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on the back burner for at least another year and the idea of an international economic summit has been embraced explicitly by the South. The task awaiting Southern diplomacy now is to convert this dramatic shifting of gears into political action in order to secure the necessary Northern response.

18

TRADE AND DEVELOPMENT IN THE 1980s

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INTRODUCTION

In international circles, the concern of the day is with the state of the world economy. There is a general appreciation of the severity of the problem, but no widespread agreement about either diagnosis or solutions. We shall focus here on a particular set of topics that have emerged as major issues during the last decade, and that also seem central to an understanding of the present economic situation. A characteristic of these topics is that they link international and domestic policy areas in so integral a way that neither can be analyzed in isolation from the other. They are:

- First, the recurrence of *recession and unemployment* in industrial countries, and the emergence of protectionism
- Second, the changing international environment facing the developing countries and, in particular, the issues of *export-led strategies* and North-South trade in armaments
- Third, the *pricing of exhaustible resources,* including oil, as a major issue in North-South trade, and in the international financial system
- Fourth, the role of declining *transfers of wealth* from industrial to developing countries, and the perceived limitations of the existing international financial institutions

These are difficult but interesting times. We are currently witnessing changes in the positions of industrial and developing countries in the world economy, and in their interrelationships. On the whole, developing countries

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have grown more, and invested a relatively larger part of their GNP, than the industrial countries in the last ten years. They have also increased significantly their role as export markets for the OECD countries (with their share of OECD exports currently 40 percent of the total), and have in addition greatly increased trade among themselves. These developments have been partly the result of resource pricing policies, and partly the result of a decline in the competitive position of industrial countries. This has occurred both in traditional heavy industries such as steel and also in skill-intensive manufactures such as electronics. The reverse side of this coin is that many developing countries have increased their need for food imports from industrial countries.

Financial markets mirror the developments in real markets, and the current strains in the international monetary system reflect the lag with which our institutions adjust to a changing world economy. For example, high interest rates in the United States and the United Kingdom were partly a domestic response to concerns about the inflationary impact of higher oil prices. Because of the increased interdependence in the world economy, these higher interest rates led to unexpected international consequences. Their threefold increase in the four years to 1980 increased significantly the costs of servicing debt and added impetus to the international debt crisis. The outcome of this has been to bring about a far bigger transfer of power to the Third World than was ever expected to come about through global negotiations. The leverage that debtors enjoy, because of their capacity to damage the reserves of the Western banking system is formidable. The IMF has responded by voting to increase its quotas by 47 percent, a dramatic departure from its previous record. The Inter-American Development Bank also recently voted to increase its lending by one-third. A natural sequel to this would be a revision of IMF loan conditions to take into account international factors, that is, the impact of deflationary policies in developing countries on OECD export markets.

In such a rapidly evolving economic environment, it is inevitable that our analytical tools will require revising and adapting. Rather than succumbing to the appeal of familiar and reassuring concepts, one must move ahead toward a more realistic conceptualization of the problems and a more practical approach to their solutions. This chapter proposes economic tools for analyzing and managing changes in the world economy. The relationship between domestic and international factors, and their impact on the evolution of the international economy, is the subject matter of the chapter.

The remainder of this section enumerates the issues that arise in connection with the four topics mentioned above, indicating the orientation of the analysis, and the general thrust of the arguments. The remaining sections are concerned with analyzing the main issues in detail and deriving conclusions. We begin with an overview of the macroeconomic situation of the industrial market economies, as a basis for the analysis of the international economic

situation. In particular, we emphasize the relationship between macroeconomic problems and modern industrial structures in the industrial economies. The next sections are then concerned with the growth of protectionism and the emergence of managed trade, an evaluation of export-led strategies and of armament trade, the role of transfers and of international financial institutions, and the issue of resource pricing. Each section contains both an economic analysis of the main issues and an indication of the policy implications of the analysis. The overall conclusions are drawn together in a final section, where they are also illustrated by reference to particular examples.

FOUR MAIN TOPICS

1. Several factors underlie the rise of protectionism in industrial countries. One is the recurrence and increasing severity of recession and unemployment, which historically have been associated with demands for protection. Another is the changing structure of international trade, including the emergence of newly industrialized countries, which led to a new and intense competition in fields central to the industrial economies. Examples are the automobile and steel industries, which are important sources of employment, and of demand for the inputs to other industries.

It will be argued that the pressures for protectionism represent in part a failure to adjust industrial structures to changes in the international economic environment. To the extent that this delays much-needed adjustments in industrial structure, protectionism may harm the industrial countries at least as much as the exporting countries. We shall also argue that even if there were rapid structural adjustment in the industrial countries, an across-the-board liberalization of trade would be neither a likely event nor necessarily a desirable one. Trade policy must be developed in a more selective and integrated manner.

2. In view of the present international economic environment, there is increasing concern about the role of export-led development strategies, especially those based on the exports of traditional labor-intensive commodities from the South. International organizations have emphasized export-led policies in recent years, frequently in response to balance-of-payments deficits in developing countries, but also as an overall policy recommendation for the development of the South. This originated partly from the apparent success of particular developing countries that pursued vigorous export-led strategies in the early 1970s.

The economic basis for export-led strategies arises from a particular view of economic development and of the international division of labor, and from a belief in the need for external "engines of growth" for developing countries.

Both views are being questioned at present. In addition, correlations have been found between commodity export earnings and armaments imports, and these also raise doubts about export-led strategies. We shall discuss the limitations of export-led policies and the possible alternatives. A general endorsement cannot be given to one of the obvious alternatives, import substitution, as more selective strategies are needed. We shall analyze the extent to which domestic rather than international markets can be viewed as internal engines of growth for the development of the South.

3. Following a long period of inexpensive energy, the emergence of energy constraints in industrial countries has underlined the importance of trade and pricing policies for extractive resources. For the last decade, these policies have been a major policy concern of industrial and developing countries. Furthermore, because of uneven patterns of consumption and endowments, exhaustible resources have emerged as a central issue in North-South trade.

Traditionally the pricing of extractive resources has been seen as a source of North-South conflict. However, the changes in the price of oil have forged a strong interdependence between the North and the South, both in real and in financial markets. Because of this, there is at present more community of interest between importers and exporters than is generally understood. Economic analysis can substantiate this both in theoretical and empirical terms, providing a motivation for suggesting cooperative pricing policies for extractive resources. We shall discuss this suggestion in light of the impact of resource prices on the macroeconomy of the importing region. In addition, the recent experience of the impact of oil exports on economies such as Mexico, Venezuela, and Nigeria runs counter to conventional wisdom. This underscores the need for careful coordination of international and domestic policies.

4. The issue of North-South transfers has been discussed for many years in the international development community, where it has represented a cornerstone of efforts to reduce North-South wealth differentials. However, there has been a consistent downward trend in such transfers in recent years, so that they are currently not meeting even half the minimum UN targets. Furthermore, in view of the recession in industrial countries, the issue of North-South transfers presently lacks immediacy.

Developing countries have on average sustained higher growth rates and savings rates than industrial countries in the last decade: Their investment has been financed in part by capital inflows, largely from recycled OPEC surpluses, leading to an accumulation of foreign debt. The subsequent rise in interest rates in the United States and the United Kingdom and the decline in their export markets greatly increased the burden of this debt at the turn of the decade, leading to widespread concern about the sustainability of these debts.

There have been discussions of temporary liquidity instruments to aid developing countries with large foreign debts. This measure would in a sense substitute for transfers, reproducing at least temporarily the wealth effects to be expected from North-South transfers. The shortage of liquidity in the world economy is indeed one of the most important concerns of the international business community at present, and one that is of the utmost importance to major international financial institutions. However, it will be argued that the effects of aid or of liquidity measures must be viewed within the larger context of international markets. Their eventual impact on market prices may run contrary to the expected effects of well-intentioned policies, unless the transfers are associated with productivity increases in certain sectors of the Southern countries.

A MACROECONOMIC OVERVIEW

This section is concerned with the recurrence and increasing severity of recession in the OECD countries, and in particular with the role of the two oil price shocks of the 1970s.

It is conventional wisdom that oil price increases were the main factor in initiating and then in perpetuating the recession in industrial economies: Both Keynesians and monetarists have held oil prices responsible for the poor performance of their economic recommendations. Keynesians attributed to higher oil prices the worsening trade-off between inflation and unemployment, and the consequent failure of demand management to cope with stagflation. Monetarists have attributed to high oil prices the undue severity of the recession that their policies produced in order to reduce inflation. Whatever the case, higher oil prices have certainly illuminated the disagreements between the two schools, and have also called attention to their inadequacies. The last few years have seen more disagreement and disarray in macroeconomics than any other time in the postwar period.

Obviously the macro impact of oil prices is an issue that demands careful attention. The claim that higher oil prices are largely responsible for either stagflation or recession in fact runs counter to most empirical evidence on the macroeconomic impact of energy prices. This evidence suggest that higher energy prices have been at most a major contributory factor to the economic slowdown in industrial countries. Studies carried out on OECD data and econometric models suggest that the effect of the 1973 oil price increase on OECD GNP was a reduction of at most 2 percent, with an associated long-run price increase of about 6 percent. The same study indicates that the 1979–80 price increase contributed less to the subsequent recession than did the restrictive monetary policies implemented at that time.[1] These findings are consistent with those of a number of other studies carried out independently at

research institutions in the United States.[2] For example, fundamental changes in the economic performance of the United States are generally agreed to have begun around 1968, five years before the first oil price shock.[3] Yet it is these changes, especially in investment and productivity growth, that are believed to underlie the present recession in that country. Of course, momentum was added by the events of 1973.

Another item of evidence running counter to the suggestion of a predominant role for oil prices is the duration of the recession. It will clearly last ten years beyond the initial shock, although oil prices in real terms have now fallen back very substantially from their peak. Indeed, the severity of the recession has actually increased just as oil prices have declined sharply. Another point against a really significant role for oil prices in causing the present recession is that the total value of oil imports of OECD countries is a very small proportion of GNP. For instance, in the United States they amounted in 1981 to less than 2 percent of GNP.[4] It is difficult to believe that a price rise in this input could be singly responsible for the worst recession since the 1930s. The formal econometric studies cited above have confirmed these arguments, suggesting that only a small part of the change in the economic environment in the industrial countries can be attributed to energy price movements. The biggest impact of energy price increases seems to have been to redistribute profits from the nonenergy to the energy sectors, and so to alter the pattern of investment.[5]

There is general agreement that insofar as oil prices contributed to the recession, they did so by the speed of their change, rather than by the level reached in 1973. Two decades of low and falling oil prices led to inefficient patterns of energy use, to the development of technologies that were clearly using energy inappropriately given the long-run supply-demand balance, and to inadequate investment in alternative energy sources. This made the oil-using countries particularly vulnerable to a change in the relative price of energy, a change that was made possible in part by the high and very inelastic levels of demand in industrial countries in the early 1970s. In this view, the problem is therefore that oil prices were too low for a long period, and that the error was then corrected too rapidly.[6] Experience since 1973 shows that the capacity of the industrial economies to adjust their patterns of energy use in response to changed relative factor prices is in fact very great. However, such adjustments necessarily take a number of years and require that market prices provide the correct incentives. For example, energy use per unit of GNP in the United States has fallen by 38 percent over the last decade, something of a record in terms of patterns of input changes.[7]

If neither energy price increases nor conventional macroeconomic theories explain satisfactorily the development of the current situation, what are the alternatives? We argue that important changes in industrial structure have made the industrial economies more vulnerable to cumulative recessionary

tendencies, and that these tendencies have been reinforced by inappropriate domestic economic policies. In particular, we argue that the growth of scale economies in production has made industrial nations less economically stable, and that this instability has been worsened by restrictive monetary policies.[8] Although the increased importance of scale economies is generally acknowledged,[9] there is little analysis of what caused their emergence. This seems to be related to changes in technology and to the expansion of markets in the postwar period, through both economic growth and increased international trade. The unprecedented expansion of markets for OECD products in the postwar period could sustain new technologies more effectively if these were oriented to large-scale production.

It has been recognized for some time that scale economies in production are a major source of productivity growth. Indeed recognition of their beneficial impact can be traced back to Adam Smith, with his analysis of the relationship between efficiency, division of labor, and the extent of the market. However, it seems that as well as these benefits, they have costs. They may make the economy more sensitive to interest rates, more vulnerable to shocks, and reduce its ability to adjust to a changing environment. The sensitivity to interest rates arises because increasing returns industries are typically capital-intensive, and because their profits rapidly turn negative as output levels drop. The vulnerability to shocks arises because scale economies can magnify minor shocks and lead to self-reinforcing cycles of expansion or contraction.

The explanation lies in an important difference between increasing and diminishing returns. A drop in demand and output will raise productivity and lower prices in the conventional case of diminishing returns. However, with increasing returns it does the opposite. A drop in demand raises costs, thus forcing up prices and causing demand to drop even further, setting in motion a self-reinforcing downward cycle. On the other hand, an expansion of demand does the opposite: It raises productivity, lowers costs and prices, and stimulates further demand increases.

