SOME ASPECTS OF STABILIZATION PROGRAMMES FOR INDIA: A MACRO-THEORETIC ANALYSIS

Synopsis

for

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by

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1. Introduction

India gave up the Nehru-Mahlanobis Strategy and adopted the New Economic Policy (NEP) in July 1991. The objective of the NEP is to establish a free market economy by removing all kinds of restrictions of the Mahalanobis era on production, pricing, investment, export, import, trade, hiring and firing of workers, work conditions etc. and transferring the ownership of all public sector enterprises set up during the Mahalanobis era and natural resources to private corporations. To minimize government's command over resources, the NEP has drastically reduced direct tax rates and imposed a cap on fiscal deficit, which stands for government borrowing. As a result, the government has to take recourse to indirect taxes to meet its essential expenditures fulfilling the fiscal deficit target so much so that at the present the major part of the government's tax revenue comes from indirect taxes. To meet the fiscal deficit target, it also has to reduce its subsidies or raise its profit by hiking up the prices of the essential intermediate inputs that it still produces. Examples of these inputs are railway services, coal, power, oil etc. Under the NEP, the RBI has made inflation control one of the most important objectives of monetary policy. It has set an inflation target and whenever inflation rate goes above this target, the RBI raises interest rates to bring inflation down to the target level. Under the Nehru-Mahalanobis Strategy the government administered prices of petroleum and petroleum products (henceforth referred to as oil) much below their international prices. The NEP deregulated oil prices so that they become equal to their international prices. The objective of this thesis is to focus on some of the short-run implications of the fiscal deficit target, inflation target, emergence of indirect taxes and profit of the public sector enterprises as the major instrument for financing public expenditure and deregulation of oil prices using macro-theoretic frameworks suitable for India. The thesis consists of three core chapters: Chapter 2, Chapter 3 and Chapter 4. Their contents may be briefly stated as follows. Government expenditure on imported goods has always been important in India. The present government has also devoted a substantial part of its expenditure to imported goods such as imported armaments and imported infrastructure items such as bullet train. The objective of Chapter 2 is to identify the best method of financing public expenditures on imports. It also examines the role of the fiscal deficit target in aggravating or mitigating the adverse effects of different modes of financing considered here. Chapter 3 focuses on inflation in India. It seeks to identify the costs that inflation inflicts on the people of India. It also inquires into how inflation and its costs are affected by the inflation target and the fiscal deficit target when the government uses its own consumption expenditure, public sector enterprises' profit and indirect taxes for meeting the fiscal deficit target. Chapter 4 examines the impact of deregulation of the price of oil. Under the Nehru-Mahalanobis era, price of oil was administered by the government much below its international price. Under the NEP, oil price has been deregulated so that it has become equal to its international price. Chapter 4 compares the macroeconomic effects of the policy of price deregulation and the policy of the administered price when the subsidy that the latter policy involves is financed by taxing the rich and also when it is financed by indirect taxes. The analysis of this chapter applies not only to oil but also to all other imported essential intermediate inputs. In what follows we present the contents of these three chapters in greater detail.

2. Chapter 2: Financing Public Expenditure on Imports under the New Economic Policy

We summarize the study carried out in Chapter 2 below.

2.1 Introduction

Government of India has been following the New Economic Policy (NEP) since 1991. The NEP has drastically reduced direct tax rates. As a result, indirect taxes have emerged as the major means of financing government expenditure. It has also imposed a fiscal deficit target, which constitutes a cap on government's borrowing. We will make an assessment of these features of the fiscal policy under the NEP taking an example. The example that we consider is the following. Government of India devotes a substantial part of its spending to imported goods such as armaments, capital goods etc. We will try to identify the best way of financing government expenditure on imports and, thereby, assess the above-mentioned features of fiscal policy under the NEP. For this purpose, we will examine how an increase in public expenditure on imported goods is likely to affect India's GDP and well-being of the people under different modes of financing in the presence of the fiscal deficit target as well as in the case where the fiscal deficit target is absent. The modes of financing that we have considered are external borrowing, internal borrowing, taxation of capitalists' income and indirect taxation. Through these exercises, we have sought to identify the best mode of financing government's expenditure on imports and to examine whether the effects of the policies mentioned above become better or worse in the presence of the fiscal deficit target. Since India's export potential for reasons we will explain shortly, is quite limited, government expenditure on imports creates BOP difficulties and, thereby, produce destabilizing effects. Hence, it is important to know how the government should finance its expenditure on imports so that these destabilizing effects are minimized or neutralized. This endeavour is worthwhile because in the literature there is no study that has examined this issue.

