Chapter III

CHOOSING AN EXCHANGE RATE REGIME FOR VIETNAM

Vietnam experienced hyperinflation in the 1980s, and now, inflationary tendency has come back since 2004 due to some external and internal factors. To control inflation, Vietnam has pegged its currency to that of a large, low-inflation country, the United States. Is it a good choice? As discussed in the previous chapter, de facto pegged exchange rate regime faces some problems. Getting the exchange rate right is essential for economic stability and growth in developing countries, especially for Vietnam, which is under the way of economic reform and accelerating its integration into the world market. This chapter discusses the choice of an appropriate exchange rate regime for Vietnam.

Vietnam will open progressively the capital account by 2010 in association with opening the financial market. The opening of capital account has implications for the choice of exchange rate regime in Vietnam. It raises the question about the sustainability of the fixed exchange rate regime in Vietnam in new environment of free capital flows. As mentioned in the previous chapter, the fixed peg could face problem of credibility and financial crisis, as the economy open its capital account.

The first section of this chapter contains a literature study about the performance of different exchange rate regimes in emerging countries. The different systems of exchange rate classification (from freely float to hard peg) will be introduced. Generally, there is a trend toward more flexible exchange rate regimes in emerging countries. The trend of transitions to more flexible exchange rate regimes among emerging countries and their experiences from currency crises during 1990s show that opening capital account while maintaining fixed exchange rate may lead to crises. Then, there will be a short literature review about advantages and disadvantages as well as economic performance of fixed and flexible exchange rate regime. The results of literature study are divided into two conclusions. First, no exchange rate regime is superior, which can be proven neither theoretically nor empirically. Higher output growth and lower inflation can be satisfied under either fixed or flexible exchange rate. Second, no definite exchange rate regime is optimal for all countries. Rather, the choice of exchange rate regime must be based on the characteristics of the
economy, its inflation history, type of shocks the economy coped, institutional frameworks, and political considerations.

The second section of this chapter analyses results of exchange rate theories. Firstly, I see whether Vietnam is a candidate for a fixed exchange rate regime against the U.S. dollar based on OCA theory (e.g. the size and openness of the country to trade and financial flows, structure of its production and exports, the stage of its financial development, and the nature and source of shocks it faces, etc). Second, real situations of the economy suggest that, an appropriate exchange rate regime for Vietnam must meet conditions of achieving the price target, and helping the economy to resist different shocks. The first one is related to the credibility and independence of the central bank, the second one is associated with the ability of different exchange rate regimes to absorb shocks.

To stabilize price: based on the analysis of conventional models on exchange rate, I come to following conclusions. Fixed exchange rate can contribute to stabilize the price if the public has confidence in the ability of the central bank to control inflation. Under flexible exchange rate regime, the central bank intervention is not compulsory and the exchange rate is no longer nominal anchor to stabilize the price. In such a case, the credibility and ability of the central bank to control money supply are two factors that help to control inflation. The credibility can be stronger if the central bank is given more independence in implementing monetary policy. The central bank independence can yield lower rate of inflation by placing higher weight on price stability relative to output stabilization in social loss function. I also conclude that in order to stabilize price, it is able to combine flexible exchange rate regime with inflation targeting, under which the central bank independence is needed to give the central bank necessary manoeuvring room to achieve the price stability objective. If the price stability objective is conflicted with other objectives (for example output objective), the central bank should give priority to price stability objective; even accept the negative effects on output. The negative effects on output can be solved by other policies, for example flexible wage policy.

To protect from shocks: the absorption of shocks under fixed and flexible exchange rate regimes will be treated. I conclude that flexible exchange rate regime will be more desirable in shock absorption in case of Vietnam, especially when the central bank targets at price stability objective.
The third section concludes that Vietnam should move toward greater exchange rate flexibility and addresses some questions supporting for this finding.

III.1. Recent evolution of exchange rate regimes

III.1.1. Classifications of exchange rate regimes

In the aftermath of the financial crises in the 1990s, discussions of appropriate exchange rate regimes have mushroomed, which include a great deal of interest in classifying exchange rate regime, bipolar hypothesis and fear of floating.

From the start, discussions on the choice of exchange rate regime face difficulties because there are too many different classification systems. From 1975 to 1998, most studies of exchange rate regimes relied on the official IMF’s exchange rate regime classification (de jure classification) reported on the IMF’s Annual Report on Exchange Arrangements and Exchange Restrictions, which was based on members’ official notifications to the IMF. The de jure classification distinguished between three main categories, which were divided into 15 subcategories, including pegged regimes, regimes with limited flexibility (those that permit the exchange rate to fluctuate within a band or a cooperative arrangement), and more flexible arrangements (those in which the exchange rate is managed or floated freely). The de jure classification system had a serious drawback, that is its failure to capture inconsistencies between what the countries officially announced and what they were doing in practice. Consequently, the de jure classification inaccurately characterized the distribution of operative currency regimes across the world and over time. Moreover, empirical analyses employing the de jure classification to test theories of regime choice or to assess the relationship between regime choice and economic performance risked reaching incorrect conclusions and drawing misleading policy implications (Rogoff et al, 2004). To address this problem, a number of new de facto classification systems have been introduced by IMF and researchers. Table III.1 provides a brief review of the classification scheme starting from the most rigid regime and becoming increasingly flexible within each system.
<table>
<thead>
<tr>
<th>Classification systems</th>
<th>Approach method</th>
<th>From Peg to Floating regime</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bubula and Otker-Robe (2002), (13 categories)</strong></td>
<td>Based on behaviour of exchange rates and international reserves</td>
<td><strong>Hard peg</strong>&lt;br&gt;- Formal dollarization&lt;br&gt;- Currency union&lt;br&gt;- Currency board arrangement&lt;br&gt;<strong>Intermediate</strong>&lt;br&gt;- Conventional fixed peg against single currency&lt;br&gt;- Conventional fixed peg against a basket&lt;br&gt;- Horizontal bands&lt;br&gt;- Forward looking crawling peg&lt;br&gt;- Backward looking crawling peg&lt;br&gt;- Forward looking crawling band&lt;br&gt;- Backward looking crawling band&lt;br&gt;- Tightly managed floats&lt;br&gt;<strong>Floating</strong>&lt;br&gt;- Other managed with no predetermined exchange rate path&lt;br&gt;- Independently floating</td>
</tr>
<tr>
<td><strong>Dubas et al. (2005) (6 categories)</strong></td>
<td>Volatility of a country’s effective exchange rate, a bilateral exchange rate against anchor currency, and international reserves</td>
<td>- Currency peg&lt;br&gt;- Limited flexibility&lt;br&gt;- Cooperative arrangements&lt;br&gt;- Adjusted according to a set of indicators&lt;br&gt;- Managed floating&lt;br&gt;- Independently floating</td>
</tr>
<tr>
<td><strong>Frankel (2003) (9 categories)</strong></td>
<td><em>Firm fix</em>&lt;br&gt;- Monetary union&lt;br&gt;- Dollarization (Euroization)&lt;br&gt;- Currency board&lt;br&gt;<strong>Intermediate</strong>&lt;br&gt;- Adjustable peg&lt;br&gt;- Basket peg&lt;br&gt;- Crawling peg - incl. preannounced crawl and...</td>
<td></td>
</tr>
</tbody>
</table>
| **Ghosh et al. (2002) (10 categories)** | Consensus classification by using the intersection of the de jure and de facto classification (hybrid classification) | indexed peg
- Band incl. Bergsten-Williamson target zone (fundamental equilibrium exchange rate) and Krugman-ERM target zone (fixed nominal central parity)

**Floating**
- Managed floating
- Free floating

| **IMF (since 1999) (8 categories)** | Combining information on exchange rate and monetary policy framework, and authorities’ formal or informal policy intentions with data on actual exchange rate and reserve movements (or based on the degree of commitment to a given exchange rate path). | **Hard peg**
- Regime with no separate legal tender – incl. another currency as legal tender (formal dollarization) and currency union
- Currency board

**Intermediate regimes**
- Conventional fixed peg against a single currency or a basket of currencies
- Pegged exchange rates within horizontal bands
- Crawling pegs
- Crawling bands

**Floating regimes**
- Managed floating with no predetermined path for exchange rate
- Independent floating

| **Kuttner and The degree to which the** | - Currency board – incl. official dollarization and

|
| Posen (2001) (4 categories) | exchange rate regime imposes a rules on policy | currency union  
- Hard peg – incl. single or basket peg  
- Target zones – incl. crawling pegs, frequently shifting basket and wide-band arrangement  
- Free float |
|-----------------------------|-----------------------------------------------|--------------------------------------------------|
| Levy-Yeyati and Sturzenegger (2002a) (5 categories) | Based on exchange rate volatility, the volatility of exchange rate changes, and the volatility of reserves | - Fixed  
- Crawling peg  
- Dirty float  
- Flexible  
- Inconclusive |
| Nitithanprapas and Willett (2002) (5 categories) | At least using two parameter - i.e. coefficients for trend and for deviations around trend - to start with fairly broad categories. For finer distinctions within these categories, some parameters will be considered for further research | - Hard fixed  
- Narrow band sticky peg (the Dead centre)  
- Crawling pegs/bands  
- Heavily managed float  
- Lightly managed float |
| Reinhart and Rogoff (2004) (15 categories) | Natural classification by using movements in the parallel rate | - No separate legal tender  
- Preannounced peg or currency board arrangement  
- Preannounced horizontal band that is narrower than or equal to +/-2%  
- De facto peg  
- Pre announced crawling peg  
- Preannounced crawling band that is narrower than or equal to +/-2%  
- De facto crawling peg  
- De facto crawling band that is narrower than or equal to +/-2%  
- Preannounced crawling band that is wider than or equal to +/-2% |
| De facto crawling band that is narrower than or equal to +/-5% |
| Moving band that is narrower than or equal to +/-2% (i.e., allows for both appreciation and depreciation over time) |
| Managed floating |
| Freely floating |
| Freely falling |
| Dual market in which parallel market data is missing |

**Stone et al. (2004) (8 categories)**

- Defined by the choice and clarity of the nominal anchor
- Monetary nonautonomy
- Exchange rate peg
- Full-fledged inflation targeting
- Implicit price stability anchor
- Inflation targeting lite
- Weak anchor
- Money anchor


Schuler (2005) shows in his study that a problem with studies of de facto exchange rate systems is that economists disagree even more among themselves than they do with the IMF in classifying particular cases. Ghosh *et al.*, Levy-Yeyati and Sturzenegger, and Reinhart and Rogoff found that they agreed with the IMF classifications in 41 to 55 percent of cases, but agreed with each other in only 35 to 45 percent of cases (results from Table 3, Frankel 2003, p.39). For example, the IMF classifies Egypt as having a managed float with multiple exchange rates from August 1989 to January 2001. Reinhart and Rogoff (2004) characterize the de facto exchange rate as a crawling band to the U.S. dollar from July 1971 to October 1991 and a hard peg thereafter. Levy-Yeyati and Sturzenegger (2003) classify the de facto exchange rate as a dirty float from 1989 to 1991, inconclusive from 1992 to 1997, a fix in 1998, inconclusive in 1999, and a float in 2000.
This babel of classification schemes makes us confuse with distinguishing the exchange rate regimes and identifying changes in the exchange rate regimes. To keep the analysis manageable, I use the IMF de facto classification scheme. According to this classification schemes, the countries informally pegging their currencies and those managing their exchange rates along a predetermined target path (for example, crawling peg or crawling band regimes) are classified as intermediate regimes.

III.1.2. Exchange rate regime transitions

Since the mid-1990s, some observers, Eichengreen (1994, 2002), Obstfeld and Rogoff (1995), Summers (2000) have predicted that emerging market countries would over time move to the polar extremes of exchange rate flexibility (so-called Bipolar hypothesis 28), that is they would either adopt hard peg (currency board and high dollarization) or freely floating. Fischer (2001) concluded, on the basis of the IMF de facto classification, “In the last decade, there has been a hollowing out of the middle of the distribution of exchange rate regimes in a bipolar direction, with the share of both hard pegs and floating gaining at the expense of soft pegs”.

Bubula and Otker-Robe (2002) find that there have been shift away from intermediate regimes toward the two ends of the spectrum of exchange rate regimes of either truly peg or freely float. In 1990, members with intermediate regimes made up 69.2% of total IMF membership. This number reduced to 38.7% in 2001 (Figure III.1). Most intermediate regimes existed to a floating regime, rather than to hard pegs (Table III.2). More than half of the shifts (56.3%) across all types of regimes involved exits to more flexible regimes and the remaining (43.7%) to less flexible regime.

The greater degree of regime polarization has been attributed to the principle of “impossible trinity” (Frankel, 1999, Fisher, 2001, Bubula and Otker-Robe, 2002, and Obstfeld et al., 2004). The “impossible trinity” principle says that a country cannot attain all three goals simultaneously: exchange rate stability, monetary independence, and financial market integration (or capital mobility). The increasingly integrated financial market pushes the country to choose between exchange rate stability and monetary independence. However,

28 Bipolar view is referred to as “vanishing or missing middle”, “hollowing out of intermediate regimes”, “hollowing out of the middle”, or “corner solutions”.
some authors argue that there is no reason why emerging countries have to allow free capital mobility. Indeed, the fact that currency crisis are result of capital flow reversals has led some authors argue that capital control can reduce the risk of crisis. Chile is a case in point (Edwards, 2001). Furthermore, even under perfect capital mobility, there is nothing to prevent country from choosing intermediate solutions between freely floats and purely fixed.

Table III.2. Number of regime shifts under alternative exchange rate regimes, 1990-2001

<table>
<thead>
<tr>
<th>Exit from</th>
<th>Toward greater flexibility</th>
<th>Toward less flexibility</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Hard pegs</td>
<td>8</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>- Intermediate regimes</td>
<td>164</td>
<td>58</td>
<td>222</td>
</tr>
<tr>
<td>- Floating regimes</td>
<td>30</td>
<td>99</td>
<td>129</td>
</tr>
<tr>
<td>Total</td>
<td>202 (56.3%)</td>
<td>157 (43.7%)</td>
<td>359</td>
</tr>
</tbody>
</table>

Source: Bubula and Otker-Robe (2002)

The validity of the bipolar view has been challenged because some have argued that a number of countries declare officially floating but maintain informal exchange rate targets, or many countries say that they have intermediate regime but in fact have de facto peg. The tendency of countries to allow less exchange rate flexibility in practice than in policy statements is consistent with the “fear of floating” of Calvo and Reinhart (2000). That is, countries may be reluctant to allow their currencies to float because negative effects of exchange rate fluctuations on output, exchange rate overshooting, lack of credibility and fear of inflation, currency mismatches, and/or balance sheet effects (on account of high liability dollarization) in case of large depreciations.

Frankel (1999) says that intermediate regime is likely more appropriate than corner solutions. Bubula and Otker-Robe (2002) examine whether the “bipolar view” holds with de factor exchange rate classification. The result is that though the proportion of countries adopting intermediate regimes has been shrinking in favour of either greater flexibility or greater fixity, there is no strong evidence to suggest that the intermediate regime will disappear. This result

29 Although Chile experienced with the policy of control of capital flows in helping prevent currency crisis, there is no guarantee that this policy will work in the same ways in other countries (Edwards, 2001).
is consistent with that of Masson (2000). Similarly, using Natural classification, Rogoff et al. (2004) indicates that there has been no “hollowing out of the middle”. While a few emerging markets indeed moved in the 1990s to de facto hard pegs or free floats, there are many transitions from freely floating to intermediate regimes.

**Figure III.1. Evolution of exchange rate regimes, 1990-2001**

![Pie charts showing exchange rate regimes]

<table>
<thead>
<tr>
<th>Year</th>
<th>Hard Pegs</th>
<th>Floating Regimes</th>
<th>Intermediate Regimes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>16%</td>
<td>15%</td>
<td>69%</td>
</tr>
<tr>
<td>2001</td>
<td>26%</td>
<td>36%</td>
<td>38%</td>
</tr>
</tbody>
</table>

(in percent of IMF membership, de facto classification)

Source: Bubula and Otker-Robe (2002)

IMF (2004b) carried out a descriptive review of exchange rate transition in emerging countries, and found that there has been a trend toward greater exchange rate flexibility

---

30 Emerging countries that are developing countries that highly integrated in international capital market (Hakura, 2005) in this review include Argentina, Brazil, Chile, China, Colombia, the Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, the Philippines, Poland, Russia, South Africa, Thailand, Turkey, and Venezuela.
since the early 1990s. Over the past decade, there have been 28 transitions, of which 20 transitions to more flexible exchange rate regimes. The share of emerging countries with free floats rose from zero in the early 1990s to 40% in recent years (Figure III.2). The reason explaining for the move to more flexible exchange rate regimes is drawn from countries’ experiences with fixed exchange rate, that is the fixed exchange rate is not able a long run solution to problem of financial and monetary instability in a world of increasingly high capital mobility. “Exchange rate overvaluation, imperfect credibility of both monetary and fiscal policy, and a build-up of short-term external debts all contributed to a high incidence of costly speculative attacks and financial crises in many exchange rate targeting countries since the 1990s. As economies become more open to international financial markets, the vulnerability to shocks under fixed exchange rate increases and floats become more durable” (IMF, 2006b).

**Figure III.2. Increasing exchange rate flexibility in emerging countries**

In summary, no compromise seemed to have developed in the debate whether freely floating or hard pegs are more attractive for emerging countries. However, the tendency toward greater flexibility continues and predominates over the counter direction. The reason explaining for the move to more flexible exchange rate regimes is drawn from countries’ experiences with fixed exchange rate, that is the fixed exchange rate is not able a long run solution to problem of financial and monetary instability in a world of increasingly high capital mobility. This raises the question whether the flexible exchange rate regime can
replace the fixed exchange rate regime (or the choice of an appropriate exchange rate regime) in the new environment of free capital flows.

### III.1.3. Advantages and disadvantages of fixed versus flexible exchange rate

Before considering about determinants in the choice of exchange rate regimes, it is necessary to recall about advantages and disadvantages of fixed and flexible exchange rate regimes. Either of fixed or flexible exchange rates have its advantages and disadvantages. Choice of the exchange rate regime is a tradeoff between the advantages of fixing and the disadvantages of floating, and vice versa (Table III.3 and Table III.4). The big advantage of fixed exchange rate is to provide a credible nominal anchor for monetary policy to control inflation. The main advantage of flexible exchange rate, on the other hand, is ability to pursue an independent monetary policy.

#### Table III.3. Advantages and disadvantages of fixed exchange rate regime

<table>
<thead>
<tr>
<th>For</th>
<th>Against</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A fixed exchange rate provides a credible nominal anchor for monetary policy to bring down inflation.</td>
<td>1. A fixed rate, if it lacks complete credibility, may be vulnerable to speculative attack; this could have damaging consequences for monetary stability in the economy or for the foreign exchange reserves; ultimately speculation may force abandonment of the fixed rate.</td>
</tr>
<tr>
<td>2. A fixed rate, if it is durable and is regarded as durable, provides businesses with a sure basis for planning and pricing, then reducing transaction costs and exchange rate risk, thereby helping to develop investment and international trade.</td>
<td>2. Promoting trade and investment in Europe was certainly a prime motivation for the European Monetary Union. However, there has not been satisfactory testing of the proposition that trade and investment are substantially boosted by full monetary union (case of European Monetary Union), in which circumstance even the possibility of a future change in the exchange rate is eliminated, along with all transactions costs (Frankel, 1999).</td>
</tr>
</tbody>
</table>
3. A fixed rate regime, which imposes direct discipline on monetary and financial policy, may be preferred when financial sector insufficiently developed for the operation of a market-based monetary policy. For example, to maintain a peg, the central bank is not be able to increase its borrowing through the bond market because this may affect interest rates, and, hence, put pressure on the exchange rate peg (Caramazza and Aziz, 1998). Fixed exchange rate induces more discipline because adopting lax financial policy must eventually lead to an exhaustion of reserves and an end to the peg.

