

# ON CURRENT EXCHANGE RATE AND INFLATION

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## I. IDENTIFICATION OF THE PROBLEM

Considering economic achievements in 1996, we saw that many targets had been achieved: real growth rate (with inflation taken away), foreign investment, food output... but there was an unexpected achievement: the inflation rate reduced from 12.7% to 4.5%, while it's planned to be at one-digit level, that is, just below 10%. The problem posed here is: Is it a roaring success or a negative result of economic activity? In the past three years (1993-1995), the inflation rate of the VND reached 35.6%, while the dollar depreciated by 9.2% only. But there were only some minor changes in the exchange rate, and in fact, the Vietnam's central bank had adopted the fixed exchange rate system. What effects (both bad and good ones) did it produce? Is it related to the excessive reduction in the inflation rate? Another problem to ponder on is the reason why the growth rate of HCMC in 1996 was lower than in 1995 (14.9% compared with 15.3%). This article aims at contributing to recent discussion and tries to look into:

- effects caused by the exchange rate on inflation and growth rate in Vietnam,
- effects of excessive importation under deferred payment term on inflation and economic growth, and
- effects of modernization and economic growth on inflation.

Our approach is to use economic models of both macro- and micro-economics to obtain more persuasive explanation. In order to get a better view of achievements of economic processes, we will analyze effects of the following factors: (1) exchange rate and foreign trade policy, (2) domestic competition, (3) foreign investment, and (4) slow increase in wages.

## II. ANALYSES OF BASIC ECONOMIC MECHANISMS

### 1. Effects of the nearly fixed exchange rate and the foreign trade policy on aggregate demand

In principle, the aggregate demand is affected by money supply ( $M^S$ ), net export (NX), government expenditure (G), real exchange rate ( $e_R$ ) and foreign trade policy (see fig. 1).

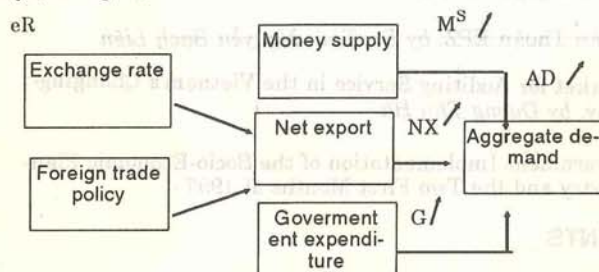


Fig. 1: Factors affecting aggregate demand

When money supply, or net exports, or government expenditure, increases, aggregate demand will increase. The aggregate demand line AD will shift to the right, from  $AD_0$  to  $AD_1$  (fig. 1).

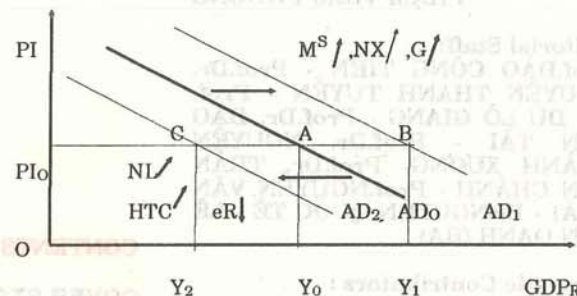


Fig. 2: Reasons of the shift of AD line

PI: price index

GDP<sub>R</sub>: real GDP

NL: illegal import

HTC: imports under deferred payment term

When the real exchange rate ( $e_R$ ) rises (export is encouraged), or the foreign trade policy restricts imports (by introducing quotas, struggling against smuggling) and encourages exports (by reducing export duties, supplying soft loans to exporters), net export NX will rise and make AD line shift from A to B (fig. 2), that is, these policies increase the demand for local goods, and  $Y_0$  shifts to  $Y_1$  (fig.2).

