CAPITAL IMPORTING OIL EXPORTERS: STRUCTURAL AND MACROECONOMIC ISSUES

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CPD Discussion Paper No. 1984-16
June 1984

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Abstract

This study seeks to analyze the major policy issues which oil exporting capital importers have had to face since the 1970's. The discovery of oil deposits in significant amounts and the rise in oil prices transformed these economies structurally. The share of tradeables production, especially agriculture, in current GDP declined. In many cases, non oil exports virtually disappeared. These structural changes were accompanied by other undesirable symptoms. These economies have often experienced real wages that are inflexible downward and persisting high levels of unemployment or very slow growing employment. Finally, they have accumulated large volumes of debt and have become vulnerable to liquidity crises since their debt servicing capacity is closely tied to exports of oil and hence to the maintenance of stable oil prices.

In this paper, the policies designed to tackle the above problems are reviewed, both analytically and in the empirical context of five major countries in the group. The issue of what aspects of an oil discovery or oil price rise contribute to a loss of social welfare is explored. Care is taken to separate short run from long run considerations. Next, the nature of optimal intervention is examined.

While the case for social intervention can be established by some criteria, the findings cast doubt on many of the usual arguments advanced in its favor. Skepticism is also directed at the long run projections of country authorities and their plans for intervention. This arises from the uncertain
nature of the future, the type of policy regime existant in many of the countries, and the experience of country authorities with active intervention. Finally, the recent monetary and fiscal policies of the oil exporters are reviewed and some suggestions are made for improving the effectiveness of policy in these areas.
Capital Importing Oil Exporters:

Structural and Macroeconomic Issues

Gautam Datta

I am grateful to Liaquat Ahamed, Sebastian Edwards, Sweder Van Wijnbergen and members of the CPD Informal Seminar for comments on an earlier draft.
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Capital Importing Oil Exporters: Structural and Macroeconomic Issues

I. Introduction

This paper seeks to analyze the major policy issues which oil exporting capital importers have had to face since the 1970s. These countries are largely in the middle income category. The three biggest ones, Indonesia, Nigeria and Egypt are at the lower end of this spectrum. In 1981 their GNP per capita was only $530, $870, and $650 respectively. Given the large domestic economies of these countries and their low incomes they are likely to remain in the ranks of capital importers in the foreseeable future. However the impact of a rise in oil prices on their economies and the macroeconomic consequences have clearly been different from those on capital importing, oil deficit countries, the usual less developed economy.

It may be naively believed that only oil importers would have problems with a rise in oil prices and oil imports and there would be symmetric gains for the oil exporters. However this has not been the case. The consequences of the oil windfall have not been happy for the oil exporting developing countries referred to hereafter as OEDC's. Many developments were not anticipated and governments are faced with major decisions in areas of both short and long run policy. Whether the presence of oil has really shortened the period over which these countries could transit to the ranks of the developed ones appears questionable to them.

In this paper the short, medium and long run structural and macroeconomic developments following an oil price rise are discussed. There has been considerable controversy regarding the implications of these changes and the best policy response to them. While no unambiguous answer can be given to many questions because of their normative content, it is helpful to
see them in perspective. Once this is done one may be in a better position to evaluate the policy proposals and recommendations which the countries are currently weighing.

The bulk of the oil exporting capital importers emerged as sizeable producers and exporters of oil after the oil price rise of 1973. Their terms of trade and foreign exchange earnings underwent a dramatic improvement in that year as well as in 1979 following the second major increase in oil prices (Tables 1 1/ and 2). Given their large domestic economies, the oil boom in these countries was not followed by capital exports to the rest of the world but was typically absorbed through high rates of domestic consumption (especially public consumption) and investment (Table 3). In many cases enhanced creditworthiness due to the discovery of oil reserves enabled these countries to build up sizeable stocks of nonconcessional debt (Table 4).

1/ The terms of trade upswing did not occur in Egypt or Mexico. Oil was not an export item in 1973 in either country and not a major item of export in Mexico even in 1979.
### Table 1

**Oil Exports as a Proportion of Total Exports - Selected OEDC's**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>0.4</td>
<td>56.7</td>
<td>55.2</td>
</tr>
<tr>
<td>Egypt</td>
<td>--</td>
<td>--</td>
<td>66.1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>38.7</td>
<td>74.4</td>
<td>74.5</td>
</tr>
<tr>
<td>Mexico</td>
<td>--</td>
<td>--</td>
<td>76.5</td>
</tr>
<tr>
<td>Nigeria</td>
<td>57.5</td>
<td>97.8</td>
<td>95.3</td>
</tr>
</tbody>
</table>

--- negligible

1/ Gross exports of crude and refined petroleum products.


### Table 2

**Terms of Trade Index for Selected OEDC's**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>63</td>
<td>100.0</td>
<td>107.0</td>
<td>145.0</td>
<td>136.0</td>
</tr>
<tr>
<td>Egypt</td>
<td>92</td>
<td>100.0</td>
<td>83.0</td>
<td>82.0</td>
<td>86.0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>44</td>
<td>100.0</td>
<td>95.0</td>
<td>136.0</td>
<td>154.0</td>
</tr>
<tr>
<td>Mexico</td>
<td>103.0</td>
<td>100.0</td>
<td>102.0</td>
<td>174.0</td>
<td>190.0</td>
</tr>
<tr>
<td>Nigeria</td>
<td>34</td>
<td>100.0</td>
<td>102.0</td>
<td>174.0</td>
<td>190.0</td>
</tr>
</tbody>
</table>

1/ The Terms of Trade shows the level of export prices as a percentage of import prices.

### Table 3

**Growth Rates of Public Consumption, Private Consumption and Investment in Selected OEDC's**

*(average annual growth rates)*

<table>
<thead>
<tr>
<th></th>
<th>Public Consumption</th>
<th>Private Consumption</th>
<th>Gross Domestic Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>N.A.</td>
<td>8.4</td>
<td>13.7</td>
</tr>
<tr>
<td>Egypt</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>Indonesia</td>
<td>-6.5</td>
<td>8.3</td>
<td>12.3</td>
</tr>
<tr>
<td>Mexico</td>
<td>11.0</td>
<td>7.5</td>
<td>8.4</td>
</tr>
<tr>
<td>Nigeria</td>
<td>6.5</td>
<td>17.5</td>
<td>11.0</td>
</tr>
</tbody>
</table>

N.A. - Not Available

1/ Includes Public Consumption


### Table 4

**Debt Volumes in Selected OEDC's**

*(U.S. $ Millions)*

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>336.0</td>
<td>2,628.4</td>
<td>3,912.2</td>
</tr>
<tr>
<td>Egypt</td>
<td>2,223.6</td>
<td>11,431.8</td>
<td>14,935.2</td>
</tr>
<tr>
<td>Indonesia</td>
<td>5,248.8</td>
<td>13,234.4</td>
<td>18,421.2</td>
</tr>
<tr>
<td>Mexico</td>
<td>5,585.0</td>
<td>29,241.8</td>
<td>50,412.2</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1,157.4</td>
<td>3,220.5</td>
<td>6,084.7</td>
</tr>
</tbody>
</table>

1/ Debt is defined to include outstanding Public or Publicly guaranteed, disbursed debt only.

Among the not so happy developments have been structural shifts in these economies with the agriculture and manufacturing industry shrinking relative to the other sectors, especially, construction (see Table 5). In some extreme cases agriculture has declined in terms of absolute output levels compared to the pre oil period. \(^1\) Exports of non oil items have declined to the point of disappearance in many cases or at least have been stagnant (Table 6). Consequently the balance of payments of these countries have become extremely vulnerable to small fluctuations in oil prices. With the softening of the oil market in the eighties these developments take on added significance for the international economy and, especially for the world financial markets, since some of the capital exporting oil importers have emerged as major international debtors.

**Table 5**

**The Structure of Production in Selected OEDCs**

(Sectoral Share of GDP)

<table>
<thead>
<tr>
<th></th>
<th>Agriculture</th>
<th>Manufacturing</th>
<th>Other Industry 1/</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>23.9</td>
<td>11.6</td>
<td>19.5</td>
<td>11.0</td>
</tr>
<tr>
<td>Egypt</td>
<td>29.4</td>
<td>20.8</td>
<td>22.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>47.2</td>
<td>24.5</td>
<td>9.3</td>
<td>11.7</td>
</tr>
<tr>
<td>Mexico</td>
<td>12.2</td>
<td>8.1</td>
<td>23.7</td>
<td>22.3</td>
</tr>
<tr>
<td>Nigeria</td>
<td>38.1</td>
<td>23.3</td>
<td>4.3</td>
<td>6.1</td>
</tr>
</tbody>
</table>

N.A. -- Not Available

\(^1\) Includes mining, construction, electricity, gas and water.