The reason why India's export potential is limited is the following: India is heavily dependent on Western Europe and the USA for knowledge and technology. To establish this claim, we take the case of teaching and learning economics in India. All the text books and journals teachers refer to are foreign, all the computers and software that the teachers, students and researchers use for empirical analysis are foreign. This is true not only of economics but also of all other subjects. Thus, to set up a college or a university in India, all the knowledge inputs and high-tech inputs have to be imported. This is true not only of educational institutes but also of all modern production facilities. Thus, for example, to set up a bank in India, all the computers, software and high-tech machines have to be imported. Therefore, both investment and production are highly import-intensive in India. On the other hand, as it does not have technology of its own and has to make do with imported technology, which is never state of the art, its export potential is extremely limited.

2.2 The Macro-Theoretic Framework

We develop a short-period model for a small open economy based on the lines suggested by Keynes (1936) and Kalecki (1954). Thus, in this model, aggregate output of goods and services is determined by aggregate final demand for goods and services and the price is set by applying a fixed mark-up to the average variable cost of production. Participants in production are divided into two classes: workers and capitalists. The latter earn profit, while the former supply labour. Workers are much poorer than the capitalists. Hence, workers' marginal propensity to consume out of their income is much higher than that of the capitalists. For simplicity, the amount of labour employed in production is assumed to be fixed. Thus, labour is treated as a fixed input here. This does not affect our results qualitatively.(Even though this is a simplifying assumption that does not affect the results of the paper qualitatively, it can be justified in Indian context. In India, about half of the GDP is produced in the organized sector. However, it employs less than six percent of the work force and the number of workers employed in this sector has been more or less stagnant in the post-reform period. This was the case even though its output grew at the rate of around six percent per year on the average in the post-reform period. In the unorganized sector, the major part of production is carried out in family firms and the family members earn profit, which is, however, a negligible part of the total profit. The profit earned by the small family firms is negligible relative to the total profit because they sell their produce to the capitalists. The small producers are numerous, while the capitalists are just a few in number and the bargaining strength of the small producers is virtually nil vis-à-vis the capitalists. The small producers have to sell their produce to the capitalists at the lowest possible price, which is set by the capitalists. The capitalists in turn sell the produce of the small producers to the consumers at the highest possible price. Hence, almost all the profit that production and sale of the produce of the small producers generate is reaped by the capitalists.)We have incorporated in this model the relevant salient features of the Indian economy. India's production is highly import intensive. (We have substantiated this claim with data in Chapter 2). It has to import petroleum and petroleum products, fertilizer, electronic goods and components on a large scale to sustain its production. Hence, in our model, imported intermediate inputs are used in production. Imported intermediate inputs are the only variable input in production in this model.Again, on the basis of the recent quarterly date of exchange rates for several years, we have deduced that India has a flexible exchange rate regime. Moreover, since India does not have any independent technological or knowledge base, we have assumed that investment in India is highly import intensive for reasons we have already explained. Therefore, if the exchange rate goes up or the price of foreign non-oil goods rises, cost of investment in India will go up substantially. This will, given investors' expectations, reduce investment on a large scale. Thus, Investment in our model is a decreasingfunction not only of the interest rate but also of the exchange rate, given the world prices of non-oil foreign goods in foreign currency. Again, since India does not have any independent base of knowledge and technology, close substitutes of almost all the goods it produces are available everywhere else. Accordingly, export demand for its products and demand for non-oil imports are likely to be highly price elastic. We have incorporated this feature also. Using this framework, we have sought to accomaplish the objective of this paper. The two key endogenous variables of the model are the GDP and the exchange rate.

2.3 The Findings of Our Study

The results we have found are the following. If the government finances the increase in its expenditure on imported products taking recourse to external borrowing, then, in the presence of the fiscal deficit target, there will take place a cumulative contraction in GDP. It will also add to the government's future external debt service charges aggravating India's future BOP woes. This mode of financing is obviously unacceptable. Note that here contraction in GDP hurts the poor people engaged in production in the unorganized sector. It will reduce their income, which they get mainly in the form of profit.

We also find that the fiscal deficit target, which is an integral part of the NEP, is responsible for the severe contraction in GDP that recourse to external borrowing leads to. This happens for two reasons. First, the increase in government expenditure on imported goods is matched by an equal amount of fall in public expenditure on domestic goods in the presence of the fiscal deficit target bringing about an excess supply at the initial equilibrium levels of GDP and the exchange rate. Second, as producers reduce output to remove the excess supply, excess supply falls by a smaller quantity per unit fall in output, since a decline in output not only reduces private expenditure but also public expenditure. Public expenditure falls with a decline in GDP because it becomes an increasing function of GDP in the presence of the fiscal deficit target, which is specified as a fraction of GDP. In the absence of the fiscal deficit target, however, GDP remains unaffected. This is because the increase in government's expenditure on imported goods does not reduce its expenditure on domestic goods.

