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Mohsin S. Khan and Malcolm Knight  
Sources of payments problems in LDCs  
External and domestic causes of deficits, 1973–81

Carl Dahlman and Larry Westphal  
The transfer of technology  
Factors in the acquisition of technology

Vito Tanzi  
The underground economy  
Causes and consequences of this global phenomenon

Kyung Mo Huh  
Countertrade: trade without cash?

Shahid Javed Burki  
UNCTAD VI: for better or for worse?  
International negotiations in a multipolar setting

Russell Kincaid  
Korea’s major adjustment effort  
Effective policymaking in difficult circumstances

Yves Rovani  
Energy transition in developing countries  
Larger investments and more efficient use needed

Harinder Kohli and Edilberto Segura  
Industrial energy conservation in developing countries  
Substantial savings possible

Padma Gotur  
World economy in transition  
Interest rates in five major countries

Alexandre Kafka  
Interest rates and the developing world  
How rates in developed countries affect LDCs

Henry Owen  
Changing public attitudes toward aid  
Guest article

Jacob Meerman  
Minimizing the burden of recurrent costs  
World Bank experience in sub-Saharan Africa

Gerard Rice, James Corr, and Susan Fennell  
Maintaining financing for adjustment and development  
The 1983 Joint Annual Meetings of the Bank and the Fund

Books

Books on rational expectations, structuralist macroeconomics, the psychology of taxation, development strategies, and successful management reviewed by Homi Kharas, Kyle Peters, Alan Tait, Phiroze Medhora, and Dale Weigel

Letters

Index for Volume 20 (1983)
Sources of payments problems in LDCs

The role of external and domestic factors during 1973–81

Mohsin S. Khan and Malcolm Knight

The past ten years have proved to be a period of considerable stress for the non-oil developing countries. Throughout most of the 1970s, a combination of events caused the international economic environment to become less conducive to their stability and growth and to aggravate their problems of economic management in general—and balance of payments adjustment in particular. External developments, including substantial fluctuations in the world market prices of primary commodities, sharp increases in the price of energy products, the slowdown of economic activity in the industrial countries, and, toward the end of the period, sharp increases in real interest rates in the international capital markets, were all major contributors to a serious deterioration in the current account positions of most non-oil developing countries. At the same time, domestic developments in a number of economies also played a significant role in exacerbating payments disequilibrium, as inflationary demand-management policies—combined with rigid exchange rate policies and restrictions on trade and payments—created domestic demand pressures and led to a cumulative loss of international competitiveness and to current account and overall balance of payments difficulties.

Of course, some non-oil developing countries were much more severely affected by these adverse factors than others, but for the group as a whole the combined current account deficit expressed as a proportion of their exports of goods and services, rose sharply between the period 1967–73 and 1974–81 (see table). During the latter period there were also considerable annual fluctuations in this ratio. In the immediate aftermath of the first oil price increase in 1973–74, there was a sizable worsening of the current account positions of the non-oil developing countries. Favorable movements in the prices of primary commodities led to a marked improvement in 1976–77, but from 1977 onward the ratio of their combined deficit to exports of goods and services continued to rise steadily. The second round of oil price increases in 1979–80 appears to have had a much smaller impact than the earlier increase; indeed for the non-oil developing countries as a group there was no important difference between the deterioration observed in the two years preceding the oil price increases (1977–78) and the two years that followed it (1980–81).

The factors that are typically identified as the major determinants of these current account developments are (1) the deterioration in the terms of trade; (2) the slowdown of economic activity in the industrial countries; (3) the sharp increase in the level of real interest rates in international credit markets, particularly toward the end of the

### Non-oil developing countries: current account balances and selected variables, 1967–81

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<tbody>
<tr>
<td>Current account balance¹</td>
<td>-17.2</td>
<td>-10.6</td>
<td>-24.8</td>
<td>-30.9</td>
<td>-18.1</td>
<td>-12.9</td>
<td>-15.2</td>
<td>-17.7</td>
<td>-20.4</td>
<td>-22.4</td>
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<tr>
<td>Terms of trade change²</td>
<td>-0.4</td>
<td>6.7</td>
<td>-5.1</td>
<td>-10.0</td>
<td>5.6</td>
<td>6.9</td>
<td>5.4</td>
<td>0.8</td>
<td>-6.4</td>
<td>-8.1</td>
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<tr>
<td>Foreign real interest rate³</td>
<td>5.4</td>
<td>-17.9</td>
<td>-20.1</td>
<td>8.1</td>
<td>-1.4</td>
<td>-7.1</td>
<td>3.3</td>
<td>-4.7</td>
<td>-4.6</td>
<td>17.4</td>
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¹ As a percent of total exports of goods and services.
² As percentage change.
³ Eurodollar deposit rate adjusted for changes in an index of export prices of non-oil developing countries (expressed in U.S. dollars).
1970s; and (4) inadequate or insufficient domestic adjustment, signaled by rising fiscal deficits and an appreciation of real effective exchange rates. This list is certainly not exhaustive (for example, it omits the effects of domestic supply shocks and rising protectionism in export markets), but it does cover most of the more important causes.