\(^1\) However these developments were not universal. In several oil exporters manufacturing output grew strongly for at least part of the period. Conversely in at least one economy, Egypt, construction grew very slowly. Moreover as Table 5 indicates from the five major OEDCs surveyed in this paper the share of the services sector did not change significantly over the seventies.
Table 6

Petroleum Exports as a Proportion of Total Exports
(Percentages)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>0.4</td>
<td>56.7</td>
<td>55.2</td>
</tr>
<tr>
<td>Egypt</td>
<td>--</td>
<td>--</td>
<td>66.1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>38.7</td>
<td>74.4</td>
<td>74.5</td>
</tr>
<tr>
<td>Mexico</td>
<td>--</td>
<td>--</td>
<td>76.5</td>
</tr>
<tr>
<td>Nigeria</td>
<td>57.5</td>
<td>92.8</td>
<td>95.3</td>
</tr>
<tr>
<td>-- negligible</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: International Financial Statistics, IMF.

This scenario has called into question the wisdom of the expansion of aggregate expenditure at the present pace in the OECD's. Normally an overexpansion of aggregate demand leads to a deterioration in the current balance of payments situation of a country and there are some self correcting mechanisms that come into play. In the case of the OECD's, however, the balance of payments consideration is not paramount. What is relevant is that as aggregate demand expands, the exchange rate appreciates. Since this appreciation is associated with some undesirable structural changes, possible policy responses may include a restraint on the growth of domestic demand, either by a slower depletion of oil reserves or stepped up imports or through the accumulation of external assets but neutralization of the corresponding increase in money supply.

Many symptoms noticed in the economies of the oil exporters have been studied in the, by now, substantial "Dutch Disease" literature. The term originated in the mid seventies in the U.K. when it was in transition from being an oil importing country to becoming an oil exporter. The reference is to the Schlochteren natural gas discoveries in the sixties in the Netherlands which led to the "disease" of nominal wage increases ahead of Germany, hence an appreciation of the real exchange rate and a decline in the competitiveness
of Dutch manufacturing industry. The term "Dutch Disease" requires careful analysis because it is not at all obvious how or why the augmentation of a nation's natural resource endowment should be a disease or a source of welfare loss. Furthermore the term has been loosely used to refer to both long-run structural changes in an economy as well as short-run, reversible changes. The "cures" suggested have, thus, varied from state intervention geared to alter private sector investment behavior to monetary and fiscal policy with essentially short term objectives. This paper attempts to separate the various conceptual issues associated with "Dutch Disease", focussing on items likely to be relevant to the functioning of a developing economy. The plans and policies of a number of major oil exporting developing countries -- Egypt, Nigeria, Indonesia, Ecuador, and Mexico are next examined to see what has been their response to the discovery of oil, the rise in oil prices and the possibility of depletion of oil resources in the forseeable future.

II. The "Dutch Disease" Problem

We have already touched on the puzzle of how an increase in a nation's natural resource endowment is identified with a "disease". Analytically the discovery of oil or a rise in oil prices is analogous to a case of asymmetric growth. If goods are divided into tradeables and non-tradeables, then an oil discovery or price rise implies a large shift in the consumption possibilities set in the direction of increased availability of tradeables. However non-tradeables are in inelastic supply and by assumption demand has to adjust to domestic availability. Consequently the shift of the consumption possibilities frontier is absent or marginal in the direction of non-traded goods, at least in the short-run.

To the extent that any outward shift of the consumption possibility frontier represents a gain in social welfare for a nation, the term "Dutch
Disease" is a misnomer. In terms of conventional welfare economics, the change between the pre oil and post oil position represents a gain rather than a loss of social welfare.

The identification of the welfare loss from oil discoveries is somewhat more complex, with various contributors to the field stressing different elements.

The most common concern seems to be the decline in the relative, and sometimes absolute, output of the domestic tradeables sector. The causes of this decline lie in both the inelastic output of the non-tradeables sector as well as the pattern of demand. The latter is partly determined by the accrual of oil revenues to the state in the first round in the form of royalties or taxes. The pattern of government expenditure is biased towards infrastructure and other non-tradeables sectors. As a consequence the oil boom is accompanied by (or in the case of an anticipated boom preceded by) an appreciation of the real exchange rate defined as the relative price of non-tradeables to tradeables and a relative contraction of the domestic, non-oil tradeable sector.

A simple model, depicting the above result is presented in Figure 1. In this model there is one non-tradeable good and a single tradeable good other than oil. 1/ The traded good, termed "manufactures" can be the numeraire. By assumption, there is full employment of resources. It is assumed, without too much violence to reality, that the absorption of resources into the oil sector is negligible.

1/ The price ratio between oil and the other tradeable good is given internationally.
In Figure 1, XY represents a Salter type production possibility curve between tradeables and non-tradeables. Consumption is originally at point A, where this curve is tangent to the highest attainable community indifference curve. As a consequence of an oil discovery X'Y becomes the boundary of the new consumption possibilities set. X'Y is obtained from XY by a vertical displacement, since by assumption the oil sector is not resource using, and the newly accruing oil revenue is equivalent to a constant transfer of tradeables. It is easy to see from Figure 1 that if the income elasticity of demand for non-tradeables is greater than zero, than the equilibrium consumption point, A', would be to the right of A, involving an appreciated exchange rate. The coordinates of A", vertically below A would give the production of non-tradeables and the non-oil tradeable. The relative share of manufacturers has declined compared to the pre-oil situation. This effect has been termed the spending effect or indirect deindustrialization effect by Corden (1982).

However there are other channels through which sectoral output shares get affected during an oil boom. If we relax the assumption of oil being a non resource-using product, then it has to be recognized that the oil sector may pull resources out of other tradeables as well as the non-tradeables sector. Thus the non-oil tradeables sector has two contractionary influences working on it, one causing it to lose resources to the oil sector and the other to the non-tradeable sector. The first effect or direct deindustrialization effect has also been called the resource movement effect in the "Dutch Disease" literature.

The above analysis is implicitly a short-run one, since, in the long-run with completely non-specific factors and factor mobility, factor prices will be equalized in each sector, provided there are constant returns
to scale and all three goods (oil, manufactures and non-tradeables) are produced. According to the standard results of the Heckscher-Ohlin-Samuelson model of international trade, fixing factor prices fixes commodity prices independent of the income elasticity of demand for non-tradeables. Thus the real exchange rate in the long run depends on the technology or relative factor intensities of the tradeable and non-tradeable sectors. If manufacturing is the relatively capital intensive sector then, in a model where we abstract from the presence of the energy sector, the change in prices is in the expected direction. When manufacturing is the labour intensive sector, the change in output is unambiguous. However counter intuitive results are possible. In the case where the oil sector is also incorporated in the analysis, a reduction in tradeable output is assured only when the capital labour ratio in manufacturing is intermediate between that in the other two sectors.

Finally the model becomes even more complicated analytically if energy is introduced as an intermediate good. In this case a rise in energy prices has both an expansionary and a contractionary effect. If manufacturing is an energy intensive sector then the deindustrialization presumption is strengthened.

Thus, the decline in the relative share of the tradeable sector following an oil boom as well as the appreciation of the real exchange rate is partly a short-run phenomenon, although the presence of some elements even in the long-run give what, Corden and Neary (1982) call a "weak presumption in favour of deindustrialization." In practice what may be observed is a relatively sharp appreciation of the exchange rate following an oil discovery determined largely by the high income elasticity of demand for non-tradeables, moderated over time as factors released by the contracting tradeable sector
are absorbed by the non-tradeable sector whose output increases and, in the long run by increased investment in non-tradeables production.

There are other effects of an oil boom, besides that of a contracting tradeable sector which are of concern to policy makers, but given that the focus seems to be largely on this development, we can concern ourselves with two questions. One is why is this felt to be a source of loss of social welfare. The second is, if a case can be made for the inoptimality of the market solution, then what form should government intervention take.

Sectoral shifts in output, per se, should not be a cause for concern, unless there are some externalities associated with them. The concern seems to, intuitively, stem from the notion that all "developed" countries have substantial manufacturing sectors and have effected the transition to development largely through the rapid growth of manufacturing output and exports. Van Wijnbergen (1983) has pointed out that such intuition is not without basis. Technological progress is faster in the traded sectors than in non-traded goods. If technological progress takes place through accumulated experience rather than exogenously and if a large component of economic growth is attributable to this factor, then a temporary decline in the traded goods sector can permanently lower income per head. In this case the externality may lie in the firm not being able to appropriate the benefits of technical progress, which accrue to the manufacturing sector as a whole. This consideration will be always present, but it is strengthened in the case of an oil boom country and a case for increased subsidization of the traded goods sector can be made on this score.

Besides the technological progress argument, a case for intervention in the process of sectoral investment can also be made on the grounds of uncertainty, if capital stock is not shiftable between sectors. If capital
were malleable and labour could be instantly transferred from one sector to another, then uncertainty would not impose any costs since all allocation decisions could be revised instantly and costlessly. However, if capital was not shiftable, then the market solution might involve an excessive investment in non-tradeables if the private sector could not foresee the oil depletion phase or the phase when the supply of non-tradeables becomes more elastic and taking its cue from the instantaneous exchange rate invested too little in the tradeable sector.