The argument takes its simplist form in the case of an individual industry, but the argument is easily generalized to the whole economy. With scale economies in production, average costs of production fall as output levels rise and, conversely, average costs rise as output falls. The reason is that large-scale production uses inputs more efficiently than small-scale. If, on the other hand, the classical assumption of diminishing returns holds in the economy, then the opposite is true: average unit costs will rise with output and will fall when output is cut back. There is now substantial evidence that costs fall with scale, in many important sectors.

In such a situation, consider an initial equilibrium that is disturbed by the loss of competitiveness on the part of one firm. A natural consequence is that this firm's market share falls, and its output contracts. Now, as output contracts, costs will rise because the economies of large scale are reduced. Hence,

the competitive position of this firm worsens further, causing a further drop in output and a cycle of falling output and rising costs. By this mechanism, then, a market equilibrium in an economy with falling costs is easily disturbed; a decline in one firm's position sets in motion forces that worsen the decline and make it cumulative. However, under the classical assumption of diminishing returns, just the opposite is true. A decline in a firm's competitive position, by cutting back its output, leads to a fall in its costs and so restores some of the lost competitiveness. There are therefore forces making for the stability of the initial equilibrium.

The above arguments show that a market equilibrium is readily disturbed if there are economies of scale. A loss of competitiveness on the part of one firm sets in motion forces that reinforce that loss. In fact, the argument is quite symmetric: If one firms gains an advantage over its competitors—for example, through an innovation—then by expanding its market this reduces the firm's costs further and reinforces the original gain, enabling it to move further ahead. There are thus tendencies that reinforce a lead and increase a lag: If you get ahead of your competitors, you move further ahead, but if you get behind, then you trail more and more.

Similar arguments can evidently be made at the level of the economy as a whole. Of course, the analysis is a little more complex in this case, as the economy will typically consist of a number of sectors, only some of which have economies of large-scale production. However, it is generally the case that goods produced with economies of scale—consumer electronics and consumer durables, for example—are leading sectors and are an important part of the market. They also face demands that are highly income-elastic, while the diminishing returns goods face demands with lower income elasticities. Therefore an economic expansion will shift the pattern of demand toward the increasing return industries. Their costs and prices fall, leading to a further expansion of their demands, and a cycle of self-reinforcing growth may develop.

Equally, a self-reinforcing contraction may occur in response to a change in demand that decreases demand in the increasing returns to scale sector. This could for instance be caused by restrictive monetary policies. So at the aggregate macroeconomic level, expansion, whether due to domestic policies or to gains in overseas markets, becomes self-reinforcing. Equally, contraction due either to restrictive domestic policies, or to loss of markets to foreign competitors, can become cumulative. The main self-correcting responses of markets with diminishing returns have been removed. The macroeconomic consequences are discussed below. Briefly, this makes the economy particularly vulnerable to a combination of stagnation and inflation and decreases the effectiveness of traditional antiinflationary policies. The important point is that if the economy is on a contractional path, then average productivity falls in the increasing returns sector, thus raising its costs. On the other hand, recession

will lower factor prices, especially real wages, tending to lower costs. The net impact of deflation on the price level will depend on the balance between these two effects. The most likely outcome is that extremely severe deflation will be needed to reach price stability, though the outcome could also be a combination of inflation and recession.

Conversely, if the economy is expanding, then average costs fall and there is a downward movement of prices. So the outcome is now growth with price stability. The crucial point here is that with economies of scale a contraction, by making production less efficient, can generate an upward pressure on costs and so begin an inflationary process. Expansion, however, tends naturally to reduce costs.

The policy implications of this analysis are quite immediate and are entirely consistent with recommendations already made by the United Nations for rather different reasons.[10] Inflationary pressures due to cost increases arising from a recession cannot readily be cured by traditional deflationary policies. These policies, by reducing output further and so lowering efficiency and raising costs in the increasing returns sector, in fact defeat some of their original purpose. Traditional deflationary policies will therefore incur all of the usual social costs of unemployment and wasted resources but may be of less value than expected in reducing inflation.

In fact, there are reasons to suppose that the social costs of deflation may be particularly high in industries with economies of scale. The reason is that deflation is associated with high interest rates. In this case, industries with increasing returns will not contract continuously as demand falls, but will at some stage shut down, throwing large numbers of workers onto the labor market.[11] The only way of preventing this is to administer subsidies to keep them in operation. Such situations have clearly arisen in many OECD countries in such industries as steel, automobiles, coal, and others.

There is another conventional argument for deflation that is also invalid in this context, which relates to the supposed efficiency gains from increasing the competitive pressures under which an economy operates. The theory is that the resulting "shake-out" eliminates inefficiency, so that in the long run the competitive position of the economy is strenghtened. Again, it is clear that while there may be some efficiency gains from such a process, there will also be efficiency *losses* from the smaller scale of operation, as economies of large scale are foregone. The rationale for restrictive policies as a response to stagflation is thus very weak indeed in modern economies with large-scale technologies. Not only are the social costs in terms of unemployment very high, but such policies are of little value in reducing prices or raising efficiency in important sectors of the economy. If deflation is pursued by restrictive monetary policies, then the resultant high interest rates may lead to bankruptcies among the capital-intensive sectors of the economy, unless these are subsidized.

There is a positive side to this analysis, which is just the converse of the above. Appropriate expansionary policies, focused on increasing returns to scale sectors, will not only raise output and employment but may also reduce inflationary pressures generated by high average costs. Such policies need, however, to be oriented toward increased output in industries where there are scale economies, that is, typically to high-technology and mass-production industries. What is called for is selective and balanced expansion of supply and demand—for example, with tax incentives for the extra expenditure to be directed toward particular industries.

A general expansion of demand would meet these criteria only if increasing returns goods had higher income elasticities of demand than others. Usually one would need to steer the extra expenditures toward appropriate sectors, using differential rates of sales tax by sector, or choosing to expand by monetary rather than fiscal policies if the activity in increasing returns sectors were highly sensitive to interest rates. In practice, the sectors with the most scope for cost reduction via output expansion appear to be manufacturers of electric and electronic equipment, manufacturers of chemicals and allied products, and transportation and communication.[12]

PROTECTIONISM AND MANAGED TRADE

The recent recession in the industrial countries has been the worst since the Great Depression of the 1930s. In response to unemployment and the decline in competitiveness of traditional industries, industrial countries have sought to protect these industries from international competition. Only in a relatively few cases has this taken the form of explicit tariffs or quotas.[13] More often, there have been informal agreements to restrict competition—for example, informal limits on the number of Japanese cars imported into the United Kingdom and the suggested harmonization of the prices of food exports from Europe and the United States. These are sometimes referred to as "orderly marketing arrangements" and are justified as ways of ensuring "fair competition."

In many cases these concerns do little more than give a veneer of respectability to a traditional protectionist lobby. However, this should not obscure the substantive issues at stake here. A general analytical content *can* be given to these issues of fair or unfair competition and of orderly trade. But before going any further we should note that trade policies have many aspects and cannot be measured by a single number describing more or less liberalization.[14] Different sectors may justify very different trade policies, and a country with a small number of substantial but carefully selected trade restrictions may in fact integrate with the international economic system better than one with a uniformly low level of restrictions or with none at all.

We shall therefore differentiate sharply between managed trade and protectionism, the first being a more constructive trade policy. We shall focus on the implications of managed trade for economies with increasing returns and show that while protectionism prevents specialization, managed trade may in some cases encourage it.

However, we shall also distinguish the desirability of international specialization under different circumstances, taking into account not just the supply efficiency but also the demand patterns generated. Because of dislocations in supply and demand, specialization may lead to persistent trade imbalances, and in some cases to welfare losses. It is simply not true that efficient operation of a world economy with increasing returns means a return to a North-South division of labor where the North specializes in capital-intensive and the South in labor-intensive production. We shall argue that this somewhat dated vision can lead only to persistent trade imbalances and increase the costs of adjustments to the evolving international economy. In so doing, we explore the extent to which exports of labor-intensive products help or inhibit the development of increasing return sectors within the South. Finally, we consider the issue of structural change in modern industrial economies and relate this to economies of scale and the need for managed trade.

We shall now turn to the issues of orderly trade and fair competition. There is obviously some confusion in the use of the term "unfair competition." It is typically used to refer to low prices of imports that compete with domestic production,[15] with a clear implication that low import prices represent a problem. Yet in the case of extractive resources, the problem is widely seen as one of import prices being too high.[16] It is not *a priori* immediately clear why in the case of some imports high prices constitute a problem, while in the case of others it is low prices that constitute a problem. Certainly one cannot justify this distinction on the grounds that whereas Japanese cars compete with domestic production, OPEC oil does not—for both in the United Kingdom and the United States, oil imports compete with domestic production, and in all industrial countries they compete with domestic coal production. Indeed, through the process of factor substitution, oil imports also compete with domestic capital and labor. Low oil prices lead to more oil-intensive technologies, which use less domestic capital and labor than otherwise.

It is clear, then, that we cannot extract an implicit definition of unfair pricing from current usage, though we note for the record that the fact that import prices may apparently be "too high" or "too low" does suggest that there may be an intermediate optimal range. This is an issue that we shall return to in our discussion of resource pricing. Overall, it is evident that fair competition and orderly trade cannot be characterized only by the level of import prices, but that they must be related to whether the trade and pricing

patterns are in some sense conducive to macroeconomic efficiency. We turn next to this issue.

A useful way of approaching this is to consider the impact of economies of scale on patterns of trade and on the distribution of gains from trade. Traditional trade theory assumes constant or diminishing returns to scale in production, and this denies the possibility that large-scale production may be more efficient than small-scale. In fact, large-scale production clearly is more efficient in many fields that are important in international trade: automobiles, computers, and steel provide obvious examples. In each case there are reasons why large-scale producers may be more efficient than small. These may be pure technological, as in the case of steel, or they may derive from the high fixed costs of research and development, as in the case of computers, or they may be partly managerial and organizational, as with automobiles. In any event, neoclassical trade theory assumes away all such effects, and this is a crucial step in its ability to derive the well-known propositions about gains from trade and the distortionary effects of tariffs and quotas. However, resuming away scale economies in production limits considerably the applicability of this theory.

If one admits these more general cases of returns to scale, the usual conclusions about the gains from unrestricted trade must be heavily qualified. In particular, a concept of "orderly trade" emerges naturally, as there are conditions under which active management of trade flows is needed to ensure that all countries gain. Without such management, all of the gains from trade may accrue to just one trading partner, with the others possibly being net losers. This active management of trade flows typically involves carefully coordinated limits on imports or exports. This provides a framework within which one can evaluate alternative trade policies and find some analytical equivalents to such phrases as "undue market penetration" or "unfair competition."[17]

What happens is that with scale economies in production, there may be no prices at which all partners gain from trade and at which trade also balances, even if prices are fully flexible and markets perfectly competitive. Scale economies in production imply that price adjustments may not be able to balance supply and demand.[18] The conclusion is that if there exist prices at which both trading countries *can* gain, we may need a "visible hand" to ensure that trade will also balance.

This argument bears a little elaboration. Consider two countries and two produced goods, each of which is manufactured under conditions of economies of scale. Then each country produces most efficiently by specializing in one good and meeting its needs for the other by trade. If each country were to produce all of its requirements of both products, this would lead to smaller-scale and less-efficient production. Productive efficiency thus seems to imply specialization and trade, with each country exporting the good in which it specializes and importing the other. However, this neglects important

economic issues. The supply provided by industries with economies of scale cannot always vary as smoothly as demand in response to price changes. Firms will instead switch from large- to small-scale production abruptly as prices change, and this may make it impossible to get precisely the outputs needed to meet demand. The market will shift abruptly from excess demand to excess supply, with no intermediate market clearing position, or will remain at a point of market disequilibrium.[19] An example of this is given by the trading relationships between Japan and the United States. This is characterized by a persistent excess supply from Japan in an increasing returns to scale sector, namely of production. Another instance would be the excess demand for industrial goods that are exported from industrial to developing countries and produced under increasing returns. A measure of this excess demand would be the persistent balance-of-payments deficits of the importers.

We have now explained the need for the management of trade in economies with increasing returns. The next step is to show how this differs from protectionism, and what managed trade means in a North-South context.

The first step is easier. Protectionism is designed specifically to prevent specialization that would naturally occur as a result of market forces. An example is the multifiber agreement, which seeks to reverse the trend toward the specialization of the industry in developing countries that presumably offer better prices and products. This agreement attempts to prevent specialization. Less explicit policies of this sort exist in other industries such as steel and various light manufactures.

In contrast, managed trade would seek to promote overall efficiency, which in certain cases may require more rather than less specialization, and an appropriate industrial policy to phase out obsolete parts of the industry. An example, is the European policy toward steel, where appropriate incentives are offered to ease the phasing out of plants in sectors of the industry that have a large minimum efficient scale of operation and cannot compete with Taiwan or Korea, while encouraging instead the production of more specialist products. This shows clearly the difference between managed trade and protectionism. It also illustrates the fact that managed trade policies cannot be formulated in isolation from other industrial policies. Indeed, the management of trade should be seen as an extension of industrial policy to the international arena.