If the increase in government's expenditure on imported goods is financed by internal borrowing, GDP will almost surely contract substantially in India in the presence of the fiscal deficit target. This happens for the following reason. First, the increase in government's expenditure on imported goods by a given amount produces two effects. It reduces government expenditure on domestic goods and creates BOP deficit by the same given amount. Hence, the exchange rate rises and raises net export net of government's imports by the same given amount. Hence, aggregate planned demand for domestic goods at the initial equilibrium level of GDP remains unaffected. However, the rise in the exchange rate lowers investment demand directly. It also makes imported intermediate inputs costlier in terms of domestic currency. Hence, the cost of production and, therefore, the domestic price level rise redistributing income from the workers to the capitalists. This lowers aggregate consumption demand since marginal propensity to consume of the workers is higher than that of the capitalists. Thus, at the initial equilibrium level of GDP, there emerges an excess supply of domestic goods bringing about a large and cumulative contraction in GDP. However, in the absence of the fiscal deficit target, GDP may change either way. Even if it contracts, its contraction will be substantially smaller than what happens under the fiscal deficit target. This happens on account of the following reasons. First, the given increase in government's expenditure on imported goods creates BOP deficit of the same given amount as that in the earlier case but leaves government's expenditure on domestic goods unchanged. The BOP deficit induced increase in the exchange rate will raise net export net of the government's spending on imports by

the same given amount. Hence, at the initial equilibrium level of GDP, aggregate planned demand for domestic goods will rise by the same given amount. However, the increase in the exchange rate will lower, for reasons already explained, aggregate consumption and investment demand. Clearly, therefore, in this case, GDP may expand also. In this case, the value of the multiplier is also less as public expenditure does not change with GDP. For this reason also, even if GDP contracts, its contraction will be substantially less in the present case.

Let us now consider the case where government's increased expenditure on imported goods is financed by collecting additional taxes from the capitalists. In this case, in the presence of the fiscal deficit target, GDP may even expand. In case it contracts, its contraction will be much less than what happens under the earlier two cases in the presence of the fiscal deficit target. Let us explain. When the government raises its expenditure on imported goods by a given amount and finances it by taxing capitalists' income, government's consumption expenditure goes up by the given amount, but capitalists' disposable income also falls by the given amount. This reduces capitalists' consumption. The fall in capitalists' consumption, however, is likely to be quite small because of their very low marginal propensity to consume. Thus, at the initial equilibrium GDP, there emerges an excess demand for domestic goods, since the net export through the adjustment in the exchange rate will remain equal to the net output of capital assumed to be autonomous in our model. The policy creates BOP deficit at the initial levels of GDP and the exchange rate, but it will be smaller than the given amount of increase in the government's expenditure on imported goods because of the fall in capitalists' consumption demand for imported goods. Thus, the BOP deficit created in this case at the initial equilibrium GDP and exchange rate will be less than that in the case of internal borrowing. Hence, the increase in the exchange rate and the consequent decline in aggregate consumption and investment demand will also be less. Thus, in this case, GDP may expand. If it contracts, its contraction is highly likely to be much less than that in the earlier two cases of internal and external borrowings in the presence of the fiscal deficit target.

In the absence of the fiscal deficit target, the value of the multiplier will be less in this case since government's marginal propensity to spend out of GDP becomes zero. This will make the contraction or expansion of GDP smaller.

Finally, we considered the case where the government raises its expenditure on imported goods by a given amount and finances it by raising indirect tax collection by the same amount. This will raise on the one hand government's consumption expenditure by the given amount. On the other hand, the given amount of additional indirect tax collection will come from both the workers and the capitalists. Hence, their consumption will fall. The fall in the aggregate planned consumption demand due to the additional tax collection of the given amount will be much larger in the present case than that in the previous case of taxation of capitalists' income because marginal propensity to consume of the workers is substantially larger than the capitalists'. Hence, the amount of excess demand for domestic goods that will be created at the initial equilibrium level of GDP in the present case will be much smaller than that in the previous case (note that the net export will remain equal to the net outflow of capital through the adjustment in the exchange rate). The policy

considered here will obviously also create BOP deficit at the initial equilibrium GDP and the exchange rate and it will be substantially larger than what is created in the previous case for two reasons. First, only a part of the given amount of additional tax comes from the capitalists (who are the only ones who consume imported consumption goods by assumption) and second, the hike in the indirect tax rate will raise the domestic price level and this will very substantially lower net export. The reason is the following. Since India does not have any technology and knowledge of its own, close substitutes of all the goods and services that India produces are produced everywhere else. Hence, even a slight increase in the prices of Indian goods will very substantially lower net export. Therefore, the rise in the exchange rate and the consequent decline in consumption and investment demand will be much larger in the present case than that in the previous case. Hence, the GDP is very much likely to contract in the present case and its contraction will be much larger than that in the previous case. The policy of raising indirect tax collection is also highly unjust as a part of the tax comes from the poor workers who have little ability to sacrifice.