4. A fixed exchange rate absorbs domestic monetary shocks. A negative shock from domestic money market leads to a shortage in money supply in money market. The public tries to sell valuable papers, which predisposes an excess in supply of valuable papers, then a reduction in price of valuable papers and an increase in interest rate. Increase in domestic interest rate also leads to a decline in demand for investment in goods and excess supply in goods market. As a result, prices and output decline. Additionally, domestic interest rate is higher than foreign interest rate, resulting in an increase in capital inflow, which leads to exchange rate appreciation. Under fixed exchange rate

3. A fixed exchange rate results in the loss of independent monetary policy. Loss of an independent monetary policy becomes problematic under fixed exchange rate regime, though inflation is controlled, since the pegging country loses the ability to use monetary policy to respond to domestic shocks that are independent of those hitting the anchor country. For example, the pegging country has to raise its interest rate if the anchor country raises the interest rate in order to maintain the exchange rate relationship, even if the pegging country is in recession.

4. Shock in the anchor country will be more easily transmitted to the pegging country, with possible negative consequences. For instance, changes in interest rates in the anchor country lead to a corresponding change in interest rates in the pegging country.
regimes, the central bank has to intervene to maintain the fixed exchange rate by buying foreign exchange in the market. This intervention brings about an increase in money supply, which in turn helps to compensate negative effects on output.

5. Fixed exchange rate together with open capital account, imperfect credibility monetary and fiscal policy, high liability dollarization, build up of short-term external debts and a weak banking system are likely to promote financial fragility and heighten the potential for financial crises. Attracting by high interest rate, stable exchange rate and strong economic performance, there is a massive volume of capital inflows in the country, which will be allocated in efficient sectors, but may be extended in inefficient sectors due to weak banking supervision. Capital inflows will also lead to exchange rate appreciation. If this pressure becomes too intensive, market participants will perceive that the exchange rate might be no longer sustainable (i.e. a sudden loss of credibility increases). In such a case, speculative attacks may occur. A large volume of foreign currency deposits will be withdrawn from banks and a massive volume of foreign exchange will flight out of the countries. These will lead exchange rate depreciation. Exchange rate depreciation will weaken already weak balance sheets of bank and firms, which in turn will force the central bank to sell foreign exchange in the market to defend the peg, but at
the cost of exhaust of international reserves. To constrain the flight of capital flows, the central bank can tighten monetary policy by raising interest rates but at the cost of further weakening an already fragile banking system and affecting negatively output. These can trigger a financial crisis and a collapse of the fixed exchange rate. In fact, experiences of Latin America and Asia show that maintaining the fixed exchange rate while opening capital account in the context of high liability dollarization and weak banking system are determinants triggered financial crises in emerging countries during the 1990s.

6. The fixed exchange rate creates the perception of an implicit guarantee for exchange rate and reduces the sensibility of market participants to exchange rate risks, thus they have a little incentive to hedge foreign exposures. If everything works smoothly, hedging is not necessary. If, however, there would be a shock on fixed exchange rate, the central bank would not be able to maintain the fixed rate; market participants would bear exchange rate risks when they had not hedged them against exchange rate risks.

7. An adequate quantity of foreign exchange reserves is required. It becomes difficult for the country, which has only modest foreign exchange reserves, to maintain the peg.

### Table III.4. Advantages and disadvantages of floating exchange rate regime

<table>
<thead>
<tr>
<th>For</th>
<th>Against</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A floating exchange rate allows country to pursue an independent monetary policy, instead of constraining monetary policy by the fixed exchange rate. When the economy is hit by a disturbance, such as a shift in worldwide demand away from the goods it produces, the government would like to be able to respond, so that the country does not go into recession.</td>
<td>1. The freedom to operate a discretionary domestic monetary policy may be abused: for example, the government, not being impelled to prevent the exchange rate depreciating, may fund budget deficits by excessive credit creation. The discretion of monetary policy comes with problem of time-inconsistency because various objectives can be pursued under flexible exchange rate. Additionally, because many emerging market countries have not developed the political or monetary institutions that result in the ability to use discretionary monetary policy successfully, they may have little to gain from an independent monetary policy, but a lot to lose (Mishkin, 1999).</td>
</tr>
<tr>
<td>2. Under a floating exchange rate, the exchange rate risk can be hedged through the forward exchange market and other instruments, thereby reducing possibility of crisis.</td>
<td>2. The flexible exchange rate may demonstrate high exchange rate volatility in context of increasingly international financial market integration. Volatility is substantially higher in developing countries with thin foreign exchange markets and unsound financial systems. Higher exchange rate volatility would create uncertainty; the future path of the exchange rate will be uncertain, which may create difficulties for businesses in planning and pricing; this risk will in turn discourage international trade and investment. In certain cases, it may be costly to hedge against such uncertainty.</td>
</tr>
<tr>
<td>3. Flexible exchange rates smooth effects of external and domestic real shocks.</td>
<td></td>
</tr>
<tr>
<td>4. If markets operate efficiently and the rate floats freely, there will be</td>
<td>4. Markets seldom operate with perfect efficiency; there is a risk, therefore, of overshooting, which will</td>
</tr>
</tbody>
</table>
no opportunities for speculators to make profits at the expense of the central bank.

result in the exchange rate being at a level not warranted by “economic fundamentals”, perhaps for a considerable period.

5. The rate is determined principally by market forces. A cardinal principle underlying the market economy is that markets are successful in allocating resources (including finance) efficiently.


Which factors are likely to dominate the advantages of fixed exchange rates or the advantages of floating? The choice of the exchange rate regime is a tradeoff between the advantages of fixing and the disadvantages of floating, and vice versa. There is no right answer for all countries or at all times. The answer depends on the particular circumstances facing the country (Frankel, 1999, 2003).

**III.1.4. Determinants in choice of exchange rate regimes**

The choice of exchange rate regimes depends on the characteristics of the economy, the shocks the country coped with, and the political considerations (IMF, 1997).

Macroeconomic and financial characteristics are determinants in choice of exchange rate regime. The standard classical theory of choosing an exchange rate regime is the theory of optimum currency area (OCA theory) pioneered by Mundell (1961). Notable followers, who further develop Mundell’s ideas, are McKinnon (1963) and Fleming (1971). An optimum currency area is defined as a geographical area in which member countries should use absolutely fixed exchange rates among themselves or, equivalently, have a common currency. Mundell and his followers have stipulated several criteria to assess whether a country should belong to an optimal currency area, including the symmetry of external shocks, the degree of labour mobility, the degree of openess, the extent of economic diversification, fiscal cushions and policy willingness to accept neighbours’ policy (McKibbin and Le, 2002, Frankel, 2003, and Horvath, 2003). Among macroeconomic variables, studies later included the different factors such as inflation, foreign exchange reserves, an indicator of either capital
controls (typically also drawn or constructed from the IMF’s Annual Report on Exchange Arrangements and Exchange Restrictions) or de facto capital openness (e.g., the ratio of foreign assets of the banking system to the money supply), measures of volatility of domestic output, exports, domestic credit, or the real exchange rate, political economy or institutional strength. Collectively, Rogoff et al. (2004) find that the studies considered more than 30 potential determinants of exchange rate regime choice.

For example, Frankel (1999) is aware of some new criteria for a fixed exchange rate, though OCA factors are still relevant, and underlines that these characteristics have to do with credibility and the need to satisfy international financial markets:

- A strong (even desperate) need to import monetary stability, due to either a history of hyperinflation, an absence of credible public institutions, or unusually large exposure to nervous international investors;
- A desire for further close integration with a particular neighbour or trading partner (which has the added advantage of enhancing the political credibility of the commitment);
- An economy in which the foreign currency is already widely used;
- Access to an adequate level of reserves;
- Rule of law; and
- A strong, well-supervised and regulated financial system.

Mussa et al. (2000) indicate conditions that are likely to favour the adoption of some forms of pegged exchange rate regime:

- The degree of involvement with international capital markets is low;
- The share of trade with the country to which it is pegged is high;
- The shocks it faces are similar to those facing the country to which it pegs;
- It is willing to give up monetary independence for its partner’s monetary credibility;
- Its economy and financial system already extensively rely on its partner’s currency;
- Because of high inherited inflation, exchange rate-based stabilization is attractive;
- Its fiscal policy is flexible and sustainable;
- Its labour markets are flexible;
- It has high international reserves.
Rogoff et al. (2004) also show that different empirical studies using the de jure and other de facto regime classifications have often obtained different results. For example, openness - the most frequently analyzed variable - is found to be significantly associated with floating regimes by three studies, significantly associated with fixed exchange rates by three studies, and not significantly associated with any particular exchange rate regimes by another five studies. Degree of economic development is found to be significantly associated with floating regimes by three studies, significantly associated with fixed exchange rates by two studies, and not significantly associated with any particular exchange rate regime by another three studies. These suggest that it is very difficult to draw general conclusions about how countries choose their exchange rate regimes.

Another approach has focused on the effects of shocks on the domestic economy. The optimal regime is the one that stabilizes macroeconomic performance, that is, minimizes fluctuations in output, real consumption, the domestic price level, or some other macroeconomic variables (IMF, 1997). If the economy faces predominantly domestic nominal shocks (money supply shocks or money demand shocks), a fixed exchange rate (or a greater degree of fixity) looks attractive. If the shocks are real (foreign shocks, shocks to productivity, or terms-of-trade shocks), a flexible exchange rate (or a greater degree of flexibility) is preferable (IMF, 1997, and Calvo and Mishkin, 2003).

Reason that fixed exchange rate regime absorbs money demand or supply shocks as follows: A negative shock from domestic money market (a decrease in money supply) leads to a shortage in money supply in money market \((m < p + y - \alpha \cdot i)\). Man, say, tries to sell valuable papers, which predisposes an excess in supply of valuable papers, then a reduction in price of valuable papers and an increase in interest rate. Increase in domestic interest rate also leads to a decline in demand for investment in goods \((y^d = -\beta_1 \cdot i)\) and excess supply in goods market. As a result, prices and output decline. In addition, domestic interest rate is higher than foreign interest rate, resulting in a reduction in expected exchange rate \((i > i^* + Ee_{it} - e)\) and an increase in capital inflow, which leads to exchange rate appreciation. Under fixed exchange rate regimes, the central bank has to intervene to maintain the fixed exchange rate by buying foreign exchange in the market. This intervention brings about an increase in money supply, which in turn compensate negative effect on output. By contrast, under flexible exchange rate regimes, the central bank permits exchange rate to appreciate.
Exchange rate appreciation makes foreign goods cheaper, resulting in a reduction in the demand for domestic goods (if effect of cheaper prices of imports is larger than decrease in prices of domestic goods), hence a decrease in price of goods and a reduction in money demand. As a result, under flexible exchange rate, nominal exchange rate, money supply, price of goods and output decrease. Therefore, the nominal shocks arising from money supply is transmitted in the real one (a decrease in output).

Reason that flexible exchange rate regime is more appealing if the shocks are real (shock to productivity or to the terms of trade) is: A fall in the price of export of a country (a negative terms-of-trade shock) leads to a reduction in income and in production and labour of export sector, and a weaker position of balance of payments. The exporters have fewer foreign exchange and fewer people want to sell foreign exchange in the market. As a result, exchange rate depreciates. Under fixed exchange rates, the central bank has to sell foreign exchange in the market to sustain the value of the domestic currency. This intervention leads to decrease in money supply (reducing amount of money available for investment), thereby contracting output. Under flexible exchange rate, by contrast, the central bank allows exchange rate to depreciate. The depreciation in exchange rate makes export more competitive, thereby increasing export demand, which in turn stimulates export and reduce negative impacts of the shock to the terms of trade on output.

In addition, the choice of exchange rate regime may depend on political considerations (IMF, 1997). For instance, it may be more costly politically to adjust a pegged exchange rate than to allow a more flexible exchange rate because the former is clearly visible and involves an explicit government decision, while the latter can be attributed to the market. When the political costs of exchange rate adjustments are high, it is more likely that a more flexible exchange rate regime will be adopted. Therefore, the choice of exchange rate regime also depends on policymakers’ preferences. That is, the type of costs they wish to minimize, the will to abandon its monetary independence to pursue a monetary policy that results in the dependence on the monetary policy/currency of the country they plan to peg, or the trade-off between advantages and disadvantages between fixed and flexible exchange rate regimes they can accept.
Table III.5. Determinants in choice of exchange rate regimes

<table>
<thead>
<tr>
<th>Characteristics of economy</th>
<th>Implication for the desired degree of exchange rate flexibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of economy</td>
<td>The larger the economy, the stronger is the case for a flexible rate.</td>
</tr>
<tr>
<td>Openness</td>
<td>The more open the economy, the less attractive is a flexible exchange rate.</td>
</tr>
<tr>
<td>Diversified production/export structure</td>
<td>The more diversified the economy, the more feasible is a flexible exchange rate.</td>
</tr>
<tr>
<td>Geographic concentration of trade</td>
<td>The larger the proportion of an economy's trade with one large country, the greater is the incentive to peg to the currency of that country.</td>
</tr>
<tr>
<td>Divergence of domestic inflation from world inflation</td>
<td>The more divergent a country’s inflation rate from that of its main trading partners, the greater is the need for frequent exchange rate adjustments. (But for a country with extremely high inflation, a fixed exchange rate may provide greater policy discipline and credibility to a stabilization program.)</td>
</tr>
<tr>
<td>Degree of economic/financial development</td>
<td>The greater the degree of economic and financial development, the more feasible is a flexible exchange rate regime.</td>
</tr>
<tr>
<td>Labour mobility</td>
<td>The greater the degree of labour mobility, when wages and prices are downwardly sticky, the less difficult (and costly) is the adjustment to external shocks with a fixed exchange rate.</td>
</tr>
<tr>
<td>Capital mobility</td>
<td>The higher the degree of capital mobility, the more difficult it is to sustain a pegged-but-adjustable exchange rate regime.</td>
</tr>
<tr>
<td>Foreign nominal shocks</td>
<td>The more prevalent are foreign nominal shocks, the more desirable is a flexible exchange rate.</td>
</tr>
<tr>
<td>Domestic nominal shocks</td>
<td>The more prevalent are domestic nominal shocks, the more attractive is a fixed exchange rate.</td>
</tr>
<tr>
<td>Real shock</td>
<td>The greater an economy’s susceptibility to real shocks, whether foreign or domestic, the more advantageous is a flexible exchange rate.</td>
</tr>
<tr>
<td>Credibility of policymakers</td>
<td>The lower the anti-inflation credibility of policymakers, the greater is the attractiveness of a fixed exchange rate as a nominal anchor.</td>
</tr>
</tbody>
</table>

Source: IMF (1997)

To conclude, it is very difficult to draw general conclusions about how countries choose their exchange rate regimes. A country needs a pegged exchange rate regime at the time, for example, of high inflation if the ability of the central bank to control inflation is weak. But when inflation is reduced, the external competitiveness is deteriorated (because the
appreciation of the currency, to which the domestic currency is pegged), or the surge in foreign investment stopped, the pegged exchange rate should be abandoned. Therefore, the choice of exchange rate depends on the structural characteristics of the economy, the nature and source of the shocks to the economy, and policymakers’ preferences (see Table III.5 for summarization of the main determinants in the choice of exchange rate regimes).

### III.1.5. Economic performance across exchange rate regimes

How does economic performance (inflation, GDP growth, volatility, and crisis) differ across exchange rate regimes among developing countries? Results of a variety of studies reach a little consensus, which reflect the difference in method of classifying exchange rate regimes (Rogoff et al., 2004).

* **Inflation**

The major difference in economic performance between fixed and flexible exchange rate regimes is with respect to inflation. Pegging exchange rate can lower inflation by inducing policy discipline and to the extent that the peg is credible, the public will not find the way to protect themselves, thus there is no expectations of inflation. Using de jure classification, Ghosh et al. (1996, 2002) also find that inflation under fixed exchange rate regimes is significantly lower than that under immediate or freely floating arrangements due to greater confidence in the currency (credibility effect) and lower money growth (discipline effect). IMF (1997) indicates that inflation in countries with pegged exchange rates has been consistently lower and less volatile than in countries with more flexible exchange rate, but the difference has narrowed substantially in the 1990s. This finding is also made by Levy-Yeyati and Sturzenegger (2001), Coudert and Dubert (2004), Edward and Magendzo (2003a, 2003b) and Rogoff et al. (2004).

However, IMF (1997) and Grauwe and Schnabl (2004) indicate that these findings do not imply that flexible exchange rates are necessarily associated with higher inflation. Indeed, there are a number of countries with flexible exchange rates having relatively low inflation. It is the case of Poland and the Czech Republic.
* Growth

The exchange rate regime can influence economic growth through investment or productivity. Ghosh et al. (1996) analyse that fixed exchange rates are in company with higher investment by reducing policy uncertainties and lowering interest rates, but associated with slower productivity since pegged exchange rate can create protectionist, distort price signal and restrict efficient allocation of resources. Output growth is slightly lower and output variability is greater under pegged exchange rates. However, this study does not find strong evidence between exchange rate regimes and economic growth. IMF (1997) also shows that during the 1990s, the mean growth rate in countries with flexible exchange rate appears to have been higher than in countries with pegged exchange rates. However, if excluding growth rate of rapidly growing Asian countries, there is no significant difference between two exchange rate regimes and output growth over the period 1975-96. In contrast, Levy-Yeyati and Sturzenegger (2002b) find that fixed exchange rates are associated with lower growth in developing countries (no similar association for industrial countries). Nevertheless, these findings do not imply that pegged exchange rates necessarily associated with lower growth. Central and Eastern Europe Countries are the case in point (Grauwe and Schnabl, 2004). In favour of pegs, Dornbusch (2001) suggests that lower inflation associated with rigid exchange rate regimes would reduce interest rates and uncertainty, spurring investment and growth. Aghion et al. (2006) find that higher exchange rate flexibility leads to lower growth in countries with relatively thin financial development and predominant financial shocks. Similarly, Rogoff et al. (2004) find that for developing economies, growth appears to decline with increased flexibility, though the effect is not statistically significant. Rogoff et al. (2004) review empirical and theoretical analyses and find conflicting results of these studies, reflecting difference in their methods of exchange rate classification.

Overall, high economic growth and low inflation can be satisfied under either fixed or flexible exchange rate regime, provided that appropriate policies and other conditions for good economic performance are in place (IMF, 1997).
* Volatility

IMF (1997) and Levy-Yeyati and Sturzenegger (2002b) find that, during the 1990s, fixed exchange rates are associated with greater output volatility. In contrast, Rogoff et al. (2004) growth volatility does not essentially vary across regimes for developing countries.

Some studies use the volatility of exchange rate changes and that of policy instruments such as interest rate changes and foreign exchange rate reserve changes to identify types of exchange rate (Calvo and Reinhart, 2000, Baig, 2001, Hernández and Montiel, 2003, Levy-Yeyati and Sturzenegger, 2005, Kim et al., 2005). The monetary authorities use policy instruments in order to stabilize exchange rate movements. Under a float exchange rate, the authorities do not intervene or rarely to stabilize the exchange rate, thus, the volatility of exchange rate would be high but that of policy instruments would be low. Volatility is substantially higher in developing countries with thin foreign exchange markets and unsound financial systems. High exchange rate volatility creates uncertainty, increases transaction costs, discourages international trade and investment, and fuels inflation. The degree of volatility of the nominal exchange rate decreases as one moves along the exchange rate spectrum towards decreasing flexibility. The hard peg regimes with their strong and credible institutional arrangements guarantee nominal exchange rate stability but low volatility in change of the exchange rate is associated high volatility with regard to policy instruments.

* Currency crisis and financial fragility

Pegged exchange rate regimes as crisis prone \(^{31}\) for emerging countries \(^{32}\) is widely accepted (e.g. Obstfeld and Rogoff, 1995, Mishkin, 1999, Mussa et al., 2000, Fisher, 2001,  

\[^{31}\] Currency crisis are mostly defined as episodes of sharp change in some indicators of pressure in the foreign exchange market. Typically, crises are defined to occur when the value of an exchange market pressure (EMP) index exceeds some threshold value. According to Bubula and Otker-Robe (2003), EMP index is computed as a weighted average of exchange rate and interest rate changes when data existed on both variables. In particular, crises were identified as periods in which the EMP index \((I_{\text{ci}})\) exceeded its sample mean by at least three standard deviations \((\text{Crisis} = 1\text{ when } I_{\text{ci}} \geq \overline{I}_{\text{ci}} + 3\sigma I_{\text{ci}})\). Currency crisis is accompanied by financial instability (such as banking crisis). Key determinants of banking crisis are credit risk, lack of adequate capital, sharp increases in short-term interest rates, currency mismatches, presence of a deposit insurance scheme, financial liberalization, lending booms, and external economic conditions (Domaç and Peria, 2000).
Mussa et al. (2000) show that for emerging market countries that were most severely affected by recent crises, their exchange rate regimes were clearly important factors in their vulnerability. Argentina and Mexico were the most severely affected countries in the “tequila crisis” of 1994-95; Indonesia, Korea, Malaysia, and Thailand in the Asian crisis of 1997-98; Russia in the Russian crisis of 1997-98; and Brazil and Argentina in the Brazilian crisis of 1997-98. At the same time, countries, which did not have pegged rates, such as South Africa, Israel in 1998, Mexico in 1998, and Turkey in 1998, avoided crises that emerging countries with fixed exchange rates faced. The currency crises of the 1990s underscored that most pegged exchange rates resulted in real exchange rate overvaluation that is incompatible with sustainability of external accounts. For example, Mexican peso was argued that it was overvalued by at least 30%, Brazilian real by 14% (see Edwards, 2001), Malaysian ringgit by 8%, Thai bath by 7%, and the Philippines’ peso by 19% (Chinn, 1998 using producer price indices).