This argument appears to underlie much of the thinking behind proposed LDC policies. There are good reasons for believing that the state, which controls oil depletion policy, foreign reserve accumulation policy and also through membership in OPEC in some of the countries is involved in setting oil prices has better knowledge of the future exchange rate than the private sector at any instant. However this is a simple information sharing problem and can be solved by the government taking the private sector into confidence and probably involving it in the management of policy instruments which affect the future exchange rates.

The crux of the problem may lie in something else. Most estimates of oil reserves as well as probable price changes are available to the private sector. Published government documents also generally indicate the policy stance of the states. The private sectors' optimal investment path, however, may diverge from the state's because of a difference in the discount rate. The private sector is sometimes perceived to be myopic relative to the government. If that is the case then even with non-shiftable capital stock it will invest heavily in the services or non-tradeables sectors, since the capital loss from such investment in the future when the relative price of tradeables starts to rise again will weigh relatively little in its calculations.
The divergence between the private and social rate of discount has been used in the literature to usually comment on the inoptimality of the aggregate savings rate. In the current context, this line of reasoning can be extended to sectoral investment decisions. However this interpretation of "Dutch Disease" depends on the acceptance of the initial argument that the private sector has a higher rate of time discount than the optimal one for society. There is a vast literature on this issue, e.g. Marglin, (1976), Sen (1961), Arrow (1970), but ultimately a strong normative assumption has to be made regarding the proper rate of social time preference. Findlay (1973) has dealt with the sectoral allocation of investment in a model which involves elements of the above two cases, though not in the context of an oil exporting economy.

Finally, country studies reveal other explanations of why a decline in the output of the tradeable sector is regarded as a cause of loss of social welfare. The decline of the food producing sector causes anxiety in countries (e.g. Nigeria) which place a high premium on food security, though such an objective may have no counterpart for the individual. In this case a genuine externality is hard to identify since sustained availability of food can be assured without domestic production. 1/ Another, connected problem is the large scale migration to cities as agriculture declines. The costs of this migration may be largely borne by the state rather than the migrants themselves in the form of high costs of infrastructure. As a consequence an inoptimally large amount of services may be produced. This, again, is a problem that exists independent of the oil boom, but the cost of the

1/ However there are some who argue that the nature of the international grain market makes it difficult to ensure sufficient supplies in times of dire need such as harvest failures. This would point towards a more efficient stocking policy rather than inefficient domestic production.
subsidization of urban activities increases many fold when urban conglomerations become much larger. The solution in this case, is, obviously to reduce the subsidization of urban services.

We have identified several sources of externality which justify government intervention in the form of some kind of subsidy or protection of the traded goods sector in an oil exporting country as well as some often used justifications which are difficult to defend on most plausible views of the world. Unfortunately there is very little evidence on the magnitude of the genuine externalities. What little evidence there is throws grave doubt on any yet identifiable socially inoptimal behavior on the part of the private sector in most cases. This topic is discussed in detail later in a country specific context but some general points are made here.

In many of the oil exporting countries, oil and gas reserves per head are very large. In such a situation it may be premature to decide that private sector investment in manufacturing is currently at an inoptimally low level, if such inoptimality is felt to flow from imperfect information or a high rate of discount.

Moreover part of the reluctance of the private sector to invest in manufacturing may stem from political uncertainty or uncertainty regarding government policy towards the private sector and may be largely a reflection of reluctance to invest in general rather than in specific sectors. The increased investment in non-tradeables observed in oil exporting countries is partly due to a composition effect as the share of the government sector expands and this sector is traditionally a producer of non-tradeable public goods. Furthermore a very large component of private investment consists of residential housing. This type of investment has very special characteristics and is, for owner occupied housing, probably less affected by uncertainty than
investment in manufacturing. Once these components of investment are accounted for, the bias against the production of tradeables not stemming from political uncertainty in general and thus amenable to policy intervention may be relatively small.

Finally it is relevant to note the role of policies unrelated to the exchange rate issue in inhibiting investment in the tradeable sectors. Many developing countries follow highly distortionary policies regarding agricultural pricing or even pricing of manufactured products falling in the category of "necessities." The official relative price of these products is often well below that prevalent internationally. In the case of the service sector, too, some restrictions are present, e.g. urban rent control, but the nature of this sector makes the pricing of its products much less amenable to control by the authorities. Thus, in a period of rapidly expanding demand, one would expect a higher rate of growth of the construction and services sector, regardless of the true underlying elasticities of demand and supply in the economy.

III. Labor Market Distortion and Employment Issues

Besides the decline (or slow growth) of the tradeables sector, a feature of the oil exporters that has worried their governments is the slow growth of employment. This point is sometimes expressed in a misleading way, since the comparison drawn is frequently between the rate of growth of output and that of employment. However given that the oil sector is a small user of labour and that much of the increase in the output of this sector has been a volume rather than a quantity increase, it is not realistic to expect employment growth to equal the rate of output increase in the short run. Moreover some of the unemployment perceived in the OEDC's in recent times is formerly disguised unemployment brought into the open through the decline of agriculture and urban migration.
However authors such as Seers (1964) and McKinnon (1976) have stressed that real wages in the oil boom economies tend to be artificially high, contributing to persistent or even growing unemployment.

In this context, we first look at the direction of change of factor prices in the Corden-Neary "Dutch Disease" framework. However this is an equilibrium framework, where markets clear. The suggestion in much of the empirical literature is that the process of reaching an equilibrium gets interrupted, often due to government intervention.

Since the price of tradeables declines in the post-oil boom situation and the (presumed) labour intensive service or non-tradeables sector expands, the probable outcome is that wages in terms of tradeables rises in the OEDC's. The outcome in terms of a weighted consumption basket is uncertain, since the spending effect leads to a rise in non-tradeable prices.

However the achievement of full employment equilibrium may be interrupted in the following fashion. As oil prices rise, the profit margin of the oil sector increases. This prompts labour unions to demand real wage increases in that sector on the grounds that they should share in the windfall. Since the oil sector is a relatively small user of labour, the policy of paying a real wage that is above that prevalent in other sectors is usually acceptable to the managers. This is felt to be politically expedient at a very small cost to profitability. However the presence of this distortion results in a higher than equilibrium real wage being established in the rest of the economy. The exact mechanism through which this happens is not spelled out in most discussions of the issue but it appears to be some

\[1/\]  Hard evidence on whether non tradeable sectors are usually labour intensive is difficult to find. Aggregate data on central government spending in the OEDCs do not suggest that the share of wages in salaries in the total has increased significantly in recent years.
kind of a "demonstration effect" that is especially relevant in smaller economies such as the Caribbean.

Van Wijnbergen (1982) has recently developed a more formal model where the dynamics of the labour market in an oil economy is explored. He introduces a wage adjustment equation where the nominal wage is indexed to the consumer price index. As the exchange rate appreciates, real wages rise in terms of traded goods but decline in terms of non-traded goods. If labour demand in each sector depends on wages in terms of its own good (following the marginal product rule), then workers will be released by the traded goods sector and absorbed by the non-traded sector. Whether unemployment will emerge or not depends on two factors. The first is the share of traded and non-traded goods in the consumer price index basket, since this will influence the extent to which nominal wages will adjust via the indexation rule. The second is the elasticity of labour demand in each sector relative to the product wage rate. These elasticities in turn depend on the substitution elasticity in the production function for each good and the share of labour in each sector.

Some interesting results emerge from this specification which explain a number of stylized facts regarding oil exporters. If the share of traded goods in the consumer price index is high, then with appreciation the nominal wage will fall substantially. This will hasten labour absorption in the non-traded sector. If, on the other hand, there is a large, protected consumer goods sector, such that non-traded items have a large weight in the price index, then the decline in the product wage in the non-traded sector will not be enough to absorb the released labour from the traded sector. The Gulf countries where overheating occurred in the labour markets following the
oil boom, fall in the first category. They virtually import all their consumer requirements. The OECDs are much more likely to have large protected sectors and hence effectively non traded goods represented heavily in their price index. It is in these countries that unemployment has proved to be a problem. Moreover countries with relatively capital intensive non traded sectors will have difficulty in absorbing labour released by the traded sectors. This again is characteristic of some OECDs, especially the Latin American countries which have built up manufacturing industries with incentives that promote the use of capital intensive techniques.

There are several common policy responses to the high wage phenomenon. The Government may try to take advantage of money illusion on the part of workers and reduce real wages through a devaluation. This is an attempt to eliminate the distortion and may succeed in certain cases, e.g. in Indonesia. Alternatively the state absorbs workers through "make work" job in the public sector. This policy can be viewed as pure transfer mechanism if the government has sufficient revenues (usually from oil royalties) to pay wages comparable to the oil sector. However, this is the relevant model only in the case of oil exporting capital exporters such as Kuwait. In other cases, such as Egypt, the Government pays relatively low wages but since discipline is lax, many government employees work at other jobs and the wage payment amounts to a supplemental benefit.