For descriptive purposes, it is useful to view the first three of these factors as "external," in the sense that the typical developing country was powerless to offset them. Analogously, changes in fiscal deficits and movements in real effective exchange rates are "domestic" factors to the extent that a country’s economic policies influence both its nominal exchange rate and domestic input and output prices.

It is, of course, unwise to try to push the distinction between domestic and international factors too far. After all, their respective influences on current account positions are so closely interrelated that it is often impossible to disentangle them. Nevertheless, in order to formulate successful policies for external adjustment in the non-oil developing countries it is important to examine each major factor separately so as to gain a better appreciation of the role that it has played in the past and might play in the future.

Terms of trade

The deterioration in the overall terms of trade of non-oil developing countries between 1973 and 1981 represented a distinct change from the previous improving trend. A considerable part of the deterioration can be attributed to the rise in import prices that resulted from the fourfold jump in the world price of energy products in 1973-74 and the further substantial increase in 1979-80. The declines in the terms of trade that were associated with each price increase were broadly similar. In both cases, price increases for primary commodities coincided with the oil price rise and helped to mitigate the adverse effect for a number of non-oil developing countries. The overall price index of non-oil primary commodities rose by 28 percent in 1974, and during 1979-80 it registered an average increase of about 12 percent a year. While commodity prices fell in 1975, 1978, and 1981, the average annual rate of increase was nearly 12 percent for 1973-81. Furthermore, it is likely that the increase would have been even larger had growth rates in industrial countries not decelerated markedly toward the end of the 1970s and put downward pressure on primary commodity prices.

The predicament of the non-oil developing countries in the face of deteriorating terms of trade was not unique. On average, the terms of trade of the industrial countries actually deteriorated by a greater amount during this period, a fact that is perhaps not surprising, given the relatively large share of petroleum products in their total imports. For a variety of reasons, however, industrial countries were in a better position than the developing countries to adjust to the deterioration, so that the impact on the latter group was more severe. The only gainers in the 1970s were, as one would expect, the oil exporting countries, which, as a group, experienced an average improvement of about 25 percent per annum in their terms of trade.

Broadly speaking, the evidence in the table seems to suggest that movements in current account ratios and the terms of trade of the non-oil developing countries coincided during the period under consideration. Using the aggregated figures in the table to check this association, the annual change in the combined current account position of the non-oil developing countries can be correlated with the yearly percentage change in their terms of trade. Although the results of this simple statistical test can only be taken as suggestive, owing to the small number of observations, they confirm the strong negative impact of a change in the developing countries’ external terms of trade on their current account positions.

Industrial country growth

Growth in the industrial countries also has a direct impact on the current accounts of the developing countries through its influence on both the prices and volumes of their exports. There was a pronounced decline in the average growth rate of the real gross national product of industrial countries between 1963-72 (5 percent) and 1973-81 (3 percent); for 1979-81 the average annual growth rate was very low—only 2 percent. Growth in the volume of exports of non-oil developing countries also fell, but modestly, from 6.7 percent in 1963-72 to 5.9 percent in 1973-81. In contrast to what might have been expected, the relatively sharp fall in the average growth rate of imports of industrial countries between the two periods, resulting from the fall in their overall growth rates, was apparently not reflected in a proportionate decline in export growth for non-oil developing countries.

It has been argued that two main factors helped to minimize the consequences of this slower growth of industrial countries’ imports on the exports of non-oil developing countries during 1973-81. First, non-oil developing countries, particularly those with a relatively higher proportion of manufactures in their total exports, were able to capture a larger share of the industrial countries’ slow-growing import volume. The process was assisted at the beginning of the period by tariff preferences, but was to some extent reversed later, as protectionist pressures rose in the industrial world. Second, non-oil developing countries were able to increase their total exports (in volume terms) faster than their exports to industrial countries by directing a larger share to oil exporting countries, as these became increasingly important markets for exports of primary products and manufactures.

Foreign real interest rates

The third major external factor affecting developing countries’ current account positions, particularly during the late 1970s, was the sharp increase in the cost and availability of financing from the international credit markets. Service payments on external debt had not been a very serious problem for many non-oil developing countries during most of the period prior to 1975 because conditions in the international credit markets were generally favorable and a large proportion of outstanding debt, particularly for the low-income countries, had been made available by foreign official institutions during the 1960s at fixed concessionary rates. As a result, the effective interest rates on external debt, when adjusted by the increase in their export prices, yielded real interest rates that were low or negative for many non-oil developing countries.