However, it is important to note that the exchange rate regime alone is not a fundamental source of crisis, rather other factors, such as domestic financial conditions, also contribute to crisis. Since more stable value of the currency might lower perceived risk for foreign investors, capital inflows were encouraged. These capital inflows, on the one hand, might be channelled into productive investments and thus stimulate growth, they might, on the other hand, promote excessive lending, manifested by a lending boom, especially in countries with inadequate bank supervision and unsound banking system. There were also positive incentives to borrow in foreign currency because on the one hand, domestic currency interest rates were higher than foreign currency interest rate as result of effort to constrain domestic

---

32 It is important to stress that recent crisis have directly and adversely affected emerging countries, but have only indirectly affected the developing and transition countries (through movements in world prices, and trade flows). One of the factors to differentiate emerging and developing countries is that emerging countries have higher exposure to international capital flows (Mussa et al., 2000, Husain et al., 2004 and Rogoff et al., 2004).

33 For example, Russia and Brazil have had the serious fiscal problem. Korean most important problems were weak financial system and overleveraged corporations. Korea at the onset of 1997 crisis experienced high leverage ratios of chaebols and their low profitability, which made them more vulnerable to shocks. Thailand, Malaysia and Indonesia faced the problem of weak financial sector and financial position of non-financial firms.
overheating by tighter monetary policy. On the other hand, exchange rate stability made banks and corporations think that it was not risky when they agreed to shoulder currency risk to minimize their borrowing costs by over-borrowing foreign currency. In addition, as international credits were cheaper for short-run borrowing, foreign currency borrowings are mainly short-term (Table III.6). These short-term foreign-currency borrowings were used in long-term projects generating domestic currency that causes maturity and currency mismatch.

When the domestic currency was suddenly changed, the debt burden of domestic firms increased. The consequences were substantial loan losses and a deterioration of balance sheets, both for non-financial firms and financial firms, which now were unable to collect on their loans to non-financial firms. In addition, devaluation could lead to a dramatic rise in both actual and expected inflation. Indeed, Mexican inflation surged to 52% in 1995 after the foreign exchange crisis in 1994 and Indonesian inflation increased dramatically from 10.3% at end-1997 to 77.6% in the same period of 1998 (Mishkin, 1999 and IMF, 2003e). The rise in expected inflation then led to a sharp rise in interest rates, which weakened firms’ cash flow position and further deteriorated their balance sheets.

The fixed exchange rate seemingly created the perception of an implicit exchange rate guarantee and reduced the sensibility of the market participants to the exchange rate risks (moral hazard problem); thereby there was a little incentive to hedge foreign exposure. Unhedged foreign exposure together with tendency toward borrowing in foreign currency in context of weak financial system and weak banking supervision became potential danger.

---

34 For example, in South Korea, a combination of South Korean policy, its accession to the OECD, and the Basle accords on capital adequacy created unintended incentives for short-term bank borrowing (Noland, 2005).

35 Total external debt outstanding of Thailand at end-1997 is USD 93.4 billion (equivalent to 62.3% of GDP), of which short-term debt outstanding is USD 34.8 billion (IFS and Bank of Thailand, 1998).

36 In case of Thailand, beginning in 1993, the economy started showing overheating signals. Demand pressures intensified, leading to higher inflation and a sharp widening of the current account deficit despite tighter monetary and fiscal policy. The pegged exchange rate in combination with freely capital flows along with large capital differential encouraged interest rate arbitrage and contributed to highly volatile capital inflows. In addition, rapid credit growth and a rising level of external debt increased Thailand’s vulnerability to a series of domestic and external shocks, including a sharp slowdown in export growth (in part reflecting appreciation of the real exchange rate in line with the strengthening of the U.S. dollar), growing difficulties in the over-expanded property sector, large falls in the stock market, and a rapidly weakening financial system. Instability eroded the public’s confidence. A succession of speculative attacks was successful led to depletion of Thailand’s international reserves, which forced the authorities to abandon the exchange rate peg on July 2, 1997.
Table III.6. Liquidity and currency mismatches as of June 1997

<table>
<thead>
<tr>
<th>Country</th>
<th>Ratio of short-term debt to international reserves</th>
<th>Ratio of short-term debt to total debt (%)</th>
<th>Ratio of broad money to international reserves</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Korea</td>
<td>3.0</td>
<td>67</td>
<td>6.2</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1.6</td>
<td>24</td>
<td>6.2</td>
</tr>
<tr>
<td>Thailand</td>
<td>1.1</td>
<td>46</td>
<td>4.9</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.7</td>
<td>19</td>
<td>4.9</td>
</tr>
<tr>
<td>Malaysia</td>
<td>0.6</td>
<td>39</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Source: Goldstein (1998)

When a banking system was in a weakened condition as well as the exchange rate came under downward pressure, the monetary authorities, who had thin foreign exchange rate reserves, had to defend the fixed exchange rate regime by intervention in the foreign exchange market and dared not raise the interest rate because it further undermined already weak banks and firms. Once market doubted about the stability of the fixed exchange rate, then speculative attacks became overwhelming, thereby resulting in depletion of foreign reserves. When the fixed exchange rate became too costly for the government to maintain, then the collapse of the fixed rate was inevitable.

In summary, the crises in East Asia and Mexico, in which the weakness of the banking sector and speculative attacks on the currency contributed by fixed exchange rates triggered a full-scale financial crises, illustrate how dangerous the fixed exchange rate for emerging countries, particularly for countries with perfect capital mobility. By contrast, the flexible exchange rates allow greater flexibility for monetary authorities at times of exchange rate pressures and economic difficulty. Market participants are forced to recognize risks of foreign currency borrowing and have measures to protect them. Overall, flexible exchange rate becomes more valuable as countries integrate more closely into international financial markets and as they develop sound financial systems.

Similarly, Eichengreen and Hausman (1999) base on moral hazard hypothesis to conclude that pegged exchange rates are source of moral hazard and promote unhedged foreign currency borrowings that are easy to expose. By implication, more flexible exchange rate is desirable to limit short-term capital inflows and buttress stability of the exchange rate.
Conversely, Domaç, and Peria (2000) indicate empirically that adopting fixed exchange rates reduce the probability of banking crisis in developing countries. Eichengreen (1998) finds counter examples that the savings-and-loan crisis in the United States and the Japanese banking crisis of the 1990s both occurred under floating rates. Eichengreen (1998) indicates that there is no simple mapping between exchange rate stability and financial stability, it needs to consider about the origin of disturbances. When disturbances to the banking system originate abroad, exchange rate flexibility can help to insulate the banks from shocks to their funding and investments. It gives the authorities the opportunity to act as lenders of last resort. In contrast, when macroeconomic and financial shocks jeopardizing the stability of the banking system are home grown, pegging the exchange rate imposes discipline on domestic policymakers.

* Other macroeconomic variables

With regard to interest rate, Hausman et al. (1999) indicate through statistical record for Latin America that fixed exchange rate regime lead to lower real interest rates.

With regard to competitiveness, IMF (1997) finds that countries with pegged exchange rate have suffered larger current account deficits than countries having more flexible exchange rate. One of the reasons is that since the early 1980s countries with pegged exchange rates have experienced losses of competitiveness relative to countries with more flexible exchange rates. In fact, the real effective exchange rates in 1996 of countries with single-currency pegs were essentially unchanged from 1980, while currencies pegged to a basket had depreciated by 14%, and countries with flexible exchange rates by 55%.

However, with regard to relations with other domestic variables, effect of exchange rate depreciation is likely inefficient. According to conventional wisdom, allowing depreciation under flexible exchange rate, could achieve more competitive real exchange rate (provided that unchanged spread between foreign and domestic prices). By lowering wages measured in the U.S. dollar, exchange rate depreciation improves competitiveness, thereby stimulating export and reducing import. Thus, countries with flexible exchange rate can use the exchange rate to affect dollar wages. Nevertheless, Hausman et al. (1999) find evidence in case of Latin America and suggest that countries with exchange rate flexibility face heavy costs when they
attempt to improve competitiveness through devaluation. That is, under flexible exchange rate, wage indexation tends to be higher because price setters protect themselves from unexpected changes in prices (price setters anticipate the possibility of lowering dollar wages through exchange rate depreciation). Wage then influences prices and cause a further cycle of inflation. All attempts to improvement of competitiveness by devaluation are nullified by response of wages while amplifying inflation. In this context, the central bank aiming to price target should not allow greater exchange rate flexibility.

Overall, high economic growth and low inflation can be satisfied under either fixed or flexible exchange rate regime; lower real interest rate is able to reach under fixed exchange rate, the improvement of competitiveness by depreciation under flexible exchange rate may not have desirable results; low volatility in change of the fixed exchange rate is associated high volatility with regard to policy instruments; and different conclusions about crisis proneness of alternative exchange rate regimes.

These imply that no exchange rate is superior and the choice of exchange rate regime depends on many determinants. These may include the characteristics of the economy (based on OCA theory), inflation history (mentioned by IMF, 1997 and Frankel, 1999), type of shocks the economy coped (introduced by Eichengreen, 1998), the existence of appropriate policies, institutions and other conditions for good economic performance and for handling the exchange rate fluctuation (for example, level of financial development indicated by IMF, 1997, Mishkin, 1999, Mussa et al., 2000, Calvo and Mishkin, 2003, and Aghion et al., 2006), and policymakers’ preferences (IMF, 1997).

III.2. Fixed versus flexible - approaches to choose an appropriate exchange rate regime in Vietnam

To answer the question of which kind of exchange rate regimes and how flexible they should be, Frankel (1999) said, “No single currency regime is right for all countries or at all times. The choice of exchange rate arrangement should depend on particular circumstances facing the country in question”.

Take the case of Vietnam. As mentioned above, fixed exchange rate regime with its problems become very difficult to sustain as the economy opens its capital account. This lays the issues
in the choice of an appropriate exchange rate regime for Vietnam. Firstly, I see whether Vietnam is a candidate for a fixed exchange rate regime against the U.S. dollar based on OCA theory. Second, real situations of the economy suggest that, an appropriate exchange rate regime for Vietnam must meet conditions of achieving the price target, and helping the economy to resist external shocks. The former is related to the credibility and independence of the central bank. The latter considers the role of the exchange rate in sustaining the economy (output and price) in the face of various kinds of shocks.

III.2.1. Country characteristics

According to IMF (1997), Mussa et al. (2000), and Rogoff et al. (2004), the fixed exchange rate is superior when the economy is small (typically measured as gross domestic product in common currency) and open (defined as half the sum of imports and exports, in percent of GDP); the economy’s production and export structure are less diversified; the geographical trade concentration (the share of trade with the country’s main partner) is high, the labour market is flexible; the degree of involvement with international capital markets is low; the country’s inflation rate less diverges from that of its main trading partners; political authority is willing to give up monetary independence for its partner’s monetary credibility; exchange rate-based stabilization is attractive in context of high inflation; the level of international reserves is high; the fiscal policy is flexible and sustainable; and the level of economic development (GDP per capita) and financial development is low.

Using these criteria as jumping-off points to consider the desired degree of exchange rate flexibility for Vietnam in the context of opening capital account in the coming years, I find some results (Table III.7):

With regard to degree of size and openness of the economy, the economy of Vietnam is small and open (the proportion of export and import to GDP is more than around 130-140% in 2004-06), and then the fixed exchange rate is more attractive (since import prices weigh more heavily in domestic consumer prices in an open economy than in a closed economy, then fixed exchange rate regime is a nominal anchor for the import prices).

With regard to the diversity of trade and production, the economy has trade relations with many countries in all continents. For example, in 2005, 66.5% of total exports are with
industrial countries, of which United States (18% of total exports), Japan (13.6% of total exports), Australia, other EU- and Asian countries make of large proportion, and 33.5% of total export are with developing countries, of which China accounts for large ratio (9.1% of total exports). The export structure is diversified, including crude oil (23% of total exports), garment, footwear, marine products, electronic goods, rice, coffee, coal, rubber, furniture, handicraft, etc (IMF, 2006d and 2006e). Manufacturing goods (garment, footwear, marine products, and furniture) make up one third of total exports in 2005, an increase from 6% in 1992. In such a case, flexible exchange rate is more feasible. However, although Vietnam has diversified its trade, 80% of international payments are settled in the U.S. dollar. This problem arises from the public’s preference to the U.S. dollar. In such a case, fixed exchange rate is more desirable.

With regard to divergence of domestic inflation from partners’ inflation, domestic prices are influenced by world prices because the economy imports almost major input (petrol, steel, machinery, construction materials). Besides, the credibility of anti-inflation program of policy makers is low, thus the fixed exchange rate is more desirable.

With regard to degree of financial development, according to conventional wisdom, the fixed exchange rate is more desirable when financial system is unhealthy (i.e. bank balance sheets are weak, financial institutions have large open foreign positions) because depreciation can provoke bank insolvencies, undermine the confidence that leads to further currency depreciation. But the point is when the fixed exchange rate regime faces problem such as unsustainability of the peg (due to lack of credibility), unhedged foreign exposure, the peg may be susceptible to speculative attacks. In this case, delay to adjust the exchange rate can be a recipe for disaster (Eichengreen, 1999). Thus, flexible exchange rate is preferable.

With regard to capital mobility, Vietnam still restricts the capital flows but it has to loosen the capital flow restrictions in the next few years according to US-Vietnam bilateral trade agreement and commitment to join WTO, thus flexible exchange rate is more feasible.

With regard to labour mobility, labour mobility is low, the wage system in Vietnam is rigid, and thus the attraction of a flexible exchange rate is greater.
With regard to shocks, the open economy will face more external and real shocks (terms-of-trade shocks are a key fundamental that affects REER in Vietnam, IMF, 2006d), thus the flexible exchange rate is superior.

**Table III.7. Consideration in choice of exchange rate regime in Vietnam**

<table>
<thead>
<tr>
<th>Characteristics of economy</th>
<th>Implied exchange rate flexibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size and openness of economy</td>
<td>Less flexible</td>
</tr>
<tr>
<td>Diversified production/export structure/Geographic concentration of trade</td>
<td>Less flexible</td>
</tr>
<tr>
<td>Divergence of domestic inflation from world inflation</td>
<td>Less flexible</td>
</tr>
<tr>
<td>Degree of economic/financial development</td>
<td>More flexible</td>
</tr>
<tr>
<td>Labour mobility</td>
<td>More flexible</td>
</tr>
<tr>
<td>Capital mobility</td>
<td>More flexible</td>
</tr>
<tr>
<td>Foreign nominal shocks</td>
<td>More flexible</td>
</tr>
<tr>
<td>Real shocks</td>
<td>More flexible</td>
</tr>
<tr>
<td>Political considerations</td>
<td>More flexible</td>
</tr>
</tbody>
</table>

Source: Author

With regard to political considerations, the SBV wants to stabilize the price level but does not want to lose its independence. Additionally, it has only thin foreign exchange reserves (about 12 weeks of imports). This implies that maintaining a fixed exchange rate as nominal anchor to control inflation by intervention in the foreign exchange rate market is very risky. Raising interest rates to defend the fixed exchange rate faces difficulties because it will affect negatively the inherent weak banking system. In such a case, although fixed exchange rate contributed to control inflation but at the cost of the central bank and the economy if the fixed peg cannot be defended, then the flexible exchange rate is preferable.

In summary, Vietnam does not fit well all OCA criteria for a fixed exchange rate regime. Rather, the economy meets more criteria for a flexible exchange rate regime. To the extent of increasingly integrated financial market, the flexible exchange rate together with strengthening the financial system as well as giving more room for the central bank to manoeuvre an independent monetary policy become more appropriate for Vietnam. We will
see more details about two aspects, which play an important role for Vietnam in the choice of exchange rate regime, price stability and shock absorption.

### III.2.2. Credibility and independence of the central bank

#### III.2.2.1. An introduction to the relationship between price-stability objective, credibility and independence of the central bank

Monetary policy objectives include normally 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. However, it is widely consented that price stability is an overriding goal of monetary policy. Maintaining low inflation (or price stability) creates a more favourable climate for doing business and thereby economic growth. If individuals and businesses believe that prices will be stabilized year after year, they can make better long-terms 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 affect badly the effectiveness of investment and export competitiveness, thereby output growth, through the increase in domestic production costs and real exchange rate appreciation. The public tries to protect itself by setting wages and prices on the expectation that inflation will be higher than announced inflation rate, which contributes to push up prices, wages, and interest rates (so-called vicious circle of rising inflation). High inflation will affect badly 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 less predictable prices in the future. Many sellers will exploit high inflation to speculate, which aggravates the high inflation situation.

With the benefits of low inflation and costs of high inflation, from my point of views, monetary policy in Vietnam should aim at stabilizing price level as primary objective. The question is how should monetary policy be conducted to achieve the price stability objective?
A monetary policy targeting at price stability (low inflation) will be successful if it is credible. That means the public believes that the central bank will carry out all necessary measures to achieve this announced objective. To the extent that monetary policy is credible, the public will not react so strongly to fluctuating trends of prices and set its 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.

However, in fact, it is not right that monetary policy is always credible. The central bank may lose the credibility if 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 loss of central bank independence. That means the central bank is under pressure from the Government to implement the Government’s objective that is inconsistent with the objective pursued by 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 (see below). This situation is called time-inconsistency problem.

Time-inconsistency problem is analyzed by Kydland and Prescott (1977), Barro and Gordon (1983), Rogoff (1985) and the followers. Time-inconsistency refers 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” (Khan, 2003). If the central bank announces that it will target a specific rate of inflation and the public will set contract of wage based on that announcement, then the central bank can renge on its promise by pursuing a policy that bring about higher growth and employment in the short run (i.e. expansionary monetary policy) even though this policy causes higher inflation rate. However, the public realizes that and protects themselves by setting their wages and prices based on the expectation that inflation rate will be higher than announced inflation rate (when prices and wages are flexible), which contributes to push up

---

37 Kydland and Prescott (1977) define the policy is consistent if for each time period, this policy 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 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.
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, thus the central bank can decide not to play that game. Even though, there will still be pressures on the central bank to pursue 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, 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, time-inconsistency problem can lead to negative outcomes in the long run.

In summary, loss of 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 announced inflation rate by the central bank. As a result, the inflation rate is push up; the price stability objective is not achieved.

In fact, in order to reach the price stability objective, there are the following ways:

One way to deal with time-inconsistency problem is to negotiate an agreement between the government and the central bank, in which the government and the central bank 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 monetary policy to the extent that the public understands it, allowing monetary policy to operate in an environment called by Bernanke et al. (1999) as “constrained discretion”. 38

38 The implementation of monetary policy is characterized as a form of either “rules” or “discretion” (Bernanke et al., 1999 and Khan, 2003). “Rules” may be thought of as pre-set policy, independent of contemporaneous circumstances, neither permitting nor requiring judgment or discretion over time. The constant money growth rule of Milton Friedman is one example, under which the money stock is required to grow annually by a fixed percentage, independent of economic or financial conditions. Advocates of “rules” note that this regime creates
is the use of “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. On the other hand, a nominal anchor, which is considered as a constraint on discretionary monetary policy, helps weaken the time-inconsistency problem so that price stability in the long run is more likely to be achieved. The nominal anchor can be in some forms of either quantitative constraint - e.g. monetary targeting (limit the amount of paper money that can be put into circulation) and inflation targeting (the public announcement of official quantitative targets for inflation rate over time) - or price constraint - e.g. exchange rate targeting (fix the value of paper money in terms of foreign currency). The first two nominal anchors (monetary targeting and inflation targeting) are usually used under flexible exchange rate regime. The last one, exchange rate targeting, is used as 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 fixed and flexible exchange rate regime through a simple model in the next part.