If the exchange rate  $e_R$  falls, quotas are granted generously, smuggling develops, and imports increase, the local production will reduce by degree, the demand for local goods decreases, the AD line will shift to the left, from A to C, from  $Y_0$  to  $Y_2$  (fig. 2). But in 1996, the official rate made nearly no change, the inflation rate in Vietnam was from three to five times higher than the American inflation rate, therefore the real exchange rate fell continuously (the VND rose against the dollar). The foreign trade policy along with increases in smuggling and imports under deferred payment term made the AD line shift to the left.

Thus, with aggregate supply unchanged, the shift of the AD curve to the left will cause the price index and the real GDP (national income) to decrease (fig. 3), that is, the policy to keep the official rate nearly fixed and the increases in smuggling and imports under deferred payment term caused deflation ( $PI_0$  to  $PI_1$ ) and decrease in GDP ( $Y_0$  to  $Y_1$ ).

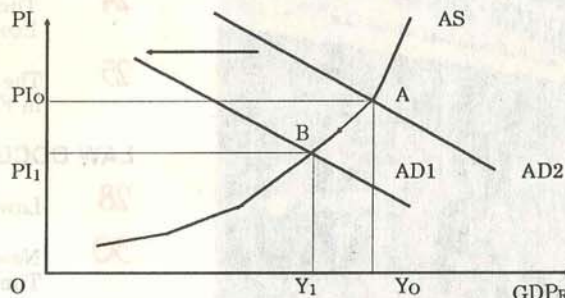


Fig. 3: Deflation and decrease in GDP caused by the



fixed exchange rate, smuggling and imports under deferred payment term

AS: aggregate supply

In 1995, imports under deferred payment term were worth about half a billion dollars. In 1996, these imports were on the increase month after month and amounted to one billion dollars. Together with the nearly fixed exchange rate and increase in smuggling, these imports have made the price index stay negative for four months in succession in 1996. It's HCMC where imports under deferred payment term reached the highest level with the result that its growth rate in 1996 was low compared with 1995.

The effect of reducing the inflation and growth rates of the nearly fixed exchange rate, smuggling and imports under deferred payment term could be explained by micro-economic instruments. For example, in steel market, when there is no imports, the supply curve is  $S_0$ , the market demand and supply is in equilibrium at point A, with price at  $P_0$  (fig. 4)

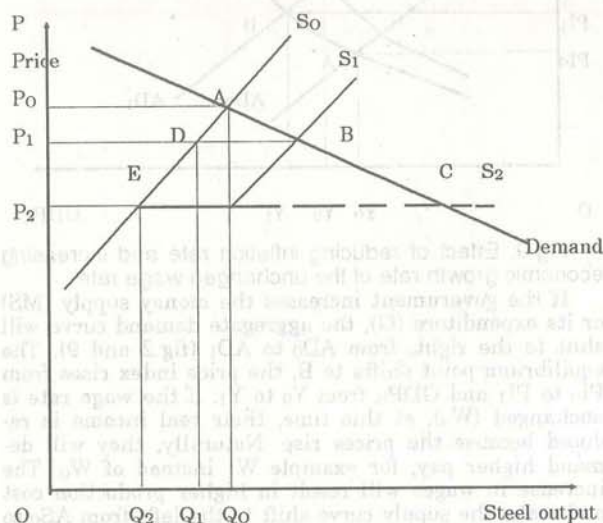


Fig 4: Price and domestic production reduce when imports increase

The local steel output is  $Q_0$ . When imports decrease, the supply curve will shift to  $S_1$ , supply will equate to demand at B, price reduces from  $P_0$  to  $P_1$ , local production will reduce from  $Q_0$  to  $Q_1$  (point D). When imports aren't limited, the supply shifts to  $S_2$ , market equilibrium is achieved at C, price falls to  $P_2$  and local production falls to  $Q_2$ , point E (fig. 4). This is the mechanism causing deflation and decrease in local production when imports increase, resulting in changes in the supply in a market with importation. Importation of goods under deferred payment term can force the price and local production (in a market without changes in imports) down by changing the demand force. If consumers can pay by instalments for such expensive goods, as motorbike, fridge or TV set, their spending on other products will fall for a long time, that is, the demand curve of these products will shift to the left, resulting in decreases in price and local production.