The optimal policy, if the distortion cannot be removed, is to give a general subsidy for labour use to all employers as suggested by Brecher (1974). If the factor market distortion takes the form, not of a high real wage in the overall economy, but a difference in real wages and productivity in a sector (e.g. oil), then the optimal policy is to use a tax-subsidy scheme on factor use in that sector (Johnson (1965)).
In this context two points can be stressed. One is that if the impact of the distortion is very major then it may not be realistic to raise taxes for a tax subsidy scheme in a non-distortionary fashion. The second is that since the ability of the oil sector to pay wages higher than the marginal product of labour in the economy is due to the presence of monopoly rents, it may not be possible to alter its behaviour very easily. Thus the policy choices suggested here should only be relevant if attempts at making real wages flexible in a downward direction prove unworkable.

In the Wijnbergen (1982) model, devaluation as a policy measure to deal with unemployment following the oil boom can be analyzed explicitly, since the marginal wage is indexed and a devaluation will cause a discrete jump in this wage, the magnitude depending on the weight of tradeables in the price index. If this share is very high then wages will respond strongly and devaluation is ruled out as an appropriate policy measure. In principle this specification of the consumer price index can be analyzed empirically and the feasibility of devaluation as a policy instrument assessed. In practice this would be virtually impossible.

Another alternative policy considered is subsidizing labour use in the traded goods sector. This will keep that sector from releasing labour at a rate too fast for the non traded sector to absorb. However, this also implies that resource flows towards the non traded sector will not take place, and the achievement of equilibrium will be delayed.

The nominal wage, however, can itself be made a policy variable. This wage is dependent on the consumer price index and the indirect tax rate is incorporated in consumer prices. Through lowering indirect taxes, the wage rate can be prevented from rising as fast as it would otherwise. This policy appears to be analogous to one of subsidizing labour use across sectors.
It appears curious that a factor market distortion should arise from the oil boom, yet this is a phenomenon that is not negligible. This, together with the policy of absorbing the unemployed in unproductive public sector jobs has resulted in real output actually falling in some economies once the value of oil output or other mineral output is abstracted from.

IV. Monetary and Fiscal Policy

So far the discussion of the exchange rate appreciation has centered around long-term issues. However there are also some shorter term considerations. One of these is the "overshooting" exchange rate phenomenon. We have already discussed the possibility of the real exchange rate appreciating over a period and then depreciating subsequently as oil resources get depleted. Within this cycle, however, the real exchange rate could swing upwards and then downwards as the output of non-traded goods become more elastic. Finally there could be an even shorter cycle analysed by Harberger (n.d.) and Edwards and Aoki (1983). This is a purely monetary phenomenon.

As the oil boom gets under way, the accumulation of monetary assets leads to an expansion of money supply, unless the Central bank adopts a policy of sterilization. 1/ The demand for money also rises as income rises, but there is likely to be a period during which supply exceeds demand, since governments typically spends their oil revenues quickly while demand rises more gradually. The excess supply of money implies an excess demand for goods, and, in particular, an excess demand for non-tradeables. This in turn implies an appreciation of the exchange rate. This component of the appreciation, however, will be eliminated over time. In the short-run,

1/ It is assumed here that the capital account is closed, a realistic approximation in the context of the bulk of the developing countries.
though, there will be a phase during which the exchange rate "overshoots" its equilibrium value.

Edwards and Aoki (1983) have analyzed the policy instruments that can deal with overshooting both in the case of static expectations as well as perfect foresight. Several options are available. One is for the government to continually change domestic credit availability so as to prevent an excess supply of money from occurring. Another alternative is to keep the proportion of oil revenue spent by the Government on non-tradeables below a certain bound. A devaluation which raises the price of tradeables domestically can also be effective, since it will eliminate the excess supply of money.

In this context, the costs associated with the overshooting of the exchange rate are the usual ones. If the exchange rate changes are not perfectly foreseen, they are likely to lead to a misallocation of resources. However, more importantly, the overshooting can lead to rise in nominal wages and if wages are inflexible downward then a distortion will be set in place in the labour market in the long-run. Such a distortion may be very difficult to remove as the previous discussion shows.

An empirical issue is the magnitude of the overshoot. Here Harberger (n.d.) throws some light. He has constructed a model and carried out numerous simulations. His findings suggest that in cases of full, immediate, impact, where oil proceeds rise from 20 percent to 30 percent of GNP immediately and stay at that level, the impact on the relative price of non-tradeables can be very substantial. 1/ The overshoot can carry the exchange rate to twice its equilibrium level. However with a lagged response

1/ Certain plausible magnitudes are assumed for price and income elasticities of demand and supply.
on the part of the Government and some reserve accumulation, the overshoot can be easily kept within modest limits.

The above scenario becomes much more complex if the capital account is considered open and anticipatory movements in capital are allowed. 1/ This may not be totally unrealistic in the case of a few OECD countries. The analysis of Britain after the North Sea oil discoveries is relevant here. While this paper will not go into the details, some important points may be mentioned.

First, after oil has been discovered but oil exports have not started, there may be a phase in which the exchange rate appreciates due to speculative capital inflows anticipating the appreciation of the exchange rate as well as capital inflows for investment in the oil sector. This adds yet another factor which causes a divergence of the exchange rate from its long-run equilibrium path with all the attendant consequences. In addition, since short-term capital flows are very volatile, a country stands in danger of losing substantial export markets and a sudden bout of unemployment, followed by a long balance of payments crisis and adjustment.

In this case the monetary authorities are justified in taking some steps to restrict the inflow of short-term capital. The Swiss policy response to inflows of short-term capital for security reasons which affected the competitiveness of Swiss exports is suggestive. Long-term capital flows are of a different nature and there seems no obvious reason for taking steps to restrict them, except in the context of debt issues which are discussed

1/ Eastwood and Venables (1982) is a good source on these issues. Many of the specific results are dependent on the complex interrelationships between the goods, bond and money markets, including lag patterns. Attempts at verifying most of the hypotheses in the context of Britain have not been very successful.
separately.

There is also a case for government intervention on a short-run basis to deal with fluctuations in oil prices, specifically unanticipated downward deviations from trend. The problem area is again the labour market. As the exchange rate depreciates, non traded activity will contract. This will be due to the relative price of non tradeables falling as well as the fall in revenues which constrain government activity. As the product wage rate falls in the tradeables sector, there will be some compensating increase in employment. However this may not be enough to avert an increase in overall unemployment, especially if the non traded sector is the more labour intensive one. If government spending on non tradeables is kept within bounds to begin with then the episodes of unemployment will be less painful than otherwise. There is an analogy here with building up a buffer stock.

V. The Debt Problem

An aspect of oil exporting capital importers that has taken on significance in recent years is their growing debt burden. Normally a developing country has relatively restricted access to international credit on commercial terms and cannot borrow up to the amount at which the productivity of capital equals the social rate of time preference. 1/ The presence of oil as an asset diminishes this risk, facilitates lending, and thus should serve to increase welfare.

However, capital inflows are associated with "Dutch Disease" in exactly the same fashion as oil export earnings, and if the borrowing is by

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1/ This is due to risk factors which we assume to be unrelated to the true productivity of capital in OEDCs. If the productivity of capital was not high in these countries, then an economic case cannot be made for capital flows to them.
private sector in the OEDC, it may be socially excessive following the same line of reasoning developed before. If the borrowing is largely by the Government or government controlled, however, this problem should not occur.

A further problem occurs because of the volatility of both the price of oil as well as global interest rates. There are two consequences. First, the optimum amount of debt in each period becomes sharply variable. Second, the uncertainty changes lender perceptions continually and can lead to cash flow problems on the part of the OEDC's in servicing their debt. Reserve accumulation can partially alleviate the latter problem. Generally, most OEDC borrowing needs, especially if they are by the Government, are inflexible and it is unrealistic to suggest that they can be adjusted downwards even if the parameter values change to suggest such a revision.

VI. A Survey of Policy Alternatives

In this section we try to briefly review policy alternatives that have been discussed in the content of the OEDC's.

The suggestion of "exchange rate protection" or maintenance of the real exchange rate in order to prevent "Dutch Disease" or unemployment symptoms has been the most commonly discussed policy measure. As discussed above, interference with the real exchange rate is warranted only if there is a genuine distortion which cannot be removed and which can be offset by a change in the exchange rate. Many of the distortions are removable, occur in the factor markets or are very difficult to estimate in magnitude. A discussion of actual country cases will further illustrate this point.