We now tackle the issue of managed trade in a North-South context. The statements made so far about the desirability of specialization with increasing returns are not necessarily applicable to North-South trade. Even if specialization could be managed so as to prevent *trade imbalances*, a fundamental asymmetry between the traders may render our previous arguments inapplicable. In North-South trade we often see an *increasing returns* product being traded for a *decreasing returns* product. A typical example is the trade of industrial goods, which are often produced under increasing returns, for labor intensive

manufacturers or primary products. Because of this fundamental asymmetry the management of trade may take a quite different form, and indeed may recommend against many forms of specialization in North-South trade. We shall discuss this next.

A higher trade volume increases the efficiency of the exporter with *increasing returns* and the productivity of its labor, thus leading to domestic gains from exports. At the international level, this exporter will also gain if the higher volume of trade brings it higher revenues. Whether or not this will happen depends, of course, on the relative prices of the two goods traded.

We may think *a priori* that the prices of the increasing returns product will fall, and those of the decreasing returns products rise, with the expansion of trade. This would lead to an improvement in terms of trade of the South. However, quite the opposite may happen.

It has been established that the terms of trade of a region exporting a decreasing or constant return to scale product will worsen as exports expand, if labor is very abundant and its technologies dualistic. This point is developed in detail in the next section. This drop in prices as exports expand can be mistakenly attributed to lower costs due to increasing returns but is in fact a rather different phenomenon. What causes the drop in prices is *not* higher productivity, but rather lower output and lower wages in the South. An expansion of exports from the South may be possible only with a reduction in domestic output, which causes in turn a severe restriction of domestic consumption and makes more surplus available to the international market.

As a matter of fact, Arthur Lewis's model of development [20] will also predict that trade expansion will cause a drop in the South's terms of trade, in a situation where the North trades an increasing returns good for a decreasing returns product from the South. He determines the relative prices of the traded products by the factorial terms of trade, which is the ratio of labor productivity in the two regions. Increased trade in these circumstances always improves the North's factorial terms of trade, because it improves its relative productivity.

Under these circumstances, nothing could be more inefficient for the South than specializing further in labor-intensive exports. Any form of managed trade that seeks overall efficiency will advise against specialization in such cases. It should be noted that when technologies are more homogeneous or labor more skilled and less abundant, specialization no longer has the negative impacts described above. This illustrates once again the importance of the coordination of domestic and international policies and exhibits rather strikingly how an optimal management of trade will depend on the characteristics of the trading regions.

Having discussed the issue of managed trade, and its implications in a North-South context, we now turn to our final topic in this section: the difficulties in structural adjustment in modern industrial economies. It has

already been noted that such difficulties are at the root of many current macroeconomic problems. The connection between trade imbalance and inadequate structural flexibility is that both stem in part from economies of scale in production. With scale economies, it is only when operating at high output levels that a firm is efficient and productive. In this case, it becomes impossible to ensure the gradual contraction of declining industries and the gradual expansion of their successors.

The difficulty arises because productivity increases with the scale of operation. This means that once an industry is uncompetitive and unprofitable, any contraction will reduce its productivity and make its position deteriorate further. But contraction is a natural consequence of an uncompetitive position, so that there is a vicious circle of decline here. Loss of competitive position leads to contraction, which leads to further loss of competitive position, and so on. Only through expansion could the firm break out of this cycle, but expansion is emphatically not a natural consequence of loss of competitiveness. This requires some "visible hand" encouragement to the market forces because of the risks involved and the public good aspects of the problem.[21]

This should be contrasted with the traditional case of diminishing returns and diseconomies of large-scale operations. In this case, productivity arises as output is cut back, and as the diseconomies of large scale are avoided. An uncompetitive industry will naturally reduce its scale and thereby raise its productivity and restore its competitive position. A loss of competitiveness therefore sets in motion forces that tend to compensate for this, and to restore the original position, rather than forces that lead to cumulative decline. In the one case with diminishing returns, industrial structures have a degree of inherent stability and will change smoothly. In the other case with increasing returns, they may be innately unstable and respond erratically to changes in the economic environment.

It emerges, then, that problems of persistent trade imbalance of structural adjustment are both related in their origins to changes in technology that have led to the greater competitive efficiency of a large-scale organization. The analysis of these issues provides another approach to the issues of "fair competition" and "orderly trade." These can now be seen as trade patterns that are conducive to trade balance and to patterns and rates of macroeconomic structural change that minimize social costs. These patterns will typically not be those that emerge from market forces but will require conscious selection via intervention.

There are thus two approaches to the concept of orderly trade, one in terms of import prices that lie within a certain range, and the other in terms of trade balance and structural adaptation. These approaches complement each other.

The ultimate conclusion from this analysis is that one cannot recommend, as an objective of international policy, a return to the pursuit of a trade

regime as uniformly liberal as possible. With increasing returns, the invisible hand cannot ensure harmonious and efficient outcomes. The need is for institutions to establish trade regulations and patterns that are consistent with trade balance and with the smooth occurrence of any necessary structural changes.[22] This will of course involve relating international economic policies to domestic economic structures. More concretely, for developing countries it must mean a limit on export prospects for many of their products. This is elaborated further in the following sections.

EXPORT-LED STRATEGIES BASED ON TRADITIONAL COMMODITIES

The last 15 years have seen an increasing emphasis on export-led development strategies. Indeed, such strategies have become an automatic policy recommendation by international organizations. Increases in exports are appealing for alleviating short-term balance-of-payments deficits or foreign exchange constraints. However, the current economic climate in the industrial countries, which are the principal importers, does not seem propitious for a substantial expansion of exports of traditional commodities.[23] Even if it were possible, such an expansion would require a sizable drop in export prices, that is, in the South's terms of trade.

The economic support for export-led strategies is usually derived from a particular view of the international division of labor and of what constitutes an "engine of growth" for a developing country. A more general and perhaps more realistic view is to evaluate export-led growth strategies by analyzing the circumstances in which these strategies can be expected to succeed and those where they cannot. In the latter case alternative policies should be considered, taking into account not only narrow forms of import substitution but also more broadly based development strategies as well as the possibility of exports of less traditional products.

Over the last 30 years a consistent body of theory has been developed to analyze the effects of trade on the trading economies. This theory has two main pillars: the ideas centered on gains from trade and those based on factor price equilization. These have been generalized, expanded, and applied very widely, so that their conclusions have reached the noneconomist and acquired the status of common and undisputed knowledge. They are used often to substantiate claims that more trade is better for all, especially when it utilizes the relative advantages of each trading region.[24]

Neoclassical trade theory is based on the Heckscher-Ohlin model and is usually presented in the framework of two regions trading with each other in two products. Each region uses two factors of production, labor and capital; one good is more labor-intensive and the other more capital-intensive. The

two countries are identical in all respects except for a difference in their factor endowments, which leads to different product and factor prices in each region. In isolation, that is, prior to trade, the labor-intensive product in the labor-abundant country has a lower price than the same product in the other country. Wages and prices are also different in the two regions. In particular, in isolation, the rewards of labor (wages) are lower in the country with more labor. When international trade in commodities takes place the prices of commodities are equalized in the two regions. Each region exports the commodity that is produced with its most abundant factor. Higher levels of welfare are attained by both countries because each may consume more by specializing in the exports of the good in which it has a relative advantage, while importing the good in which the other has an advantage.

A further result links the gains from trade with the equalization of factor prices. Following the equalization of commodity prices in the international market, the factor prices (of labor and capital) in the two regions will also equalize. Therefore, free trade leads to a rise in the real wage in the labor-abundant country. The specialization in the production of the labor-intensive good, which is a form of *international division of labor*, would therefore improve the distribution of income within the South. Moreover, as wages in the South increase, the relative advantage of the South decreases, so that this theory predicts that relative advantages tend to disappear with continued trade. The factors that lead to the international division of labor are eliminated with time.

The appeal of gains from trade and factor price equalization results has been powerful enough to shape almost all formalized thinking on the theory of trade and international economic relations over the last 30 years, and to permeate policy thinking in a pervasive manner. However, it is becoming increasingly clear that there are several important factors that have not been considered in these theories.

It is generally acknowledged that the Heckscher-Ohlin model has not provided an adequate explanation for salient features of the postwar period (1945–70). In this period, the volume of international trade increased in an historically unprecedented fashion, while wealth differentials and the division of labor between North and South became more pronounced. Furthermore, it is generally acknowledged that the distribution of income within the South did not improve during this period. Neither gains from trade nor factor price equalization theories seem consistent with these facts.[25] As Arthur Lewis has recently observed, "the market works to concentrate rather than to diffuse the benefits of trade."[26] Of course, exogenous historical explanations could be invoked but this would amount to an implicit recognition of the limited explanatory powers of the theory.

An alternative theory can be offered, taking into account features of North-South trade that are lacking in the Heckscher-Ohlin model. Our North-South model is consistent with perfectly competitive markets throughout,

but it allows for differences in the economic structures between the trading regions.[27] If these differences are small, one obtains results in the spirit of Heckscher-Ohlin. However, if the economic structures are significantly different, one can describe precisely when the expansion of trade is beneficial to the South and when it is not.

The structural differences in the two regions are of two types:

- *Differences in technologies,* in particular, the degree of technological diversity between traditional and industrial sectors in the South, should be much larger than in the North.
- *Differences in the labor market behavior:* Labor supply in the South should be highly responsive to changes in real wages (due, for example, to a significant migration from the subsistence to the industrial sectors of the economy) while labor supply in the North is less responsive to changes in the real wage.

These two structural differences, taken together, or indeed just the greater dualism of technologies in the South together with an assumption that all wages are spent on the basic good, lead to important general equilibrium effects called "income effects." It is analytically convenient to divide the impact of an export price change into price (or substitution) and income effects. The price effects produce conventional demand responses, giving lower demands at higher prices. The income effects of a price change describe the impact that it has on demand via changes in income levels. An increase in prices may lead to higher incomes and thus to increased rather than decreased demand.[28] The overall consequences of a price change for demand therefore depend on the relative magnitudes of these two different effects. Technological dualism, together with either abundant labor or wage income spent entirely on the basic good, tends to emphasize income effects. Hence in either of these cases the income effects of a price change dominate the price effects. From now on we will refer for convenience largely to the case of technological dualism and abundant labor in the South, but it should be recalled that the arguments and conclusions apply equally well to the case of duality and wages spent entirely on the basic good, quite independently of the abundance of labor in the South.

Because of income effects, with dual technologies and abundant labor, an increase in the exports of the labor-intensive basic consumption good will result in a decrease in the price of this good in relation to that of the importable good. Domestic employment and the purchasing power of wages also decrease, so that domestic consumption of basic goods decreases. These effects occur for *any* increase in exports, quite independently of the cause of this increase. For example, the increase in the volume of exports of basic goods from the South may follow an industrial expansion of the North, and yet the same negative results obtain. These results do not depend, therefore, on any assumptions on the elasticity of international demand for goods from the

South but rather on domestic conditions in the South.[29] A very clear nontechnical summary of the arguments that support this conclusion was given by K. J. Arrow:

> Very loosely, the argument is the following. Suppose the rise in export demand for the B commodity were followed by an increase in its price. Since its production is highly labor-intensive, there should be a rise in real wages and, since labor supply is highly responsive to the real wage, a considerable increase in labor supply. The rise in both real wage and labor supply increases even more rapidly the domestic demand for the B commodity, since it is all directed to the B commodity. Hence supply available for export would *decrease*, and therefore would not match the increased demand for exports. It follows that the only way the export demand could be met, under these conditions, would be a *decrease* in the price of commodity B and of real wages.[30]

This argument emphasizes the importance of *income effects:*[31] An increase in the price of the basic good leads to increases in both employment and real wages, and thus to an increase in total income and in demand. Although this quote refers to the case of dualism and abundant labor, the same argument applies with dualism alone if all wage income is spent on the B commodity. In such cases, an increase in export demand can be met only by a *decrease* in both real wages and the price of the basic good. This is because only at lower real wages will domestic consumption allow increased exports, and lower real wages are associated with a lower price of the labor-intensive basic good. Under the conditions of technological dualism and of abundant labor in the South, a higher volume of exports is necessarily associated with a lower price of a basic good, with lower wages and employment, and with lower domestic consumption of basic goods.

It seems worth pointing out that these results are *reversed* when the production system in the South is more homogeneous and when its labor supply is less responsive to real wages. In this latter case, an expansion of exports leads to an improvement in the North-South terms of trade, and also to increases in domestic employment, consumption, and real wages. From an economic viewpoint, therefore, the economic parameters of dualism and labor abundance must be considered and, if necessary, modified before embarking on an export-led policy.