In 1978 this picture changed quite drastically. Owing to adverse terms of trade shocks and slow export market growth, the non-oil developing countries’ stock of external debt, particularly short-term debt, rose sharply. In addition, interest rates in international capital markets were climbing to postwar highs at a time when developing countries’ export prices began to weaken, so that average real interest rates on external debt became positive (see table). Their strongest impact was on the debt-service burdens of those countries whose stocks of external debt were relatively large because they had already experienced substantial current account deficits in earlier years and had resorted to foreign financing. From this point of view the recent rise in debt-service burdens can also be seen at least partly as the lagged effect on current accounts of the other factors that are being discussed in the present article.

Domestic factors

While factors beyond the control of the developing countries played a large role in the deterioration of their current account
positions during the 1970s, domestic de-
mand pressures were also an important
factor in their external payments problems.
A wide spectrum of developments can give
rise to excess demand, but in non-oil de-
veloping countries, as elsewhere, an increase
in aggregate demand can often be traced to
expansionary government policies that re-
sult in fiscal deficits. A rise in government
spending, as evidenced by an increased fis-
cal deficit, acts directly to expand domestic
demand, and if it is financed by domestic
monetary creation the expansionary effects
are intensified. Other things being equal,
such increases in demand have a strong
negative impact on the current account.
Adding to this problem is the fact that ex-
cess domestic demand is normally reflected
in domestic inflation, and if the authorities
are not able or willing to alter the nominal
exchange rate to keep pace with the differ-
etial between the domestic and foreign
inflation rates the real exchange rate will
appreciate. (The real effective exchange
rate can be defined here as the home coun-
try's consumer price index relative to an
import-weighted average of consumer price
indices in partner countries, adjusted
for the nominal exchange rate.)
The combination of fiscal deficits and real
exchange rate appreciation had serious
consequences for the non-oil developing
countries' current account balances over
the 1970s. On average, the fiscal positions
of non-oil developing countries, measured
as a proportion of GDP, were consistently
in deficit throughout the period 1973–81.
The weighted average deficit rose from
about 2 percent in 1973 to a little over 3
percent in the period 1975–76. (These aver-
ges are based on the sample of 100 non-oil
developing countries presented in the
World Economic Outlook, 1982.) After a slight
improvement in 1978, there was a signifi-
cant worsening, and the ratio of the fiscal
deficit averaged about 3 1/2 percent during
1979–81.
Partly owing to the direct and indirect
effects of rising fiscal deficits, inflation was
also endemic in most non-oil developing
countries during 1973–81, averaging about
29 percent a year, compared to about 12
percent for 1963–72. More important, how-
ever, from the point of view of the current
account, there was a tendency for exchange-
rate changes not to keep pace with the dif-
ferences between domestic and foreign in-
flation, resulting in an appreciation of the
real effective exchange rate. In this way,
fiscal deficits, domestic demand pressures,
inflation, and the real effective exchange
rate were closely interlinked, and tended to
rise together. Such a link has been docu-
mented for a number of countries. The
behavior of the real exchange rate, essen-
tially being the outcome of changes in the
nominal exchange rate and domestic infla-
tion, reflects the way in which exchange
rate policy and demand-management poli-
cies are coordinated.
An increase in the real effective exchange
rate is clearly a fundamental determinant of
a deteriorating current account since, other
things equal, it tends to raise domestic de-
mand for imports and to reduce foreign de-
mand for exports. Further, if the home coun-
country has little influence on the prices of
its exports because they are fixed in world
markets, and if domestic nominal wages
rise in line with domestic prices, an appre-
ciation of the real exchange rate induces a
cost squeeze on the exporting sector that
reduces the supply of exportables.
On the basis of these effects, it seems
legitimate to view movements in the fiscal
position and the real effective exchange
rate as useful indicators of the domestic fac-
tors that would typically be expected to in-
fluence the current account. At the same
time, it should also be kept in mind that
external factors, such as changes in the
terms of trade, may also exert a systematic
effect on the real effective exchange rate, so
that the latter is not always a reflection of
domestic developments alone. For exam-
ple, a worsening of the terms of trade re-
sulting from an increase in import prices
would raise the domestic price level. If do-
mestic policies (including exchange rate
policy) were not changed, the real effective
exchange rate, as defined here, would tend
to appreciate. This is one reason for the
practical difficulties mentioned earlier of
making a clear-cut distinction between so-
called external and internal factors.