However within the longer run context, there can be cycles where the exchange rate appreciates due to short-run and reversible causes and sets into motion disruptive movements in trade or in the real wage rate. There appear to be firmer grounds for Central Bank intervention in these cases.
Finally measures other than interference with the exchange rate have been discussed as a remedy for "Dutch Disease". One suggestion is protection for the tradeables sector. The other is, paradoxically, relaxation of some tariffs in order to lower the price of tradeables. Neither of these strategies is optimum. Protection would involve a distortion in the price of tradeables and the attendant consumption loss. Lowering of tariffs is an issue, to be decided on general welfare grounds. If selectively done it will penalize certain domestic producers of tradeables and benefit others who would have been harmed by the exchange rate appreciation, i.e. the cost of adjustment would be borne by the tariff protected sector rather than all importable producers.

Finally the importance of fiscal policy should be stressed in the area of exchange rate management in the OEDC's. These countries generally do not have well developed government bond markets while oil revenue accrues in the first round to the state. Thus monetary policy has to be carried out via an expansion or contraction in the budget. In the oil exporter case since expenditure on foreign goods does not lead to any impact on the price of non-tradeables, the concern is with government spending on domestic goods and services. Since a large part of the latter consists of wage payments, it is difficult for a government to contract current expenditures. It is thus not clear that many developing country governments possess the instrument to contract the money supply when the need arises. This implies that efforts to distribute oil revenues via reductions in taxes and a simultaneous effort to develop credit markets may have considerable payoffs.

An optimal response to the oil windfall suggested by Bruno and Sachs (1982) is for the Government to reduce taxes by the discounted present value of oil revenues, rather than by the magnitude of current revenues. The
resulting budget surplus can be accumulated as foreign asset holdings, to be
drawn down when oil resources are depleted. This is, under certain
assumptions, equivalent to a policy of not spending the whole of the oil
revenue in each period, but may be politically more acceptable. However a
clearer judgement on this score is clearly country specific.

VII. Country Specific Policies

A common theme underlies the policy debate in almost all the OEDC's
as far as the long run, structural changes are concerned. Most of these
countries appear concerned that while their overall rate of output growth has
been impressive in the seventies -- often in the range of 8 to 10 per annum,
their manufacturing industries and agriculture have grown at a much slower
pace. Consequently, country strategies imbedded in national plans suggest
ways to step up import substitution in the tradeable sectors.

The argument generally given is that if rates of growth remotely
resembling current ones are to prevail in the oil depletion phase, large
exports of tradeables will be necessary, and such exports cannot come about if
the base for producing tradeables is stagnant or shrinking, as at present.

In the area of actual macroeconomic policies undertaken in the
seventies, there has been greater variability across countries. In some cases
a "conservative" policy has been followed, with reserve accumulation and
sterilization of the capital inflows. In others capital inflows have been
encouraged through borrowing. Some countries have devalued at relatively
frequent intervals while others have kept nominal exchange rates fixed for
long stretches eventhough inflating at a rate much faster than the rest of the
world.

In the following discussion we study each of five major OEDC's --
Egypt, Ecuador, Mexico, Indonesia and Nigeria separately. The focus is on
three items. First, their oil resources and potential. This should be part of any analysis of policy, since all OEDCs are not in the same boat and the "Dutch Disease" issue is only of immediate significance for those economies which are in danger of running out of oil in the near future. Second, their perception of the extent to which they suffer from "Dutch Disease" and their long-term strategies to deal with it. Third, the macroeconomic policies they have actually followed.

Each of these economies is, in its own way complex, with numerous factors inhibiting the growth of the tradeables sectors. It is clearly not feasible to discuss all of these issues or attempt to apportion the lack of growth in the tradeables sector to "Dutch Disease" elements and other factors within the confines of this paper. However we hope to isolate the specific trends which have caused policy makers in these OEDC's to feel unhappy with the present environment as well as have some comparative analysis of their policies.

(i) Oil Resources and Potential

Both currently exploited and commercially exploitable oil resources per head as well as the oil component of GNP vary widely across OEDC's. Thus the optimal profile of the real exchange rate should also differ. "Dutch Disease" should be less of a problem for countries where oil depletion is not expected until far into the future.

However there are major problems of identification with regard to energy resource availability. Oil deposits are generally divided into currently exploited fields, proven reserves and unproven reserves. Even leaving aside the question of change in the price of oil, the quantity of unproven reserves lends a great deal of variability to any empirical analysis. These reserves may be potentially very large (e.g. in Ecuador) and
almost certainly present, but not properly explored, often because of the
country's policy of not allowing foreign companies to prospect. Another
complicating factor is the presence of natural gas along with oil in most
OECD's. Natural gas is a substitute for petroleum in many industrial uses but
not easily exportable with present technology. Thus the question of what
should be the equivalence factor between oil and gas is debatable.

Within these limitations we can develop the following country
profiles on oil and gas availability.

Egypt is at the bottom end of the spectrum in terms of per capita
oil endowment. In 1981 its total reserves of oil were estimated to be
6.5 bbls or 900m tons. Its total estimated oil plus gas reserves are somewhat
higher at 1,500m tons, but gas does not have a ready external market in the
region. 1/ The value of oil reserves (proven and expected) at 1981 prices was
between $4,500 to $5,000 per person. The value of proven reserves at end 1982
was only $2,300 per capita. This can be contrasted with Mexico where proven
reserves of oil alone amounted to $20,000 per person and oil plus gas (the
latter easily exportable to the U.S. in the case of Mexico) reserves added up
to $29,000 per capita. However Egypt has two other sources of external
revenue which are similar to oil. These are migrant worker remittances which
totalled $2.8 billion and Suez Canal revenue amounting to $0.9 billion in
1981. 2/ These compare with $8 billion of oil exports in the same year. If
gas and oil use grow at the rate of 6.5 percent per annum, Egypt will totally
run out of oil in 20 years and oil and gas in 30 years. Migrant worker

1/ The source of these estimates is Report No. 4136-EGT, The World Bank.

2/ Migrant worker remittances are similar but not identical to oil revenues
in that they are generated at the cost of export of skilled labor which
can cause serious domestic bottlenecks.
remittances have probably peaked and neither this source nor Suez Canal revenues are expected to grow in the seventies. Egypt has also received large volumes of aid on soft terms, largely from the U.S. This inflow too cannot be expected to continue indefinitely.

Ecuador's proven oil reserves in 1982 were estimated to be 1.4 bbls. which translates to $4,900 per capita. However secondary reserves can add as much as 50 percent to these reserves. Moreover exploration efforts have been meager in the seventies, and stepping up of exploration as well as taking into account largely unexploited natural gas can increase these reserves vastly. If probable deposits in the Amazon region are included Ecuador would rise from the lower end of the OEDC spectrum to the upper. Ecuador also possesses an enormous hydroelectric potential estimated to be the equivalent of 5 bbls of oil. If these resources were exploited oil could be conserved and exported over a much larger time horizon than otherwise.

Nigeria is not particularly rich in proven oil reserves though this is a matter of speculation, since there are no publicly available official estimates. Unofficial estimates suggested reserves of about 16.8 bbls in 1982 which would place Nigeria's proven oil endowment per capita at around $5,700. Unless new fields are brought into operation, oil would be exhausted in 10 to 15 years even at present rates of exploitation. While Nigeria has unproven reserves both in the Niger delta area where the current oil fields are located, as well as offshore, the possibilities of oil output declining by the end of the 1980's are quite high for several reasons. First, the potential for secondary recovery from the existing fields is limited as they are already under active water drive. Second, the extraction rate is very high. Finally the offshore fields are thought to be relatively small, so that oil from them would be costly to produce.
Gas reserves in Nigeria are estimated to range between 80 trillion and a 100 trillion cubic feet (including unproven reserves), of which gas associated with oil accounts for about a quarter. Currently a large proportion of the associated gas is flared, but plans are afoot for developing household and industrial use of gas. There is also potential for liquifying gas and supplying it to the European market.

Indonesia's oil resources are the smallest among the major OEDC's on a per capita basis, and proven reserves fell short of $2,000 per capita at the end of 1982. The exploration for new sources have been vigorous but reserves have been declining in spite of this effort. On the other hand Indonesia has very large and increasing reserves of natural gas with a potential for export to Japan.

Mexico's proven oil reserves alone amount to more than $20,000 per capita, putting it far ahead of the other countries discussed in this paper. This figure has been increasing sharply in recent years and many structures in the Gulf of Campeche which are almost surely oil bearing have not yet been drilled. Mexico also has large gas reserves with the world's biggest market, the U.S. within accessible distance. In 1982, Mexico ranked fourth in the world as a producer of oil, behind only the U.S., U.S.S.R. and Saudi Arabia.

It should be reemphasized that the oil and gas reserve estimates given above are tentative and these reserves have often increased dramatically given new exploration. Technology for secondary recovery has also been improving. This is relevant insofar as private sector investors may believe that once a country has become a major oil producer, the government will pursue an intensive exploration strategy if there is a serious danger of a reduction in production, and this strategy is quite likely to payoff. This scenario would not be an inaccurate description of the past, when oil prices
have also risen sharply. In the future, with oil prices expected to rise much more gradually, the resource base of some of the OEDC's are likely to shrink more rapidly. However, the sketch on oil reserves and potential suggests that if natural gas is included then besides Egypt no major OEDC is in imminent danger of running out of exportable energy resources.