Thus, the nearly fixed exchange rate and increases in smuggling and imports under deferred payment can

force the inflation and economic growth rates down. This could be explained by macro - and micro economic mechanisms (fig.5)

#### Macroeconomic Mechanism

- Fixed exchange rate
- Illegal imports
- Imports under deferred payment term



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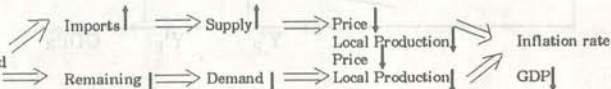


Fig.5: Explanation of decreases in inflation and growth rates caused by exchange rate and imports by macro - and microeconomic mechanisms

In the micro-economic model, demand is the need for a product (locally made or imported). Supply is the amount of goods for sale, including both locally made and imported ones. Production is measured by units of corresponding product.

In the macro-economic model, aggregate supply refers only to the supply of local goods or services, not including imported ones. Aggregate demand only reflects the demand for final products, not including imports (net exports). Local production is measured by currency unit, not in kind.

#### 2. Effects of competition on aggregate supply

In many analyses, the competition is rarely mentioned. Even in the micro - economic analyses, the relation between competition and aggregate supply usually shares the same fate. In order to survive and increase profit in a competitive environment, companies have to renovate themselves, rationalize production, apply new technology and reduce production cost. The reduction in production cost makes the supply curve of the company shift to the right, from  $S_0$  to  $S_1$  (fig.6)

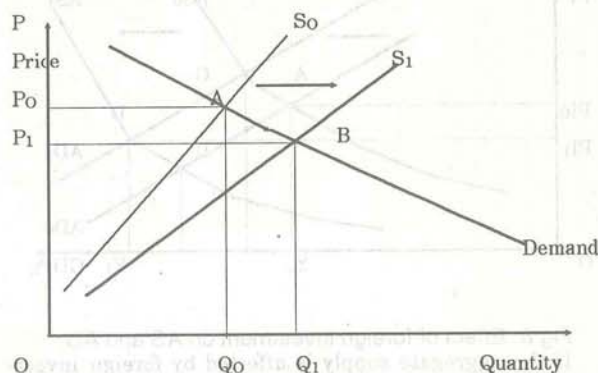


Fig 6: Effect of reducing price and increasing quantity caused by competition

This results in an decrease in price,  $P_0$  to  $P_1$ , and increase in supplied and consumed quantity,  $Q_0$  to  $Q_1$ , that is, in the micro-economic model, the competition helps to reduce inflation rate and increase real output if the economic efficiency is on the increase (average cost falls).

In the macro-economic model, when production cost decreases, and production capacity rises because of modernization, the AS curve will shift to the right,  $AS_0$  to  $AS_1$  (fig.7).



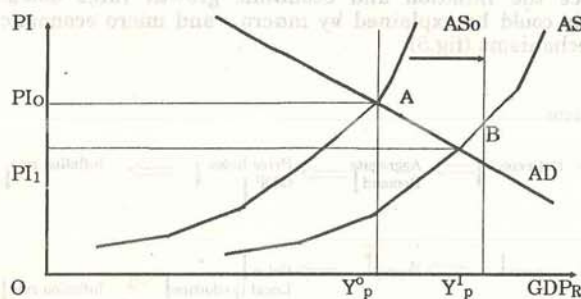


Fig. 7: Effect of competition

Thus, if aggregate demand doesn't change, the equilibrium point (or the intersection of the demand and supply curves) will shift from A to B. This results in a decrease in price index,  $PI_0$  to  $PI_1$ , and an increase in  $GDP_R$ , that is, the basic effect of the competition is to cause the inflation rate to decrease and  $GDP_R$  to increase. A rightward shift in the aggregate supply curve from  $AS_0$  to  $AS_1$  means that the quantity supplied increased from  $Y_0^p$  to  $Y_1^p$  (fig.7).