Empirical evidence

It is widely acknowledged that each of the
factors described so far played a signifi-
cant role in the substantial deterioration
of current account positions for the group of
non-oil developing countries between 1973
and 1981. Nevertheless, there is a differ-
ence of views about the relative contribu-
tions of each of these factors, both for indi-
vidual countries and for the group as a
whole. This is a question of considerable
importance. The particular combination of
adverse developments that the group of de-
veloping countries had to face in the 1970s
will, it is hoped, not be repeated during the
1980s. But policymakers must still address
the question of how a different combina-
tion of domestic and external develop-
ments would be likely to affect the current
account positions of the non-oil developing
countries.
One possible approach is to assess the
contribution of each of the factors on the
basis of empirical tests for all those coun-
tries for which the necessary published
data are available. In the research described
in this article, a simple model was used that
made the current account position, ex-
pressed as a proportion of total exports, de-
pendent on the external and domestic
factors discussed. Estimates of the influ-
ence of these factors were obtained using a
sample of the 32 countries for which the
necessary data were available for the period
1973–80. These data were then “pooled” to
produce a single sample covering 8 annual
observations for each of the 32 countries.
The exercise yielded statistically signifi-
cant results suggesting that the variables
representing the terms of trade, fiscal de-
ficits, real effective exchange rates, and the
level of international interest rates in real
terms had definite effects in the expected
direction on the current account ratios of
non-oil developing countries during the
period under review. The fifth factor,
changes in growth rates in industrial coun-
tries, also appeared to induce changes in
the current account ratio, but the effect was
not as significant, empirically, as in the
case of the other variables. This probably
reflected the fact that non-oil developing
countries were partially successful in off-
setting the direct effects of the slowdown in
industrial countries by curtailing imports
and, to a lesser degree, by increasing their
exports to other regions.
While each non-oil developing country
was obviously affected by its own particu-
lar combination of factors, these results
help to explain the determinants of the cur-
rent account ratio for the “average” coun-
try in the sample. For example, the esti-
mates suggested that a 1 percentage point
increase in the ratio of the average coun-
try’s fiscal deficit to its GDP would cause its
current account, as a proportion of its ex-
ports, to deteriorate by about half a per-
centage point. A 1 percentage point fall in
industrial country growth rates was esti-
mated to reduce the current account ratio
by a little less than half a percentage point,
while a similar rise in the real foreign inter-
est rate would induce a fall of less than a
half percentage point. By the same token, a
1 percent deterioration in the external
terms of trade or a 1 percent appreciation in
the real effective exchange rate would lead,
on average, to a decline of about half a per-
centage point in the current account ratio.
Finally, trend factors that are not separately
identified appear to have exerted a small
negative effect on the average country’s cur-
rent account position.
In order to judge the relative contribu-
tions of the various external factors to the
current account positions of the non-oil de-
veloping countries in 1973–81, it is impor-
tant to consider both the quantitative im-

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Impact of a given change in each factor and the actual changes in the factor that occurred during the period. On this basis, the empirical work suggested that the most important single influence on current account disequilibrium in the non-oil developing countries was, indeed, the deterioration in their terms of trade. Next in importance were fiscal deficits and movements in the real effective exchange rate, which were of roughly equal significance. Finally, smaller, though still significant, influences were exerted by movements in real foreign interest rates, trend factors, and growth in industrial countries.

These results certainly suggest a major role for the terms of trade deterioration in the current payments experience of a broad group of non-oil developing countries during the 1970s. Nevertheless, they also suggest that, on average, the individual country could have offset some part of the effect of adverse exogenous shocks on its current account position by using an appropriate combination of demand-management and exchange rate policies.

For instance, depreciation of the real effective exchange rate, together with fiscal restraint, could have been applied in order to keep the current account ratio from worsening markedly in the face of deterioration in the terms of trade. This assumes, of course, that the authorities were in a position to alter the real exchange rate by changing the nominal rate, an issue on which there is considerable dispute on both the theoretical and empirical levels. It could be that, owing to widespread indexation, domestic factor prices would tend to snap back following a devaluation, leaving the real exchange rate unchanged. Despite such obvious problems, it seems reasonable to assume that at least some portion of the current account effects of adverse international developments could have been counterbalanced by a combination of a more flexible exchange rate policy and tighter demand-management policies designed to keep domestic inflation in check.

While such real sector adjustments are certainly very painful for a low-income country, they would seem preferable to the alternative of failing to adjust or, worse still, allowing the real effective exchange rate to appreciate and being forced to undergo highly deflationary and disruptive adjustment at a later stage.

It should be stressed, of course, that the effects of these policies would be severely reduced if a large group of non-oil developing countries tried to undertake policies of exchange rate depreciation and domestic restraint simultaneously, since their terms of trade would tend to deteriorate and to offset the positive effects of the exchange rate action. Since total world demand for many primary commodities is not very responsive to price reductions, this raises a policy issue that has become all too familiar during the past year: an exchange rate change will tend to be more effective for an individual developing country if its competitors refrain from similar action; obviously the beneficial effects of such a policy would be severely limited, or even eliminated entirely, if it were undertaken simultaneously by a large group of developing countries.

**Financing and adjustment**

The empirical tests support the hypothesis that both external factors (represented by the longer-run decline that has occurred in the terms of trade, the slowdown of economic growth in industrial countries, and the increase in foreign real interest rates) as well as domestic factors (captured by changes in the fiscal position and movements in real effective exchange rates) are relevant in explaining the deterioration of current accounts of non-oil developing countries during the past decade. These results also suggest the importance of circumspection in attributing the current account imbalances experienced by non-oil developing countries during the 1970s to any single cause.