It is of interest that the international division of labor tends to be *reinforced* by the expansion of international trade when technologies are different across sectors, and when labor is abundant in the South. This is because in this case an increase in exports lowers wages in the South, therefore reinforcing its relative advantage. Relative advantage here derives from low wages, which imply low labor costs. This is of course different from the relative advantage derived from the lower labor costs that obtain when labor is very productive,

so that total labor costs are low, even though individual wages may be high. In contrast to the predictions of the neoclassical model that the international division of labor will gradually disappear, inequality and the international division of labor may perpetuate themselves in this case, despite the assumption of perfectly competitive markets. This difference in results emerges because the neoclassical models do not consider abundant labor and dual technologies.

A further point is that factor prices not only fail to equalize across regions in this model but also tend to drift further apart within the South as trade expands. The rewards to capital increase, and the rewards to labor decrease.

This point is worth emphasizing because it is only natural that in a neoclassical model with different technologies in the two regions, the prices of factors will not be the same in both regions. However, under the neoclassical assumptions, factor prices in the South will move *toward* those of the North as the countries move from autarchy to free trade, leading to an increase in wages in the South. It has been inferred from this that an increase in trade will improve the distribution of income in the South, though this inference certainly does not follow without additional assumption. In the case of abundant labor and dual technologies, however, it is clearly established that an increase in the volume of trade will worsen the distribution of income in the South. Our results compare factor rewards at different levels of trade, while the neoclassical results compare only autarchy and free trade.

It has already been indicated that we refer to two distinct but related cases, namely where the South is characterized by dualism and abundant labor, and where it is dualistic and exports a "wage good"—that is, all wage income is spent on this good. Examples would be exports of agricultural or manufactured products that are consumed domestically from wage income, such as meat or meat by-products in Argentina, jute and textiles in India and Pakistan, or rice in Thailand. This analysis can in fact be extended to a third case, which represents a considerable generalization of these: the case where the region exports a labor-intensive product that is produced almost exclusively for export. Examples are coffee and soya beans in Brazil, bananas in Central America, and tea in Sri Lanka. In this latter case, we consider three rather than two sectors in the South—industrial good, basic goods, and the labor-intensive export. This export is called an "enclave" because it is not consumed domestically nor is it used as an input to production in other domestic industries. The results show that with abundant labor and dual technologies, an increase in exports of the enclave leads to lower terms of trade and to a decrease in the domestic consumption of basic goods. This can also be traced to income effects, but of a different nature, since the enclave good is not consumed domestically. It results from the competition between the enclave and the basic good sectors in factor markets. Both are labor-intensive sectors. An increase in wages leads to higher demand for basic goods. This leads, in turn, to more employment in the basic sector, and even though total labor supply increases, less labor is employed in the enclave. Higher wages lead to lower exports in such circumstances, so that a drop in wages is required to increase exports.[32]

Domestic consumption of basic goods therefore decreases while exports increase. This appears to be consistent with an observation made by A. K. Sen and other authors, who note that a region with decreased food consumption, or even famines, may be sustaining or even increasing its level of food supplies or food exports.[33] Food consumption in a region is a result of complex market forces, rather than a simple relation between food supplies and populations.

Finally, we consider cases where the export commodity is a resource that is extracted almost exclusively for sale in the international market but is not labor-intensive. Examples are minerals such as copper in Chile and oil in Venezuela. The results also show a connection between the success of export-led policies and the characteristics of demand and technologies, and are described in the section on "Resources and North-South Trade."

The results discussed above pose doubts about general reliance on export-led growth for bringing about equality and development in the South.[34] When labor is very abundant and there is a significant level of duality in production, export-led growth cannot be expected to bring about gains from trade nor to improve consumption and real wages in the South. A careful appraisal of each case, focused especially on the parameters studied here (labor markets, technologies, and structure of demand) seems in order before endorsing export-led strategies. Alternative strategies are preferable until the underlying conditions on technologies and labor markets can be improved.

In general terms it can be said that the growth of the South should not be based on the relative advantage of cheap labor associated with poverty. To the extent that widespread poverty is consistent with abundant labor supply, and leads to technologies in the industrial sector very different from those in the rest of the economy, export-led policies may lead to a deterioration of the international terms of trade of the South, lower wages, and also lower export revenues. Even though in the short run the revenues accruing to a small elite could be increased, in the medium and long runs the country as a whole is worse off. This possibility has been substantiated by econometric studies of trade between selected industrial and developing countries.[35]

A short discussion of possible ways of remedying this situation, and of the conditions necessary to reap the benefits from export-led growth, seems in order. A first requirement would be the development of stronger domestic markets and in general of policies conducive to a better distribution of income. Such policies would lead to lower rates of population growth and to a lower response of labor supplies to higher wages. If accompanied by the use of more homogeneous technologies, then there could be gains from increased trade in labor-intensive products.

The main point is that increasing the productivity of labor, and developing stronger domestic markets, permits a stronger "bargaining position" in international markets. The protection of local production, that is, import substitution and infant industry protection, is neither a necessary nor a sufficient correction per se, as it deals only with the supply side of the market and neglects demand factors. What is required is an appreciation of the two sides of the market, both demand and supply, and a realization that local populations count in both sides of the profit equation, that is, as customers as well as inputs. Domestic markets must be strong in order to prevent deterioration of international terms of trade and the accompanying accumulation of balance-of-payments deficits. This requires the development of the domestic market as a whole, so that increases in the productivity of rural or other low-income groups seem necessary before embarking on export-led policies.

Examples of successful export-led policies in the last 20 years, which were widely discussed in the 1970s, include Japan, Germany, and South Korea. In all these cases the domestic markets were relatively strong, and the levels of productivity, employment, wages, and consumption were relatively high. Less successful export-led policies have been pursued by Latin American countries, which have dual economies and more "abundant" labor. The results indicate a significant relationship between the North-South terms of trade and the distribution of income within the South. Better terms of trade with the North are associated with a better distribution of income in the South. The international market is therefore an important factor in shaping domestic distributions within each region. Its impact depends on the prevailing market and technological conditions. The interaction of domestic and international factors should therefore not be neglected, even with respect to variables that are usually considered purely domestic, such as the distribution of income.

ARMAMENTS AND NORTH-SOUTH TRADE

Armament flows have come to play an increasingly important role in international markets, and North-South trade has become the most important element of this growing sector. The main exporters are in the North: The United States, France, and the United Kingdom jointly have accounted for at least 60 percent by value of all arms exports since World War II. In particular, between 1965 and 1974 the United States alone delivered just under 50 percent of all arms traded in the international market, and the USSR followed with 28 percent.[36]

The last 15 years have seen the armaments trade shift dramatically from a within-North to a North-South trade. From 1950 to 1965 arms trade within the North amounted to $13.1 billion,[37] while the South purchased arms to the value of $6.31 billion. From 1965 to 1974, however, foreign and military sales

orders (FMSO) from the North amounted to $8.99 billion, while those from the South amounted to $27.63 billion (all in constant 1970 prices). This implies that North-South arms trade rose by over 450 percent between these two periods, while within-North arms trade fell by about 30 percent. This means that currently approximately three-quarters of global arms trade is North-South. Over the same period 1950–74, the total volume of world trade rose by 240 percent. Therefore, during this period, North-South arms trade almost doubled its share of total world trade.

Note that trade in armaments is only a part of all arms transfers: The total includes military grants and aid, military assistance programs, and military transfers against special credit arrangements. These nonmarket transfers are of course difficult to value and have decreased dramatically in importance, from being 800 percent of market transfers during the period 1950–65 to only 25 percent of these during 1965–74. Arms flows are therefore increasingly being transacted through the market, rather than being part of a political process.

As most arms are purchased by the South, and approximately 80 percent of the South's exports are primary commodities, it is reasonable to expect a connection between arms imports and commodity prices and exports. In fact, in substantial measure North-South trade can be characterized as a trade of raw materials and minerals for capital goods and arms. There is a very strong correlation between arms imports and military expenditures in the South and the prices of the South's commodity exports.[38] To be precise, a study of the export of nine commodities (aluminum, cocoa, coffee, copper, cotton, rice, rubber, steel, and sugar) exported by 37 countries found strong correlations between commodity export prices and arms imports. Because their elasticities of demand are less than one, commodity prices are positively related to export revenues. The total export revenues of primary producers are therefore also positively correlated with arms imports. As an example, in the period 1972 to 1974, the U.S. oil bill rose by a factor of 5.6 ($6.4/$0.8 billion), while FMSOs to OPEC countries increased by a factor of 7.51 ($6.4/$0.8 billion), and represented in 1974 roughly 25 percent of the U.S. oil import bill. This implies, at least for the United States, an elasticity of military sales with respect to oil imports in excess of unity.

Given present trade patterns, policies that raise the export revenues of primary producers will therefore lead to increases in the North-South arms trade. Higher export revenues will be partly recycled through the purchase of these arms. The precise extent to which this occurs of course varies by commodity and by country: In some cases it is substantial enough to suggest that domestic populations will enjoy only small welfare gains as a result of relaxation of foreign exchange constraints following higher export revenues.

NORTH-SOUTH TRANSFERS AND FINANCIAL POLICIES

For the last 20 years, the issue of aid and transfers has been widely discussed

as a means of narrowing the North-South wealth gap. As early as 1961, the industrial market economies agreed in principle to target 1 percent of their GNP to poor nations, with 0.7 percent in the form of Official Development Assistance, that is, concessional transfers from or guaranteed by governments[39] The matter received widespread attention, it became a permanent feature of North-South dialogues, and most economic models of North-South relations saw it as the single most important policy tool for narrowing the wealth gap.[40] However, in recent years the issue of North-South transfers has lost some of its appeal. It is becoming increasingly clear that North-South aid flows have followed a downward trend. They never reached even 30 percent of the stated goals, and in recent years have decreased significantly in absolute as well as in relative terms,[41] except for the OPEC countries' contributions.[42]

In the current economic recession, industrial countries do not even wish to consider the matter of transfers, and the issue has effectively been dropped from the North-South agenda. Contributions to development assistance programs have also followed a decreasing trend.[43]

Recently the international business community has been concerned with the substantial foreign debt accumulated by some developing countries, a significant part of which is outstanding loans from private institutions in industrial countries.[44] These loans represented in part a recycling of OPEC revenues, which were deposited in the commercial banks of industrial nations.[45] The severity of the recession in the industrial countries, coupled with the availability of OPEC funds, moved a number of these banks to undertake large loans to developing countries. These countries kept overall higher investment and growth rates than the industrial countries, adding some impetus to the world economy.[46] The enterprising spirit of capitalism therefore provided a measure of liquidity that was much needed at a time when the governments of industrial countries would not provide an equivalent.

However, in the four years to 1980, interest rates in the United States and the United Kingdom increased threefold as a consequence of the restrictive monetary policies. These were in part a response to oil price increases. As the United States and the United Kingdom are the home bases of many of the commercial banks, the burden of debt increased very significantly for many LDCs, for example, Mexico, Argentina, and Brazil. To illustrate the orders of magnitude involved, with a $300 billion debt, a one point increase in interest rates represents $3 billion extra repayments or additions to the debt. A twelve point rise from 6 to 18 percent therefore represents a threefold increase in the costs of debt servicing, from $18 billion to $54 billion per year, giving demands on the balance of payments of $36 billion per year.[47] The change in domestic monetary policies in major industrial countries therefore seriously undermined the ability of borrowing nations to service existing debts.

The picture so far is rather negative, but it must be recognized that the impact of monetarism in the United States and the United Kingdom was very profound and may have set in motion short- and long-term changes in the international financial system, some of which we have already been able to observe. The recent 47 percent increase in IMF quotas is a rather striking example. The Inter-American Development Bank has also recently voted to increase its loans by 30 percent.

Effects that are more indirect, but not less striking, are also being felt at present. The very enterprising nature of the industrial countries' banking systems provided a check to the monetarist experiments in the United States and the United Kingdom, as their exposure led them to press for lower interest rates. The private banking system, an important bastion of capitalism, became rather vulnerable to precisely the developing countries that had borrowed from them. There have been recent comments that "Third World countries recently attained unprecedented leverage because of their ability to harm the western banking system."[48] This provides an object lesson in international interdependence: Banks' recycling of OPEC funds led them to press for easier credit policies within the United States, because their own survival depended on the ability of their international borrowers to continue paying.

Both the symbolic and the real aspects of this crisis have been profoundly educational. The high interest rates that were partly a response to OPEC pricing policies turned out to give more leverage to the Third World through the debt issue. Recently, Argentina and Brazil proposed rescheduling of part of their debts on favorable and somewhat novel terms, and their proposals were reluctantly accepted because of their inevitability.[49]

Under the circumstances, any attempt to alleviate the debt crisis contributes as much to bracing the viability of the international banking system as to any other aim; it was in part this consideration that moved the United States to support the 47 percent increase in IMF quotas, an increase that was historically unprecedented and that under different circumstances many years of negotiations would not have brought about.