(ii) **Long-term Country Strategy**

In this section long-term country strategy and thinking about the "Dutch Disease" problem is examined. An actual analysis of country policies, especially monetary and fiscal policies is undertaken later.

(a) **Egypt**

In the case of Egypt, Bank reports suggest that the "Dutch Disease" issue was quite prominent in the thinking of the authorities. In the period 1970-81, while the rate of growth of aggregate GDP was 8.1 percent compared to 4.3 percent in the sixties, agriculture grew at only 2.9 percent, the same rate of growth displayed in the earlier period, while industry grew at a rate of 7.6 percent. Services grew at 11.8 percent per annum, compared to a growth rate of 4.6 percent in the earlier decade.

There were however some aspects of Egyptian growth which were atypical. Housing, for instance, grew relatively slowly in Egypt.

The exchange rate (measured as the purchasing power parity deflated value of the Egyptian pound) had been appreciating at a rate of 8 to 10 per annum in the post 1974 period, though computation is rendered difficult by the fact that Egypt has a multiple exchange rate system and the volume of transactions at the more depreciated rate grew over time. Real wages are, again, difficult to calculate since public sector wages were frozen in nominal terms over long periods. However the general consensus is that while wages in construction and agriculture declined between 1966 and 1972, they have been
increasing since then. Non petroleum merchandise exports in 1981, were, even in nominal value terms lower relative to 1974.

Under these circumstances, a 1980 Bank Economic Report on Egypt (3123 EGT) felt that adjustment might be too late if left to market forces. According to projections, under moderately optimistic assumptions regarding the petroleum sector, an 8.5 percent growth rate per annum in real investment and no major policy reforms, by 1984/85 the economy would be in the grip of severe balance of payments problems. The resource gap would widen at an accelerating rate suggesting that drastic steps would have to be taken to restore balance of payments equilibrium, and growth would consequently suffer.

The policy response suggested by the Bank was that Egypt should keep the real purchasing power parity deflated exchange rate constant over the next few years. This should be done through a series of overall nominal adjustments accompanied by reserve accumulation and the necessary monetary policy. The impact of the exchange rate intervention was largely expected on the import side. A subsequent Bank Report (4136-EGT) dated July 1983, projected the depletion of oil resources to occur somewhat later. Oil production would peak at the end of the eighties while natural gas production was expected to increase till the year 2000. This report however suggested that the Egyptian Authorities should devalue and not merely keep the purchasing power parity deflated exchange rate constant, since the growth rate of non-oil exports had to be as high as 9.4 percent per annum to ensure acceptable levels of per capita growth.

The Egyptian experience, however, does not give a clear indicator regarding "Dutch Disease" and its remedies. In this case oil discovery and price rise were imposed on an economy which had been through severe
problems 1/ and in which administered rather than market clearing prices are the rule. The economy tried to liberalize in the post 1974 period, but liberalization has been only partial. In other words, it is not clear that Egyptian growth rates in the tradeable sectors would have been much higher even if the exchange rate had been allowed to depreciate. Aside from the issue of administered prices, Egyptian agriculture suffers from numerous structural problems and certain studies have doubted whether output responses in the short or medium run to price stimuli would be very strong. The labor market in Egypt has also been severely affected by the migration of skilled workers to Saudi Arabia, Libya and other Middle Eastern countries, which partially accounts for the slow growth of housing construction. In the case of Egypt it seems that a comprehensive battery of reforms is needed rather than only an adjustment in the real exchange rate in order to induce higher growth rates in agriculture and manufacturing industry nor can the low growth rates be attributed solely to the appreciating exchange rate.

(ii) Ecuador

Ecuador's experience in the seventies has some aspects that reflect the typical OEDC experience that has been sketched above; however there are also significant differences which make the country especially worth studying. Ecuador emerged as a major oil exporter in 1972. In the 1970s its aggregate growth rate was 8.6 percent per annum. 2/ The growth rate of agriculture was only 2.9 percent, while services grew at 8.7 percent. However, Ecuador's manufacturing sector grew at 10.8 percent per annum over the same period. Moreover, Ecuador's non-oil exports, primarily agricultural

1/ Caused by the wars with Israel and consequent heavy military spending.

2/ For the period 1970-81 (WDR 1983).
products such as cocoa, bananas, coffee and fish have grown in absolute terms at a respectable rate. In 1980, over 40 percent of exports still originated in the non-oil sector.

Ecuador has followed a policy of pricing petroleum well below international prices for domestic use, resulting in a 15 percent per annum growth in domestic use in the 1973-80 period. Since due to financial stringency and a weak institutional structure exploration activity also lagged in the 1970s and production actually declined, oil exports in volume terms have not increased since 1973. A four fold increase in exports in the 1970s can be almost entirely explained by the rise in oil prices.

The exchange rate in Ecuador appreciated considerably during the 1970s on the basis of purchasing power parity comparisons. Ecuador has a dual exchange rate system, with the official exchange rate at which trade and official capital transactions are conducted pegged to the dollar. Unofficial capital transactions and some invisible transactions are allowed at a flexible exchange rate. The official exchange rate versus the dollar remained unchanged between 1971 and 1980, while the open market nominal rate depreciated slightly. However over the period the consumer price index rose by 200 percent in Ecuador relative to a rise of only 118 percent in the U.S. If a comparison is made with Ecuador's main trading partners, it is found that the sucre appreciated by 19 percent against an import weighted index of currencies, while it appreciated by 24 percent with respect to an export weighted index of currencies, 1/ over the 1971-80 period. The impact of import restrictions declined somewhat over the same period due to a rationalization of the tariff structure. Export taxes on cocoa and coffee,

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1/ Petroleum exports are omitted.
the principal non-petroleum exports continued to be high throughout the period, and in 1980 the net real prices to coffee producers were 26 percent lower than a decade earlier. Cocoa prices had also declined since the mid seventies.

Real wages remained constant between 1971 and 1979 but jumped sharply in 1980 and 1981 and were double their 1970 level in the latter year. There is considerable evidence that wages have been rising ahead of productivity increases in Ecuador. While this has been justified on grounds of equity by the government, the organized sector wage is not applicable to all workers and this has created a segmented labor market. There is also some evidence that the pattern of investment in industry is becoming excessively capital intensive and labor absorption is slowing down — in the 1970s employment growth in manufacturing industry was only 3 percent per annum, far slower than the growth rate of value added, which increased at a rate of 10 percent.

A high rate of growth of manufacturing industry in Ecuador even during a period when the real exchange rate was appreciating was ensured by a cheap energy policy, high, though diminishing levels of protection and financial (credit) subsidies.

Ecuador presents an interesting example of an OEDC because it has partially succeeded in averting the main Dutch Disease symptom, namely a decline in the growth of manufacturing industry. This has, however, not been a costless process. The industrial development that has occurred has mostly been of the import substituting kind, aided by tariff barriers and other subsidies. The industries that have grown up do not utilize local raw materials, neither are they labor intensive. Given the small scale of the home market, it is difficult to see how Ecuador's industries can survive without continued protection. The growth of industry has also not solved the
employment problem, since protection has been afforded by high tariffs on consumer goods with exemptions for capital and intermediate goods, leading to a capital intensive choice of technique by entrepreneurs.

In the agricultural sector, the government's policy of subsidized sale of imported food items for distributional reasons has acted as a disincentive to domestic producers. Effective export taxes on coffee and cocoa have also risen, cutting into the profit margins of cash crop exporters.

The case of Ecuador highlights the dilemma faced by OEDC policy makers. While some elements of policy, especially in agriculture were clearly misplaced, the overall attempt to follow a conservative strategy and protect the manufacturing sector was probably correct if "Dutch Disease" was to be averted. However the result has been the growth of a high wage, inefficient manufacturing industry. As infrastructural and other non-tradeable bottlenecks are relieved, the situation may improve, but this remains to be seen. In the case of Ecuador, the oil boom was imposed, not on a developed economy, but on a largely agricultural economy with very little manufacturing industry. However government policies were not geared to preserving the agricultural sector but towards developing an industrial base. Whether a viable manufacturing sector has been built up that can survive in the long-run is doubtful.

(iii) Nigeria

Nigeria presents a striking example of "Dutch Disease" in some respects. During the seventies (1970-1981), overall GDP grew by 4.5 percent. Agriculture declined in absolute terms, at a rate of about -0.4 percent. Manufacturing industry, however, grew at a rate of 12.4 percent, while the services sector grew at 7.4 percent.
The exchange rate of the Naira against the U.S. dollar has floated within a band of about 20 percent during the period 1972 to 1981. However, while from 1974 onward the rate of inflation has been much higher in Nigeria relative to the U.S. the Naira has actually appreciated against the dollar. According for an IMF estimate in April 1982, the Naira had experienced a cumulative real appreciation of some 80 percent at the end of the period 1974-80 on the basis of purchasing power parities. DRC ratios for some potential agricultural exports computed in 1979 showed that a DRC of unity would be achieved only if the shadow exchange rate for the Naira depreciated considerably. 1/

Real wages in Nigerian manufacturing do not appear to have risen between 1962 and 1974. In fact they may have fallen somewhat, though they have increased sharply since 1979. However fringe benefits account for a large part of total emoluments and including these, real wages in both agriculture and industry seem high relative to productivity levels.