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 (this relates to the central bank independence). 39 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.

---

39 See Rogoff (1985) model in the next part.
Overall, price stability objective of monetary policy can be achieved by a variety of nominal anchors and giving the central bank more independence. The following are discussions about the issue of credibility under fixed and flexible exchange rate regime and central bank independence in attaining price stability objective (Chart III.1).

### Chart III.1. Control of inflation and monetary policy

```
<table>
<thead>
<tr>
<th>Credibility</th>
<th>Control inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed exchange rate</td>
<td>Flexible exchange rate</td>
</tr>
<tr>
<td>Central bank independence</td>
<td></td>
</tr>
</tbody>
</table>
```

Source: Author

### III.2.2.2. Credibility

#### A. The model

We see the issue of credibility in ensuring price stability under fixed and flexible exchange rate through the following simple model.

Consider 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.
<table>
<thead>
<tr>
<th>Monetary market</th>
<th>$m = p + y - \alpha \cdot i$</th>
<th>(III.1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchasing power parity</td>
<td>$e = p - p^*$</td>
<td>(III.2)</td>
</tr>
<tr>
<td>Interest parity</td>
<td>$i = i^\ast + E\Delta e$</td>
<td>(III.3)</td>
</tr>
<tr>
<td>Exogenous variables</td>
<td>$y = i^\ast = p^\ast = 0$</td>
<td>(III.4)</td>
</tr>
</tbody>
</table>

where $m$ is the log of the domestic money supply, $e$ is the log of the exchange rate, $i$ is the nominal interest rate. Variables referring to foreign currency are indicated by an asterisk. $E\Delta e$ is the expected rate of change of the log of the exchange rate.

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

\[
m = p - \alpha \cdot E\Delta e
\]

\[
e = p
\]

Consider different cases as follows:

(a) Fixed exchange rate $e = 0$, money supply $m$ is endogenous.

(a1) If fixed exchange rate is credible $E\Delta e = 0$.

The result is $m = p = e = 0$, the price level is stable.

(a2) If fixed exchange rate is not credible, there is an expectation of depreciation $E\Delta e > 0$.

The result is $m = -\alpha \cdot E\Delta e$. 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 foreign exchange reserves are limited. Therefore, the central bank cannot defend the fixed exchange rate because its foreign exchange reserves run out. In addition, speculative attacks are likely to happen, which are not reflected in this model.

(b) Flexible exchange rate $m = \bar{m}$, money supply $m$ is exogenous, but not set as zero because it can be changed by the central bank.
Under flexible exchange rate regime, market participants do not sure about the fluctuation trend of the exchange rate, thus the expected fluctuation of the exchange rate is assumed zero $E \Delta e = 0$.

The result is $p = e = m$. Under flexible exchange rate, the central bank is not impelled to defend the exchange rate and changes in foreign prices are neutralized by changes in exchange rate (no inflation import). Therefore, the domestic price stability is ensured if the central bank is able to control money supply.

To summarize, the price stability objective will be achieved if credibility under fixed and flexible exchange rate regime is ensured. The credibility of fixed exchange rate regime refers to the ability of the central bank to maintain the peg. The credibility of flexible exchange rate regime refers to the ability of the central bank to control money supply. We see the credibility of the exchange rate regimes in Vietnam as follows.

**B. Credibility under the fixed exchange rate regime in Vietnam**

Facing high domestic inflation, the central bank cannot build a credible monetary policy to fight inflation. It, thus, imports credibility by fixing the value of domestic currency to hard-money country with low inflation rate. A pegged exchange rate fixes the inflation rate for internationally traded goods, and thus directly contributes to keeping inflation under control (see Equation III.2). The pegged exchange rate (as 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 targeting-country’s inflation rate in line with that of the low-inflation anchor country. In short, 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.

As mentioned in the previous chapter (see II.2.3.4), although the fixed exchange rate regime in Vietnam has been not yet successfully speculated until now, the maintenance of the peg remains a challenge to the SBV because of imperfect credibility of the public in the SBV. In addition, the progressive liberalization of capital account puts the maintenance of the fixed exchange rate regime in more difficult situation, as a sudden loss of credibility increases. Consequently, a financial crisis and a collapse of fixed exchange rate regime are more likely. 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. 

Besides, we see the actual role of 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 change in exchange rate, and thus directly contributes to keeping inflation under control. In such a way, the fixed exchange rate is useful in anchoring inflation expectation. However, the fixed exchange rate is not really a strong nominal anchor to control inflation because it is very difficult to fix inflation expectations in Vietnam due to large inertial inflation in Vietnam (IMF, 2006d). The Vietnamese economy experienced a long period of hyperinflation, thus, inflation has been always an obsession with regard to both the public and the authorities. The inflation obsession 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, higher than other selected Asian countries (IMF, 2006d). 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.

Furthermore, the role of exchange rate pegging as a nominal anchor to peg inflation expectations in the targeting country to the inflation rate in the anchor country becomes very difficult for the public to understand.

Additionally, although the SBV has a fear that an excessive volatility of the exchange rate will lead to increase in inflation, however, the effect of exchange rate volatility on inflation rate is relative small (IMF, 2006d). The IMF (2006d) estimates that 1-percent depreciation of NEER leads to an increase of 0.12% in inflation (in period 2000-06), 0.1% higher than that in other Asian countries. For example, the depreciation of NEER in 2004 was 6.7%. This figure 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 (measured as NEER) is only one of determinants of inflation in Vietnam.

---

40 Similarly, the IMF (2006c, p.12) concludes that the fixed peg is useful in anchoring inflation expectation in Vietnam.
other determinants that affect the price stability in Vietnam are past inflation, broad money, excess demand pressures (measured as output gap), 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 determinants aside from exchange rate volatility. These lead to the requirement of use of monetary policy in association with other policies (for example fiscal policy) to control inflation, rather exchange rate peg alone. In addition, as mentioned in previous chapter, the maintenance of the fixed exchange rate regime faces difficulties in the event of free capital flows. Therefore, it can be said that 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. Another alternative solution is moving to flexible exchange rate regime and adopting monetary targeting or inflation targeting as a nominal anchor to control inflation. We see below whether monetary and inflation targeting work in Vietnam.

C. Credibility under the flexible exchange rate regime in Vietnam

Let see about the necessity of adopting a nominal anchor to control inflation under flexible exchange rate regime. Under flexible exchange rate regime, the central bank is not impelled to prevent exchange rate fluctuation. Regardless of price stability objective of the central bank, the government can force the central bank to finance budget deficit by excessive credit extension that leads to inflation and depreciation of domestic currency. Since various objectives can be pursued under flexible exchange rate regime, the discretion of monetary policy comes with time-inconsistency-problem, then likely leading to poorer outcomes (as discussed above). Additionally, the problem of multiple incompatible objectives can reduce the credibility of the public in the central bank. Once the central bank looses 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 flexible exchange rate regime to constrain the discretion of monetary policy, thereby helping weaken time-inconsistency

41 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, hence ensuring the 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 flexible exchange rate regime are monetary targeting and inflation targeting.

Under flexible exchange rates, the credibility of commitment to keep inflation in control needs to be taken into account. As showed by the model, the credibility of monetary policy under flexible exchange rate is related to ability of the central bank to control money supply, thereby inflation. We see below the ability of the SBV to control money supply, hence inflation. This relates to the adoption of monetary targeting. Then, we try to answer if the SBV cannot control money supply, what should the SBV do in order to control inflation under flexible exchange rate regime? This is related to inflation targeting.

* **Monetary targeting**

Monetary targeting strategy relies on information conveyed by monetary aggregates to conduct monetary policy. Monetary targeting limits the amount of paper money that can be put into circulation, or in other words, aims at the growth rates of various money aggregates (Bernanke et al., 1999). Monetary targeting was popularly adopted from the mid-1970s (following the collapse of the Bretton Woods system) until the early 1980s.

A monetary targeting strategy comprises three elements: 1) reliance on information conveyed by a monetary aggregate to conduct monetary policy, 2) announcement of targets for monetary aggregates, and 3) some accountability mechanism to preclude large and systematic deviations from the monetary targets (Mishkin, 2000).

Monetary targeting helps to control inflation (as a nominal anchor) in the following way. Under flexible exchange rate regime, the demand for domestic base money, and hence the price level and exchange rate, depends on the expectation about money supply growth. Because information on conducting money aggregate is announced periodically with very short time-lags, the public can compare easily actual money-supply growth rate with target 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 result will be a lower rate of inflation.

(a) Advantages of monetary targeting

According to Bernanke et al. (1999), Mishkin (1999), and Mishkin and Savastano (2000), monetary targeting has the following advantages: First, it allows the central bank greater freedom to adjust monetary policy to domestic conditions (see Chapter III, III.3.1). Second, it allows some scope for monetary policy to deal with transitory output fluctuations and certain external shocks. Third, it can be used as a nominal anchor to reduce inflation. Fourth, monetary targets promote the central bank’s accountability to keep inflation low and help to constrain the time-inconsistency problem.

(b) Disadvantages of monetary targeting

First, it is more difficult to anchor inflation expectations because money targets introduce a second numerical target to primary goal of monetary policy (i.e. low inflation), thereby obscuring the task of the central bank and making it harder to monitor its performance. Therefore, monetary targeting is not suitable for countries with history of high inflation rate and fragile credibility of the central bank (IMF, 2005c).

Second, the advantages of monetary targeting only work if the relationship between money aggregates and goal variable such as inflation is strong and reliable. That means the implementation of monetary targeting is based on the assumption that the central bank has full control of the nominal money stock (i.e., the money multiplier and velocity are predictable). In other words, the precondition (or necessary condition) to adopt monetary targeting is good ability of the central bank to control money supply (we can see this conclusion through the model above). The sufficient condition is a strong and reliable relationship between targeted variable, say, monetary aggregates, and goal variable, say, inflation (Mishkin, 1999, Agénor, 2001). The weak relationship between money supply and inflation implies that hitting the target will not produce desired outcomes on goal variable. Thus, money aggregates will fail to provide signals to market participants about the central bank’s intention, and then they will be no more effective anchor for inflation expectations. Additionally, this weak relationship makes it difficult for the central bank to be transparent and accountable to the public that may
in turn impair credibility of market participants in the central bank. To conclude, the weak relationship between monetary aggregates and inflation deteriorates the effect of regulating money supply on inflation, hence the effectiveness of monetary targeting as nominal anchor to control inflation.

Indeed, countries’ experiences both in industrialized countries (United States, the United Kingdom, Canada, Germany and Switzerland) and emerging countries (Latin America) show that the relationship between monetary aggregates and goal variable is very unstable, which may arise from, say, financial innovation and liberalization, and other changes in banking system. This explain why most of monetary targeters abandoned this strategy in the 1980s and a few adopted it in a flexible and ad hoc manner (Germany allowed inflation goal change over time and missed target frequently, about 50% of the time) (Agénor, 2001, Bernanke et al., 1999, Mishkin, 1999, and Mishkin and Savastano, 2000).

Third, sources of inflation derive from a variety of reasons, not only money aggregates; thus making the control of money supply to stabilize inflation is very hard. We can see it as follows (assumingly, closed economy).

| Money market | \( m = p + y - \alpha \cdot i \) | (III.7) |
| Fisher equation | \( i = r + E\Delta p \) | (III.8) |
| Inflation rate | \( \Delta p_t = p_{t+1} - p_t \) | (III.9) |
| Rate of change of inflation rate | \( \Delta \Delta p_t = \Delta p_{t+1} - \Delta p_t \) | (III.10) |

Then, inflation rate equation is written:

\[
\Delta p = \Delta m - \Delta \bar{y} - (\Delta y - \Delta \bar{y}) + \alpha \cdot \Delta r + \alpha \cdot E\Delta \Delta p
\]  

(III.11)

where \( \Delta \bar{y} \) is potential output growth, \( (\Delta y - \Delta \bar{y}) \) is output gap between actual and potential output growth (degree of utilization).

The inflation rate depends on change in money supply \( m \), actual output growth \( y \) given a certain growth rate of potential output \( \Delta \bar{y} \), change in real interest rate \( r \), and in expected change in inflation rate. Therefore, sources of inflation are money supply growth, cost push,
demand pull (change in variables relating to interest rate such as investment and government expenditure), and shocks.

Monetary targeting would be an optimal way of fulfilling inflation targets if money growth was a sole source of inflation, i.e. the inflation rate is caused by change in money supply alone. We have:

\[
\Delta p = \Delta m - \Delta \bar{y} - \left( \frac{\Delta y - \Delta \bar{y}}{0} \right) + \alpha \cdot \Delta r + \alpha \cdot E\Delta \Delta p = \Delta m - \Delta \bar{y} \quad (\text{III.11})
\]

Given a certain potential output growth, inflation rate increases when the money supply increases.

(c) The adoption of monetary targeting in Vietnam

At present, in parallel with exchange rate targeting, the SBV aims at money supply (total liquidity - M2) to implement monetary policy. However, the control of the money supply faces a variety of difficulties.

First, monetary targeting is sometimes at odds with exchange rate pegging. For example, at end-2006, there was an excessive supply of foreign exchange in the market resulting from remittances, foreign tourists, and Vietnamese emigrants taking traditional “Tet” holiday in Vietnam, receipts from export, FDI, and increase in selling foreign exchange of the resident for spending for “Tet” holiday. This made exchange rate appreciated in real terms. In this case, the SBV did not intervene to defend the peg. Otherwise, foreign exchange intervention in the market would lead to increase in money supply that has been already ratified by the National Assembly. In such a case, the SBV chose to widen the exchange rate band from +/-0.25% to +/-0.5%. That means the SBV prioritized monetary targeting. The missing of exchange rate targeting might impair the fragile credibility of the public in the SBV’s maintenance of the fixed exchange rate regime.

Second, the amount of money supply is ratified annually by the National Assembly to attain the objectives of economic growth and inflation rate (i.e. inflation rate must be lower than output growth). This does not show that the long-run objective of monetary policy is to
control inflation. This also limits the central bank independence in conducting monetary policy and raises the time-inconsistency problem, thereby restraining the accountability of the central bank to control inflation. Therefore, the SBV is not active in controlling money supply to achieve monetary policy objectives. In addition, the effect of monetary indirect instruments on money supply is restricted. For example, in using refinancing instrument to control credit institutions’ liquidity, then credit supply, interest rate, and inflation rate, the SBV has to regulate refinancing and discount interest rate (in a way that refinancing interest rate is ceiling rate and discount interest rate is floor rate) to limit access of credit institutions to funds of the SBV because the SBV is restricted from money supply ratified by the National Assembly.

Third, the SBV is less able to control credit extension, hence money supply (see Chart II.2). The credit growth has been high. As already mentioned in previous chapter, the most important reason that affects the control of credit growth is policy lending (credits directed by the government), which does not base on commercial reasons. Moreover, many financial institutions, such as Development Assistance Fund and postal savings system, whose operations affect the implementation of monetary policy, are not supervised by the SBV because of lacks of legal regulations. In addition, the impact of central bank lending facilities and reserve requirements on credit liquidity has not been yet effective. The control of the credit operation (such as credit institutions’ liquidity) through OMO is not yet effective because of a few participants in OMO and an underdeveloped stock market. Furthermore, the control of interest rate faces difficulties because domestic interest rate is affected by international interest rate under fixed exchange rate regime.

Fourth, let I say about the relationship between money aggregates and inflation. Previous studies show that the relationship between broad money and inflation in Vietnam is weak (a study by Vo (2000) for the period 1992-99, and a study by IMF (2003b) for the period 1995-2003). Unlike the earlier phase, IMF (2006d) finds some evidence that, since 2002 correlation between money and inflation has become strong, monetary aggregates appear to affect inflation with a lag of about 12 months. However, this finding must be viewed cautiously, especially during a period that money demand function has shifted significantly. This could be attributed to the rapid structural transformation of the economy since “doimoi”, growing monetization, and increasing integration into international financial markets, which create many new services and assets, more variable capital movements, and rapid change in institutional framework as well as in financial sector. IMF (2006a, d) concludes that the rapid
structural change of the economy makes it difficult to estimate stable relationships for macroeconomic variables. This unstable relationship between monetary growth and inflation obstructs monetary policy strategy targeting at monetary aggregates. Additionally, the economy is affected by a sequence of price shocks (corrections in administered prices and tax reforms, oil and rice price shock) and supply shocks (food supply shocks). These make controlling and predicting money supply and demand become more complicated. Therefore, relying on targeting money aggregates could be a quite ineffective approach to control inflation.

Fifth, experiences of Germany and Switzerland show that monetary targeting can be used successfully if the central banks announce clearly the objective of monetary policy and explain that they continue pursuing the long-run objective of price stability when monetary targets are missed (Mishkin, 2000). However, gaining the confidence of the public in such a case is not easy and explaining the reason of target misses is complicated. The central banks can do it if they have a track record of fighting inflation, like Germany and Switzerland, and the public places high confidence in the central banks. In such a case, the central banks must be flexible in implementing monetary policy at monetary targeting. With this condition, monetary targeting is not advisable for Vietnam because the public has a little confidence in the ability of the central bank to fight inflation. In addition, the public does not care about the money supply, rather about the intuitive and visible commitment - that is inflation rate.

In conclusion, monetary targeting and exchange rate targeting are two parallel nominal anchors in implementing monetary policy in Vietnam. Exchange rate targeting is not a long-run solution for price and financial stability in the event of free capital flows. Monetary targeting faces problems of unstable relationship between money aggregates and inflation, time-inconsistency problem, policy lending and ineffective monetary policy instruments. 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 the exchange rate targeting, monetary targeting under flexible exchange rates 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 flexible exchange rates are not met. Once the conditions for the adoption of monetary targeting are not met, the success of
this strategy is impossible, thereby its credibility is not ensured. Therefore, the adoption of monetary targeting when moving to flexible exchange rate regime is not an optimal alternative for fixed exchange rate regime in Vietnam. We see below what the central bank should do when it cannot control money supply under flexible exchange rate regime. This relates to inflation targeting.

* Inflation targeting

If the central bank is not able to control money supply, it cannot implement monetary targeting as nominal anchor to control inflation. In such a case, the central bank can adopt inflation targeting, under which the central bank must give priority to price stability objective in implementing monetary policy; even accept the negative effects on output. To reduce negative effects on output, the central bank needs support from the government by conducting other supportive policies (for example, the wage policy).

For example, let see the effectiveness of wage policy in reducing the negative effect on output under a shock in money supply. A decrease in money supply $M \downarrow$ means that market participants have fewer money in hands, they will restrict their consumption $C \downarrow$ (if price is flexible), leading to excess supply of goods $Y^d \leq Y^r$, and then a decline in the price of goods $P \downarrow$.

In case of rigid nominal wage in the short-run, the nominal wage is already set in the labour contract, thus employer cannot cut off wage to get more profit in case that prices of goods are reduced ($W = \bar{W}$). This brings about an increase in the real wage $\bar{W} / P \uparrow$. Enterprises, who want to maximize their profit, will react by cutting off employment $N \downarrow$ (Labour market in case of underemployment $N^d(\bar{W}/P) \leq N^r(\bar{W}/P)$, 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.

$$M \Rightarrow P \Rightarrow \frac{\bar{W}}{P} \Rightarrow N \Rightarrow Y$$
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 \((W/P_{cst})\). 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.

\[ M \downarrow \Rightarrow P \downarrow \Rightarrow W \downarrow \Rightarrow W/P_{cst} \Rightarrow N_{cst} \Rightarrow Y_{cst} \]

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.

Unlike monetary or exchange rate targeting, which targets intermediate variables, such as money supply growth or a level of the exchange rate, inflation targeting involves targeting inflation directly. Inflation targeting is associated with high degree of exchange rate flexibility and central bank independence in terms of monetary policy instrument and the link between the central bank and the financing of the government budgets.

Inflation targeting entails an institutionalized commitment to price stability as the primary goal of monetary policy; mechanisms making the central bank accountable for attaining its monetary policy goals; the public announcement of medium-term numerical targets for inflation; an information inclusive strategy in which many variables, and not just monetary aggregates or exchange rate, are used in making decisions about monetary policy; and increased transparency of the monetary policy through communication with the public about the plans, objectives and decisions of the monetary authorities (Mishkin, 2004).