A number of alternative liquidity measures have been proposed, some reflecting a similar concern for the viability of the existing financial system, and others expressing concerns for the borrowing countries.[50] Obviously these debts have very serious impacts on countries such as Mexico, Brazil, and Argentina. Concerns have also been expressed about the social and political consequences of painful austerity programs. However, it is equally obvious that the survival of states is less tied to the repayment of their debt than is the survival of the lending banks, especially as the crisis has precipitated an understanding of the need to renegotiate some of the debt.

The debt crisis also contains an important lesson for debtor countries that followed export-led strategies based either on more traditional commodities, such as Brazil, or on oil, such as Mexico. As the international sectors of their

economies expanded rapidly, and often inefficiently, their imports from industrial countries soared and exceeded the revenues from increased exports. Furthermore, concentration on their export market led to a neglect of the subsistence sector, and a consequent dependence on food imports, as in the case of Venezuela.[51] The lesson is that development strategies based mostly on the resource exports have very high risks, as their success is tied to international terms of trade for primary commodities, which are notoriously volatile and unreliable. For example, the recent drop in the price of oil had severe consequences for the Mexican economy, which had been oriented to depend to a great extent on the production and export of oil following a conventional view of development strategies.

The debt problem underscores the overall concern with liquidity in the world economy.[52] This concern arises in part from the strict monetarist regimes imposed by leading industrial economies in an attempt to combat their domestic inflation. In this context, the issue of transfers to developing countries has been replaced by a concern to develop better international financial tools. These are intended to alleviate deficits and the crippling interest payments on debts, as well as to forestall the instability of financial agents in the industrial countries with a very significant exposure. There is a general unease about the adequacy of existing international financial institutions, some of which date as far back as the immediate postwar years.[53] While the international community discusses the possibility of updating its financial institutions, the recent changes in the world economy strain the capacities of existing ones to cope with the demands of the day, and therefore they anticipate the emergency of newer and more adequate institutional arrangements.[54]

Temporary liquidity measures, if targeted appropriately, could provide a service to the industrial economies as a whole, allowing them to expand their economies simultaneously, even if in a limited fashion. A problem that is perceived at present is that each OECD country fears to implement expansionary measures on its own, because it may worsen its relative position in terms of inflation and exchange rates. The outcome is therefore worse than that which could be attained if all were acting cooperatively. A temporary liquidity measure could encourage a more or less simultaneous, if limited, expansion.

An analysis of the impacts of the new financial proposals on the developing countries could be carried out within a framework similar to that used to examine the older proposals on "transfer." Both proposals have a common feature: the desire to add initial endowments to the developing countries, in the belief that such an addition will improve their position in the world economy.

However, since the international economy is a market economy, an analysis of changes in initial endowments is not complete unless its effects on international market prices are understood. Such prices include the "terms of trade" between the North and the South, and therefore have a major influence on a number of policy concerns extending beyond the financial area, such as export policies, investment, and growth. Any liquidity measure aiming to alleviate outstanding debt must be significant, since the value of the debt is itself rather significant for the economies concerned.[55] Therefore, we can expect that such a liquidity measure may have a nontrivial impact on trade, as well as on demand and supply patterns in the countries concerned, and one should examine the overall implications. As in the case of export-led policies discussed above, the *income effects* of a transfer are likely to have a significant impact on the welfare of the giver and of the receiver when the market prices have adjusted to the new parameters.

The market responses to a transfer to the South may in some cases be more helpful to the donor than to the receiver. Despite its counterintuitive nature, this is in fact a classical proposition in trade theory, going back to the work of Wassily Leontief in 1936. The general problem of the welfare effects of a transfer is one of the oldest in trade theory, starting with the work of John Stuart Mill.[56]

A transfer may have a negative effect on the receiver if its effect on market prices is to *lower* the terms of trade of the receiver. This happens if the receiver's imports are an important component of its demand, because in such a case the new "wealth" may be transformed into increased demand for imports. This is akin to the income effect mentioned above. If the price of the imports increases sufficiently, the receiver may find that despite the expansion of its budget, it is less able to import and to consume than before.[57]

For several years this problem was considered something of a curiosity because it was established that in two-region economies it could occur only in unstable markets. The phenomenon was therefore thought to be at worst temporary. However, it has recently been established that this problem arises very generally in three-region economies, and that it also occurs with *stable* markets, so that it may be quite persistent.[58]

The main result is that in a three-region world the receiver could be worse off whenever the third region, which does not participate in the transfer, imports the products in which the donor specializes. An example is an economy with three regions: an industrial region, a newly industrialized region, and a less-developed region. The industrial region makes a transfer to the less-developed region; the donor consumes mostly industrial goods and the receiver basic goods. Under these conditions a transfer will make the receiver worse off when the nonparticipant country imports industrial goods, in a stable market.[59]

A typical case where such conditions may be satisfied is when the industrial countries transfer goods or money to the lower-income LDC's, while the newly industrializing countries, which do not participate in the transfer, are net importers of industrial goods. This is clearly a plausible case.[60] The

negative impacts of transfers may happen quite independently of the *denomination* of the transfer, which can be in industrial goods, in consumption goods, or in money.

This serves to show that overall reliance on transfers to decrease wealth differentials cannot be justified when part of the welfare of the countries concerned depends on their positions in the international market, and on the international terms of trade.

It therefore seems worth indicating the economic policies that could offset the negative impacts of transfers. As the negative results apply to *exchange* market economies, they may be avoided by appropriate *supply* responses, such as changes in the levels of production. For example, the losses from higher prices to imports may in part be offset if domestic producers increase their production of import substitutes. Decreased consumption of imports could then be offset by higher output and employment. In the rather general case where the LDC receiving the transfer is an importer of agricultural products from the North, then what is required is that the transfer be accompanied by measures to increase domestic agricultural output. Thus, the negative impact of higher agricultural prices, which lowers the volume of food imported and the domestic consumption of food, may be offset, at least in part, by increases in domestic production of food. This positive output response would in principle be consistent with profit maximizing behavior, because the producers would naturally increase their output when faced with higher prices. What is at stake is the strength of this output response, and the extent to which it can offset the negative price effect. This suggests the importance of positive measures addressed to improving productivity in the agricultural or subsistence sector.

In sum, measures addressed to the correction of inequalities cannot be based solely on aid flows, because these do not correct the basic difficulties in the real side of the economy. Aid that does not raise the levels of productivity will not lead to market structures adequate for sustaining economic expansion. Transfer policies share with export-led policies a misunderstanding about what constitutes an engine of development. Both rely on engines located outside the regions, while sustainable development also requires an increase in domestic productivity and stronger domestic markets.

A more balanced view is required, one that sees the domestic population not just as an input whose costs are to be minimized but rather as an important component of the market itself. This is akin to widely accepted prescriptions for industrial economies: The need to increase productivity and output is emphasized by supply side economists, while the need to strengthen domestic markets is a traditional Keynesian prescription.

RESOURCES AND NORTH-SOUTH TRADE

The prices of extractive resources, and indeed of primary commodities in general, have a notorious history of volatility. In the 1950s and 1960s they were also generally falling in real terms. The 1970s saw a departure from this earlier pattern, with a shift of market power from consumers to producers. This was a response to unprecedentedly high levels of industrial activity by user countries, and to demand conditions generated by decades of low prices. The oil market was of course the prime example and set a trail that other commodity producers sought to follow. Here a seller's market enabled OPEC to overcome two decades of market dominance by the buying cartel of major oil companies, and to begin exercising significant market power on behalf of producers. Although the role of a monopoly on the buying side in holding prices down has been noted for some years,[61] this point has only lately become generally accepted. Widely read publications in the United States and the United Kingdom have commented recently that "in one sense the dramatic increase in oil prices in the mid-1970s represented a belated recognition by the producers that the market had been rigged in the Western interest,"[62] and that OPEC was formed initially as "a cartel to confront a cartel."[63] Indeed, it has not been only in resource markets that industrial countries have been in a position to exercise market power. On the selling side, they have been able to dominate the markets for products as diverse as food, armaments, and various types of capital goods.[64] This recognition has also dawned on other producers, creating a concern to ensure in the future pricing policies that distribute the gains from resource trade more equitably among buyers and sellers.

It has usually been taken as obvious that higher prices benefit exporters and harm importers, and vice versa. In fact, this is not always true: There are a number of powerful factors that tie together the interests of the two parties, especially in the case of such an important input to production as oil. Moreover, the movements of prices in resource markets are strongly influenced by the domestic economic policies of the industrial countries. As well as having common interests in certain types of price movements, exporters and importers therefore have a shared influence over these price movements. It is then a very natural recommendation that they should design their economic policies so as to use their joint influences over these markets to pursue these common interests.

Higher resource prices, generally supposed to benefit exporters, may in some cases benefit the importers as well. In addition, lower prices, usually taken as beneficial to importers, may in some cases also benefit the exporter. From this, it will emerge that there are circumstances under which both importers and exporters gain from higher prices, and others under which both gain from lower prices.

To substantiate these points, consider the effects of alternative resource prices on importer and exporter. Looking first at the importer, it is possible to distinguish three partial impacts of higher prices. The most obvious and mostly widely acknowledged is of course the recycling effect, whereby higher revenues from resource sales return to the importing countries as increased export demand or portfolio investment or, in the case of many non-oil exporting developing countries during the 1970s, in the form of loans. The magnitude of this effect, particularly in the case of oil prices, may be very substantial. Recent estimates[65] have suggested that up to 50 percent of the extra OPEC revenues after the 1973 oil price increase were recycled to the OECD countries, and that the total effects of such spending would have been sufficient to prevent a downturn in GNP in those countries, in the absence of other deflationary effects. Other estimates suggest that the recycling of OPEC surpluses as loans to non-oil LDCs has had a very positive effect on their rates of growth and on their rate of investment as a proportion of GNP as well. For instance, in the period 1973 to 1979, investment as a proportion of GNP increased in LDCs from 15.7 to 23.6 percent and LDCs investment as a proportion of total world investment rose from 4.9 to 8 percent during this period.[66]

A second source of common interest is the longer run conservation effect. There is an old saying that "the monopolist is the conservationist's best friend," meaning simply that the higher prices supposed to result from monopoly will reduce consumption and aid conservation.[67] There have been widespread concerns about the long-run implications of inefficient patterns of extractive resource use, and about the way in which this may tighten global constraints on long-run growth prospects. High prices, by encouraging efficient use and the development of substitutes, will help to prevent or reduce long-run shortages. The industrial countries, as the main users of resources, will also be the main beneficiaries. There is therefore another dimension of common interest here.

Probably by far the most important source of community of interest between importer and exporter is the one that is also least obvious. This is the substitution effect, a medium-term effect that arises from the effect of a resource price change on the internal equilibrium of the importing country. It is most readily illustrated by reference to the effects of oil prices. However, identical arguments can also be made about the effects of the price of any imported primary input.

An increase in the price of an imported resource (such as oil) leads to increases in the demands for other inputs such as domestic capital and labor. Producers, wishing to produce at minimum cost, will change the factor mix so as to use more labor or capital, whose price has not risen, and less of the resource. At constant output levels, this would raise the demands for, and employment of, domestic capital and labor. The returns to these factors increase and therefore so do their total incomes. At the same time that producers

switch from using resources to using capital and labor, consumers will also change their demand patterns. They will turn away from resource-intensive goods, whose prices have risen, and toward goods made mainly from other less-expensive inputs, such as domestic capital and labor. This again tends to increase the employment of, and rewards to, domestic capital and labor.

In the medium run, therefore, the increase in the price of a resource may increase the employment and remuneration of those domestic factors that can substitute for it. This is obviously a positive effect as far as the importing economy is concerned.

To set against this substitution effect is a short-run wealth effect that is more intuitively clear: The importing economy must part with more purchasing power to import any given quantity of the resource, so that its real wealth is reduced by the increase in the price of a good that it purchases. Even though the impact of a price increase is negative before substitution takes place, in the medium run it could be positive. There is also another short-run effect to consider. When the exporter fixes the price of the resource and not the terms of trade (as in the case of oil), the importing country can increase the price of its own exports in response to the rise in its import prices. This may offset even in the short run the drop in real wealth. This point is of practical relevance: After the oil price increases of both 1973 and 1979, the prices of OECD industrial exports to OPEC countries increased by amounts quite sufficient to compensate for much of the loss of wealth from the higher oil prices. The magnitude of the negative wealth effect may therefore be significantly reduced once we account for the export price responses of the importing country. However, in general the wealth effect will reduce domestic aggregate demand and thereby reduce the total demands for, and employment of, domestic factors. This contractionary consequence of the higher oil price will of course tend to offset any possible beneficial consequences of the substitution effect.

The important issue is therefore which of these effects dominates. There is no general answer to this problem: No effect will uniformly dominate the others. Each effect will predominate at a different set of initial prices. The substitution effect will be more important quantitatively at low prices, the wealth effect more so at high prices, and the recycling effect will predominate when revenues are high. At intermediate prices their relative magnitudes will switch in a way that depends upon the structural characteristics of the economy. Although there are no completely general statements about the sizes of wealth and substitution effects at all price levels, we nevertheless have enough information to make the following important statement: At low resource prices, when the substitution effect dominates, the importing country will gain from an increase, and at high prices, when the wealth effect dominates, it will gain from a reduction. At intermediate ranges, the results require precise examination of the economic parameters of the importing country.