In the absence of the fiscal deficit target, the value of the multiplier will be smaller since government's expenditure becomes independent of GDP. Hence, the amount of contraction in GDP will be less.

Summing up the above results, we find that in the presence of the fiscal deficit target, taxing capitalists' income is the best method of financing an increase in government's expenditure on imports as it may lead to an expansion in GDP. Even if that does not happen, the contraction in GDP will be the least. It is also eminently just, as it puts the burden of financing the additional expenditure on those who have the ability to sacrifice.

We also find that the fiscal deficit target produces strong recessionary tendencies when the additional public expenditure on imports is financed by internal or external borrowing. It also acts as an automatic destabilizer by making the multiplier values larger.

Our finding constitutes a strong critique of the NEP, which has drastically reduced direct tax rates on the rich, raised the importance of indirect taxes in financing government expenditure and made the fiscal deficit target an integral part of its recommended fiscal policy.

Fiscal deficit of course has longer term implications. It will add to government's debt service charges in future. This is considered bad by neoclassical economics. This line of though should be subjected to close scrutiny. We plan to take it up in our future research programme.

3. Chapter 3: Inflation and Stabilization Policies in India

We present a summary of the content of Chapter 3 below.

3.1 Introduction

This chapter focuses on inflation. It seeks to identify the major costs that inflation inflicts on the people in India and show how fiscal and monetary policies enshrined in the NEP aggravate these

costs manifold. We pointed out in Chapter 2 that fiscal deficit target is an integral part of the fiscal policy of the NEP. It imposes a ceiling on the fiscal deficit (government's borrowing) as a proportion of GDP. Here we will point to an aspect that the existing literature on fiscal deficit target has largely overlooked. We will show here that the fiscal deficit target magnifies manifold the adverse effects of inflation.

The kind of monetary policy being pursued these days all across the capitalist world including India is also a matter of grave concern for the poor toiling masses who are net lenders to the capitalists. This monetary policy consists in reducing drastically interest rates as soon as a recession strikes an economy and raising it in times of inflation to weaken inflationary forces. All the major capitalist countries have been in the grip of recession for a long period of time. Japan, US and most of the countries in Europe have been in recession since 1992, 2001 and 2008, respectively (we have supported this claim with data in Chapter 3 in Table 3.1). Interest rates in all these countries were reduced to the minimum possible level immediately following the onset of recession much to the detriment of the interest of the workers who are net lenders to the capitalists. However, this policy failed to make any impact on recession, which continued unabated (in support of this claim, we have given data in Tables 3.2 and 3.3 in Chapter 3). It should be noted here that, even though risk-free interest rates dropped to the minimum possible levels in these countries, loans were available at these low interest rates only to the giant corporations or giant capitalists, whom Bernake, Gertler and Gilchrist (1996) calls quality borrowers. In fact, with the onset of the 'Great Recession' in the US and the cut in the Fed rate to zero in 2007, interest rates for the giant corporation dropped to the minimum possible level but interest rates rose steeply for the small and medium enterprises eroding substantially their competitive strength (see Mishkin (2011) in this context) vis-a-vis the giant corporations. We seek to show in this chapter that if interest rates are raised in times of inflation to tackle it, it will significantly strengthen inflationary forces and magnify manifold the adverse effects of inflation causing grievous harm to the toiling masses.

Inflation is a matter of grave concern to the people and the government. It inflicts enormous costs on the society. The objective of this chapter is to develop a suitable macro model for India to study how inflation harms the economy. It does so to examine how the costs of inflation are affected in the presence of the fiscal deficit target and inflation target. Even though Patnaik (2006) and Kaldor (1976) warn of the costs of inflation getting aggravated by fiscal deficit target and inflation target, respectively, they have not used any model to rigorously establish their claims. We consider it worthwhile to go into the issues in greater detail and capture the destabilizing effects of fiscal deficit target and inflation target rigorously within the framework of a macro-theoretic model suitable for India. We consider our endeavour necessary in view of the Government of India's fiscal and monetary policy stance. In pursuance of the FRBM Act 2003, the Government of India (GoI) adheres to a strict fiscal deficit target. Following the recommendation of the Urjit Patel Committee Report (RBI 2014), the GoI seeks to restrict fiscal deficit to around 3 percent of GDP. The same committee recommended that inflation should be the nominal anchor for monetary policy framework. Following this recommendation, the RBI has set 4 percent as the inflation rate

target (RBI 2016). If inflation rate exceeds 4 percent, the RBI raises its policy rates to bring down the inflation rate to its target level. If the inflation rate is less than 4 percent, the RBI lowers its policy rates to give a boost to growth, if it is below the desired or potential level. It is important to know whether these policies, contrary to the policy makers' beliefs, act as automatic destabilizers and aggravate the costs of inflation as suggested by the writers mentioned above.