(a) Advantages of inflation targeting over exchange rate pegging

Nowadays, many countries choose inflation targeting in implementing their monetary policy when they decide to exit fixed exchange rate regimes. Advantages of inflation targeting over exchange rate pegging are:
• With the announcement of low inflation as primary objective of monetary policy and an explicit numerical inflation target, inflation targeting becomes easier understand than exchange rate pegging (also than monetary targeting).

• Inflation targeting increases the transparency of the central bank’s policymaking, whereas the policymaking under exchange rate pegging is disclosed. The greater transparency, the better the public understands the central bank’s stance and strategy, which in turn enhances the credibility of the public in the central bank.

• Inflation targeting allows the central bank to solve the problem of maintaining price stability, thereby enhancing the central bank’s ability to control inflation and to conduct monetary policy, while the central bank under exchange rate pegging cannot do it because maintaining price stability is shifted to anchor country.

• Inflation targeting helps to enhance the credibility of the public in the central bank’s ability to conduct monetary policy, while the central bank under exchange rate pegging cannot enhance its credibility per se because it imports credibility by anchoring the domestic currency to foreign currency. Bernanke et al. (1999) find that credibility is not achieved immediately on the adoption of inflation target, but once the central bank gains credibility, it will bring better economic consequences. For example, after inflation is kept in control for a period of time, inflation expectation will remain low despite the economy in strong cyclical growth.

• Inflation targeting allows the central bank to focus on its per se monetary objective (price stability) and domestic considerations by giving it independence, while the central bank under exchange rate pegging is constrained to use monetary policy for other purposes (loss of independence). On the one hand, loss of central bank independence under exchange rate pegging becomes a problem because the central bank has to conduct the duty entrusted by the Government that contradicts to its objective (i.e. the price stability), thereby not ensuring the price stability objective. On the other hand, loss of monetary policy independence becomes a problem when shocks transmitted from anchor country are independent with domestic shocks (increase in interest rate in anchor country forces the pegging country to raise its interest rate even in face of a negative demand shock). In contrast, inflation targeting maintains the central bank independence (to avoid time-inconsistency problem) and monetary policy independence (to respond to domestic shocks). The more independent the central bank, the larger credibility and the lower inflation rate is (Cukierman, 1992, 2006).
• Inflation targeting allows the central bank to use all information, neither just one variable such as monetary aggregates, nor exchange rate, to determine the best settings for monetary policy.

• Inflation targeting pays attention to inflation and deflation, whereas exchange rate pegging cannot do it. Deflation can cause negative effect on output and employment and lead to financial instability (see, Mishkin, 1997).

• Inflation targeting focuses the central bank and the Government on what they can do (that is long-run price stability, which in turn improves prospect of sustained long-term growth), rather than on what they cannot do (tradeoff between output and price stability, which however can be reduced by flexible wage policy), thereby reducing time-inconsistency problem that undermines credibility.

• Inflation targeting, among other things, does not raise the probability of crises, but the exchange rate peg increases a likelihood of speculative attacks in case of high capital mobility (IMF, 2005c, 2006b).

With above noted advantages of inflation targeting over exchange rate pegging, the inflation targeting will become a strong and credible nominal anchor if the central bank is successful in achieving its inflation targets.

(b) Credibility of inflation targeting

Making inflation targeting credible in the eye of the public is related to the success of the central bank in achieving its inflation targets. Inflation targeting framework creates a mechanism, which gives the central bank more independence and puts pressures on the central bank to increase accountability, transparency, communication. Transparency and flexibility will help to achieve both output stability in the short run and price stability in the long run (more details are discussed in chapter V, V.1.2.2). Low inflation in the long run, in turn, improves prospect for sustained long-term growth. Bernanke et al. (1999) conclude that “there is no evidence that inflation targeting has produced harmful effects on the real economy in the long run; more likely, low inflation have improved the prospects for sustained long-term growth”. These outcomes will enhance the credibility of the public in the central bank.
Experiences of inflation targeters show that the adoption of inflation targeting, among other things, helps to reduce inflation (Bernanke et al., 1999 and IMF, 2006b). However, the adoption of inflation targeting does not eliminate the costs of reducing inflation, i.e. inflation-output tradeoff in the short-run. In addition, credibility is enhanced after the adoption of inflation targeting, despite not immediately, because credibility gains are slow to materialize and institutional arrangements (for example, for wage- and price-setting) do not change quickly following the adoption of inflation target. For instance, Perrier and Amano (2000) write about inflation targeting in Canada, “… Most of the studies on this topic have concluded that success in keeping inflation within a target range has helped to increase the credibility of Canadian monetary policy”. Similarly, Coletti et al. (2006) show the evidence that the credibility of monetary policy has increased significantly with the introduction of the inflation-targeting regime in Canada.

Mishkin (2004) concludes that, “the examples of Chile and Brazil illustrate that inflation targeting is indeed feasible in emerging market economies, despite their more complicated political and economic environment. Inflation targeting has been able to provide a strong nominal anchor that can keep inflation expectations in check. However, this requires not only a focus on good communication and transparency by the central bank, but also supportive policies to develop strong fiscal, financial and monetary institutions”. Schmidt-Hebbel and Werner (2002) analyze evidence on the contribution of inflation targeting to strengthen the credibility of monetary policy in Chile, Brazil and Mexico and find that “…inflation targeting has helped strengthen credibility in four ways: inflation targets have influenced private sector inflation expectations; they helped in the convergence toward low stationary inflation; the influence of volatile inflation shocks on core inflation was either small or negative; and inflation deviation forecast errors declined significantly following the adoption of inflation targeting”.

In short, inflation targeting creates a mechanism, which will enhance the credibility of the public in the central bank depending on the success of the central bank in achieving its inflation targets. The credibility is enhanced after the adoption of inflation targeting, despite not immediately.
(c) **Disadvantages of inflation targeting**

Inflation targeting has several criticisms, including:

First, inflation is not easy controlled by the monetary authorities, and thus inflation targeting was only adopted after substantial disinflation has been achieved (single-digit inflation) in all industrial inflation targeters. This has contributed to the initial degree of credibility of the framework (Masson et al., 1997, Bernanke et al., 1999, Carare et al., 2002, and IMF, 2006b).

Second, inflation targeting does not provide immediate signals to the public about the stance of monetary policy because of the long lag of monetary policy, which affects inflation expectations.

Third, some criticisms argue that inflation targeting imposes a rigid rule on the monetary authorities that does not allow them enough discretion to respond unpredictable circumstances. However, Mishkin (1999) argues that inflation targeting is far from a rigid rule. In practice, inflation targeting contains a degree of policy discretion and inflation targets have been modified depending on economic circumstances. Moreover, it allows monetary authorities to use all information to determine appropriate policy actions to achieve the inflation target. Indeed, central banks under inflation targeting have left themselves considerable scope to respond to output growth. Say, this was the case of Brazil (see Mishkin, 2004).

Svensson (2002) shows that it is widely agreed that inflation targeting in practice is “flexible” inflation targeting. The objective is to stabilize inflation around the inflation target, but also to put some weight on stabilizing the output gap (the difference between actual output and the natural/potential output). Such an objective can be described by an intertemporal loss function in period $t$:

$$L_t = (1 - \delta) \cdot E_t \sum_{s=0}^{\infty} \delta^s \cdot \left[ \left( \pi_t - \pi_s^* \right)^2 + \lambda \cdot x_t^s \right]$$

(III.12)

---

42 More details, see Svensson (1999)
where $\delta (0 < \delta < 1)$ is a discount factor, $1 - \delta$ implies that the intertemporal loss function is scaled such that it is measured in period loss units), $E_t$ is expected information in period $t$, $\pi_t$ is inflation in period $t$, $x_t$ is the output gap $(x_t = y_t - \overline{y})$ in period $t$, $\pi^*$ is the inflation target, and $\lambda > 0$ is the relative weight on output-gap stabilization. Thus, inflation and the output gap are two target variables in the loss function, which correspond to $\pi^*$ and zero $(y_t = \overline{y})$, respectively. Note that inflation target is the primary objective.

When $d$ approaches one ($\delta \to 1$), the limit of the intertemporal loss function is the weighted sum of the unconditional variances of inflation and the output gap:

$$\lim_{\delta \to 1} L_\delta = Var[\pi_t] + \lambda \cdot Var[x_t]$$

(III.13)

(when $E[\pi_t] = \pi^*$ and $E[x_t] = 0$). Flexible inflation targeting means $\lambda > 0$, strict inflation targeting when $\lambda = 0$.

(d) Macroeconomic performance under alternative monetary policy regimes

Based on two caveats, the IMF (2005c, 2006b) shows macroeconomic performance under alternative monetary policy regimes. The results are industrial inflationary targeters have been associated with significant improvements in macroeconomic performance (inflation, volatility of inflation, output growth, volatility of output growth, medium- and long-term inflation forecast, and their volatility) relative to their own previous performance and to most non-targeters. Evidences from non-industrial countries, subject to two caveats, suggest that inflation targeting has been associated with better macroeconomic performance than under other alternative monetary policy frameworks. In addition, inflation targeting is associated with lower financial market volatility (volatility of nominal exchange rates, real interest rates and international reserves) and lower probability of crises relative to non-inflation targeters.

43 The caveats are (i) the experience with inflation targeting in non-industrial countries is relatively short, and it is hard to draw definitive conclusions about the effects of inflation targeting, rather suggestive; and (ii) it is difficult to infer causality from inflation targeting to the observed outcomes in a definitive way, because in many cases inflation targeting coincided with a range of reforms towards greater macroeconomic stability (IMF, 2006b).
Similarly, Edwards (2006) finds that adopting inflation targeting has not resulted in increase in nominal and real exchange rate volatility.

**(e) Prerequisites for inflation targeting**

Prerequisites for a successful inflation targeting framework are divided into four groups (Carare et al., 2002, and IMF, 2005c, 2006b): institutional independence, technical infrastructure, economic structure, and healthy financial system.

(e1) Institutional independence

This include: (i) A central bank should have a mandate to pursue the inflation target as the primary objective of monetary policy and have sufficient independence to set monetary instruments to pursue the inflation target; (ii) The public should be informed about the framework and conduct of monetary policy; (iii) The inflation target will not be subordinated to other objectives.

When the country conducts inflation targeting, the overriding objective of monetary policy is to pursue inflation target. The inflation target can be set either by the government, the central bank, or jointly by both of them (Carare et al., 2002). The government's involvement in setting the target will strengthen the credibility of the inflation targeting framework through indirect commitment of the government to manage fiscal policy in a way that supports the inflation objective. The central bank has sufficient discretion to choose and manage its monetary instruments to pursue its inflation target. In practice, industrial inflation-targeting central banks use short-term interest rate as operating instrument and rely on developed financial markets to transmit the effects of changes in the instrument to aggregate demand and inflation.

When the central bank decides to adopt inflation targeting, it must be accountable to the public for achieving its goal. Accountability is essential because lags of monetary policy transmission make it difficult for the public to monitor the conduct of monetary policy. Thus, the monetary policy under inflation targeting must be transparent in order to ensure that the public has enough information about monetary policy performance.
Countries adopting inflation target should avoid fiscal dominance, a situation in which monetary policy is governed by the financial needs of the government (Masson et al., 1997). If not, prolonged and huge fiscal imbalances will raise inflationary pressures (for example, financing fiscal deficit by monetization) that will undermine the ability of the central bank to achieve the inflation target.

(e2) Technical infrastructure

Analytical capabilities and infrastructure should be well developed. That means central banks must have a good capacity to forecast inflation and data needed are more required than under other alternative regimes.

(e3) Economic structure

Inflation targeting requires that prices are fully deregulated (not administered), the economy is not overly sensitive to changes in commodity prices and exchange rates, and dollarization is minimal.

(e4) Healthy financial system

Financial system stability is the foundation to control inflation and enables monetary policy to pursue inflation targets. It also helps to enhance the credibility of the monetary policy, thereby anchoring inflation expectation to the inflation targets.

A sound and stable fiscal policy is needed to avoid problems of fiscal dominance, to minimize potential conflicts with financial stabilization objectives, and to guarantee an effective monetary policy transmission.

---

44 This implies that public sector borrowing from the central bank and the banking system should be low or nonexistent; the government should not finance its revenues from seigniorage generated by excessive currency issuance; domestic financial markets should have enough depth to absorb the placement of public and private debt instruments; and the accumulation of public debt should be sustainable and not unduly constrain monetary policy (Masson et al., 1997).
Further, a deep and liquid financial market helps to convey information to the central bank on economic fundamentals and market expectations about monetary policy stance, and helps to facilitate the formulation, execution of monetary policy and monetary and exchange rate operations.

(f) Do preconditions need to be met before adopting inflation targeting?

IMF (2005c) conducted a survey to assess the role of “preconditions” for the adopting of inflation targeting in both industrial and non-industrial inflation targeters. The results are as follows:

With regard to “institutional independence”, although the IMF recommends that the central bank must have full legal autonomy, and be free from fiscal and/or political pressures that could create conflicts with the inflation objective, only 20% of emerging-economy inflation targeters satisfied key indicators of independence at the onset of inflation targeting (IMF, 2005c). 45 In fact, most industrial countries, plus Brazil and Thailand, adopted inflation targeting before introducing a central bank framework that grants the appropriate degree of central bank independence (Carare et al., 2002). Masson et al. (1997) indicate that central banks need not be fully independence; rather they should have instrument independence. In addition, regarding fiscal dominance problem, inflation targeters’ experiences show that they faced different financial conditions at adoption, for example, the Philippines had high ratio of public debt whereas Chile was in good fiscal condition (IMF, 2005c).

With regard to “technical infrastructure”, this precondition is not met by emerging countries’ inflation targeters. They started with no or little inflation forecasting capacity and no forecasting model as well as not enough or not ideal date available.

With respect to “economic structure”, in practice, administered prices, the economy’s sensitiveness to commodity prices and exchange rates, and dollarization were problems that

45 Freedom from any obligation of the central bank to purchase government debts, a high degree of job security for the central bank governor, and freedom from the executive and formulation of monetary policy which prioritizes the inflation (price stability) objective. These are independence in three areas (finance, personnel and policy).
emerging countries’ inflation targeters faced; and none of them had ideal economic conditions when they introduced inflation targeting (as results of survey, IMF, 2005c).

With respect to “healthy financial system”, at the outset of inflation targeting, most inflation targeters scored relatively poorly in this area (IMF, 2005c).

In conclusion, evidences indicate that no inflation targeters meet all these preconditions before the adoption of inflation targeting framework (IMF, 2005c). Thus, all preconditions for successful adoption of inflation targeting in emerging countries are not necessary in place before introducing inflation targeting framework (Carare et al., 2002, and IMF, 2005c, 2006b). However, technical and institutional improvements do contribute to better inflation performance once this framework has been adopted because such improvements signal the authorities’ commitment to the framework and thereby enhancing their credibility.

(g) The adoption of inflation targeting in Vietnam

With the advantages of inflation targeting over exchange rate pegging noted above, I find that inflation targeting is really a leading monetary policy strategy instead of exchange rate pegging. However, the main issue is whether the inflation targeting framework can work in Vietnam in the control of inflation. To address this question, we will discuss the following issues:

- The benefits of the adoption of inflation targeting in the control of inflation in Vietnam and in comparison with that of exchange rate pegging;
- The preconditions for the adoption of inflation targeting;
- The challenges for Vietnam to adopt inflation targeting.

(g1) Benefits of the adoption of inflation targeting in Vietnam

The adoption of inflation targeting in Vietnam may bring benefits for the economy. I will compare the strength of both inflation targeting and exchange rate targeting as a nominal anchor to control inflation and to enhance the credibility of the public in the central bank.
Inflation targeting would help to enhance the ability of the SBV to control inflation and to conduct monetary policy, in the following ways. First, in the context of unstable relationship between money aggregates and inflation, the adoption of inflation targeting would allow the SBV to use all information variables (such as monetary aggregates, exchange rate, interest rate, expected inflation rate, assets prices, and key-material-input prices) to achieve its announced targets, rather only monetary aggregate under monetary targeting or exchange rate under exchange rate pegging. Second, inflation targeting would allow the SBV to focus its monetary policy on solving the problem of maintaining price stability, while under exchange rate pegging the SBV cannot do it because maintaining price stability is shifted to anchor country. Third, if the SBV chooses a strict inflation targeting, inflation targeting would allow the SBV focus only on price stability objective, while the SBV faces the problem of time-inconsistency problem (trade-off between inflation and output) under fixed exchange rate regime.

Inflation targeting, if successful, would help to enhance the credibility of the public in the SBV’s ability to conduct monetary policy. The adoption of inflation targeting would create a mechanism, which gives the SBV’s independence, increases its accountability (by targeting at explicit numerical target and by being supported by the Government in avoidance of fiscal dominance and time-inconsistency problem) and fosters its communication with the public. This mechanism would help to enhance the credibility of the public in the central bank, despite not immediately. By contrast, under exchange rate pegging, the SBV cannot enhance its credibility per se because it imports credibility by anchoring the domestic currency to foreign currency.

Inflation targeting can help build credibility and anchor inflation expectations more rapidly and durably (IMF, 2005c). It is assumed that, by announcing price stability as the primary objective of monetary policy and targeting an explicit numerical inflation target, the inflation targeting would help the public better understand, monitor, and evaluate the SBV’s performance, thereby anchoring inflation expectations faster than under other monetary strategies. Countries experiences show that credibility is not achieved immediately on the adoption of inflation target, but once the central bank gains credibility, it will bring better economic consequences (Bernanke et al., 1999)

The adoption of inflation targeting would increase the transparency of the SBV’s policymaking, whereas the policymaking in Vietnam under fixed exchange rate regime is disclosed. The greater transparency, the better the public understand the SBV’s stance and strategy, which would in turn enhance the credibility of the public in the central bank.
• Inflation targeting would allow the SBV to focus on its per se monetary objective (price stability) by giving it independence, at least in the implementation of monetary policy, while under exchange rate pegging the SBV loses its independence. In fact, under fixed exchange rate regime, loss of the SBV’s independence leads to time-inconsistency problem (conflict between price and output stability). In contrast, inflation targeting maintains the central bank independence to avoid time-inconsistency problem. Cukierman (1992, 2006) proves that the more independent the central bank, the larger credibility and the lower inflation rate is (discussed later).

• The adoption of inflation targeting would enhance the SBV’s ability to deal with shocks to the economy, such as demand shock. For example, the SBV can ease the monetary policy to deal with a decline in aggregate demand or vice versa. In contrast, under fixed exchange rate regime, loss of monetary policy independence will restrict the SBV’s response to external shocks that contrast with domestic considerations. As mentioned in previous Chapter II.2.2.4, under fixed exchange rate regime, in 2006, the increase in Fed rate led to a rise in interest rates of commercial banks to attract foreign exchange deposits from the public, which could heighten the run-out of commercial banks because they mobilized more funds but could not lend accordingly. In such a case, the SBV usually called commercial banks to be prudent in raising their interest rates and had no better measures to prevent the shift from the Vietnamese dong to the U.S. dollar.

• The adoption of inflation targeting would not force the SBV to ignore other macroeconomic objectives, whereas the fixed exchange rate helps to control inflation only. The adoption of flexible inflation targeting in association with increasing transparency would help the central bank achieve two objectives, i.e. short-term output stability and long-term price stability (more details see Chapter V). Although inflation targeters cannot avoid loss in output and employment in the short-run (flexible wage only helps reduce the loss), less output loss in the short run, which may receive more support of the public and Government on the adoption of a new framework, and low inflation in the long run, which in turn improves the perspective of sustained long-term growth, will enhance the credibility of the public in the central bank.

• The successful adoption of inflation targeting would be likely if it would get strong support from the government to avoid fiscal dominance and time-inconsistency problem and to develop strong fiscal, financial and monetary institutions. In contrast, under fixed exchange rate regime, the SBV did not get support from the Government to maintain the peg. For example, facing upward pressures of exchange rate at end 2006, the SBV did not
buy foreign exchange from commercial bank because it would excess the volume of money aggregate ratified the National Assembly, rather the SBV widen the exchange rate band.

- The adoption of inflation targeting would pay attention to both inflation and deflation, whereas exchange rate pegging cannot do it.