In the area of bottlenecks in the supply of non-tradeables, Nigeria provides an almost nightmarish picture. Power and water have been in chronically short supply and this, more than anything else, has rendered export industries non viable.

The government appears to have been aware and expressed concern about the decline of the agriculture sector and the failure of non-oil exports to grow in Nigeria in various plan documents dating back to the early seventies. However the policy response dealing with the "Dutch Disease" phenomenon has not always been consistent or effective.

1/ However this was not true of oil palm, while the DRC for cocoa could not be computed because of lack of data. These two are two of the largest potential agricultural exports.
In agriculture, the full nature of the causes of the decline in the sector, or even its extent are not properly understood. 1/ While the appreciation of the exchange rate undoubtedly hindered development this was partially offset by the decline and virtual disappearance of export taxes which were a significant source of overall revenue in the sixties. In 1980, cotton, palm kernel, rubber and groundnuts were subsidized at the official exchange rate adjusted for trade distortions. In some cases the contraints have been crop specific. Oil palm and rubber plantations were badly affected by the civil war ended in 1970 and did not recover fully. The groundnut crop was severely affected by drought in 1973-74 and subsequently decimated by the rosette virus. Cotton too was affected by the drought. The institutional base (credit supply, extension, research) of agriculture in Nigeria is weak and it probably could not have met the burgeoning domestic demand following the oil boom, even with a greater degree of price support.

A clear constraint across the entire agriculture sector in Nigeria has been the rapid rise wages, especially in construction wages, which has induced migration to the cities. The high transport costs of agricultural produce has also been felt and the non-tradeables bottleneck is clearly evident. An interesting but misplaced response by the state has been to directly invest in large scale mechanized farms, in order to minimize the impact of labor shortages and also induce farm laborers to remain in the countryside by relieving the tedium of agricultural work. These state farms have been plagued by management problems. It is also doubtful whether at world prices, capital intensive farming is the best choice for Nigeria. In the case of agricultural exports, it should be noted that several items are on

1/ There is a considerable body of opinion which holds that there may not have been an absolute decline.
a banned list since the government believes that exports should be allowed only after domestic demand is satisfied. Clearly, since some farm products are smuggled, the domestic prices are not in line with international ones.

The record of industry during the seventies is not as poor as that of agriculture over the same period. However this has been partly if not largely achieved by an expansion of the capital intensive public sector and through high levels of protection of some sub sectors. Many labor intensive and local resource intensive industries such as cement, footwear, sugar, vegetable oil and tin smelting experienced declining output levels or stagnated.

The concerns of the Nigerian government regarding "Dutch Disease" take a more alarming shape when viewed against a back drop of projections developed by the World Bank in a modified RMSM model. 1/ With unchanged policies, the balance of payments would deteriorate very sharply, showing a negative resource balance of $16 billion in 1977 prices in 1995 and reaching $50 billion in 2000. In the latter year Nigeria would require to borrow $81 billion, clearly an infeasible scenario. In order to achieve a viable growth path, the Report recommends accumulation of foreign reserves, a reduction in the budget deficit by reducing expenditures and a weaker Naira. 2/ Since it appears that devaluations are difficult to implement in Nigeria for political reasons, the Report suggested a combination of exchange rate change, import protection and export subsidy in order to give an incentive to manufacturing industry. In agriculture institutional reforms have been suggested in addition. There is an acceptance of the general principle that "Dutch


2/ In 1981 the Naira had started to depreciate against the dollar.
Disease" needs to be cured as "The first goal of macro-economic policy for long-term development ought therefore to be to arrest the debilitating influences of the oil boom for commodity production, in particular reversing the trends in the movement of relative prices." 1/

In the case of Nigeria, many manifestations of the "Dutch Disease" are very prominent. More than any other OEDC, non-oil exports have virtually disappeared and the agriculture sector has been stagnant if not declined in absolute terms. Moreover a decline in earnings from oil is closer to realization than in other countries. In this case the private sector's unwillingness to respond to expected relative prices appears to be due to conflicting signals to the private sector. While numerous incentive schemes exist for private investors on paper, it appears doubtful whether industries in which Nigeria has a comparative advantage do receive international prices. In agriculture, institutional factors probably have played a large role in acting as bottlenecks to growth. In areas such as large scale poultry farming serving the urban market, the agricultural sector has responded in an acceptable fashion. In view of this record one should be cautious in assigning an excessively interventionist role to the government in the future in managing the exchange rate, especially if, for political reasons, this degenerates into a policy of selective protection of some industrial subsectors.

(iv) Indonesia

Indonesia presents an exceptional case among OEDC's in that it is probably the only country which appears to have successfully checked the tendency of the exchange rate to appreciate during the oil boom. "Dutch

Disease" has been less of a problem here compared to the other sample countries. During the period 1970-81, overall GDP grew at a rate of 7.8 percent per annum in Indonesia. Agriculture grew at only 3.8 percent per annum, but its performance in certain sub sectors was impressive. Production of rice, the principal foodcrop grew by 50 percent in the seventies. Manufacturing industry grew at a rate of 13.9 percent during the decade, a rate significantly higher than the growth of the services sector, which was at the rate of 9.5 percent per annum. In 1980, 24 percent of Indonesia's exports still originated outside the fuels and minerals sector.

The nominal exchange of the Rupiah vis a vis the dollar had remained unchanged between 1971 and 1978. In terms of a trade weighted basket, adjusted for the rate of inflation, the Rupiah remained largely unchanged between 1971 and 1973. After the oil boom in 1973-74, Indonesia's inflation rate exceeded that of its partners and the exchange rate appreciated till 1976. Since then the rate of inflation slackened and by 1978 about 65 percent of the loss of competitiveness had been restored. In 1978 a successful devaluation largely restored Indonesia's competitiveness, and this real improvement was maintained till 1980. In 1983 a further devaluation took place.

Indonesia's success in holding the exchange rate is also reflected in wage statistics. Following the 1978 devaluation, for example, real wages in some smaller firms declined by as much as 20 percent in one year. Over the longer period of the decade, data is unavailable, but there is some evidence that real wages did not increase very much. Employment growth was higher than the growth of the labor force, which tends to buttress this conclusion.

The reason behind Indonesia's ability to control inflation and the rise in the price of non-tradeables lies in the pattern of expenditures...
following the oil price rise of 1973-74. The inflow of foreign exchange was counterbalanced by a large expansion of imports, especially of fertilizers and capital goods. Pertamina debt repayment also neutralized a part of the gross inflow. Private sector domestic credit was reined in and declined in real terms.

Indonesia's relative success in controlling "Dutch Disease" however does not imply that the government should be complacent about the future. According to a set of projections developed in Report 2788-IND, the Indonesian resource gap is likely to be of the order of $2 to $4 billion by 1985 since, in order to sustain a growth rate of GDP of 6.5-7.5 percent per annum, imports have to grow at 12-13 percent per annum, while export growth rates are unlikely to exceed 2.4 to 3 percent per annum. Oil exports can be expected to remain constant in real value terms till 1985 and decline thereafter. The importance of the development of non-oil exports is underscored by the fact that the projections are posited on the assumption that non-oil exports grew at 7 percent per annum -- with the nascent manufacturing exports expected to grow till 1985 at the extremely high rates of 15 percent and 20 percent per year in two alternative scenarios. Even so the low weight of manufactured exports in total exports implies that the decline in overall exports resulting from the anticipated retardation in the growth of oil exports cannot be averted.

The policy recommendations of the Bank to meet the growing resource gap consists of a package. In the area of trade policy, reduction and unification of tariffs, improved customs service and elimination of import controls, effectively reducing the protection afforded domestic industry is suggested. Exports of manufactured goods would benefit from the lower protection given to imported components. Intensified rehabilitation and
expansion of tree crop production and realistic domestic oil pricing and substitution policies to further decelerate domestic oil consumption growth, should also help boost exports. In the case of Indonesia, if a modest commercial borrowing strategy is followed, the resource gap is manageable especially since on account of its relatively low per capita income, Indonesia will continue to receive official development assistance on concessional terms for some time.

(v) Mexico

Mexico presents a more difficult problem for analysis relative to the other OEDCs since the oil boom is more recent, and the country's experience of dealing with "Dutch Disease" is limited. In many ways Mexico's experience of the early 1980s has been more akin to that of a traditionally "overheated" economy. As late as 1978, oil formed only 30 percent of Mexico's exports. However by 1980 the impact of increasing oil production had started to make itself apparent. Oil and gas accounted for 70 percent of exports in that year. Non petroleum imports declined in real terms for the first time, after a sustained growth of both manufacturing and agricultural exports in the 1970s, while the exchange rate started appreciating.