It is explained below that the exporting country will also gain in some respects from an increase when prices are low, and from a decrease when they are high. This will provide the basis for arguing that there is a "cooperative band" of resource prices. Whenever prices are outside this range, both importer and exporter will gain by moving into this range. If both traders are aware of the full consequences of different pricing strategies, they will wish to raise prices if they are lower than this band, or reduce them if they are higher.

This suggestion of a substantial community of interest is grounded on the analysis of *competitive market responses* to resource prices. As such it is a rather novel proposal and has far-reaching implications. It is therefore important to understand exactly the framework from which it emerges: that of an industrial economy with perfectly competitive domestic markets that respond to a given world market price for a resource. This economy imports resources in exchange for industrial goods. The resource exporter fixes the world price of the resource, and so is a price setter. However, the resource exporter has no control over the prices of the industrial goods it receives in exchange for resources: These are of course influenced by the price of the resource. Hence the exporter cannot set the terms of trade between resources and industrial goods, which is the "real" price of the resource. It can only set the resource price alone, a "nominal" price. The reaction of the industrial market economy then determines the price of industrial goods and hence the terms of trade or the "real" resource price.[68] This is a framework that is different from the conventional models of monopoly in the world resource market, where it is assumed that the seller sets the "real" price of the resource, that is, the terms of trade between this and the goods traded for it. Equally, it is different from a fully competitive model where the resource exporter is a price taker. It is a model where the price-setting power of the resource exporter is mediated by the market's response, which is a price for the industrial imports. The resource exporter can set any "nominal" price, but it has to live with whatever real price is the market's response. The price of the resource is set by the exporter; the terms of trade are not. This seems to be an accurate representation of the positions that many resource-exporting countries have, or may aspire to. Certainly it describes OPEC's position well: OPEC member countries have been able to fix the current dollar price of oil but have had to accept the current dollar prices of industrial exports with which the OECD economies have responded. These have risen sufficiently sharply since 1973 to make OPEC's gain in real oil prices a very small fraction of its gain in current dollar prices.[69] We are therefore concerned with comparing a short- and a medium-term effect of resource prices. In the short run, the exporter fixes the dollar price, but in the medium run it must accept a market-determined "real" price for its resource—that is, the relative price of the resource with respect to the price of industrial goods. Experience indicates that these short- and medium-term price changes can be significantly different. Furthermore, when compared with long-run real price adjustments, short-run price changes may

lead to the opposite effects from those originally sought, as demand patterns and production patterns shift in response to the original changes in dollar prices. Short-, medium-, and long-run responses may be detected by considering the full general equilibrium effects of a price change, in which all important variables—such as income, supply, and demand— adjust, rather than by the more usual partial equilibrium responses.

It is important to note that this analysis is entirely consistent with empirical studies of the responses of importing countries to higher energy prices. One phenomenon revealed by these studies is that higher energy prices have on occasion led to increases in investment in importing countries, which is precisely what is predicted by the substitution effect analyzed above. They have also revealed regime changes in the response of industrial countries to oil price increases, that is, qualitative changes in the nature of the response.[70] This is just as predicted by the interplay of wealth and substitution effects outlined above: When substitution effects dominate there is one type of response, and when wealth effects dominant there is another.

We turn now to an analysis of the reaction of the resource-exporting country to different export price levels. It will again prove useful to distinguish different types of effect. This time the distinction is between the impact of a pricing policy on the revenue from exports and the impact on the internal economic structure of the exporting country. These are called revenue and structural effects.[71]

The revenue effects are in part predictable. If the price increases from a very low initial level, then the total revenue from sales will rise. This hardly needs explaining. At very high prices, an increase will reduce revenues. This is partly because high prices encourage substitution and so reduce demand (the substitution effect referred to above), and partly because they lead to a deflation of the consuming economy and so reduce demand via the income effect, also analyzed above.

In the intermediate price range, the revenue effects of a price change are more complex and will depend on the structural characteristics of the consuming economy. Precise results can be given (and are contained in the technical papers, which can be obtained from the authors), but it is certainly clear that at low prices the revenue effects of a price rise are beneficial to the exporter and that at high prices they are harmful.

This analysis is couched in terms of the effect of a change in the *money* price of oil on the *real* revenues of the exporter, by which we mean its revenues denominated in terms of the goods it imports. This is important, as an increase in the price of a raw material will typically lead to rises in the price of products embodying it. These consequential price changes have of course to be considered when evaluating alternative pricing strategies.

The structural effects of a price change on the exporting country are more complex and have both positive and negative aspects. They depend upon the characteristics of both importing and exporting economies. A key variable

here is the degree of duality in these economies, where duality is measured essentially by the differences between the factor-intensities of the various industries and the level of real wages. An economy is dual in this sense if it contains very capital-intensive industrial sectors and very labor-intensive traditional sectors.

The section on "Export-Led Strategies" explored the consequences of such duality, together with either a labor supply that is highly responsive to real wages or expenditure patterns leading to most wage income being spent on labor-intensive goods. It was shown that under these conditions an expansion of international trade may harm the position of wage earners.

The effects of price changes on profits depend on the initial price level. From a very low initial price, an increase in the price of the exported raw material will lead to an increase in the profitability of domestic capital, and also to an increase in the amount of capital employed. On the other hand, if the initial price is high, the consequences of an increase are the opposite. In these cases, the profitability and employment of domestic capital therefore increase or decrease with the export price precisely when revenues increase or decrease. The intuition behind this is rather clear: An increase in revenues from exports raises domestic aggregate demand. This has a positive impact on the demand for capital and leads to higher prices and employment of capital. A decrease has the opposite effects. (Again, for intermediate price levels, one must turn to the more detailed analysis of the technical papers.)

To summarize this discussion of the impact of pricing policies on a dualistic resource-exporting country, we can state:

- Revenues increase when prices are increased from low levels or decreased from high levels.
- Profitability and capital income increase when prices are increased from low levels or decreased from high levels.
- Wages and wage income respond in the opposite sense to profits.

This summary applies only to price increases or decreases from low or high initial levels respectively; for changes from intermediate initial prices, more complex statements apply. In particular, it can be shown that with intermediate initial prices, there are price movements that have beneficial consequences for both revenues and wages. However, in general there may be a conflict between profits and wages in a dual economy.

We have dealt above with the case of a dualistic resource-exporting country from the point of view of establishing a common interest between importers and exporters—this is in fact the worst case. If, instead, the exporting economy is homogenous, then in the situations described above real wages will move with profits as resource exports vary. For example, a price increase from low initial levels will increase revenues, profits, *and* wages. A decrease from high initial levels will do likewise. This is one significant advantage of a

homogeneous economy: Profits and wages generate positive externalities to each other, so that they increase simultaneously in some cases. As a general proposition a country stands to gain more from resource exports the more homogenous are its technologies and the higher are its real wages. Indeed, the greatest gains accrue to a homogenous, high-wage economy exporting resources to a dualistic, low-wage country. So an industrial economy such as Australia or Canada stands to gain from an expansion of mineral or fuel exports to South America or the Far East. A South American country, on the other hand, is less likely to gain uniformly from expanding resource exports to North America or Europe.

Obviously, there is indeed a significant community of interests between buyers and sellers in the international markets for resources; there are price movements that will benefit buyers, and that will also benefit sellers in terms of export revenues and capital income, though they may worsen the position of labor in the selling countries. Having noted these connections, the next step is to analyze the factors that actually influence price movements in these markets. The interesting point here is the extent to which the domestic policies of importing countries may affect resource prices. It is to be expected that an increase in demand will raise prices, and there is certainly evidence that economic expansion of the consuming countries has affected the level of resource prices. There are also both theoretical and empirical reasons for supposing that such domestic policies as interest rate policies have a significant impact on resource prices. Extractive resources have many of the characteristics of assets such as stocks and bonds (this is rather clear of gold or silver), and consequently equilibrium in their markets is described by the same kinds of conditions as characterize equilibrium in asset markets. One such condition is that all equivalent assets should yield their holders the same rate of return. Now, the rate of return to a good that pays no dividend is simply the rate at which its price appreciates, that is, the rate of capital gains that it produces. The return to holding an extractive resource therefore depends upon the rate at which its price increases, and market equilibrium requires that this rate be related to the rates of return available on other assets. Such rates of return are determined, interalia, by interest rates, so there is here a chain of connections running from interest rates to the rates of change of resource prices. It can be shown that whatever the market structure—competitive, imperfectly competitive, or monopolistic—there will be a positive relationship between the rate of change of resource prices and rates of interest.

This is just the well-known "Hotelling Rule,"[72] which relates resource price movements to interest rates. It establishes that in the long run, resource prices will follow an upward trend that is related to the general level of interest rates. Unanticipated changes in interest rates will lead to changes in this trend of rate of increase, and also to abrupt changes in the level of resource prices. There is an analogy here with the impact of interest rates on asset prices in

general: Unanticipated changes in interest rates raise or lower the prices of assets such as stocks and bonds. The rising long-run trend of resource prices simply reflects their increasing scarcity, as the remaining stock becomes smaller.

This slightly surprising prediction has received extensive empirical scrutiny, from which it has emerged essentially unscathed.[73] From the point of view of understanding the international economic system, the important point is that the prices of extractive resources are not exogenous to the industrial countries: Via the logic of the Hotelling Rule, they are strongly influenced by their domestic economic policies. The domestic policies pursued by these countries influence the prices they face in resource markets, so these prices cannot be attributed solely to the actions of the sellers.

We can now pull the various strands of argument in this section together to make a coherent whole. There are two important points. One is that the issue of the pricing of internationally traded resources is not necessarily a source of North-South conflict: There are several sources of common interest and in consequence there can be situations where a price movement is attractive to both sides of the market. Crucial here is the recognition that very low or very high prices may be to nobody's benefit. In fact, they lead not only to welfare losses but to instability. Low prices lead with a lag to an expansion of demand and an upward pressure on prices.[74] The commodity price boom of the early 1970s can be seen in part as a demand response to a period of low prices. Similarly, high prices lead eventually to a very depressed market, as is currently the case with oil, and thus to a "buyer's" market. It should be noted that both exporters and importers are in a position to exercise influence over price movements. The precise nature of the relationship between domestic economic policies in the consuming countries and international price movements is complex, but it can be set out in the detail needed for policy analysis in each country. The general implication of these observations is once again that national and international economic issues are intimately linked, so that neither should be considered in isolation from the other. National and international economic policies need to be formulated consistently, and the fact that there are regions of common interest should facilitate the establishment of policies within which this can be done.[75] Indeed the foregoing analysis makes clear the main sources of common interests (and the technical papers set out in more detail the precise parameters of this common interest). Empirical investigation within this framework could provide a basis for numerical evaluation of the effects discussed, and of the regimes within which cooperation would be mutually beneficial, for a variety of extractive resources. These would have to be economically important inputs, either individually as in the case of oil, or in groups that can naturally be considered together, as in the case of nonferrous, nonprecious metals. Otherwise, the impacts of their price changes would be significant enough to produce the wealth, substitution, and recycling effects necessary to make cooperative pricing policies possible.

CONCLUSION: TRADE AND DEVELOPMENT IN THE 1980s

This chapter has touched upon a wide range of issues—on protectionism and managed trade, on recent macroeconomic developments, and on North-South interdependence via international financial markets, export-led strategies, arms trade, and resource pricing. Although the scope is broad, there have been a number of recurrent and unifying themes; in fact, there is a single theme that emerges strongly. This is that attention must be paid to domestic economic structures in order to ascertain the impact of international economic policies, and in order to understand how national markets interact with each other through the international economy. Two particular features of our analysis are economies of scale in industrial countries and the importance of income effects resulting from price changes in developing country markets. In a broad range of situations, a consequence of these features is that certain conventional and widely adopted policies have results that are quite the opposite of those expected. Therefore alternative policies are required, and we have suggested general guidelines.

The increased importance of economies of scale influences the macroeconomic performance and policies of the industrial countries. In particular, it affects the stability of markets, the possibility of smooth structural change, and of mutually beneficial and balanced trade. Increasing returns are an important link between the emergence of stagflation and of problems connected with trade imbalances and structural change at the international level. Restrictive monetary policies may be less efficient in controlling inflation, and may impose high efficiency losses in terms of plant closures and unemployment. Equally, the traditional presumptions that favor across-the-board liberalization trade are no longer operative in this case. We offered guidelines for industrial policies and the management of trade for economies with increasing returns to scale.

The second important feature of domestic economies that we singled out was income effects in developing countries. If substantial, income effects may reverse traditional links between domestic and international markets. An increase in the export of primary commodities, even if due to an expansion of demand, may lower the earnings of those producing them. This occurs precisely when the income effects are large relative to the substitution or price effects. The same issue arises with resource prices: The effects of these on welfare in the consuming and producing countries depend on the relative magnitudes of income and substitution effects. We have argued, and this is an argument backed by empirical evidence,[76] that circumstances where income effects dominate are in fact likely to arise frequently in markets of importance to developing countries.