The chapter shows that the fiscal deficit target substantially reinforces adverse effects of inflation, if the government seeks to keep fiscal deficit under control by adjusting government consumption or administered prices of essential inputs such as services of railways, electricity, coal etc. or by raising indirect tax rates. We have not considered direct taxes here since direct tax rates have been reduced drastically since the adoption of the NEP and the government does not hike direct tax rates to meet its fiscal deficit target. It also shows that the inflation target also reinforces inflationary forces and magnifies manifold the costs that an exogenous increase in the inflation rate inflicts on a society.

3.2 The Theoretical Framework

In this chapter, we have used the model of a small open economy developed in chapter 2. However, we have modified it slightly so that we can capture the major costs of inflation and the effects of fiscal deficit target and inflation target on them with ease. The model, as was the case with the earlier one, consists of a real sector and a financial sector. We consider the real sector first. As before, in the real sector, aggregate output is demand determined and the price is set on the basis of the average variable cost of production. However, we have treated labour as a variable input here. We have also replaced the rigid mark-up pricing rule of Chapter 2 with a more general one, where the domestic price is just an increasing function of the average variable cost of production. The major determinants of the average variable cost of production that we have considered here are the exchange rate, government administered prices of essential intermediate inputs produced in the public sector such as railway fares, coal prices, power tariffs etc., the indirect tax rate and the interest rate, which is a policy variable of the RBI. A number of essential intermediate inputs such as the ones mentioned above are produced in the public sector and their prices are administered by the government. These essential intermediate inputs enter into the production of all goods and services directly or indirectly. Clearly, the administered prices of these intermediate inputs are an important determinant of the average variable cost of production and, thereby, that of the domestic price level. As we have pointed out in Chapter 2, under the NEP, direct tax rates have been slashed drastically and indirect tax rates are being raised continuously to raise revenue. Obviously, indirect tax rates are also important determinants of the average variable cost of production and, thereby, that of the domestic price level. Finally, following Kalecki (1954), we have assumed that besides the average variable cost of production, domestic price level also depends upon the degree of monopoly power of the firms. We have taken this as exogenously given.

Let us now consider the financial sector. The RBI in India takes measures so that the interest rates remain at target levels. One of the major objectives of RBI's monetary policy is to keep inflation

below a target level, which is 4 percent at the present. If the inflation rates go above the target level, the RBI takes steps to raise the interest rates. Now, the firms take loans not only to finance their investment but also to pay for intermediate inputs and factor services. A part of the interest charges on loans, therefore, is included in the average variable cost of production. An increase in the interest rate will, therefore, raise the average variable cost of production and, thereby, the domestic price level. As before, the two key endogenous variables in this model are the domestic GDP and the exchange rate.

Note that the theoretical framework used here considers an economy in a given period of time. In the given period of time, the price of the preceding period is given. Hence an increase in the domestic price in the given period implies an increase in the rate of inflation.

3.3 Major Results

We have used the framework described above to examine first how the welfare of the people is affected by an increase in the domestic price level following an exogenous increase in the degree of monopoly power of the firms. We have found that it will bring about a very large contraction in domestic GDP and employment. The increase in the domestic price level brings about a redistribution of income from the workers to the capitalists. Thus, workers will be very badly affected.

The reason why this happens may be briefly stated as follows. An exogenous increase in the monopoly power of the firms will raise the domestic price level at the initial equilibrium levels of GDP and the exchange rate. This will produce a strong contractionary effect for two reasons. First, it will redistribute income from the workers to the capitalists reducing aggregate consumption demand. Second, as close substitutes of Indian products are available everywhere else for reasons we have already explained, the rise in the domesticprice level will lead to a very large fall in net export. The exchange rate will, therefore rise and restore net export to zero. However, the rise in the exchange rate will lower investment demand. It will also raise the domestic price level further reducing consumption demand. A large excess supply will, therefore emerge at the initial equilibrium level of GDP. Hence, GDP and employment will fall substantially.

We have, then, examined how the fiscal deficit target affects the costs of an exogenous increase in the inflation rate when the government uses the following instruments to meet its fiscal deficit target: its own consumption expenditure, administered prices of the essential intermediate inputs that it produces and, finally, the indirect tax rates. Let us first focus on government's consumption expenditure. Following an exogenous increase in the degree of monopoly power of the firms, domestic price level will go up. This will, for reasons we have already explained, lead to a large contraction in GDP. This will, with government expenditure remaining unchanged, lower government's tax revenue and widen fiscal deficit beyond the target. In this case, the government will lower its consumption expenditure to meet its fiscal deficit target. This will, again, create excess supply of goods and services and GDP will fall again. Thus, there will be a cumulative

contraction of GDP due to the fiscal deficit target when the government adjusts its consumption expenditure to meet the fiscal deficit target. Thus, in this case, the fiscal deficit target magnifies manifold the adverse impact of an exogenous increase in the rate of inflation.