### 3. Effects of foreign investment on aggregate supply and aggregate demand

Foreign investment in Vietnam has increased incessantly in the past eight years. Investments in existing industries will help to modernize them, reduce production cost and increase production capacity. The results are: the aggregate supply curve shifts to the right, from  $AS_0$  to  $AS_1$ ; the inflation rate decreases while the growth rate rises as presented by fig. 7. If investments are put in developing new industries, the production capacity will rise and the supply curve keeps on shifting to the right. If foreign investment also aims at exportation, the demand curve will shift to the right, from  $AD_0$  to  $AD_1$  (fig.8).

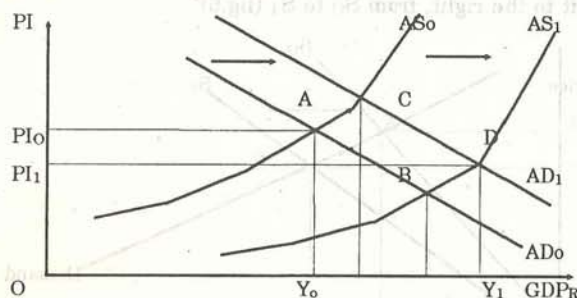


Fig.8: Effect of foreign investment on AS and AD

If the aggregate supply is affected by foreign investment only, the equilibrium point will shift from A to B (fig.8),  $GDP_R$  will rise and price index fall. Taking only its effect on the aggregate demand, the equilibrium point will shift to C, both  $GDP_R$  and price index will rise. Considering effects of foreign investment on both the aggregate supply and demand, the equilibrium will be achieved at D (fig.8),  $GDP_R$  will certainly rise, but the rise or fall of price index is uncertain. If foreign investment makes the shift of the supply curve farther to the right than the demand curve, it also makes GDP rise and price index fall (from  $PI_0$  to  $PI_1$  in fig.8). On the other hand, the demand curve shifts farther, both GDP and price index rise.

### 4. Effects of slow increase in wages

In three years from 1994 to 1996, the aggregate inflation rate reached some 34.7%, while the wage rate increased only by small amounts, that is why the wage payment in January 1997 was equivalent to 70% of that in 1993 when the wage rate reform took place. What did it affect the aggregate supply, inflation and economic growth? In other nations such as Germany, the US...the wage rate is adjusted regularly based on predictions of future interest rate when the labor contracts are signed by employees, their trade unions and employers. The wage rate must be raised when the inflation takes place in order to ensure the real purchasing power. In fig.9, we assume that the wage rate is  $W_0$ , the price index  $PI_0$ , the supply curve  $AS_0(W_0)$  and the equilibrium point A.

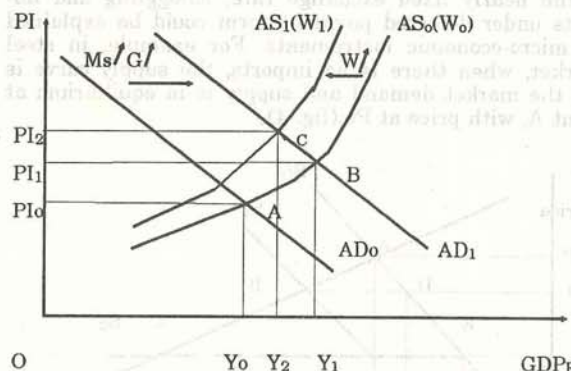


Fig.9: Effect of reducing inflation rate and increasing economic growth rate of the unchanged wage rate