With benefits and advantages of inflation targeting over exchange rate targeting in Vietnam, I find 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 unlike the exchange rate pegging, under which the SBV has to import credibility from abroad, 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 the price stability objective, e.g. to avoid fiscal dominance and to develop strong fiscal, financial and monetary institutions. The 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. The success of inflation targeting depends on whether Vietnam meets preconditions to adopt inflation targeting. If not, Vietnam should implement a transitional process to adapt itself to inflation targeting strategy.

(g2) Preconditions for the adoption of inflation targeting in Vietnam

We see whether Vietnam meets preconditions for a successful inflation targeting framework. As noted above, the prerequisites for a successful inflation targeting framework include institutional independence, technical infrastructure, economic structure, and healthy financial system.

With regard to “institutional independence”, this precondition is not met. The SBV lacks independence in the implementation of monetary policy. The SBV has to pursue the conflicting monetary policy objectives. The inflation target is subordinated to output target (inflation rate is lower than output growth). The conduct of monetary policy is not announced publicly. The SBV is not accountable to the public for achieving its target when it misses the projected inflation rate. In addition, the fiscal dominance is still problematic. A continuing
deterioration of fiscal balance has been since 2004, deriving from misspending, corruption, ineffective public investment (leakage and waste account for 20-40% of total investment, IMF, 2006c), and public wage reforms. As noted in the previous chapter, the SBV is required to finance the government deficit. For example, the SBV extends non-warranted loans to the SOCBs to restructure these commercial banks, i.e. freezing, rescheduling, and writing off their debts, and providing liquidity for SOCBs’ lending to policy purposes and state project etc.

With regard to “technical infrastructure”, this precondition is not yet satisfied. The SBV has forecasted inflation rate relatively closed to actual inflation rate. Sometimes the SBV fails to forecast the inflation, especially since 2004. In 2005, inflation forecast error was relatively large due to unanticipated shocks (3%). If the central bank uses core inflation, the forecast result might be better (discussed below). The SBV has not yet constructed econometric models to analyze the effects of monetary policy and to predict the future economic trends (monthly, quarterly, yearly, or long-term forecasts). Data are insufficiently collected and statistically reckoned.

According to “economic structure”, some characteristics of the economy do not guarantee for the adoption of inflation targeting. The economy is sensitive to changes in commodity prices and exchange rates. Dollarization is widespread.

With regard to “healthy financial system”, the financial system has some weak signals as noted in Box II.1. In addition, the financial market is not deep and liquid to help to convey information to the SBV on economic fundamentals and market expectations about monetary policy stance, and to facilitate the conduct of monetary policy.

In short, for the time being, Vietnam does not meet all preconditions for the adoption of inflation targeting.

(g3) Challenges for the adoption of inflation targeting in Vietnam

Like other emerging countries in adopting inflation targeting, Vietnam also faces a number of challenges that differ from those industrial countries faced, including: (i) weak fiscal institutions (public sector financial management), (ii) weak financial institutions and markets
(including government prudential regulation and supervision), (iii) weak monetary institutions (low credibility of monetary institutions), (iv) high dollarization of financial liabilities, and (v) vulnerability to sudden stops of capital inflows (Mishkin, 2004). These features make the implementation of inflation targeting more complicated.

First, fiscal stability is necessary for inflation control. Fiscal deficit has been always a problem in Vietnam and has increased more rapidly recently (see Appendix II.2). Excessive government spending leads to fiscal imbalances, raising money growth and then putting inflationary pressures because the SBV may have to finance fiscal deficit by monetization. Fiscal imbalance will undermine the ability of the SBV to achieve the inflation target and can lead to banking and financial crisis as the case of Argentina in 2001 (more details, see Mishkin, 2004).

Second, a healthy financial system is also necessary for inflation control. The Vietnamese financial system shows shortcomings and unsoundness (see Box II.1). Weak financial system makes countries more vulnerable to high inflation and currency crisis as cases of recent crises in Asian and Latin America. Weak banking system prevents the central bank from raising interest rate to tighten monetary policy in response to deviation of inflation or expected inflation from the target because increase in interest rate threatens the healthy of the banking system. Weakness of banking system worsens the situation of liability dollarization, especially when sudden stops in capital inflows occur that result in exchange rate depreciation and put upward pressure on inflation rate. However, although fiscal and financial stability are necessary conditions for inflation control, but it is accepted that this condition does not mean a strict prerequisite for inflation targeting (Carare et al., 2002, Mishkin, 2004 and IMF, 2005c, 2006b). It can be argued that inflation targeting can help promote fiscal and financial reforms because the government involves commitment to keep inflation low and thus the government must support these reforms if it wants the inflation targeting regime to be successful (Mishkin, 2004).

Third, perfect credibility of the public in the central bank will help to fix inflation expectations because the public believes that the central bank will take necessary measures to counter inflation. Because of imperfect credibility of monetary institutions, two monetary institutions are necessary for the ability of the central bank to keep inflation under control are a public and institutional commitment to price stability as the overriding long-run goal of
monetary policy and instrument independence of the central bank (Mishkin, 2004). In countries with history of poor support for the price stability goal and easily overturned law, in order for inflation targeting to work, it must be supported by the public and the political process and requires more transparency and excellent communication skills of the central bank as well as a well-supported political environment for inflation control. As mentioned above, the weak ability of the SBV in the conduct of monetary policy impairs the credibility of the public in the SBV. The government has not yet given the SBV independence in the implementation of monetary policy. The SBV has to face time-inconsistency problem (conflict between output and price stability objective). Loss of central bank independence in turn injures the credibility of monetary policy. If the Government does not support the SBV by giving more independence and conducting a supportive stable fiscal policy, it is very difficult for the SBV to adopt inflation targeting.

Fourth, according to Mishkin (2004), weak fiscal, financial and monetary institutions make emerging economies more vulnerable to high inflation and currency crisis, thus the real value of domestic currency will not be ensured. In such a case, the public switches to hold foreign currency and deposit foreign currency in banking system. The increase in foreign currency deposits raises loans in dollarization (liability dollarization). An excessive real depreciation of exchange rate raises the value of liability in domestic currency, making the net worth of the public fall, whose incomes come from nontradables (in domestic currency). Therefore, high liability dollarization and currency mismatch may make the economy vulnerable to a currency crisis. Dollarization makes the formulation and implementation of inflation targeting more difficult. High dollarization will tend to amplify the importance of exchange rate relative to inflation and interest rate movements. Given the potential negative impact of currency depreciation on the financial system, the central banks may smooth exchange rate fluctuations under an inflation-targeting regime (fear of floating). However, the problem is the central bank may pay too much attention on the exchange rate and the role of inflation target is dimmed (as the case of Hungary shown by Jonas and Mishkin, 2003). Pursuing two nominal anchors becomes problem when there is no clear guidance to solve the conflict, which in turn hinders the effectiveness and transparency of monetary policy, and when the central bank does not estimate exactly the origin of shocks on the exchange rate in order to make right monetary-policy decisions (discussed later). Take the case of Vietnam. Vietnam can face this challenge because it has also high dollarization, currency mismatch and fear of floating. To solve this problem, the central bank should have a transparent intervention policy with public
and institutional announcements of intervention objectives and a clear guidance to solve conflict, and analyze the exchange rate pass-through to inflation (discussed later). The central bank should prepare all conditions to enhance the resilience of the financial system to exchange rate fluctuation when it moves toward more flexible exchange rate (discussed later). Note that, a credible and successful policy of disinflation may help to reduce degree of dollarization. Leiderman et al. (2006) conclude that although dollarization alters the transmission of monetary policy, it does not preclude the use of inflation targeting in dollarized countries.

Fifth, a sudden stop may be understood as a large negative change in capital inflows. Large capital movements may affect the fixed exchange rate (as discussed in the previous chapter) and the conduct of inflation targeting. Large capital movements may require central bank to intervene in the foreign exchange market or to change interest rate particularly in the case of temporary shocks. In such cases, the central bank should make clear that foreign exchange intervention and change in interest rate policy aim at smoothing the effects of shocks. As mentioned above, Vietnam cannot avoid this challenge when it opens capital account.

In conclusion, although the fixed exchange rate regime is useful in anchoring inflation expectations, the effect of exchange rate pegging as a nominal anchor to fix inflation expectations is relative modest because the inflation in Vietnam is affected by a variety of determinants aside from exchange rate volatility and largely inertial. The current inflation will not correct itself without macroeconomic- policy actions (IMF, 2006d). These lead to the requirement of use of monetary policy in association with other polices (e.g. fiscal policy and wage policy) to control inflation, rather exchange rate peg alone. Therefore, the role of the fixed exchange rate as a credible nominal anchor to control inflation rate in Vietnam is not strong enough and the fixed exchange rate regime is not a long-run solution for price and financial stability, especially in the event of free capital flows.

Inflation targeting provides a strong nominal anchor in lieu of the exchange rate peg to control inflation. The combination between flexible exchange rate regime and inflation targeting framework will be a promising and leading monetary strategy in the long run. Other things equal, it will associate with better macroeconomic performance and an enhancement of credibility. Like other emerging countries at the onset of the adoption of inflation targeting, at present, Vietnam does not meet all prerequisites for inflation targeting and faces a number of
challenges. Although literature shows that no inflation targeters meet all preconditions before the adoption of inflation targeting framework (Carare et al., 2002, and IMF, 2005c, 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) to ensure a successful adoption of inflation targeting in Vietnam. The success of inflation targeting are likely to depend more on the accountability and transparency of authorities’ commitment and ability to plan and drive institutional change after the introduction of inflation targeting, good communicating with the public, strong support of the public and political process and developing strong fiscal, financial and monetary institutions. Some proposals for the transition process to inflation targeting and for the enhancement of credibility under inflation targeting will be discussed in Chapter V.

III.2.2.3. Central bank independence

As noted above, price stability objective can be achieved by giving the central bank more independence. Having independence in the implementation of monetary policy, the central bank will choose an optimal monetary policy, under which the central bank can pursue its monetary objective, say price stability (thereby avoiding time-inconsistency problem). The public has to appoint an independent central bank, who is recognized as having an inflation-tolerance threshold lower than that of the public. In such a way, inflationary pressures will not affect inflationary expectations, because the public is confident that the central bank will take measures to counter those pressures.

Recently, academics and policymakers have paid increasingly attention to the objective of price stability and the independence of the central bank. Many researchers believe that countries with an independent central bank have lower inflation rate than that of countries having central bank under direct control of the government. It has been found by Kydland and Prescott (1977), Barro and Gordon (1983), Rogoff (1985), Grilli, Masciandaro and Tabellini (1991), Alesina (1989), Cukierman (1992), Alesina and Summers (1993), Shiemann (1993), Lybek and Morris (2004), and Cukierman (2006) that, the more independent central bank has been coupled with lower levels of inflation. In relation to policy conductions, Cukierman (1992) concluded that, the lower the degree of central bank independence, the lower would be the level of average credibility (as measured by the variance of the deviation between actual
policy actions and the public’s perception of the deviation). Indeed, various countries have recently upgraded central bank independence to raise their commitment to price stability (Eijffinger, Introduction, 1997, and Cukierman, 2006).

The independence of the central bank refers to three areas: personnel independence, financial independence, and policy independence (Eijffinger, Introduction, 1997). Personnel independence refers to the influence from the government in appointment and dismissal procedures, and term of office etc. Financial independence is referred as to access of the government to the central bank credit (to finance expenditure of the government), sufficient financial resources of the central bank to fulfil its mandate and authority of the central bank over its budget. Policy independence is related to manoeuvring room given to the central bank in the formulation and execution of the monetary policy.

Debelle and Fischer (1994) draw a distinction between goal and instrument independence. A central bank has goal independence when it has the right to define freely the goal of monetary policy. To achieve its goals, the central bank is given instrument independence. A central bank has instrument independence when it is free to use the means to meet the goal.

Lybek and Morris (2004) distinguish between goal and target independence. It can be divided into four different types:

- **Goal autonomy**, the broadest concept, entrusts the central bank authority to determine its primary objectives from among several competing objectives (such as output growth and price stability) included in the central bank law (Federal Reserve System in the United States is one example).
- **Target autonomy**, allows the central bank to decide one specific target for achieving the primary objective (Case of the European System of Central Banks and the European Central Bank).
- **Instrument autonomy** implies that the government decides the target in agreement with the central bank, but the central bank retains sufficient authority to implement the target by using the suitable instrument (One example is the Reserve Bank Act of New Zealand).
- **Limited or no autonomy** means that the government determines policies’ objectives and influences the conduction of those policies. The central bank is a government agency (the case in Vietnam and some developing countries).
A. The model

Why would the central bank independence yield lower rate of inflation?

There are some answers for this question, but the most prominent argument based on time-consistency of monetary policy. This argument is presented in Rogoff (1985) model. In the Rogoff model, society can sometimes make itself better off by appointing a central bank who does not share the social objective function, but instead places a higher weight on price stability relative to output stabilization (optimal policy). It is optimal for society to choose an independent (conservative) central bank, who places a greater weight on price stability than society does (optimal central bank). The Rogoff model consists of two stages (Rogoff, 1985):

**Stage 1: Choice of optimal monetary policy**

The social loss function $LS$ depends on deviations of output and inflation from their optimal level (socially desired level).

$$\min_p LS = p^2 + h \cdot (y - \bar{q})^2 \quad (III.14)$$

where $p$ is the logarithm of the price level, $h$ is the weight that society places on output stabilization, $y$ is output in logarithm and $\bar{q}$ is optimal output level (Socially desired level) logarithm. Time index is not included to simplify. The output $y$ differs from its natural level $\bar{y}$ (or output in full employment) by an amount inversely proportional to the real wage $w - p$ (in logarithm).

$$y = \bar{y} - (w - p) + z \quad (III.15)$$

where nominal wage

$$w = Ep \quad (III.16)$$

with $Ep$ is expected price level, $z$ is supply shock and expectation of shock is zero $Ez = 0$
Substituting equation III.16 into equation III.15, we obtain

\[ y = \bar{y} - (E_p - p) + z \]  

(III.17)

By substituting equation III.17 into equation III.14, differentiating equation III.14 with respect to \( p \) and setting \( dLS / dp = 0 \), equation III.14 is written as:

\[ 2 \cdot p + 2 \cdot h \left[ \bar{y} - (E_p - p) + z - \bar{q} \right] = 0 \]  

(III.18)

Taking expectations across equation III.18 and recalling that \( Ez = 0 \) and \( Ec = c \) when \( c \) is constant, \( z \) is exogenous, thus:

\[ 2 \cdot E_p + 2 \cdot h \left[ \bar{y} - (E_p - p) + Ez - \bar{q} \right] = 0 \], then we have:

\[ E_p = h \cdot (\bar{q} - \bar{y}) \]  

(III.19)

By substituting equation III.19 into equation III.17 and solving for the value of \( p \), the optimal value of price level and output can be obtained:

\[ p_{opt} = h \cdot \left( \bar{q} - \bar{y} - \frac{1}{1 + h} \cdot z \right) \]; Optimal monetary policy  

(III.20)

\[ y = \bar{y} + \frac{1}{1 + h} \cdot z \]  

(III.21)

In case of ideal situation \( (LS = 0) \) would \( p = 0 \) and \( y = \bar{q} \) that happens when \( \bar{q} = \bar{y} \) and \( z = 0 \).

If employment goal is ambitious, \( \bar{q} > \bar{y} \) then inflation bias arises \( (p > 0) \). The larger is \( h \), the more \( p \) increases. At the same time, effect of supply shock \( z \) on output and price will be brought into play through \( h \). In other words, if the society places the high weight on the output stabilization, or lower weight on inflation stabilization relative to output stabilization, it brings about inflation. Problem is that it should reduce inflation bias. That means one should choose
a monetary policy with low \( h \). Note that \( h \) is not too low, otherwise disturbance \( z \) will affect more strongly. The model in stage 2 will answer the question what is the optimal value of \( h \).

**Stage 2: Choice of optimal central banker**

Society and central bank place weigh on output stabilization \( h_i \) and \( b_h \), respectively. The expected social loss function \( ELS \) (from society point of view) is

\[
ELS = Ep^2_b + h_i \cdot (y_b - \bar{q})^2
\]  

(III.22)

and depends on the price level \( p_b \) that the central bank chooses and the output \( y_b \) arising from chosen \( p_b \) (the optimal value of \( p_b \) and \( y_b \) is already set in stage 1).

The optimal value of \( b_h \) is defined by replacing \( p_b \) and \( y_b \) in the following equation:

\[
\min_p ELS = E \left[ b_h \cdot \left( \bar{q} - \bar{y} - \frac{1}{1 + b_h} \cdot z \right) \right]^2 + h_g \cdot E \left[ - (\bar{q} - \bar{y} + \frac{1}{1 + b_h} \cdot z) \right]^2
\]

(III.23)

Note that society will choose the central banker with \( b_h \) so as to the expected social loss is minimum (though society may have other optimal value \( h_s \)). The optimal value of \( b_h \) can be achieve by the foregoing method.

\[
ELS = E \left[ h_b \cdot \left( \bar{q} - \bar{y} \right)^2 - 2 \cdot \left( \bar{q} - \bar{y} \right) \cdot \frac{1}{1 + b_h} \cdot z + \left( \frac{1}{1 + b_h} \right)^2 \cdot z^2 \right] + h_g \cdot E \left[ \left( \bar{q} - \bar{y} \right)^2 - 2 \cdot \left( \bar{q} - \bar{y} \right) \cdot \frac{1}{1 + b_h} \cdot z + \left( \frac{1}{1 + b_h} \right)^2 \cdot z^2 \right]
\]

(III.24)

Taking expectations across equation III.24 and recalling that \( E_z = 0 \) and \( E_z^2 = \sigma_z^2 \) with exogenous \( z \), \( Ec = 0 \) when \( c \) is constant, thus:

\[
ELS = h_b^2 \cdot \left( \bar{q} - \bar{y} \right)^2 + h_b^2 \cdot \left( \frac{1}{1 + b_h} \right)^2 \cdot \sigma_z^2 + h_g \cdot \left( \bar{q} - \bar{y} \right)^2 + h_g \cdot \left( \frac{1}{1 + b_h} \right)^2 \cdot \sigma_z^2
\]

(III.25)
Differentiating equation III.25 with respect to $b$ and setting $dELS/db = 0$, we obtain

$$\frac{h_s - h_b}{h_b \cdot (1 + h_b)^3} = \frac{(\bar{q} - \bar{y})^2}{\sigma_z^2} > 0$$

(III.26)

Provided that employment goal is ambitious, $\bar{q} > \bar{y}$, then the optimal $h_b$ must meet the condition $h_s - h_b > 0$, that means it is optimal for society to choose an independent (conservative) central bank who places a lower weight on output stabilization than society does (optimal central bank), by which inflationary bias is smaller. In order to ensure that its weight $h_b$ must be smaller than $h_s$ without pressure from society, the central bank must be independent. Note that, the more the variance $\sigma_z^2$ is, the narrow is gap between $h_b$ and $h_s$.

In short, central bank independence helps to reduce inflation.

**B. Central bank independence under fixed and flexible exchange rate**

We consider the role of central bank independence under fixed and flexible exchange rate regime in ensuring price stability through the model of credibility in II.2.2.2:

$m = e - \alpha \cdot E\Delta e$  \hspace{1cm} (III.5)

$e = p$  \hspace{1cm} (III.6)

(a) Fixed exchange rate $e = 0$, money supply $m$ is endogenous. The money supply must be adjusted to maintain the fixed exchange rate. The central bank is not able to implement an independent monetary policy.

(a1) If fixed exchange rate is credible $E\Delta e = 0$.

The result is $m = p = e = 0$, the price level is stable. Loss of independent monetary policy is no problem because price stability is ensured by exchange rate peg.

(a2) If fixed exchange rate is not credible, there is an expectation of depreciation $E\Delta e > 0$. 
The result is $m = -\alpha \cdot E\Delta e$. The central bank has to intervene to maintain the fixed exchange rate, leading to changes in money supply. If the central bank cannot maintain the peg, the monetary policy will not help to control inflation because it has to serve the objective of maintaining the fixed exchange rate. Thus, price stability is not ensured.

(b) Flexible exchange rate $m = \bar{m}$, money supply $m$ is exogenous. The central bank has independence in the implementation of monetary policy.

Under flexible exchange rate regime, we have $p = e = \bar{m}$ (assumably, $E\Delta e = 0$ ). The exchange rate can move without intervention. Changes in foreign prices are neutralized by changes in exchange rate (no inflation import). The domestic price stability is ensured if the central bank is able to control money supply. Therefore, the central bank can conduct a discretionary monetary policy to stabilize the price level.