Let us now focus on the second case. In this case, the government produces some essential intermediate inputs and uses the profit from the production and sale of the essential intermediate inputs to meet its fiscal deficit target. When fiscal deficit rises above the target level, it raises the prices of these essential inputs to raise profit and vice versa. Following an exogenous increase in the monopoly power of the firms, domestic price level rises. This, as we have already explained, will lead to a large contraction in GDP and employment. With government's expenditure remaining unchanged, this will lead to a widening of the fiscal deficit above the target level. The government will, therefore, raise the prices of the essential intermediate inputs. It will raise the domestic price level further bringing about another round of large contraction of GDP and employment and this process of contraction will continue. Thus, in this case also, the fiscal deficit target magnifies manifold the costs that an exogenous increase in the rate of inflation inflicts on the workers.

Let us now consider the case where the government adjusts indirect tax rates to meet its fiscal deficit target. In this case also, following an exogenous increase in the degree of monopoly power of firms, the domestic price level rises and, for the reasons explained earlier, GDP and employment level contract by a large amount. With government's expenditure remaining unchanged, this will lead to an increase in fiscal deficit above the target level. This will induce the government to raise indirect tax rates to reduce the fiscal deficit. This will lead to a further increase in the domestic prices. It will lead to another round of contraction in the levels of GDP and employment. This process of contraction will obviously proceed further. Thus, in this case also, the fiscal deficit target exacerbates the adverse effects of an exogenous increase in the rate of inflation.

Let us now bring in the inflation rate target. We have found that it exacerbates the harmful effects of an exogenous increase in the inflation rate. The reason is quite simple. Note that here the relevant set of domestic prices is the one that makes the domestic inflation rate equal to or greater than the target rate of inflation. Now, following an exogenous increase in the degree of monopoly power of the firms, domestic price level goes up. In the presence of the inflation target, the RBI will raise the interest rate to bring the price down. However, the rise in the interest rate will raise the variable cost of production inducing the producers to raise price further. Thus, there will be a cumulative increase in the price level due to the inflation target at the initial equilibrium levels of GDP and the exchange rate. Hence, the contraction in GDP and the employment levels will be much larger. The price increase and the contraction will be more severe in the cases where the government uses the prices of essential intermediate inputs and indirect tax rates to keep the fiscal deficit at the target level. In these cases, following the initial large contraction in GDP, the fiscal deficit will rise above the target level. The government will hike the administered prices of essential inputs or indirect tax rates to lower the fiscal deficit. However, these measures will raise the domestic price level. This will induce a cumulative increase in the interest rate and the domestic

price level. Thus, in every round the contraction in GDP and the employment level will be much larger.

Our study in this chapter shows that both fiscal deficit target and inflation target exacerbate substantially the adverse effects of inflation, given the ways the government and the central bank seek to achieve these targets. Thereby, it behoves us to consider the following issues. Fiscal deficit leads to an increase in government's debt service charges in future. This is considered bad by neoclassical economics. This view of fiscal deficit has to be subjected to close scrutiny. Moreover, the instruments that the government uses in India to keep the fiscal deficit under control, as we have shown here, magnifies manifold the adverse effects of an exogenous increase in the inflation rate. This chapter also shows that hiking interest rates to control inflation may reinforce inflationary forces and make the adverse effects of inflation much more pronounced. Given all these findings and observations, it is important to carefully study the following. First, whether a cap on the fiscal deficit is warranted or not? Second, what is the best way of keeping the fiscal deficit under control, if such control is found to be necessary? Third, how the policy makers should keep inflation under control? We will take up these issues in our future research programme.

4. Chapter 4: The Appropriate Oil Price Policy for India – A Macro-Theoretic Study

We summarize the content of Chapter 4 below:

4.1 Introduction

India is a large importer of petroleum and petroleum products, which we will refer to as oil. Oil is an essential intermediate input of production in India. An increase in the international price of oil is a major cause of inflation in India in the post-reform period. In the pre-reform period in 1975, an administered price setting mechanism with regard to oil was put in place to safeguard the people in India from the onerous effects of oil price hikes in the world market. Under this mechanism, the government administered the domestic price of oil for the people of India much below the world price of oil and kept it fixed there so that the Indians had access to the basic necessities of life at low and stable prices. With the beginning of Economic Reforms in India since July 1991, the administered price mechanism was being gradually dismantled with a view to making domestic price of oil equal to its international price. Government's rationale of linking the domestic price of oil to its international price is the following. If the domestic price of oil rises when its international price goes up, consumers get the signal that oil is scarcer and they get inducedto economize on the use of oil. Similarly, the domestic producers of oil get the signal that oil is scarcer and they find it profitable and also get the resources to invest in the oil sector to increase its production. However, this argument for doing away with the administered price of oil is completely flawed for the following reason. Rationing a scarce good through a rise in its price is the cruelest means of rationing since it forces the poorer people out of the market of the scarce good, while the rich are hardly affected. For example, in India, if the price of oil rises, small farmers who own more than 80 percent of agricultural land will be forced to reduce their purchase of oil.