It has sometimes been asserted that the nature of a balance of payments stabilization program depends on the origin, or proximate cause, of disequilibrium. This view holds that if a payments deficit is the result of excessively expansive demand-management policies, the appropriate cure involves domestic demand restraint, whereas if the problem is caused by exogenous factors, such as a fall in the terms of trade, no adjustment is necessary and foreign financing should be provided.

Since our results indicate that both types of factors were at work during the 1970s and since, as has already been mentioned, it is exceedingly difficult to separate the relative contributions of domestic and external factors to current account instability in a developing country, it would seem to make more practical sense to adopt an alternative view that has often been implicit in the work of the Fund. This view suggests that the question of whether a deficit ought principally to involve adjustment or financing should depend, among other considerations, on whether the imbalance is viewed as permanent or temporary, irrespective of its origin. If developments that give rise to balance of payments difficulties are expected to be short-lived and self-reversing, they may involve a need for temporary financing; permanent changes, on the other hand, necessarily require adjustment of the basic supply-demand balance in the economy.

While one can argue that the slowdown in growth in industrial countries and the high level of foreign real interest rates are temporary phenomena and are likely to be reversed in the not so distant future, the deterioration in the non-oil developing countries’ terms of trade since 1974 appears to have been more of a long-term change. The terms of trade fell in five of the eight years 1974–81, and a further sharp decline of close to 12 percent is estimated to have taken place in 1982. Some financing of the deficits created by terms of trade changes did occur, but the situation also called for a substantial adjustment effort. In terms of the framework of this article, evidence of insufficient adjustment in a number of developing countries is seen in the way their real effective exchange rates appreciated and fiscal deficits expanded during this period. For individual countries, suitable adjustment would have meant pursuing a more flexible exchange rate policy, supplemented by the application of a broad range of demand-management policies. Some countries, notably those among the group that are classified as major exporters of manufactures or “newly industrialized countries,” did adopt such a strategy with considerable success. However, the beginning of the 1980s also found a large number of non-oil developing countries experiencing increased current account deficits resulting not only from adverse international factors but also from domestic developments during the decade.

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The transfer of technology

Issues in the acquisition of technological capability by developing countries

Carl Dahlman and Larry Westphal

Throughout history, the assimilation of technologies invented elsewhere has been central in raising living standards. The modern era differs from previous epochs in that although there are greater disparities now in technological levels among countries, there is also greater ease of communication and transportation. These differences have enhanced both the perceived and the real gains from acquiring foreign technologies—hence the increasing prominence of technology transfer in discussions of development.

Market failures in the creation and the diffusion of technology are at the heart of the international debate about technology transfer. Technology has characteristics of a public good that, once produced, is not depleted through further use by others. It is usually presumed that the cost of transferring technology is zero and that additional uses of the technology do not detract from its value. On those grounds, achieving optimal welfare requires that technology be available to all potential users without charge. This argument is the basis for claims that developing countries should have free (or cheap) access to developed countries’ technology. But free diffusion preempts markets that the creator might have served, and may thus remove the incentive to innovate. The patent system permits the diffusion of technology while attempting to protect the proprietary rights of the innovator. In exercising these rights, technology suppliers seek to restrict use of the technology so as to maximize their returns. Control over the supply, plus the buyer’s ignorance regarding the true value of technology, can lead to excessively high prices.

High prices for technology and restrictions on its use are the basis for many developing countries’ call for an international code of conduct on the transfer of technology and a revision of the international patent system. But no satisfactory agreement has been reached on either.

Why? Because of the inherent conflict of interests between the suppliers and the demanders, which mirrors society’s fundamental dilemma between the need to stimulate the creation and the need to encourage the diffusion of technology.

Many governments in the developing world have adopted “defensive” measures—that is, measures that control contractual technology transfers—in order to redress the bargaining asymmetry and protect the development of local technological capabilities. Although such regulations have helped reduce the price and improve the terms of the contractual inflow, they may also have affected the character of the foreign technology that can be imported. Foreign technology suppliers are unwilling to sell when they consider the returns too low. Moreover, direct foreign investment is often the only means of obtaining access to closely guarded technological assets. It is also not clear that regulating formal inflows has stimulated the development of local capabilities. Such development requires technological effort on the part of local firms, which is not ensured by regulation of or protection from technology imports.

What is technology?

Technology is a method for doing something. Using a method requires three elements: information about the method, the means of carrying it out, and some understanding of it. Much of the confusion about what technology transfer is arises from trying to identify one or two of the elements as technology. Information and means can be transferred, but understanding can be acquired only by study and experience. Information embodied in blueprints, operational manuals, and technical books is transferable, as are physical means, such as capital goods. But both physical means and information are worthless unless the recipient knows how to use them, which involves the knowledge of a technology’s potential and—most important—some experience in its use.

