

## General Discussion

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This note discusses some of the issues related to the role of non-tradable goods and assets in managing inflation targeting. These issues are not new and well known. They are brought out here to underscore the possible limitations of inflation targeting in a small open economy.

### Non-tradable Goods and Services

A price index  $P$  chosen for inflation targeting is defined as:

$$P = P_T \cdot P_N^{(1-\alpha)} \quad (1)$$

where  $P^T$  and  $P^N$  are price indices for tradables and non-tradables respectively. For simplicity, assume the PPP in the tradable sector,

$$P_T = e \cdot P_F \quad (2)$$

where  $e$  is the nominal exchange rate (local currency per US dollar) and  $P_F$  is a global price index of tradables, which is exogenous.

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$$P_N = W \quad (3)$$

where  $W$  is the nominal wage rate in the non-tradable sector and  $\alpha > 1$ . Then equation (1) can be rewritten as

$$\ln P = (\alpha \ln e + \ln P_F) + (1 - \alpha) \ln W \quad (4)$$

If downward rigidity of the nominal wage rate is assumed in equation (3), the higher interest rate will not be effective in restraining price increases in the non-tradable sector.

In an economy with free floating and an open capital account, however, the tightening will strengthen the currency if the interest rate parity condition prevails. The currency appreciation then lowers domestic prices of tradables for a given level of  $P_F$ , thereby allowing the monetary authorities to moderate the increase in  $P$ .

In controlling the rate of inflation, therefore the monetary authorities depend on a policy instrument that works mostly through the adjustment in the foreign exchange market, and the degree of adjustment will largely depend on the rigidity of wages in the non-tradable sector. In the process of adjustment, the current account may deteriorate, and the extent of the deterioration will depend on real appreciation (the increase in the ratio of  $P_N$  to  $P_T$ ).

On the other hand, if the nominal wage rate in the non-tradable sector is flexible, then it may return to the initial level or the initial rate of increase as the rise in the interest rate cuts back the demand for both tradables and non-tradeables. In this case, the degree of monetary tightening could be excessive in that the tightening lowers domestic prices of tradables through currency appreciation, which together with monetary tightening may cause a current account deterioration and output loss.

The preceding discussion raises several questions as to the efficiency of inflation targeting in emerging economies with open trade and capital accounts. One question

is whether it is desirable to rely mostly on monetary policy to bring about changes in the nominal exchange rate needed to meet the inflation target. This question becomes more important in open emerging economies where the volatility of the exchange rate is high and its causes such as the high volatility of capital flows are not well understood.

Another question is related to the consequences of inflation targeting on the misallocation of resources in the long run. In many emerging economies, it is known that the increase in productivity in the non-tradable sector is lower than in the tradable sector while wage movements are likely to be similar in the two sectors. The productivity differential will then be responsible for a higher rate of inflation in the non-tradable sector. Since a target rate of inflation is defined in terms of  $P$ , it is likely to be lower than the rate of increase in  $P^N$ . To the extent that price stability is brought about by currency appreciation, it is conceivable that inflation targeting will encourage a shift of resources to the non-tradable sector in the long run.

### **Asset Market Instability**

There is also the concern that inflation targeting may render itself susceptible to real asset inflation and speculation. In order to examine this possibility, suppose that there has been growing deflationary pressure as a result of sustained fall in  $P_F$ . The monetary authorities may then find some room for expansionary policy.

An expansionary monetary policy will initially raise prices of both financial and real assets. Interest rates will fall, and prices of equities and land as well as residential housing and commercial buildings will all move up. Given the low price elasticity of the supply of real estate in the short-run and the fact that real assets are poor substitutes for financial assets, the increase in the prices of real assets would be much steeper than those of financial assets.

The supply of financial assets such as bonds and equities denominated in foreign

currency adjusted for risks is infinitely elastic for given levels of their prices and the exchange rate. Higher prices of these financial assets induce domestic investors to move out of the country in search for cheaper foreign bonds and equities, resulting in capital outflows and currency depreciation.

In contrast, however, land and other types of real estate are non-tradable assets. Unlike in the case of financial assets, the excess demand for real assets generated by the expansionary monetary policy cannot be alleviated through capital outflows (by acquiring foreign real estate). The excess demand is then bottled up because it can be reduced to some extent by the increase in the supply of commercial and residential housing over time. This flow adjustment will take time while the stock adjustment in the financial markets can be instantaneous depending on the degree of the openness of the capital account. Prices of real assets remain high whereas those of financial assets have come down. How would the monetary authorities respond to these developments in asset markets?

Initially, the higher prices of both real and financial assets may stimulate domestic demand. If this is accompanied by a depreciation of the currency, then the expansionary effect of the increase in the asset prices on domestic demand would be reinforced and hence the prices of both tradables and non-tradables will rise. Having succeeded in reversing the deflationary trend, the monetary authorities may then return to a neutral policy stance.

However, this is not necessarily the end of the story. If an overshooting of the currency depreciation occurs, then after a time, the currency will start appreciating again and hence slowdown, or even reverse the initial increase in domestic prices of tradables. Furthermore, if the real asset price increase provokes speculation and generates an expectation that it will continue to rise, then the speculation may induce capital inflows rather than outflows as happened in East Asia during the 1997-98 financial crisis.

If capital inflows surge with the expectation of a further increase in the real asset price, then the currency may appreciate rather than depreciate. In this case it is

reasonable to argue that the rate of increase in the domestic prices of tradables would fall or remain unchanged. The monetary authorities may then infer from this price development that the initial monetary easing was not sufficient enough to reverse the deflationary trend. They may step up the monetary expansion, but a stronger dose of monetary easing will result in a further appreciation of the currency. At this point a bubble in the asset markets will be in the making and grow.

### A Lack of Instruments

In a free floating regime with open trade and capital accounts, the policy authorities are left with basically two policy instruments, monetary and fiscal policy. Monetary policy will largely be locked in stabilizing prices if inflation targeting is adopted. Since free floating and inflation targeting do not necessarily keep the trade balance at a sustainable level, there is a shortage of instruments if policy objectives include price stability, a high level of employment, and maintaining a sustainable trade account balance.

When there is no inflationary pressure, monetary policy can be directed to the pursuit of a higher rate of growth. In the opposite case where inflationary pressure is accompanied by a deterioration of the current account, fiscal tightening could complement a contractionary monetary policy. However, a terms of trade deterioration such as a hike in the oil price would pose a dilemma to the policy makers. It will build up inflationary pressure while causing a slump in the economy with a current account imbalance. In this case, what should be the stance of fiscal policy? The answer is not clear. The macroeconomic policy framework that is built around inflation targeting has worked well in many emerging economies, but if the period of global price stability will come to an end as widely predicted search for a more realistic macroeconomic policy framework for emerging economies should begin.