It will lower food output. Food price will accordingly rise. This will force the poor to reduce their food consumption, while the rich will hardly be affected. Thus, the brunt of rationing through price increase is borne by the poor who are very badly and cruelly affected when they are forced to lower the consumption of essential scarce goods. In contrast, if the domestic price of oil is administered below the international price of oil at a low level so that the poor have access to all the basic necessities of life on an adequate scale, and the subsidy on the consumption of oil is financed by taxing the rich, then the brunt of rationing will be borne by rich, who make all the non-essential uses of oil. Obviously, this rationing scheme is fully just. The producers are not harmed in any manner as they receive the international price of oil. The objective of this chapter is to develop this argument in a macro-theoretic framework suitable for India.The study undertaken in this chapter is worthwhile, since no other theoretical study in the relevant literature has sought to accomplish the objective noted above.

4.2 The Macro-Theoretic Framework

Here, we use the short-period model for a small open economy developed in Chapter 2. However, we reiterate below the major features of this framework to brush up our memory. Thus, in this model, aggregate output of goods and services is determined by aggregate final demand for goods and services and the price is set by applying a fixed mark-up to the average variable cost of production. Participants in production are divided into two classes: workers and capitalists. The latter earn profit, while the former supply labour. Workers are much poorer than the capitalists. Hence, workers' marginal propensity to consume out of their income is much higher than that of the capitalist. Besides labour, imported oil is used as an input in production. We have incorporated in this model the relevant salient features of the Indian economy. Thus, on the basis of recent quarterly date of exchange for several years, we have deduced that India has a flexible exchange rate regime. Again, since India does not have any independent technological or knowledge base, we have assumed that investment in India is highly import intensive. Therefore, if the exchange rate goes up or the price of foreign non-oil goods rises, cost of investment in India will go up substantially. This will, given investors' expectations, reduce investment on a large scale. Thus, Investment in our model is a decreasingfunction not only of interest rate but also of exchange rate, given the world prices of non-oil foreign goods in foreign currency. Again, since India does not have any independent base of knowledge and technology, close substitutes of almost all the goods it produces are available everywhere else. Accordingly, export demand for its products and demand for non-oil imports are likely to be highly price elastic. We have incorporated this feature also. Using this framework, we have sought to examine how a rise in the international price of oil is likely to affect aggregate output, employment and workers' economic well-being under free market conditions. We have also examined the impact of an increase in the international price of oil when the domestic price of oil is administered by the government below its international price and the subsidy is financed by taxing capitalists' income.

In the post-reform period, the government has cut direct tax rates drastically. It keeps direct tax rates unchanged but hikes indirect tax rates quite often to increase its revenue. As a result, at the

present, the major part of government's tax revenue comes from indirect taxes (see Ghosh and Ghosh (2019) in this context). We have, therefore, also considered the case where the government finances the subsidy in the administered price regime by hiking indirect tax rates.

4.3 The Results Derived

The results that our study in **C**hapter 4 has yielded are the following. We have found that following an increase in the international price of oil under free market conditions, aggregate output and employment are highly likely to contract on a large scale and the real wage rate also falls substantially in India heaping untold miseries on the poor. The reason may be briefly stated as follows. Following an increase in the international price of oil, which is equal to the domestic price of oil under free market condition, a large BOP deficit will be created at the initial equilibrium values of the NDP and the exchange rate for two reasons. First, since demand for imported oil is price inelastic, the oil import bill rises. Second, the rise in the domestic price of oil raises the domestic price level. Since close substitutes of Indian products are available everywhere, for reasons we have already explained, there will take place a very large fall in the net export of non-oil goods. The exchange rate will, therefore, rise by a large amount and restore net export to zero again. However, the rise in the exchange rate has little impact on terms of trade or price of foreign goods in terms of domestic goods. This is because a rise in the exchange rate raises the price of oil in terms of domestic goods. Since Indian production is highly oil intensive, it will raise the domestic price level substantially. Therefore, an increase in the exchange rate raises net export mainly by lowing investment, which reduces import of capital goods. The very large increase in the domestic price level due to both the increase in the international price of oil and the exchange rate redistributes income from the workers to the capitalists lowering aggregate consumption demand on a large scale since marginal propensity to consume out of income of the workers is much larger than that of the capitalists. Because of the large fall in aggregate consumption and investment demand, there is highly likely to emerge a large excess supply at the initial equilibrium value of NDP inducing producers to lower NDP substantially.