We have also argued that the level of interdependence in the world economy has increased very significantly. We discussed the impact of resource

prices on international financial flows, including the loans that recycled OPEC revenues to rapidly growing developing countries. These loans made the borrowing countries particularly vulnerable to changes in domestic monetary policies in the industrial countries. Reciprocally, they made the banking system in those countries vulnerable to the policies of borrowing countries. In any case, the evidence suggested that the developing countries had a significantly higher level of growth and investment than the industrial countries over the last ten years, despite the high oil prices.

Our next step is to give an integrated review, with examples. First consider the domestic macroeconomic policies of the industrial market economies, whose sluggish performance in recent years has adversely affected export earnings of many developing countries. We argued here for selective expansionary fiscal and industrial policies, associated with low interest rates. Clearly, the expansion must be directed toward those sectors with the greatest potential for cost reductions from scale economies. However, there is a danger that an attempt at rapid expansion of output in these sectors will cause bottlenecks in the markets for labor and other inputs, with inflationary consequences. Because of this, the directed expansion would need to be associated with policies to encourage the availability of appropriate inputs into these sectors. These might involve subsidies to the retraining of labor and to labor mobility, and also to related capital expenditures. It is important to note that there are positive and negative policy responses to the need for structural change. The positive response is that outlined above: Encourage the sectors with potential and also expedite reallocations from sectors with lower to those with higher potential.[77] A negative response is to subsidize declining sectors to keep them in being.[78] If the underlying loss of comparative advantage is permanent, then this latter response can only lead to a cycle of declining efficiency and of rising subsidies. Public resources are in general much more productive when spent facilitating the growth of emerging industries with potential for cost reductions than in attempting to maintain an existing declining industrial base.

Finally, we consider the relationship of developing countries with the international market system. Here, one of the main thrusts of our analysis has been to warn against the dangers of excessive dependence on international markets as an engine of growth, especially with respect to traditional exports. The outcome of participation in such markets is extremely sensitive to domestic markets and technological structures, and in particular to the importance of the income effects already mentioned. If these income effects are substantial, and there are reasons to believe that in many cases they are, then involvement in international markets for primary commodities can lead to a country becoming trapped in a self-reinforcing position of dependence. An excessive international orientation leads to dependence on imports and to a vulnerability to balance-of-payments deficits during cyclical downswings, such as the present. Such payments deficits lead to pressures from international

organizations for restrictive domestic policies and for devaluations, both with a view to emphasizing export-led policies. As discussed above, these may increase further the international orientation of the economy and undermine its growth and distribution of income. Ultimately, developing countries would fulfill a service role in the international economy, as suppliers of cheap exports to the industrial countries.

On the other hand, stronger domestic markets, and a more integrated and productive technological structure, may lead to positive outcomes of export-led policies. More participation in international markets for primary commodities may be beneficial to the exporter in this case. This suggests two important policy conclusions. One is that involvement in international primary commodity markets should be undertaken only after a careful review of domestic economic structures and their likely interaction with the international market. These structures are not unchangeable, and they could be subject to influence by suitable policy measures in the labor market and in the field of choice of productive technique, both with a view to strengthening domestic markets. Another suggestion to emerge clearly is that there may be substantial advantages to exporting goods that are not very labor intensive, as the potentially harmful income effects are less likely to arise with these. Overall, the point is that the structure of domestic markets is an important determinant of the outcome of international trade, so that a strengthening of these markets, by reducing technological dualism and the elasticity of labor supplies and improving overall productivity, is a valuable preliminary to greater involvement in international markets. The traditional view of cheap labor as the main relative advantage of developing countries is therefore not a good basis for the formulation of economic strategies. The most successful export-led growth examples of the last decades (for example, Japan, Taiwan, Korea, Germany) had highly educated and productive labor, with corresponding living standards. Widespread poverty is not a relative advantage, but is rather a weakness. When participating in international markets, a country with a better bargaining position is one where the local population is viewed as prospective customers rather than only as a source of cheap labor. A more integrated approach is required, viewing the local population as belonging to both sides of the market: both as consumers (demand) as well as inputs (supply). This approach exhibits very clearly the practical importance of better distributions of income.

NOTES

1. These results are contained in G. E. J. Llewelwyn (Head, Economic Prospects Division, OECD), "Resource Prices and Macroeconomic Policies: Lessons from Two Oil Price Shocks," paper presented at the OPEC-UNITAR seminar at Essex University, January 1983.

2. See, for example, William Nordhaus, "Oil and Economic Performance in Industrial Countries," and Jeffrey Sachs, "The Current Account and Macroeconomic Adjustment in the 1970s," both in *Brookings Papers on Economic Activity* 2 (1980).

3. See, for example, Michael Bruno, "Oil Shocks and Macroeconomic Responses," Discussion Paper, National Bureau of Economic Research, 1982. Bruno analyzes data from the IMF, the World Bank and U. S. sources.

4. Sachs, "The Current Account," p. 207.

5. Llewelwyn, "Resource Prices."

6. This view is set out in detail in Chapter 15 of P. S. Dasgupta and G. M. Heal, *Economic Theory and Exhaustible Resources,* (Cambridge: Cambridge University Press, 1979).

7. See, for example, figures quoted in *Business Week,* November 8, 1982, p. 38.

8. A model that formalizes the assumptions of this section, and justifies the claims made about the effect of economies of scale on stability, is given in a supporting technical paper, "Economies of Scale and the Macroeconomics of Stagflation and Expansion," by G. M. Heal, Working Paper, Woodrow Wilson School of International and Public Affairs, Princeton University, 1983.

9. See, for example, the references cited in Elizabeth Bailey and Anne Friedlander, "Market Structure and Multiproduct Industries," *Journal of Economic Literature,* September 1982. An earlier study emphasizing the growing importance of increasing returns is N. Kaldor, *The Causes of the Slow Rate of Growth of the UK Economy* (Cambridge: Cambridge University Press, 1967).

10. See, for example, "Trade and Development Report 1982: Report by the UNCTAD Secretariat," UNCTAD/TDR/2 (Vol.I), p. 1.

11. This point is developed formally in G. M. Heal and G. Chichilnisky, "Monetary Policies and Increasing Returns," Cowles Foundation Discussion Paper, Yale University, 1982.

12. See also H. Houthakker, *Brookings Papers on Economic Activity* 1 (1979).

13. See UNCTAD document TD/B (xxiii) Sc. I/Misc. 1 GE.81-55447, Statement by Mr. R. Figueredo, Director of the Manufacturing Division, at the fourth meeting of Sessional Committee I on October 1, 1981. Here, in paragraph 4, it is stated that "there has been a decline in the importance of fixed measures of protection, especially customs duties. . . . There is now greater reliance upon mechanisms of flexible protection, under which restrictions or other measures can be applied when specific conditions exist." The reader is referred also to the remark in paragraph 11 that "the concern to provide more flexibility for taking protective action seems to have been equally as important as, if not more important than, the strive to liberalize trade."

14. See, for example, Alexander J. Yeats, "Agricultural Protectionism: an Analysis of its International Economic Effects and Options for Institutional Reform," in *Trade and Development: An UNCTAD Review,* No. 3 (Winter 1981), pp. 1-30. Here the author outlines a wide range of policy measures that could be pursued in the field of agricultural trade.

15. See UNCTAD document TD/B (xxiii), note 1 SC. In particular, paragraph 16 refers to the use of restrictions against "low-cost suppliers."

16. See, for example, Dale W. Jorgensen, "Energy Prices and Productivity Growth," in *The Impact of Rising Oil Prices on the World Economy,* edited by Lare Mattiessen (London: Macmillan, 1982). The same point was made in a statement by U.S. Treasury Secretary William Simon on November 5, 1974, when he said that "I can think of no single change that would more improve the outlook for the world economy than a substantial decrease in the price of oil."

17. Interestingly, this point is suggested in UNCTAD document TD/B, p. 15. Paragraph 14 refers to the idea that countries have a right to maintain "minimum viable production" as a justification for managing trade. But the concept of a minimum viable scale of production presupposes economies of scale in production. In this case it refers to a level of production large enough to make costs competitive. The issue of managed trade is also raised in UNCTAD document TD/B (xxiv) Sc. 1/Misc. 1GE 82-50568, in a statement by the Director of the Manufactures Division to the Trade and Development Board. He defines managed trade as situations where the government controls, sets, or encourages the setting of parameters for prices and quantities of imports. This is just what would be involved in the management of trade for mutual benefit under conditions of economies of scale on production.

18. See, for example, the discussion of economies of scale in K. J. Arrow and F. H. Hahn, *General Competitive Analysis,* (Amsterdam: North Holland). The issue is also studied by G. M. Heal, in "Stable Disequilibrium Prices," Cowles Foundation Discussion Paper No. 650, Yale University, November 1982, and "Rational Rationing and Increasing Returns," *Economic Letters 8* (1981):19-27.

19. These arguments, and their implications for the management of trade, are set out in detail in G. Chichilnisky and G. M. Heal, "Trade Policy and Increasing Returns," Discussion Paper, Woodrow Wilson School of Public and International Affairs," Princeton University, 1583.

20. W. A. Lewis, "Economic Development with Unlimited Supplies of Labour," Manchester School, May 1954), and *The Evolution of the International Order* (Princeton, N.J.: Princeton University Press, 1978).

21. A firm whose costs fall with output, and which is faced with a loss of market share, has only one alternative to cutting back production and facing a further loss of market because of rises in costs. This is to expand output substantially, in the hope of reducing costs enough to reclaim a market share that enables it to stay competitive. Such a policy clearly involves risks; it is typically costly, and its success depends upon the measures taken by competitors. However, the risk can be greatly reduced if there is a simultaneous expansion of total demand by, for example, fiscal or monetary measures, so that the probability of larger sales will be increased.

22. Figueredo poses a presumably rhetorical question that makes this point in paragraph 21 of UNCTAD document TD/B (xxiii) in note 1, when he asks: "Has the time not come to at least begin to conceive of a new system of a more universal, comprehensive and coherent nature?" Also, the UNCTAD "Trade and Development Report 1982," UNCTAD/TDR/2 Volume 2, paragraph 232, suggests that the "international 'rules of the game' need to be reformulated in order to promote economic growth and structural change in the international economy as a whole."

23. The same point is made in "Trade and Development Report 1982: Report by the UNCTAD Secretariat," UNCTAD/TDR/2, in particular, Vol. 1, page 1, paragraph 1: "This year's *Trade and Development Report* . . . reports on the serious deepening of the crisis in development . . . and on the further deterioration of the international economic environment." See also page 7: "Slower growth in the developed market-economy countries is curtailing directly their import demand and is also associated with structural changes in those countries which have a further negative impact on demand." There is also a reference there to "the progressive alteration of the international environment in ways that narrow the range of feasible policies open to developing countries to promote their own development, and that reduce the effectiveness of those that are available." Volume II, paragraph 3, also refers to the limited scope for exports of manufactures from developing to developed countries because "long-term prospects are for low growth in the latter countries and this will impede any significant reversal of the declines in the terms of trade experienced by the developing countries during the recent past."

24. For the limitations of such claims, see P. Samuelson, "The Gains from Trade Once Again," *Economic Journal,* December 1962.

25. The shares of resources and expenditures of developed and underdeveloped countries became more unequal from 1960 to 1972. See P. Streeten and S. J. Burki, "Basic Needs, Some Issues," *World Development* 1978, Figure 9, Chapter 5. Many income distributions within the Third World also worsened, and considerable evidence suggests that the incomes of the bottom 10-20 percent have fallen in absolute terms in the last 25 years; see Annex 2, Mabub ul Haq, in J. Tinbergen et al., *RIO: Reshaping the International Order* (New York: E. P. Dutton, 1978).

26. W. A. Lewis, "Development Economics in the 1980's," Seminar Paper, Princeton University, February 1983.

27. This theory was developed between 1977 and 1982 as part of a UNITAR research project conducted by G. Chichilnisky at Harvard University, Columbia University, and the University of Essex. The main publications are: "Terms of Trade and Domestic Distribution: Export-led Growth with Abundant Labour," *Journal of Development Economics* (1981); "Basic Goods, Commodity Transfers and the International Economic Order," *Journal of Development Economics* 8, no. 2 (1980): 163-92; "The Transfer Problem with Three Agents Once Again," *Journal of Development Economics* (1983); and "Terms of Trade and Domestic Distribution: A Generalization," *Journal of Development Economics* (1983).

28. This happens, for example, when most of the individual's income derives from profits, and profits increase with prices. A similar proportion holds with wage income instead of profit income.

29. A full technical derivation of these results is given in Chichilnisky, "Terms of Trade and Domestic Distribution."

30. K. J. Arrow, Evaluation of UNITAR Project, "Technology, Domestic Distribution and North-South Relation" (New York: United Nations, August, 1981).