The transfer of information or means is not the same as the acquisition of technological capability. The ability to use technology effectively comes from a person’s (or organization’s) understanding, and the degree of understanding required is related to the objective sought in employing the technology. For example, full comprehension of the potential of photography may call for some knowledge of optics and chemistry, but this knowledge is not necessary to take standard snapshots. Moreover, all technologies are elements of larger systems, and the presence or absence of other technologies has a major impact on what has to be acquired to accomplish the objective sought. For example, developing and printing capabilities are not needed to take snapshots, but they may be required where these services are not locally available.

Technological capability is not an end in itself. Objectives can be achieved in various ways and the selection of the best way requires a strategy. Optimum strategies for choosing and acquiring particular elements of technologies vary across countries, sectors, firms, and individuals, according to their needs and characteristics. These obvious considerations are too often neglected in discussions of technology and development.

Choosing a technology

For most activities in most industries, no single technology is best for all circumstances. Local requirements and factor endowments vary widely—both among developing economies and between them and the developed economies. As well as differing in their relative use of capital and labor, alternative technologies also use different intermediate inputs and produce outputs that are not strictly identical in all respects. These characteristics affect a technology’s suitability for individual situations. Although definitions of appropriate technology vary, a core characteristic is that it makes optimum use of available resources. The conventionally prescribed method for choosing among alternative technologies is to evaluate their associated benefits and costs, using prices that properly reflect relative scarcities. The best or most appropriate technique is that which has the highest net benefit.

Lack of local capability to identify needs and to search for and assess different tech-
nologies is often responsible for the selection of inappropriate techniques. In turn, government policies—such as those leading to distortions in factor prices—can induce producers to search for technologies that are, in fact, inappropriate. Monopolistic market structures and excessive protection from imports can, by unduly raising prices, destroy rational incentives to search for the most cost-effective technology. In addition, producers may anyway fail to respond to market signals, and base their choices on criteria that are independent of economic forces, such as seeking the newest or most sophisticated technology regardless of cost.

The implementation of an appropriate choice often requires complementary investments in local skills to make the optimum use of available resources. To the extent that these skills can be augmented, they need not impose absolute constraints on the selection of what would otherwise be appropriate technologies. Labor and management abilities can be upgraded through investments in human capital formation, for example, or local machinery repair and production facilities for spare parts can be developed.

But concern with appropriate technology extends beyond choices among existing alternatives to address the possibilities for creating new technologies. Technological change in the developed economies has resulted in modern technologies that are urban-based, large-scale, capital-intensive, and whose requirements for capital and intermediate inputs are often import-intensive. Likewise, the characteristics of the outputs produced by these technologies are sometimes ill-suited for developing economies. Nonetheless, because of their high productivity, modern technologies are frequently most appropriate. But modern and older technologies alike can be adapted to conditions in developing economies. Whether changes are warranted depends on their costs relative to the expected benefits.

Acquiring technology

Less developed countries typically obtain many elements of technology from more developed countries. But there are various combinations of foreign and local contributions. Information, means, and understanding can be (1) provided by foreigners who retain ownership; (2) purchased from foreigners; or (3) acquired through indigenous efforts to translate foreign technological knowledge into specific methods. And technology can be transferred with varying degrees of human capital accumulation and institutional development.

At one extreme, a package consisting of all the elements is transferred, with indigenous involvement limited to an unskilled labor force—as with direct foreign investment, or to operating the technology—as with “turnkey” projects. (In the latter case, a foreigner contracts to provide all the elements needed to design and establish a production facility in the local environment, but ownership is local.) At the other extreme the underlying knowledge is assimilated and then used to create the necessary elements. The knowledge can be acquired through education, experience, experimentation, research, or purchase.

The modes of technology transfer that are most often discussed are those where foreigners play an active role and provide information in an immediately operational form—direct foreign investment, turnkey projects, licensing, know-how agreements, and technical service contracts. But modes in which foreigners play a passive role, and where locals acquire the knowledge and later translate it into technology, are very important channels of technology transfer. These channels include sending nationals for foreign education, training, and work experience; consulting foreign technical literature; and copying foreign processes and products.

In discussing what is acquired through technology transfer, it is useful to distinguish three broad types of capability: production capability—that required to operate a technology; investment capability—that required to expand existing productive capacity or to establish new capacity; and innovation capability—that required to develop new methods of doing things. There is often an implicit notion that technology transfer gives the recipient the first two if not all three types of capability. That is rarely the case. The capability to operate a technology is different from the ability to develop the means of implementing it. Similarly, having the capability to implement a technology is different from having the capability to create a new one.

Production capability is not achieved by passively importing technology. It requires local participation and considerable indigenous effort to master the technology’s use. Research shows that in most cases where the technological elements are imported as a “black box,” the recipients are not able to take full advantage of it because they do not understand how or why the black box operates as it does. This hampers their ability to improve productivity or to adapt to changing circumstances—such as shifts in input prices or demand patterns—that affect how it is best used.