Let us now consider the case where the government administers the domestic price of oil below the international price of oil and finances the subsidy by taxing capitalists' income. In this case, we have found that if international price of oil rises and the government finances the increase in the subsidy by raising the tax on capitalists' income by such an amount that capitalists' consumption demand for imported goods falls by the amount by which the value of oil import has gone up, aggregate output and employment in all likelihood will stay unaffected. The price level and the real wage rate will remain unchanged also. This result may be explained as follows. Capitalists earn the major part of NDP as profit. They are also just a few in numbers. Accordingly, the amount of consumption expenditure they make, though substantial, constitutes a small fraction of their income. They consume the finest consumption items produced all across the world. Since India is a backward country, almost all the consumption goods that the capitalists consume have to be imported. Hence, their marginal propensity to spend on imported goods out of their consumption expenditure may reasonably be taken to be unity in India. If the amount of additional

tax collected by the government equals the increase in the subsidy due to the rise in the international price of oil, capitalists' consumption demand for imported goods will fall by a small fraction of it. To make it fall by the amount of the increase in the oil import bill, the amount of additional tax collected from the capitalists has to be much larger. This increase in the tax burden on the capitalists will lower capitalists'demand only for imported non-essential consumption goods. Aggregate demand for domestic goods at the initial equilibrium levels of the NDP and the exchange rate will remain unaffected and BOP will remain in equilibrium. Hence, the NDP, the exchange rate, the domestic price level and the real wage rate will remain unchanged as well.

Let us now consider the case where the increase in the subsidy on the use of oil due to the increase in the international price of oil is financed by hiking indirect tax rates on all goods. The burden of the indirect tax will be borne by both the workers and the capitalists and, hence, their consumption demand will fall. Since India does not have any independent technological or knowledge base and produces with imported technology, close substitutes of almost all the goods India produces are available everywhere else. Hence, the hike in the indirect tax rate and the increase in the domestic price level that it brings about leads to a very large fall in the net export of non-oil goods. The value of oil import has gone up too. Thus, at the initial equilibrium levels of NDP and the exchange rate, there emerges an excess supply of domestic goods and services and a very large BOP deficit. The exchange rate, therefore, begins to rise to raise net export back to zero. An increase in the exchange rate raises net export in two ways. First, the increase in the exchange rate makes foreign goods dearer relative to domestic goods inducing everyone to substitute domestic goods for foreign goods and, thereby, raising net export. Second, it reduces investment in India and, thereby, lowers import of capital goods. The first effect does not work much in the present case. This is because of two reasons. First, with the rise in the exchange rate, oil import bill increases in domestic currency. Second, with the rise in the exchange rate and the consequent increase in the oil import bill, the indirect tax rate goes up to finance the additional subsidy. This raises the domestic price level substantially. Thus, an increase in the exchange rate cannot make foreign goods much dearer relative to domestic goods. Because of the two reasons mentioned above, an increase in the exchange rate in the present case in India raises net export principally by lowering investment. Therefore, with the increase in the exchange rate at the initial equilibrium level of NDP, the excess supply of domestic goods will increase. Hence, there will take place a large contraction in NDP and employment. The real wage rate will go down too because of the increase in the domestic price level. If indirect tax rate is raised beyond the level that is necessary to finance the subsidy, the contraction in the levels of NDP and employment and the fall in the real wage rate will be larger.

The conclusion of this chapter is that the government should fix the domestic price of oil much below the international price of oil so that the poor workers in India have adequate access to the basic necessities of life. It should finance the subsidy on the use of oil by taxing the capitalists on an appropriate scale. This will protect the workers' jobs and incomes in the face of increases in the international price of oil, tax away a part of the surplus income of the capitalists and reduce their non-essential uses of oil.

The results that apply to oil also apply to all other essential imported intermediate inputs.

5. Conclusion

The thesis shows that the best mode of financing public expenditure on imported goods is by taxing the capitalists' income in the presence of a fiscal deficit target. It may benefit the workers. Even if it harms them, the harm done to the workers will be the least compared to what happens under the other modes of financing, namely, external borrowing, internal borrowing and indirect taxation. It also shows that the best policy regarding the pricing of oil or other essential imported intermediate inputs is to administer their prices below their international prices so that the poor have adequate access to the basic necessities of life in adequate quantities and finance the subsidy by taxing the capitalists. It also shows that the fiscal deficit target and inflation target produce strong destabilizing effects following an increase in the inflation rate for exogenous reasons. Hence, the rationale of the fiscal deficit target should be subjected to close scrutiny. Efforts should be made to identify the best methods of controlling inflation. We would take up these issues in our future research programme.

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