Two other features of the oil boom are especially marked in the case of Mexico. One is the increase in creditworthiness which preceded the actual export of oil in substantial quantities and which resulted in Mexico's total public/publicly guaranteed debt 1/ increasing from $5.5 billion in 1973 to over $50 billion in 1982. By 1978, debt levels had already exceeded $25 billion. Imports increased rapidly, and by 1978, net inflows of capital were in the range of US $4.5 billion. The other interesting feature, linked with

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1/ Debt disbursed outstanding.
the first is that Mexico was already a highly expansionary economy by the time it emerged as a major oil exporter. Oil revenues, instead of leading to a reduction in the budget deficit caused further expansion through higher government expenditure, much of it in the form of various kinds of subsidies. This strengthened inflationary forces in the short run as bottlenecks emerged in the supply of non-tradeables while it also exacerbated tendencies towards misallocation of resources in the long run by increasing the quantum of subsidies.

However while many of the elements of "Dutch Disease," including sharply rising real wages preceded the oil boom in Mexico, the growth rate of industry did not suffer as much as would be expected. This is partly due to direct state investment in certain branches of industry and an import control policy in force from 1975 to 1977. After 1977 a more liberal phase followed, replaced again after 1981 by a quota restricted import regime as the balance of payments worsened. A vigorous growth of domestic industry largely oriented towards the home market has been the consequence.

Given Mexico's large oil endowment, it would seem premature to read alarmist signals into the decline in non oil exports. However Bank Economic Reports (e.g. 3605-ME), have focussed on this issue largely because of the increasing balance of payments difficulties experienced by the country. Apart from suggesting cuts in public expenditure, the policy recommendations have been largely non specific. There is however, an acknowledgement that although import restrictions would lead to a misallocation of resources, they may be necessary as would perhaps a dual exchange rate system to help protect non petroleum exports.

In the case of Mexico, the "crisis" has manifested itself largely as a balance of payments problem, arising partly from large debt service
obligations and partly from higher imports. The latter are due to the appreciation of the exchange rate but also arise from the requirements of domestic industry which has been growing largely to service the protected domestic market. The fear is, that without a sufficient export orientation, the non oil sector would suffer as an economic contraction is undertaken to restore balance of payments equilibrium, and such an export orientation is unlikely in the usual OEDC context. However Mexico also illustrates how difficult it is to develop an industrial structure in accordance with the country’s comparative advantage. Given this background one is somewhat skeptical about policy proposals which would further push Mexico’s industry away from market signals. This may lead to a statistically high growth rate of manufacturing over a short period but is unlikely to solve the country’s long run problems.

It is evident that while elements of “Dutch Disease” are present in all the OEDC’s, there are also very many country specific features which inhibit generalizations. However a few common symptoms and policies deserve comment. In general, the agriculture sector has been hardest hit in terms of production and export growth. This was also usually the largest sector in pre-oil boom days. However it is in respect of this sector that policy response has been the weakest. The most common policy measure taken or contemplated is some form of protection to manufacturing industry. Given the relatively low base, this has usually had a payoff in terms of an impressive growth rate of this sector in some cases. However it is undesirable to build up a high cost, import substituting industry which is often capital intensive and unrelated to the countries natural comparative advantage. Mexico’s experience reinforces the presumption that the mere presence of a relatively substantial manufacturing sector is no guarantee that this sector will be able to compete in the export market.
Second, in almost no case was the oil boom imposed on a relatively normally functioning economy. Many of the countries had undergone severe economic disruptions in the past and continued with non-market pricing in many major areas. Consequently it is difficult to decide whether the failure of the non-service sectors to grow stems primarily from the oil discoveries or is caused by the policy induced distortions imposed on a growing economy. In other words, a stronger private sector response in terms of investment in tradeables production may have been observed had there been less policy induced departures from the market solution.

Given these reservations, extreme caution should be exercised in recommending policy steps which afford increasing protection to some activities or direct government investment (e.g., the Nigerian state farms). Balance of payments or resource gap projections do suggest catastrophic scenarios in the late eighties or nineties for many countries if present trends continue, but the welfare loss from highly protectionist policies is not negligible either. The resource gap projections are highly conjectural. Basic parameter values such as the rate of depletion of oil reserves, new discoveries, the time lag between exchange rate changes and output responses in agriculture and industry, the rate of time preference, etc. are all uncertain. It is presumptuous to imagine that planners can evolve a fine tuned investment profile that maximizes social utility under these circumstances.

Finally a sharp distinction should be drawn between short-run policies to prevent temporary disruptions and long-run planned action against "Dutch Disease". The first is clearly warranted. Whether enough is known about the second phenomenon to suggest a suitable response is more debatable than commonly assumed by policy makers.
Monetary and Fiscal Policies

If OEDCs do want to keep their exchange rates from appreciating then this requires a policy of control over their money supply. Nominal devaluations are not helpful unless they can be translated into real devaluations through a curb on domestic inflation. In this section a brief glimpse is taken at monetary and budgetary policies of the five OEDCs discussed earlier. The aim is to see if their policy experience suggests that they can use monetary and fiscal policy to keep their exchange rates from appreciating, if this indeed is the desired policy.

In Egypt total reserves have grown steadily over the seventies. The money supply growth rate per year has been in the range of 24 percent to 37 percent over the same time span. Given the large share of the government and public enterprises in domestic credit, the budget deficit and deficits of the public corporations are largely responsible for the expansion in domestic assets, but private sector credit has also increased sharply in recent years.

Ecuador has followed a policy of reserve accumulation and total reserves as well as Net Foreign Assets of the Banking system grew steadily through the 1970s. The budget deficits have been limited in size and net claims of the banking system on the government have declined in several years. The growth rate of money supply has usually been within 20 to 30 percent per annum.

In Nigeria, while reserves and Foreign Assets of the Banking system rose dramatically after the oil price increases of 1973 and 1979, they have fallen in other years. The rate of growth of money supply has been erratic ranging from a less 10 percent in some years to over 80 percent. From 1974 to 1976 net claims on the government declined. They rose sharply in the 1977 to 1979 period and declined again in 1980. Claims on the private sector have
increased throughout the period, and taken together the increase in domestic assets offset the fall in foreign assets by a wide margin.

In Indonesia, Net Foreign Assets of the Banking system grew between 1974 and 1979, with the exception of 1975. Reserve growth has been positive but modest. Between 1979 and 1982 Net Foreign Assets declined. Money supply growth rates per annum have ranged between 17 percent and 48 percent between 1974 and 1982. The bulk of the increase in domestic assets have originated in credit to private enterprises and the state enterprise sector, net claims on the central government having declined throughout the late seventies and in 1980 and 1981.

In the case of Mexico, Net Foreign Assets as well as Domestic Assets have grown rapidly with both budget deficit and private sector credit increases being contributory factors. The rate of increase of money supply has varied between 20 percent and 39 percent per year between 1975 and 1980.

The monetary and budgetary policies followed by the various OEDCs have been quite different in details. However in almost no case do we find the increase in foreign assets neutralized by a contraction of domestic assets. Consequently, the rate of increase of money supply in most countries have often spilled over into the 30 to 40 percent per year range, leading to a rate of inflation higher than the average for the OEDC trading partners. However increasing government budget deficits have not always been the primary factor in expanding domestic credit, expansion in credit to the private sector playing a significant role in many cases.

It appears from this experience the OEDCs have not had much success in keeping their price level in line with their trading partners through an active monetary policy. In such a configuration, the real exchange rate is bound to appreciate, since most of these countries do not have floating
exchange rates but fixed ones that are altered at comparatively lengthy intervals. This also explains why a protective regime based on tariffs or quantitative restrictions appeals more to them as a usable policy regime to combat "Dutch Disease," rather than "exchange rate protection" or maintenance of a constant real exchange rate, since nominal devaluations are eroded through price rise.

Since there are additional welfare costs associated with a policy of tariffs or quotas, it may be worth investing in developing an environment within which monetary authorities can exercise greater control over the money supply, even if the necessity of active government intervention to combat "Dutch Disease" is admitted — something regarding which there can be serious reservations as we have discussed at length earlier in the paper. It is also curious that policy makers as well as the Bank have neglected the issue of efficiency of monetary and fiscal policy when the case for short-term intervention is much more firmly grounded than that of influencing long-term outcomes.

May 7, 1984
GDatta/bmd
Table 7

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Source: *International Financial Statistics Yearbook, 1983, IMF.*

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1/ Excludes Gold

Source: *International Financial Statistics Yearbook, 1983, IMF.*
Table 9
The Pattern of Central Government Financing in Selected OEDCs
(as a percentage of expenditure)

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Table 10
The Pattern of Central Government Deficit Finance in Selected OEDCs
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References


Harberger, Arnold, "Dutch Disease, How Much Sickness, How Much Boon," (mimeo), n.d.