The understanding that underlies production capability is also an important aspect of the capabilities to invest and to innovate. Thus the accumulation of local production experience can provide the understanding necessary to carry out some, but not all, of the tasks involved in investment and innovation. For example, plant engineers may acquire some capability in plant design, spare parts production, and adaptation of existing technology from experience in breaking bottlenecks, maintaining equipment, and solving production problems. But it is unlikely that they will acquire a capability in basic plant design, capital goods manufacture, or the creation of radically new technologies. The background and experience necessary to carry out many of these tasks is different, and the relevant capabilities tend to be developed in specialized entities, such as process engineering firms, capital goods producers, and technological research institutes.

Part of the increase in local capabilities acquired through transfers spills into related activities. For example, the capabilities gained from establishing one industry can enable greater indigenous participation in subsequent transfers of related technologies, increasing their effective assimilation. The accumulation of such experiences can also lead to the creation of specialized firms which, in turn, permits greater local participation in future transfers. More generally, the increased capability contributes to an economy’s capacity to undertake independent technological efforts, including replication or adaptation of foreign technologies as well as creation of new technologies.

But unless carried out with the explicit objective of doing so, some modes of technology transfer do not provide the experience that is critical to the development of indigenous technological capability. Tasks involving project design and the manufacture of capital goods, for example, which could be performed locally, may be carried out by foreigners. This precludes local learning through experience—experience that may be directly relevant to the industry’s subsequent development. Moreover, project costs may be higher: cheaper local services may not be used; and intimate knowledge of local conditions, required to optimize project design and to take advantage of available raw materials, may be ignored.

Imported or domestic technology?

Any project entails much iterative problem solving and experimentation as the original concept is refined and given practical expression. Important elements of the technology appropriate to the project are developed through applying existing technological knowledge and engineering principles to specific local circumstances. There may even be some minor innovations or
adaptations in the technology being implemented. Whether the elements of technology should be obtained locally or from abroad ought to depend on the relative costs and benefits involved. Few would argue that foreign technical knowledge should be eschewed, so the issue ultimately concerns the division of labor between foreigners and locals in transposing technological knowledge into concrete form.

An economy's capacity to provide the necessary elements depends on the stage of development of the relevant sector and those closely related to it. Firms engaged in well-established activities may often acquire technology locally—either through their own efforts or through the diffusion of expertise from other domestic firms. Hiring personnel with expertise from previous work experience plays an extremely important part in the diffusion of knowledge among firms, as does the interchange of information among suppliers and users of individual products, especially for intermediate products and capital goods.

Firms in new or relatively new industries can rarely take advantage of previous local experience or the diffusion of expertise or information from other domestic firms. Such firms are likely to find it more cost-effective to rely initially on foreign technological “packages” in the form of direct foreign investment and turnkey contracts. As a country develops its technological capability, it can disaggregate these packages to import more cheaply or efficiently only those elements that it cannot obtain locally.

The relative merits of different ways of acquiring various elements of foreign technology depend on several factors. First, the costs and terms at which elements can be obtained from abroad may be affected by the competition among alternative sources of supply and the negotiating power of the recipient, including the degree of government support. The second factor is the technological capability of the recipient and stage of development of local technological infrastructure. The third is the size of the market for which the technology is to be applied.

There are trade-offs—involving risks, short- and long-term considerations, and private versus social costs and benefits—between attempting to supply some of the elements locally and importing them. A rational firm is unlikely to use inexperienced local engineering services or untested capital goods, for example, unless their use brings long-run developmental benefits that more than compensate for the greater short-run risks and higher costs of using such local inputs. The social benefits from increasing technological capability generally exceed the private gains that an individual firm can expect to capture. There are many avenues along which technological capability can move to other firms, and not all of these are controlled by the firm that finances the initial acquisition. This discrepancy between private and social value often leads to underinvestment. Moreover, firms may value the private benefits that they do capture at less than their own true social worth, or consider that the cost of securing them exceeds the true social cost.

Furthermore, firms may opt for more expensive monopolistic sources of foreign technology, such as those that confer a well-known brand name, because such sources confer monopoly power. There is then a convergence of interests between the domestic firm and the foreign supplier since the domestic firm can offset the promise of domestic monopoly profits against the excessive price paid. Thus, the motives that give rise to technology imports can sometimes conflict with social objectives. In turn, where imports are consistent with social objectives, domestic firms may prefer importing technology without considering ways of increasing domestic technological capability. Even the simplest form of participation—intelligent observation of activities carried out by foreigners—entails a cost to firms.

**Strategy over time**

The central issue of strategy is how to build upon what can be obtained from abroad to stimulate the development of local capability in selected areas. For many reasons, timing is of critical importance. Since all capabilities cannot be developed simultaneously, and since the accumulation of any one capability takes time and experience, the sequence in which various capabilities are developed is crucial. And the required capabilities change as a firm or country matures, because of changes in existing capabilities, and because of changes in market conditions.