31. It is conventional in economic theory to break the total effect of a price change on demand patterns into two parts. These are called the *income effect* and the *substitution or price effect*. The point is that any change in the price of a good has two effects: It changes the real income of those who own or consume those goods, and it changes the relative price of this good with respect to others. If the good is an important component in the budget of consumers, such as foodstuffs in traditional sectors of a developing economy, then the effect on real income of a change in its price may be substantial. The income effect may dominate here. The income effect is that part of the consequences of the change attributable to changes in income, resulting from the original price change. The substitution effect, or price effect, is the remainder, and for goods featuring only minimally in budget, it is typically the important part. Traditional examples of goods for which the income effects of a price change are important are basic consumption goods. Such effects may therefore be expected to be significant in many developing countries. It should be noted that price effects have the more conventional impact on demand: An increase in price lowers demand. Income effects may produce the opposite effect on demand, leading to more complex behavior. The study of these effects is clearer in a general equilibrium model, in which price changes are traced through the whole market equilibrium.

32. For full details see G. Chichilnisky, "North-South Trade with Export Enclaves," Columbia University, 1983.

33. See, for example, A. K. Sen, *Famines*, (Oxford: Oxford University Press, 1981); and D. Alves, "Brazilian Agriculture Export Promotion Versus Nutrition " (University of São Paulo, Brazil), presented at the Development Conference, Yale Growth Center, 1978.

34. Other authors have expressed similar doubts. W. A. Lewis makes a related observation very elegantly: "The official doctors, the IMF, have a standard prescription: clear the markets, look outwards, and balance the budget. This comes from our famous forefather of 1776. It is a palliative rather than a cure, judging by the frequency with which the same patients return." "Development Economics in the 1980's."

35. The North-South model discussed here has been subject to empirical testing. These tests, for trade between Sri Lanka and the United Kingdom, confirmed the basic structure of the model and in particular substantiate the possibility that an expansion of trade in labor-intensive products may have harmful effects.

36. For a more detailed analysis, see G. Chichilnisky, "The Role of Armaments Flows in the International Market" in *Disarmament and Development*, edited by D. A. Leurdijk and E. M. Borgese (Rotterdam: RIO, 1979).

37. This is measured by foreign military sales orders. Note that these represent *orders* and not *deliveries:* the lag between an order and the corresponding delivery may be over five years in the case of ships or aircraft, so that order and delivery figures do not always correspond year by year.

38. The econometric analysis is given in G. Chichilnisky, M. deMello, and A. Roberts, *Two Studies in International Markets* (New York: United Nations, 1983).

39. See, for example, *RIO*, pp. 35-36.

40. See, for instance, the discussion in A. Carter, W. Leontief, and P. Petri, *The Future of the World Economy* (New York: United Nations, 1976). This study estimated the possible magnitudes involved in larger foreign aid flows to narrow the North-South wealth gap: "The gross aid ratio would increase from 0.85 percent in 1970 to 1 percent in 1980 and 2 percent in 2000 in North America" (pp. 45-46). See also the discussion in the Bariloche Model, which introduced the concept of basic needs and, by contrast, minimized the role of such transfers in reaching these goals. For instance, see G. Chichilnisky, "Development Patterns and the International Order," *Journal of International Affairs* 31, no. 2 (Fall-Winter 1977): 275-304; A. Herrera, G. Chichilnisky et al., *Catastrophe or New Society*, (Ottawa: International Development Research Center, 1976); and *Grenzen des Elends* (Frankfurt: S. Fischer Verlag, 1977)—all of which discuss in detail the issue of transfers and basic needs in the context of the Bariloche Model.

41. See *RIO*, Note 14, Annex 2: Official Development Assistance from 17 developed market economies has actually declined from 0.52 percent in 1960 to 0.3 percent in 1975. See also *North-South: A Program for Survival*, (Cambridge, Mass.: MIT Press, 1980), pp. 224-25.

42. OPEC contributions in some cases reached 10 percent of GNP or more. Details are in *North-South* (p. 226): "A new and important source of aid in the 1970s has been the OPEC members, which supplied about 20 percent of all Official Development Assistance in 1978. This represents an average of 1.59 percent of their GNP, but individual countries such as Saudi Arabia, Kuwait, U.A.E. [United Arab Emirates] and Qatar, have provided between 6 and 15 percent of their GNP in past years and between 4 and 5 percent in 1978."

43. For example, recently B. Morse, the head of the United Nations Development Program, told delegates to the annual Pledging Conference that developing countries were faced with a "crucial emergency" as a result of decreased contributions from member nations. Secretary General J. Perez de Cuellar opened the conference urging: "It is of the utmost importance that the 1982 Pledging Conference provide new optimism to reverse the trends of recent years. . . . The uncertain economic climate and its impact on donations were pervasive from the opening session," New York *Times*, November 11, 1982, page A.14.

44. See, for example, the report on growth of risky foreign loans by Jeff Gerth, Special to the New York *Times*, November 11, 1982, page D1, on amounts owed to U.S. banks by developing countries. This article is concerned with the continued growth of such loans and with the calls for regulating banks in this respect. It is based on data from the Federal Financial Institutions Examinations Control and the International Monetary Fund, which exclude data from OPEC countries. See also Felix G. Rohatyn, "The State of the Banks," *New York Review of Books* (pp. 5 and 6): "According to the Federal Reserve, as of May 1982, U.S. banks have lent over $300 billion abroad. This includes $200 billion in Latin America, the Third World, and Eastern Europe. To put these numbers in perspective, it is worth noting that the total equity of the thirty largest U.S. bank holding companies as of mid-1982, that is, the value of their assets over their total liabilities, was about $40 billion. American banks are major participants in Mexico's $80 billion of external debt, as well as Brazil's $60 billion and Argentina's $40 billion: the risks to American banks of an unexpected default by these and other countries would therefore be grave ones."

45. See Sachs, "The Current Account," for an analysis of the consequences of OPEC surpluses for patterns of borrowing and lending.

46. Out of 88 developing countries for which data are available, 46 achieved an average GNP growth of 4.56 percent or higher between 1970 and 1979 compared with an average of 3.2 percent for the industrial economies. About one-third exceeded 6 percent per annum. See *World Development Report, 1981* (New York: Oxford University Press, 1982). Investment as a proportion of GDP in LDCs increased from 15.7 percent for 1960 to 23.6 percent in 1978. By contrast, the U.S. figures are about 16-17 percent from 1965 to 1979. Sources are International Monetary Fund, *International Financial Statistics*, (Washington, D.C.), and OECD, *National Accounts for OECD*

Countries, 1950-78 (Paris, 1980). See also Sachs, "The Current Account," Tables 9 and 10, who also discusses the recycling of OPEC as loans to developing countries that had high rates of investment and growth.

47. In fact, because of the decline in inflation rates, real interest rates rose even more sharply.

48. *Financial Times,* Editorial, February 12, 1983.

49. In recent months a major emergency loan rescheduling has also been engineered by the International Monetary Fund, the Bank for International Settlements, and the central banks of the major industrial nations.

50. "The predicament has fueled thinking about new mechanisms of international finance, [including] a new superagency to trade long term interest bonds for some of the sovereign debts that have been piled up in bank portfolios [and] the creation of a new international agency, backed by central banks instead of an institution like the International Monetary Fund." This agency could "swap noninterest-bearing bonds backed by central banks for troublesome loans. The banks getting the bonds could hold on to them and treat them as assets equal in face value to the loans but assets that do not require the setting aside of funds to cover the possible failure of debtors to repay." "The World Banking Crisis," New York *Times,* March 27, 1983, Section F.

51. Venezuela imports at present 60 percent of the food it consumes.

52. See, for example, M. M. Sakbani, "A Critique of the Prevailing Monetary System: Principal Themes of a Reformed System," *Third World Quarterly* 3, no. 3 (July, 1981): 460-72; and D. Avramovic, "The Developing Countries After Cancun," *Journal of World Trade Law* 16, no. 1 (January/February 1981): 3-26.

53. See Sakbani, "A Critique of the Prevailing Monetary System."

54. Dissatisfaction with "the disorderly world monetary system" is expressed in L. Silk, "Seeking a New Bretton Woods," New York *Times,* March 25, 1983.

55. For a discussion, see Avramovic, "The Developing Countries after Cancun."

56. For a discussion of this literature and of empirical evidence for such effects, see, for example, Chichilnisky, "Basic Goods, Commodity Transfers and the International Economic Order."

57. A case where the magnitude of the transfers is not a negligible part of total income is that of the remittances of earnings of citizens employed overseas, in certain developing countries. For example, in the case of Egypt and Pakistan, these remittances were equal to 90 percent of the value of merchandise exports in 1978, see UNCTAD/TDR/2 (Vol.II), paragraph 169.

58. This was shown in Chichilnisky, "Basic Goods, Commodity Transfers and the International Economic Order."

59. This precise model is that of a pure exchange economy with three regions, two goods, and limited substitution in the preferences, which emphasizes income effects. See Chichilnisky, "Basic Goods, Commodity Transfers and the International Economic Order." More recent results that strengthen this proposition on transfers are in Chichilnisky, "The Transfer Problem with Three Agents Once Again." For a discussion of related issues on transfers, see also S. Kojima, "Neoclassical Theory of a New International Economic Order: An Asymmetric Two-Country Three-Commodity Approach," Discussion Paper No. 5, UNCTAD, 1982.

60. For a discussion, see also J. Geanakoplos and G. Heal, "The Transfer Paradox in a Stable Economy," Cowles Foundation for Economic Research Working Paper, Yale University, 1982, and *Journal of Development Economics,* 1983.

61. This was noted by Dasgupta and Heal in *Economic Theory and Exhaustible Resources.*

62. *Financial Times,* Editorial, February 12, 1983.

63. *Newsweek,* March 7, 1983, pp. 62-63.

64. For details, see Chichilnisky, de Mello, and Roberts, *Two Studies on International Markets.*

65. See, for example, "OPEC Responding and the Economic Impact of an Increase in the Price of Oil," by Jan F. R. Fabritius and Christian Ettrup Petersen, in Matthiessen, *The Impact of Rising Oil Prices on the World Economy.* We are grateful to Amir Sepahban for bringing this study to our attention.

66. For example, Sachs, "The Current Account.

67. C. Doblin, "Energy Savings and Conservation " (International Institute for Systems Analysis [IIASA]), Autumn 1982, discussed inter alia the negative impact of today's lower oil prices on conservation.

68. This model is presented fully in G. Chichilnisky, "Oil Prices, Industrial Prices and Outputs: A simple General Equilibrium Macro Model," Columbia University Discussion Paper.

69. There is some dispute about the precise figures, as these depend on the index of OPEC import prices used. However, while nominal oil prices have risen by a factor of over 15, real prices have risen by a factor of at most 3. This is based on data from the IMF, *International Financial Statistics Yearbook 1982,* and on private communications from the OECD.

70. These issues, and the relevant literature, are reviewed in G. Chichilnisky and G. Heal, "Capital-Energy Substitution: A General Equilibrium Approach," IIASA Collaborative Paper, 1983.

71. Details are in G. Chichilnisky, "Resources and North-South Trade: A Macro Analysis of Open Economies," Columbia University Discussion Paper.

72. This analysis was first developed in the classical paper by Harold Hotelling, "The Economics of Exhaustible Resources," *Journal of Political Economy* 39 (1931): 137-75. The implications of this dynamic approach for the long-run outcome of cooperative pricing policies is studied in G. Chichilnisky, G. M. Heal, A. Sepahban, "Non-Conflicting Resource-Pricing Policies in an Interdependent World," *OPEC Review,* Spring 1983.

73. G. M. Heal and M. Barrow, "Metal Price Movements and Interest Rates," *Review of Economic Studies* 48, no. 146 (January 1980): 161-82, and "Empirical Investigation of Mineral Price Movements," *Economic Letters* 7 (1981): 95-103.

74. For example, IIASA, in its publication *Options,* Autumn 1982, comments on "the fear that today's oil glut masks the threat to tomorrow's energy users."

75. In a note on "Problems and Policies Relating to Commodity Pricing" dated June 22, 1982, the UNCTAD Commodity Division refers to the possibility of a "global scheme of support for agriculture and mining." They argue that "it is possible to envisage a global scheme of support for agricultural and mining products and reduced protection, associated with substantial financial assistance for structural adjustment. . . . Its attractiveness is that there would be benefits to farmers and mining companies in both developed and developing countries without burdens on the national budget." They argue for such a possibility on the grounds of community of interest between producers and consumers through the recycling effect, and through the fact that many countries are consumers in one market but producers in another. Our arguments could be taken as pointing strongly in the same direction, placing more weight on the community of interest, and pointing to the joint control that is exercised anyway in these markets.

76. See "Trade in Primary Products between the U.K. and Sri Lanka: An Econometric Case Study."

77. Such policies have been pursued in connection with coal and steel sectors in the EEE.

78. Policies toward textile industries in Europe and the United States exemplify this approach.