If the government increases the money supply (MS) or its expenditure (G), the aggregate demand curve will shift to the right, from  $AD_0$  to  $AD_1$  (fig.2 and 9). The equilibrium point shifts to B, the price index rises from  $PI_0$  to  $PI_1$  and  $GDP_R$  from  $Y_0$  to  $Y_1$ . If the wage rate is unchanged ( $W_0$ ), at this time, their real income is reduced because the prices rise. Naturally, they will demand higher pay, for example  $W_1$  instead of  $W_0$ . The increase in wages will result in higher production cost and make the supply curve shift to the left, from  $AS_0$  to  $AS_1$  (fig.9) and the equilibrium point shift to C. The results are: the price index rises from  $PI_1$  to  $PI_2$  and GDP falls from  $Y_1$  to  $Y_2$ , that is in a period with inflation, if the wage rate rises, the inflation rate will increase and GDP decrease. Thus, success in controlling the inflation rate and increasing the growth rate in the past three years depends partly on sacrifices made by millions of laborers who accepted increasingly low payments.

### III. GENERAL ANALYSES AND SUGGESTIONS

We have analyzed effects of exchange rate, foreign trade policy, competition, foreign investment and wages on inflation and GDP. However, to estimate the economic growth of a country, we have to consider many other factors such as balance of trade, external debt, GNP and real wages. As analyzed above, the nearly fixed exchange rate in recent years has really encouraged importation and discouraged exportation with the result that the trade gap became greater and greater.



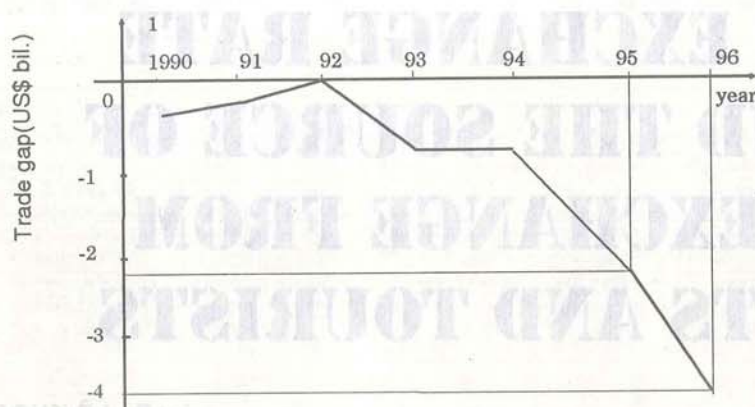


Fig. 10: Vietnam trade gap

In addition to the trade gap, there was an increase in external debt. Repayments for foreign debts and their interest have become a burden to the economy. After subtracting transfers to countries abroad of profit and income by foreign parties invested in Vietnam, the income received by Vietnamese people will be remarkably small in comparison with income generated in Vietnam.

$GNP = GDP - \text{Payments for foreign loans and investment} + \text{income from abroad}$ .

In recent years, Vietnam's growth rate varies from 8.1% (1993) to 9.5% (1996), but GNP certainly increased by a lower rate because of large payments for external debt and transfers of profit. The changes in GNP what the Vietnamese people receive- couldn't be found in the AS-AD model. Putting aside this defect in the AS-AD model, we could present the inflation and GDP growth in the period between 1993 and 1996 affected by four above-mentioned factors in Fig. 11.