The results of the model can be summarized as follows. Under fixed exchange rate regime, the central bank loses its independence in implementation of monetary policy. If the fixed exchange rate regime is credible, loss of the central bank independence is not problematic because the price stability is ensured. If the fixed exchange rate is incredible, the independence of the central bank is needed to stabilize the price. Otherwise, price stability objective is not achieved (incredible fixed exchange rate and lack of the central bank). Under flexible exchange rate regime, the central bank can implement an independent monetary policy to stabilize the price.

However, as mentioned in II.2.3.3, although the fixed exchange rate is credible, loss of an independent monetary policy may become problematic since the pegging country loses the ability to use monetary policy to respond to domestic shocks that are independent of those hitting the anchor country. Thus, it can be said that, the main difference between fixed and flexible exchange rate regimes is the central bank independence.

Since the central bank independence is the advantage of flexible exchange rate over the fixed exchange rate, thus, many countries, now, choose to raise their commitment to price stability by upgrading the central bank independence in company with introduction of inflation target (explicit or implicit) than pegging it exchange rate. The Eurosystem having target
independence employs an explicit inflation target together with float exchange rate. Others, such as the U.S. Federal Reserve having goal independence, anchor monetary policy with an implicit low inflation objective accompanied with float exchange rate. The Czech Republic was the first transition economy that introduced an inflation targeting in company with floating freely exchange rate and high degree of the central bank independence, after it has abandoned fixed exchange rate regime following currency turbulence in May 1997. Poland’s transition to inflation target regime began during 1998 with low degree of monetary policy independence, firstly, maintaining the exchange rate band (from ±10% at the time of announcement inflation target to ±15% later) and later switching to managed float in April 2000 (Arestis and Mouratidis, 2003, Jonas and Mishkin, 2003).

Vietnam is a case in point. Under the fixed exchange rate regime, the SBV loses its independence in implementation of monetary policy. The fixed exchange rate regime is not a strong nominal anchor to control inflation. In addition, the maintenance of the fixed exchange rate regime faces difficulties in the event of free capital inflows. These lead to the requirement of use of monetary policy in association with other policies to control inflation, rather exchange rate peg alone. Moving toward flexible exchange rate and inflation targeting will be a leading candidate strategy, under which the central bank independence will be given to help to control inflation.

In conclusion, the country can suffer the standard problem of the sustainability of the fixed exchange rate when the credibility of the exchange rate-based stabilization program 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 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 necessary manoeuvring room to achieve the price stability objective. If the price stability objective is conflicted with other objectives (for example output objective), the central bank should give priority to price stability objective; even accept the negative effects on output. The negative effects on output can be solved by other policies, for example flexible wage policy. The question how far the country moves to greater flexibility of exchange rate and how well it prepares for the introduction of inflation target will be discussed in the next chapters.
III.2.3. Exchange rate regimes and shock absorption

III.2.3.1. The model

To address the issue of the role of exchange rate in sustaining the economy (output and price) in face of various kinds of shocks, we consider the following model (see Rødseth, 2000, p.325).

We consider a small country. All foreign variables are exogenous. All variables are measured in the logarithm, except the interest rate. All coefficients are positive. Variables referring to foreign countries are indicated by an asterisk.

Goods market

\[ y = -\beta \cdot r + \eta \cdot (e + p^* - p) + v \]  
(III.27)

Interest rate parity

\[ i = i^* + Ee - e + z \]  
(III.28)

Fisher equation

\[ i = r + Ep - p \]  
(III.29)

Labour market/Output

\[ y = -\gamma \cdot (Ep - p + u) \]  
(III.30)

Consumption price

\[ p^* = (1 - a) \cdot p + a \cdot (e + p^*) \]  
(III.31)

There are three types of shocks, demand shock \( v \), foreign exchange market shock \( z \), and supply shock \( u \).

Goods market has two commodities, one home good and one foreign good. Purchasing power parity does not hold (home and foreign goods are not substitutive). The aggregate demand equation III.27 is based on Mundell-Fleming model, \(^{46}\) under which \( \kappa = 0 \) and \( v \) is added as an exogenous demand shock.

Home and foreign financial assets are homogenous. Interest parity holds. A foreign exchange market shock \( z \) is for example a stochastic risk premium.

Real and nominal interest rate is distinguished in Fisher equation III.29. The monetary policy instrument of the central bank is nominal interest rate. The central bank will decide monetary response (by setting interest rate) after the shock and assessment of nature of shocks.

\(^{46}\) \( y = -\beta \cdot r + \theta \cdot g + \eta \cdot (e + p^* - p) + \kappa \cdot (y^* - y) \)
Labour market/output is aggregate good supply. Wage is set based on inflation expectations before shock appears. For example, supply shock $u$ is a productivity shock.

The consumption price is a price of a basket of goods, in which home goods have a weight of $1-a$ and a supply price of $p$ and foreign goods have a weight of $a$ and a supply price of $p^{*} (0 < a < 1)$. The price of foreign goods is converted to domestic currency by the exchange rate $e$.

To simplify, we assume that $Ep = Ee = 0$ (static inflation and exchange rate expectations) and $i^* = p^* = 0$. Disturbance with $p^*$ and $i^*$ can be expressed by $v$ and $z$, respectively. Then, we have the simplified model:

\[
\begin{align*}
\text{Goods market} & \quad y = -\beta \cdot (i + p) + \eta \cdot (e - p) + v \quad (\text{III.32}) \\
\text{Interest rate parity} & \quad i = -e + z \quad (\text{III.33}) \\
\text{Labour market/Output} & \quad y = \gamma \cdot (p - u) \quad (\text{III.34}) \\
\text{Consumption price} & \quad p^{*} = (1-a) \cdot p + a \cdot e \quad (\text{III.35})
\end{align*}
\]

We have four equations and five endogenous variables $y, i, p, e, p^{*}$. To have the result, we need one equation more. This equation will express the monetary strategy stance of the central bank. If the central bank wants to fix the exchange rate and allows the consumption price fluctuation, then $e^{*} = 0$ (strategy A). If the central bank wants to fix the consumption price and allows the exchange rate fluctuation, then $p^{*} = 0$ (strategy B).

We see how shocks $v, z, u$ affect on exchange rate, consumption price and output under fixed and flexible exchange rate (strategy A and B); hence find which strategy is superior.
Solving the equation from III.32 to III.35, we have the results as follows:

<table>
<thead>
<tr>
<th>Strategy A: fixed exchange rate</th>
<th>Strategy B: flexible exchange rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>flexible consumption price</td>
<td>stable consumption price</td>
</tr>
<tr>
<td>( i = z )</td>
<td>( \frac{(1-a) \cdot (v + \gamma \cdot u) + (a \cdot \beta + a \cdot \gamma + \eta) \cdot z}{\beta + a \cdot \gamma + \eta} ) (III.40)</td>
</tr>
<tr>
<td>( e = 0 )</td>
<td>( e = -\frac{(1-a) \cdot v - \beta \cdot z + \gamma \cdot u}{\beta + a \cdot \gamma + \eta} ) (III.41)</td>
</tr>
<tr>
<td>( p^c = a \cdot \frac{v - \beta \cdot z + \gamma \cdot u}{\beta + \gamma + \eta} ) (III.38)</td>
<td>( p^c = 0 ) (III.42)</td>
</tr>
<tr>
<td>( y = \gamma \cdot \frac{v - \beta \cdot z - (\beta + \eta) \cdot u}{\beta + \gamma + \eta} ) (III.39)</td>
<td>( y = \gamma \cdot \frac{a \cdot (v - \beta \cdot z) - (\beta + \eta) \cdot u}{\beta + a \cdot \gamma + \eta} ) (III.43)</td>
</tr>
</tbody>
</table>

The central bank has only interest rate instrument to implement monetary policy to achieve its target. In strategy A, the target of the monetary policy is fixed exchange rate (equation III.37). Therefore, the central bank has to respond to only foreign exchange shocks (equation III.36) and can ignore demand and supply shocks. In strategy B, the target of monetary policy is stable consumption price (equation III.42). The central bank has to use interest rate to respond to all kinds of shocks (equation III.40).

To see which strategy is superior, we use social loss function:

\[
\text{min } LS = (p^c)^2 + \varphi \cdot (y)^2
\]  

(III.44)

The economic policy wants to minimize its social loss that derives from consumption price’s and output’s deviation from its target level (target level are set as zero in equation III.44). We see two following cases:

(a) Consumption price component is overriding (\( \varphi \) is very small). The social loss will be minimized if fluctuations in consumption price can be avoided (\( p^c = 0 \)). This is relevant to strategy B or flexible exchange rate is superior.
(b) Output component is overriding (φ is very high). In this case, the social loss will be minimized if changes in output are smallest. To see which strategy is superior, we see the original of shocks faces the economy:

(b1) If the shock is a supply shock \( u \), the effect of supply shock on output in strategy A (fixed exchange rate) is lower than that in strategy B (flexible exchange rate) (equation III.45). Thus, the fixed exchange rate regime is superior.

\[
\left( \frac{\partial y}{\partial u} \right)_A = -\frac{\gamma \cdot (\beta + \eta)}{\beta + \gamma + \eta} < \left( \frac{\partial y}{\partial u} \right)_B = -\frac{\gamma \cdot (\beta + \eta)}{\beta + a \cdot \gamma + \eta}
\]  

(iii.45)

(b2) If the shock is demand shock \( v \) or foreign exchange market shock \( z \), the effect of demand and foreign exchange market shock on output in strategy B (flexible exchange rate) is lower than that in strategy A (fixed exchange rate) (equation III.46 and III.47). Thus, the flexible exchange rate regime is superior.

\[
\left( \frac{\partial y}{\partial v} \right)_A = \frac{\gamma}{\beta + \gamma + \eta} > \left( \frac{\partial y}{\partial v} \right)_B = \frac{a \cdot \gamma}{\beta + a \cdot \gamma + \eta}
\]  

(iii.46)

\[
\left( \frac{\partial y}{\partial z} \right)_A = -\frac{\gamma \cdot \beta}{\beta + \gamma + \eta} > \left( \frac{\partial y}{\partial z} \right)_B = -\frac{a \cdot \gamma \cdot \beta}{\beta + \gamma + \eta}
\]  

(iii.47)

In conclusion, the choice of exchange rate regime in terms of shock absorption depends on the target of monetary policy (price or output is overriding) and the dominance of the shocks. The results of the model are summarized in Table III.8.

**Table III.8. Desirable exchange rate regimes under different shocks**

<table>
<thead>
<tr>
<th>Shocks</th>
<th>Price target</th>
<th>Output target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand shock</td>
<td>Flexible exchange rate</td>
<td>Flexible exchange rate</td>
</tr>
<tr>
<td>Supply shock</td>
<td>Flexible exchange rate</td>
<td>Fixed exchange rate</td>
</tr>
<tr>
<td>Foreign exchange market shock</td>
<td>Flexible exchange rate</td>
<td>Flexible exchange rate</td>
</tr>
</tbody>
</table>

Source: Author
III.2.3.2. Choice of exchange rate regime in terms of shock absorption in Vietnam

Among other things, the IMF (2006d) and the SBV (2005) find that high inflation rate since 2004 has been attributed by a number of external, supply and demand shocks.

With regard to external shocks, increase in food prices (especially rice) and prices of input raw materials and fuels (e.g., oil, petrol, iron, steel, and fertilizer) in the world market contributed to increase in cost of production and then goods prices. In addition, growing foreign demand for Vietnamese exports also raise inflation.

As for supply shocks, the widely outbreak of avian influenza reduced dramatically the supply of avian foodstuff by about 20%, then leading to upward pressures on prices of other substitutive products such as beef and seafood.

Concerning demand shocks, increasing food demand for consumption and export raised the prices of foods, then inflation. The aggregate domestic demand, investment and consumption have increased relatively fast in recent years that have caused pressure on inflation (the ratio of investment to GDP increased from 35.1% in 2003, 36.3% in 2004 and 38.9% in 2005, 41% in 2006). In addition, wage adjustments under the Government’s public administration reform program in the state sector have raise the purchasing power of wages and caused the wages in the private and FDI sectors to an increase approximately by 5-10%, resulting in inflation expectation and hence inflation.

In a situation that the economy has to face three kinds of shocks and the output objective is overriding, the fixed exchange rate helps absorb only supply shocks. The flexible exchange rate helps absorb demand and foreign exchange market shocks. IMF (2006d) finds that the excess demand pressure (usually measured as output gap) is one of the important determinants of inflation in Vietnam. In such a case, the flexible exchange rate is more attractive than the fixed exchange rate because it can absorb two kinds of shocks; one of them is importantly attributed to inflation in Vietnam, whereas the fixed exchange rate can absorb only supply shocks. In contrast, if the SBV is allowed to pursue per se central bank objective as primary objective, say price stability, the flexible exchange rate is obviously superior.
In short, regarding the ability of the exchange rate to absorb foreign exchange, supply, and demand shocks, flexible exchange rate is superior when the SBV targets at price stability. The flexible exchange rate is also more attractive than the fixed exchange rate when the SBV targets at output stability because the flexible exchange rate neutralizes two of three shocks facing the economy, of which demand shock is very important determinant of inflation in Vietnam.

III.3. Moving toward greater exchange rate flexibility in Vietnam

To consider an appropriate exchange rate regime for Vietnam, I base on three approaches related to country characteristics, the credibility of exchange rate regimes and the central bank independence to ensure price stability objective as well as and role of exchange rate regimes in sustaining the economy in face of a variety of shocks. Based on characteristics of the economy, Vietnam does not fit well all OCA criteria for a fixed exchange rate regime; rather the economy meets more criteria for a flexible exchange rate regime. To the extent of free capital flows, the flexible exchange rate regime together with inflation targeting as well as giving more room for the central bank to manoeuvre an independent monetary policy to achieve the price stability objective becomes more appropriate for Vietnam, provided that fiscal, financial, and monetary institutions are strengthened, the Government’s supportive and appropriate policies and other conditions for good economic performance (to achieve output growth target) are in place. In addition, the flexible exchange rate looks more attractive in sustaining the economy against different shocks, especially when the central bank targets at price stability objective. Because the economy does not meet conditions for the adoption of flexible exchange rate and inflation targeting, it should undergo a transitional process to prepare all necessary conditions for a successful adoption of flexible exchange rate and inflation targeting.

To consolidate my arguments in favour of the flexible exchange rate regime, I will address following issues. The answers are moving toward flexible exchange rate is appropriate for Vietnam.

- Is fixing the exchange rate to control inflation a good choice?
- New environment for the choice of the exchange rate regime
- Advantages of flexible exchange rates
III.3.1. Is the pegged exchange rate a good choice?

Firstly, inflation pressures in Vietnam since 2004 have in part resulted from increase in world commodity prices because mostly major inputs have been imported from abroad. In such circumstance, fixing the exchange rate, from technical point of view, has exacerbated domestic inflation because of phenomenon of import inflation under fixed exchange rate. We can see it through the following model including two countries, home country and foreign country.

<table>
<thead>
<tr>
<th>Monetary market</th>
<th>Home country</th>
<th>Foreign country</th>
</tr>
</thead>
<tbody>
<tr>
<td>( m = p + y - \alpha \cdot i )</td>
<td>(III.48)</td>
<td>( m^* = p^* + y^* - \alpha \cdot i^* )</td>
</tr>
<tr>
<td>Fisher equation</td>
<td>( i = r + \Delta p )</td>
<td>(III.50)</td>
</tr>
<tr>
<td>Relative purchasing power parity</td>
<td>( \Delta p = \Delta p^* + \Delta e )</td>
<td>(III.52)</td>
</tr>
<tr>
<td>Exogenous output</td>
<td>( y = 0 )</td>
<td>(III.53)</td>
</tr>
<tr>
<td>Real interest rate</td>
<td>( r = 0 )</td>
<td>(III.55)</td>
</tr>
</tbody>
</table>

where \( \alpha \) is semi-elasticity of money demand with respect to nominal interest rate. \( \Delta \) is difference between present value and previous value (time index is omitted to simplify). Output and real interest rate are zero; that means deviations of two variables from equilibrium level are zero. This model deals with change in money supply accounting for inflation. It is related to inflation import under fixed and flexible exchange rate.

Substituting equations (III.53), (III.55), (III.56) into equation (III.48), we have

\[
m - p = -\alpha \cdot \Delta p
\]  

(III.57)

Assuming that steady inflation (constant rate of inflation), that means \( \Delta p \) is constant, leading to \( m - p \) is constant, that implies:

\[
\Delta m = \Delta p
\]  

(III.58)
Similarly, we have

\[ \Delta m^* = \Delta p^* \]  \quad \text{(III.59)}

Under flexible exchange rate regime, price level in one country depends only on changes in the money supply there. Because of a certain reason (for example, foreign country adopts an expansionary monetary policy, leading to an increase in money supply, thereby raising price \( p^* \) there), foreign price increases. When foreign price is higher than that in home country, the result is more export from home country to foreign country. More foreign currency earnings in home countries cause an excess supply of foreign exchange in home countries, thus resulting in cheaper foreign currency (exchange rate appreciation). Under flexible exchange rate regime, the central bank must not intervene to maintain the exchange rate. Foreign inflation is neutralized through changes in exchange rate. There is no inflation import. In this case, the central bank can conduct an independent monetary policy without consideration to foreign monetary policy.

\[ \Delta m \rightarrow \Delta p \rightarrow \Delta e \leftarrow \Delta p^* \leftarrow \Delta m^* \]

Under fixed exchange rate regime, the nominal exchange rate is maintained fixed (\( \Delta e = 0 \)). An increase in price \( p^* \) abroad causes a rise in domestic price \( p \) accordingly (equation III.52). This phenomenon is called inflation import. Therefore, fixing exchange rate does not help to constrain inflation in case of increase in inflation abroad and the country depends much on imported input. Let see reaction of the central bank in face of inflation import. In home country, increase in price level leads to increase in money demand. Excess money demand results in decrease in demand for valuable papers, and then rise in interest rate. Domestic interest rate is higher than foreign interest rate that brings about more capital inflows, which in turn make exchange rate appreciation. To maintain the fixed exchange rate, the central bank must buy foreign exchange in the market, leading to increase in the money supply \( m \). Increased money supply causes further increase in price level in home country. Consequently, the central banks cannot implement an independent monetary policy and the price stability target does not achieve.

\[ \Delta m \rightarrow \Delta p \rightarrow \Delta p^* \rightarrow \Delta m^* \text{ or } \Delta m \leftarrow \Delta p \leftarrow \Delta p^* \leftarrow \Delta m^* \]
In conclusion, the role of fixed exchange rate as a nominal anchor to import low inflation is not ensured when foreign inflations are more fluctuated than that in Vietnam. In such a case, flexible exchange rate is more feasible.

**Secondly**, as mentioned above, although fixing exchange rate since 2004 helps anchor inflation expectations (according to assessment of IMF, 2006a), 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 determinants aside from exchange rate volatility. In the presence of inflationary inertia, real exchange rate will become appreciated, then undermining countries’ competitiveness and weakening the external position. In addition, de facto fixed exchange rate system will bring about risks over long period for Vietnam’s economy, in particular the economy’s exposure to exchange rate risks due to high und unhedged foreign-currency borrowing from domestic banks. The fixed exchange rate limits the ability of monetary policy to concentrate on domestic considerations and transmits foreign shocks (from anchor country) to the economy. Besides, the sustainability of the fixed exchange rate regime faces the problem of credibility. When the confidence on the fixed exchange rate has been shaken, the fixed exchange rate becomes vulnerable to speculative attacks, thus currency crisis together with a collapse of fixed exchange rate is inevitable. In such cases, moving to greater exchange rate flexibility is encouraged.

To conclude, the fixed exchange rate as a nominal anchor to control inflation is not a good choice as foreign inflation is higher than home inflation. It is also not a long-run solution for price and financial stability, especially in the event of free capital flows.

**III.3.2. New environment for the choice of exchange rate regime**

Free capital flows have made the maintenance of pegged exchange rate more difficult. It is suggested that the flexible exchange rate becomes more valuable as countries integrate more closely into international financial markets and as they develop sound financial systems (Rogoff et al., 2004, and Husain et al., 2004).
For the time being, international financial integration becomes an indispensable trend that no countries want to keep themselves out of it. As mentioned by Williamson (1999) and Ishii and Habermeier (2002), international capital flows have some benefits:

- Capital account liberalization can support an efficient allocation of resource, that is, it helps facilitate to transfer capital from countries having surplus savings but low investment demand to countries having excess investment opportunities, which creates mutual benefit for countries received and countries transferred.
- Capital flows associate with modern technology and machinery, managerial expertise, assess to markets and higher working skills.
- Countries gain from capital inflows such as higher investment and higher output growth.
- Free capital movements contribute to the efficiency of financial system and the development of financial markets by strengthening competition and financial depth.
- In terms of risk diversification, international capital movement helps reduce risks specific to a country because investors’ assets are hold in a variety of countries with different risks.

While a country can reap the benefits from international capital market access, it will cope with the risks associated with international capital flows. \(^{47}\) Growing frequency of financial crises has led to argument that capital account liberalization contributes to financial crises. \(^{48}\) Recent prominent crises involving emerging countries (Mexico of 1994-95, Asian countries of 1997-98, Russia of 1998, and Brazil of 1999) show that fixed exchange rate regimes under high capital mobility with thin financial sector are inherently crisis-prone for emerging countries (Williamson, 2005). \(^{49}\) Opening the capital account before adopting flexible

---

\(^{47}\) Including credit risk (e.g. transfer risk, settlement risk and country risk), market risk (e.g. foreign exchange rate risk, interest rate risk and derivatives transactions risk) and liquidity risk. For more details, see Ishii and Habermeier (2002).

\(^{48}\) Ishii and Habermeier (2002) review that in sample of 35 economies, of which 25 economies experienced financial crises following financial sector liberalization.

\(^{49}\) Ishii and Habermeier (2002) identify that capital account liberalization and capital mobility are not synonymous. For example, capital mobility can increase even without capital account liberalization if market developments erode the effectiveness of existing control. Moreover, both terms usually refer to private capital movements, but the term capital mobility has sometimes also been used to cover cross-border financial transactions with sovereign and public sector entities.

Let see the case of Vietnam. The opening of capital account has implications for the choice of exchange rate regime in Vietnam. To the extent that capital account will be progressively liberalized (see II.2.1.7), the Vietnamese government is still reluctant to allow greater exchange rate flexibility because of the following reasons. First, having a fear that an excessive volatility of the exchange rate will lead to increase in inflation; the SBV has maintained a low depreciation of nominal exchange rate to help reduce the effect of exchange rate volatility on inflation. Second, excessive exchange rate fluctuations will raise transaction costs, thereby affecting capital flows including foreign direct and indirect investment, which plays an important role in economic development in Vietnam. Third, with a weak domestic financial system and unhedged foreign exchange transactions, local business will be suffered from exchange rate exposures through impacts of excessive exchange rate fluctuations over balance sheets of firms and banks (for example by raising the domestic-currency value of foreign-currency-denominated debts in firms with currency mismatch).

However, as mentioned above (see Chapter III, III.2.2.2), 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 and the modest exchange rate pass-through to inflation.

In addition, Eichengreen (1999) shows through Thailand’s crisis that authorities’ reluctance to allow more flexible exchange rates only make the economy vulnerable to crises. The weakness of the banking sector and opening capital account before adopting flexible exchange rate under speculative attacks on the currency are reasons of the financial crisis. 50 Although Thailand’s authorities were warned of the problem with their currency peg and the need for greater exchange rate flexibility, the government hesitated to introduce greater exchange rate flexibility during the period of abundant inflows because the government was worried about durability of the weak financial system in face of exchange rate volatility (Eichengreen, 1999). However, exchange rate stability did not encourage the market participants to hedge their foreign exchange exposures, even banks and corporations agreed to

50 Goldstein (1998) shows that in addition to the weakness of the financial system, external sector problem and contagion are also reasons of the Asian crisis.
shoulder currency risks to minimize their borrowing costs, thus leading to over-expanded borrowings in short-term foreign currency. The free movement of capital flows into and out of the country facilitated further foreign currency borrowings. These left the market participants more vulnerable when the exchange rate depreciated. Thailand’s crisis of 1997-98 is a lesson for Vietnam. The IMF urges Vietnam to allow more flexible exchange rate to avoid external vulnerability and to encourage exchange rate risk management. Vietnam envisages also allowing more flexible exchange rate, but its deed is slow. Vietnam has the same characteristic like Thailand before crisis (weak banking system, fixed peg exchange rate, unhedged exchange rate risks, and opening capital account while maintaining fixed peg - this characteristics will become potential dangers in the coming years if Vietnam continues adopting fixed peg). That means a country should not wait until domestic financial system is completely healthy, rather it should prepare exit strategy from the peg. Indeed, many countries moved to more flexible exchange rate while still in progress of strengthening their financial system (Mexico, India, Turkey and Chile).

In conclusion, Vietnam should move to flexible exchange rate in accordance with progressive capital account liberalization in the years to come. For the time being, Vietnam needs prepare appropriate steps for this way.

### III.3.3. Advantages of the adoption of flexible exchange rate regime in Vietnam

Recalling the disadvantages of the fixed exchange rate regime in Vietnam mentioned in the previous chapter (see Chapter II, II.2.3):

- It entails the loss of an independent monetary policy and transmits shocks from the anchor country to Vietnam. For example, although inflation rate is under control, loss of an independent monetary policy becomes a problem under fixed exchange rate regime since the pegging country loses the ability to use monetary policy to respond to domestic shocks that are independent of those hitting the anchor country. For example, if the interest rate in the anchor country (say, USA) increases, the interest rate in the targeting country (Vietnam) must be raised in order to maintain the exchange rate relationship, even if Vietnam is in recession. Increase in interest rate, in turn, aggravates further the recession situations, for example, reduction in investment and then output and price.
• It may incur the credibility problem, thereby increasing the likelihood of speculative attacks if the public doubts about the ability of the central bank to maintain the exchange rate pegging.
• It increases financial fragility and heighten the potential for financial crises if domestic liability is mainly dominated in foreign currency and short-term and the banking system is weak.
• It creates the perception of an implicit guarantee for exchange rate and reduces the sensibility of market participants to exchange rate risks
• It leads to real exchange rate appreciation, thereby deteriorating external competitiveness.
• It, in accordance with weaknesses of banking and financial system, places the central bank in difficult situation to defend the fixed exchange rate regime by raising interest rate.
• It does not help to import price stability if foreign inflation (say, the US as anchor country) is higher than home inflation (say, Vietnam as targeting country).

From my point of view, the flexible exchange rate regime solves all disadvantages of the fixed exchange rate regime:

• It allows the SBV to conduct an independent monetary policy. The monetary policy becomes more independent because it does not need to subordinate to maintain the peg and can focus on what is happening in the domestic economy. When the economy is hit by shocks, under a flexible exchange rate regime, the central banks are freely to expand or contract the monetary policy to respond to the shocks. To stabilize the price level, the central bank can pursue the inflation targeting that becomes clearer responsibility of the central bank than other anchor. Therefore, central bank independence is a key factor that ensures the effectiveness of monetary policy. More importantly, because the task of the monetary policy, i.e. inflation target, is easy for the public to understand, thus it becomes transparent and more credible.
• It facilitates adjustments to shocks (absorb shocks) and rapid structural changes and allows Vietnam to strengthen further its modest international reserve position.
• It restrains speculation because there is no condition for speculation attack to happen. Because the exchange rate is floated, the public has no doubt about whether the central bank can defend the peg or not. There is also uncertain future path of the exchange rate, so that speculation does not happen or successful speculation is not likely. The main problem is how to acquire credibility following the abandonment or collapse of an exchange rate
peg. This requires the country to introduce and implement an alternative monetary policy operating strategy under 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 necessary manoeuvring room to achieve the price stability objective.

- Flexible exchange rate together with more freely capital account mobility as well as strengthening the healthy of the banking system constrains the possibility of financial crisis. Not being attracted by stable exchange rate, lending boom in foreign currency is not likely. The firms have to be vigilant in making decision on borrowing. If firms want to borrow in foreign currency, they have to hedge them against exchange rate risks in cases of a reversal of capital flows or exchange rate volatility.

- Greater exchange rate flexibility encourages market participants to manage exchange rate risks, thereby avoiding excessive foreign exchange exposure in the economy.

- Flexible exchange rate will neutralize inflation import.

- The central bank does not need to intervene to limit exchange rate fluctuations, subject to its foreign-exchange-intervention objectives.

- Allowing exchange rate to move closer to its equilibrium value associated with reasonable measures to control inflation will help to reduce real appreciation of the dong against the U.S. dollar. The Vietnamese dong responds to adverse developments in Vietnam’s export markets or other shifts in the terms of trade by depreciating, thus achieving the necessary real depreciation even in the presence of sticky prices or wages (Frankel, 2003). Relating to exchange rate equilibrium, there are two scenarios:

  First scenario, real exchange rate is misaligned. From my point of view, real exchange rate misalignment may occur under both flexible and fixed exchange rate regime because the market functions from time to time inefficiently, economic fundamentals is changed, and new information distorts the market process of price discovery. Real exchange rate overvaluation can undermine export competitiveness and weaken the external position, while an undervalued exchange rate may create inflationary pressures. Especially for Vietnam, rapid structural transformation makes the exchange rate more volatile and easily deviate from its economic fundamentals. Therefore, the central bank should find whether exchange rate is misaligned or not (not easy to do it) to correct misalignment. Correct real exchange rate misalignment appears to be easier under flexible exchange rate regime than under fixed exchange rate regime. If real exchange rate is misaligned, the central bank can correct it by changing the nominal exchange rate or by changing price level through
interest rate, spending, wage. Changing interest rate is sensitive if the economy is in good going. Changing spending is more difficult if the economy overheats and the government does not support or has other opinions. Changing wage makes sense if wage is flexible. Due to this reason, changing nominal exchange rate is preferable. Under fixed exchange rate regime, the nominal exchange rate is set at an already determined level, thus changing nominal exchange rate regime is impossible. Under flexible, the central bank can change the nominal exchange rate easier. In fact, real exchange rate overvaluation (or misalignment) under fixed exchange rate is one of the reasons of currency crisis during the 1990s (Edwards, 2001, Agénor 2004, Bernanke, 2005). In addition, intervention under flexible exchange rate is more desirable in terms of international reserves.

Second scenario, real exchange rate is not misaligned. Although the IMF (2006d) finds that REER in Vietnam since 1992 is consistent with Purchasing Power Parity hypothesis, that means there is no evidence that real exchange rate in Vietnam is misaligned under fixed exchange rate (in fact, real exchange rate tends to appreciate), it is not sure that real exchange rate will be misaligned under flexible exchange rate. Moreover, it gives an excellent opportunity to move to flexible exchange rate because there will be no excessive volatility after the exit from the peg (an orderly exit). There is also the need to reform the exchange rate regime because fixed peg is not a long-run solution for financial stability (as mentioned above). Many countries were reluctant to change its exchange rate regime when the going is good. But countries’ experiences suggest that “it is better to exit from a peg when times are good and the currency is strong, rather than to wait until times are bad and the currency is under attack” (Frankel, 2004). In addition, sharp real exchange rate appreciation since 2005 will sooner or later undermine export competitiveness, which plays very important role in the economy whose economy performance underpinned by strategy of export-led investment and growth.

- Allowing exchange rate flexibility is a key step that can help improve the depth and efficiency of the foreign exchange market and limit an unavoidable chicken-egg problem: the problem that flexibility requires a deep market, but that a deep market requires flexibility (IMF, 2004c).
- The shift toward more flexible exchange rate regimes together with strengthening the healthy of the banking system as well as moving toward more freely capital account mobility will expand opportunities to deeper involvement in an international financial market.
III.3.4. Consequences of transition to greater exchange rate flexibility

This part reviews IMF’s analyses of association between transitions to greater exchange rate flexibility, macroeconomic outcomes and macroeconomic policy frameworks by making comparison between countries making transitions and countries not making transitions (using IMF de facto exchange rate classification system). 51 “A transition is defined as a change from one exchange rate category, in which a country has been for at least two years, to another, in which a country remains for at least one year or which is followed by another shift in the same direction. The transitions to more flexible exchange rates are from pegs to intermediate regimes or from intermediate regimes to free floats”, and can be characterized as voluntary or crisis-driven. “A crisis-driven transition is defined as one that is associated with depreciation against the U.S.dollar of more than 20%, at least a doubling in the depreciation rate compared with the previous year, and a depreciation in the previous year of less than 40%”. The transitions that are not crisis-driven are defined as voluntary, though some of these transitions occurred under thread of a crisis (IMF, 2004b). The results are as follows:

* Macroeconomic variables

The following results are form IMF (2004b). Before making transitions, macroeconomic environment of countries making voluntary transitions was not significantly different from that in countries not making transitions (the control group), 52 e.g. growth, the primary fiscal balance, and the current account balance are broadly similar.

The voluntary transitions were not followed by much change in the levels of real and nominal exchange rate; unlike crisis-driven transitions, real exchange rate further depreciated around the time of transition.

The volatility of real and nominal effective exchange rates increased in the period immediately after a voluntary transition and returned to pre-transition levels after several months. In contrast, volatility of exchange rate after crisis-driven transition was more significant.

51 For more details, see IMF (2004b) and Hakura (2005).
52 The control group represents countries whose exchange rate regimes are the same as the starting regimes of transitioning countries in periods that are not with three years of a transition (IMF, 2004b).
Unlike driven-crisis transition, growth, inflation, the primary fiscal balance, and the current account balance, among other things, were affected a little by voluntary transitions. Indeed, voluntary transitions have been accompanied by higher growth, and lower inflation and exchange rate volatility than those of crisis-driven transitions in the years following the transition.

Similarly, Duttagupta and Ötker-Robe (2003) find that crisis-driven exits are associated with deterioration in economic indicators (e.g. reduction in foreign exchange reserves and export growth, and appreciation of real effective exchange rate) whereas orderly exit could be associated with an improvement of economic health.

In conclusion, voluntary transitions did not result in increase in macroeconomic instability, In comparison with crisis-driven transitions, voluntary transitions were associated with lower vulnerabilities and far less macroeconomic disruption.

* Macroeconomic policy framework

As the exchange rate does not fulfil the role of a nominal anchor under floating exchange rate regime, a key issue is how to establish a credible alternative nominal anchor. In this regard, institutional frameworks are important because strong policy frameworks address the key vulnerabilities under the “fear of floating”. This part investigates the linkage between transitions to greater flexibility and changes in macroeconomic policy frameworks based on results of the IMF (2004b).

**Monetary policy framework**

Two measures of monetary policy framework supporting flexible exchange rates are central bank independence and inflation targeting. For example, in 2003, the central banks of emerging countries with free floats are more independent than that with pegs or intermediate regimes. About 90% of countries with free float adopted inflation targeting. Inflation targeting is generally adopted two years after countries made transition (IMF, 2004b). 53

---

53 Inflation targeting is not prerequisite for the transition to free float. In fact, Poland adopted inflation targeting before transition to free float.
Financial sector supervision and development

Developing countries always face problems such as weak balance sheets and a shortage of long-term capital, which involve currency and maturity mismatch that can raise the fear of floating. Thus, an adequate quality of bank supervision helps to recognize and to manage risks, thereby strengthening the balance sheet and further supporting greater exchange rate flexibility. The development of securities market helps to improve long-term funding, thereby reducing maturity mismatch. Therefore, the degree of financial sector supervision and development is represented by two indicators: quality of bank supervision and development of securities market. The following results are from the IMF (2004b).

Perceiving the importance of bank supervision, countries making transitions always prepare for their transitions by strengthening quality of bank supervision. Therefore, countries making transitions to more flexible exchange rates had, on average, better bank supervision than the control group. Countries having voluntary transitions had better on average quality of bank supervision than countries experiencing crisis-driven transition. Crisis-driven transitions had improvements in bank supervision in the period leading up to the exit and after that.

With regard to securities market development, countries making transitions from intermediate regime to free float have better securities market development than control group. Again, crisis-driven transitions had further securities market development around the time of transitions and after that.

In short, financial sector supervision and development in countries with free float are on average stronger than those in countries with pegs and intermediate regimes.

Financial sector liberalization

There is a linkage between financial sector liberalization and financial sector development, i.e. capital account liberalization is associated with deeper financial development in the long run. However, open financial markets can also create financial problems, including financial crises, which are generally associated with both excessive inflows and outflows and

54 See IMF (2001) for more details.
the volatility of net capital flows. Thus, if financial sector development and supervision are weak, it is desirable to maintain financial control. In other words, financial liberalization and development should be carried out in tandem.

Abiad and Mody (2003) used six measures of financial sector constraint to capture the extent of financial sector liberalization. In such way, the financial sector liberalization can be distinguished between domestic and external financial liberalization. IMF (2004b) shows that countries making crisis-driven transitions from pegs to intermediate regimes had on average greater domestic financial liberalization than countries making voluntary transitions and countries in control group. On the other hand, countries that transited voluntarily from pegs to intermediate regimes, before transition, had less external finance liberalization than countries experienced crisis-transition and countries in control group. Conversely, voluntary transitions from intermediate regimes to free floats were accompanied by higher degree of external financial liberalization than that in the control group.

In short, countries making voluntary transition from pegs to intermediate regimes had less financial liberalization than that in countries experiencing crisis-driven transitions and control group. By contrast, voluntary transitions from intermediate regimes to free floats were associated with a higher degree of external financial liberalization than in the control group, reflecting in part the higher levels of bank supervision and securities market development than in the control group.

In summary, voluntary transitions to greater exchange rate flexibility do not result in greater macroeconomic instability, though a small sample could reflect sample selection bias. Indeed, growth was on average little affected by the transition. Inflation continued to be improved after the transitions. Exchange rate volatility increased a little immediately after the transitions and came back to a level similar to that in the pre-transition period. Transitions to greater exchange rate flexibility were generally associated with a strengthening of monetary and financial policy frameworks, such as more independent central bank, the adoption of inflation

55 Including credit controls, interest rate controls, entry barriers (such as licensing requirements and limits on the participation of foreign banks), regulations governing financial firms and the establishment of securities markets; dominance of state-owned firms in the financial sector; and restrictions on international financial transactions, including the lack of currency convertibility and the use of multiple exchange rates.
targeting, better financial sector supervision and further developed securities market than other countries (Table III.9).

Table III.9. Consequences of transitions toward greater exchange rate flexibility

<table>
<thead>
<tr>
<th></th>
<th>Transition from pegs to intermediate regimes</th>
<th>Transition from intermediate regimes to floats</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Voluntary</td>
<td>Crisis-driven</td>
</tr>
<tr>
<td>Macroeconomic instability 1/</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Central bank independence 2/</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Inflation targeting 3/</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Bank supervision 4/</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Securities market development 5/</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Financial liberalization 6/</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Note: “+” means:

1/, *increased* around and after transition
2/, *increased* in comparison to control group after transitions
3/, *more prevalent* in comparison to control group after transitions
4/, 5/, for crisis-driven transitions, *improved* after transitions
4/, for voluntary transitions, *better* than the control group before transitions and *better* than crisis-driven transitions
5/, for voluntary transitions, *better* than the control group before transitions
6/, for voluntary transitions, *higher* than the control group
6/, for crisis-driven transitions, *higher* than voluntary transitions

Source: Author’s summary based on results from IMF (2004b)

To conclude, although having helped anchor inflation expectations since 2004, the fixed exchange rate regime is not a strong nominal anchor to fight inflation pressure. The fixed exchange rate is not a long-run solution for price and financial stability, particularly in the event of free capital flows. Therefore, moving toward more flexible exchange rate together with establishing a credible nominal anchor to control inflation (inflation targeting is a desirable candidate) as well as giving more room for the central bank to conduct an independent monetary policy is encouraged. It is suggested that the exchange rate flexibility becomes more valuable as countries mature in terms of their access to international capital markets and as they develop sound financial systems. Indeed, many countries moved toward greater flexible exchange rates, while continuing strengthening their financial system and
gradually liberalizing their capital account. The economy can reap many advantages from flexible exchange rates. Countries’ experiences show that voluntary transitions to greater exchange rate flexibility did not cause increase in macroeconomic instability, contrarily, they were generally associated with a strengthening of monetary and financial policy frameworks, such as more independent central bank, the adoption of inflation targeting, better financial sector supervision and further developed securities market than other countries. With these advantages, I suggest that Vietnam should undergo a transitional process to more flexible exchange rate and inflation targeting.