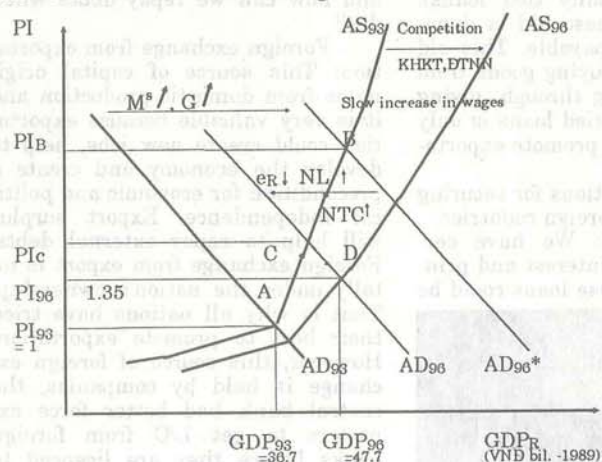


Fig. 11: Changes in the inflation and GDP growth from 1993 to 1996

KHKT: application of techno-scientific achievements  
DTNN: foreign investment

In 1993, we have the supply curve  $AS_{93}$ , the demand curve  $AD_{93}$  and the equilibrium point A. With 1993 as the base year, the price index is 1. In the next three years, taking only increases in the money supply  $MS$  (around 20% per year) and in the government expenditure  $G$  into account, the demand curve would shift to the right from  $AD_{93}$  to  $AD_{96}^*$  (fig. 11). With the aggregate supply in the period unchanged (because of weak competition, lack of foreign investment and application of

techno-scientific achievements), the equilibrium point shifts from A to B: the price index will rise strongly (high inflation rate) and GDP also rise. But if we take effects of the fall of exchange rate and the rise of illegal imports and payment-deferred imports into consideration, the demand curve will shift to the left from  $AD_{96}^*$  to  $AD_{96}$ , the equilibrium point will shift from B to C: the inflation and growth rates will fall. In the past three years, under the influence of competition, application of techno-scientific achievements, foreign investment and slow increase in wages, the supply curve shifted to the right from  $AS_{93}$  to  $AS_{96}$ . The results are: the equilibrium point came to D: the inflation rate fell, GDP rose (fig. 11), the price index  $PI_{96}$  was 1.35 (the inflation rate in 1996 was about 35% compared with 1993), and  $GDP_{96}$  equated to 1.3  $GDP_{93}$ .

Recently, many people have suggested abandoning the nearly fixed exchange rate system because it led to:

- Increase in trade gap and external debt, and decrease in GNP compared with GDP.

- Decrease in foreign exchange reserve when the bank sold millions of dollars to stabilize the exchange rate but the black foreign exchange market kept on developing.

- Low growth rate (GDP increased slowly)

Many others were of the opinion that the floating exchange rate would cause inflation and make the economy unstable.

If this is the only measure the central bank could take, the inflation rate will certainly rise. But we learned from experience that from 1988 to 1991, the exchange rate fell from VND3,000 to 13,255 to the dollar but the inflation rate reduced from 393% to 67.6%, that is, within three years, the VND was depreciated by 342% while the inflation rate decreased by 326%. The secret is the fact that the increase in the money supply was reduced from 445.4% in 1988 to 189% in 1989, 53% in 1990, 78.7% in 1991 and 33.7% in 1992 when the inflation rate reduced to 17.6%. Realities show that to make the exchange rate fall and reduce the amount of money supplied could help us not only curb but also reduce the inflation. Moreover, the influence of competition, foreign investment, application of techno-scientific achievements and slow increase in wage rate will shift the supply curve to the right (fig. 11) and make the inflation fall, GDP rise.

Another opinion argues that the depreciation of the VND according to the purchasing power parity theory would make the economy unstable. The VND was depreciated by 4.4% in 1989, 67% in 1990, 67% in 1991 and 18% in 1992, but from then on, the economy has become stabler, and the inflation rate lower. At present, if we have to change the exchange rate in order to regain the purchasing power in 1993, the exchange rate will be some VND13,200 to the dollar, equivalent to the depreciation of 24% per year (which is low compared with the period 1988 - 1991).

So we can conclude that: depreciating the VND step by step, reducing the increase in the money supply, encouraging competition and application of techno-scientific achievements, and encouraging foreign investment are main measures to achieve the following targets:

- High growth rate
- Decrease in external debt, increase in GNP
- One-digit inflation rate
- Increase in wage rate