If the market is small and growing slowly, so that investments in new plants are infrequent, the best strategy may be to acquire only production capability—say, by importing a turnkey plant, with the training required to adjust the operation as necessary. But if the market is large or growing rapidly, it may be economic to acquire some investment capability. Furthermore, if technology is changing rapidly, it may be desirable to insure the capability to assimilate new advances quickly or even to innovate new products or processes. Or a decision may be made to rely on direct foreign investment in dynamic areas where it would be too costly to keep up with rapid world technological developments.

In this context, the strategy of Japanese firms is instructive. During the 1950s and 1960s, when they were technologically far behind firms in the then developed nations in almost all areas of industrial technology, they actively and unabashedly imported foreign technology. The means to accomplish this included commercial contracts, such as licensing and know-how agreements and turnkey plants, as well as copying products, getting training overseas, making visits to foreign plants, and studying foreign technical literature. In areas in which they wanted to excel, they sought to understand the underlying principles rather than simply to import technological “black boxes.” Thus, Japanese firms allocated specific local research and development efforts to acquire this understanding. Further, they used the import of technology as a starting point and focused the bulk of their efforts on understanding, adapting, and improving the technology. In particular, they focused on increasing the quality of products and on reducing production costs. In the 1970s, and even more now in the 1980s, Japanese firms have devoted more attention to basic research and innovation. Their strategy has changed as their capabilities have evolved.

There are various situations in which it may be cost-effective to develop basic product and process knowledge as an element of local innovation capability. These include instances when foreign technology is not appropriate or does not exist for the needs at hand, when it can be obtained.
only at excessively high costs or is unavailable because of monopoly supply restrictions, or when the size of its potential market is large enough to justify the cost of developing it locally because of the gains from scale economies. Efforts to acquire substantial innovation capability may pay off by reducing future costs and providing greater flexibility to adapt to changing circumstances. The difficulty of assessing these returns, together with differences in sensitivity to technological considerations, may explain why firms in the same industry exhibit vastly different levels of technological effort.

Because of market failures and externalities in the creation, diffusion, and choice of technology, there is an important role for government incentives and other interventions in fostering the effective use of technology. The objectives of such policies include inducing the choice of the socially most appropriate foreign techniques; importing technology on the best possible terms; ensuring adequate local participation designed to increase domestic technological capability; and promoting, where appropriate, the use of local rather than foreign sources. Some of these aims can be achieved through defensive measures, but others can only be attained by positive steps, such as building up local physical and human technical infrastructure.

It is not always clear how to design and implement policy measures most effectively. While defensive steps are not enough, positive measures are not always successful. For example, many research institutes have been poorly integrated with production needs. In addition, measures to support and encourage local technological effort have frequently worked at cross purposes with other elements of industrial and trade policies. As a result, firms, even those owned by the state, have often not responded to technologically oriented policies. Another difficulty is how to foster the development of technological capability in different domestic sectors, while minimizing the costs to the users—often other industries—of temporarily shutting out more efficient foreign sources or making access to them more costly. And perhaps more important than specific policy measures is the establishment of an environment that sensitizes firms to technological considerations and stimulates them to develop greater technological capability to improve their overall performance.

Technology is multidimensional. Many different capabilities are required to assess, select, assimilate, use, adapt, and create it. Elements of different technologies already exist in the developing world. Sometimes a completely new technology is not needed, but rather an improvement on existing technological elements or a complement of new elements imported from abroad and adapted to local conditions. Countries may follow different paths toward the acquisition of the technology they need, paths that involve varying degrees of openness to foreign technology and of reliance on foreigners rather than locals to transform technical knowledge into concrete form. Not much is known about the relative merits of the different paths, because little attention has been focused on economic performance along these paths. There is much to learn about the best strategies. The performance along the path matters. So do the targets. There is an inherent difficulty in that the targets are constantly shifting as the future unfolds and new technologies are developed. The only recipe for success is pragmatism based on constant monitoring of performance and of the possibilities opened up by new technological developments.
The underground economy

The causes and consequences of this worldwide phenomenon

Vito Tanzi

In recent years, a growing number of observers of the economic scene have called attention to a phenomenon described by a variety of terms, of which the most common is "underground economy." A range of names are used to describe this phenomenon, including "parallel," "unofficial," and "black." Regardless of the appellation, the phenomenon relates to activities ranging from relatively legal to totally criminal that somehow escape official attention and may distort official statistics and lead to erroneous policies.

The underground economy—as its plethora of names suggests—can be defined in various ways. If the relevant agency to which activities are not reported is the tax or customs authority, the definition is tax-related. If the relevant agency is the national accounts authority, then we get a definition that relates to the national accounts. More specifically, the underground economy can be defined either as the total of incomes earned, but not reported to the tax authorities, or as the total of incomes not included in the national accounts. There may be no close connection between these two definitions; an activity may not be reported to the tax authorities but may still be assessed by the national accounts offices if, for instance, national accounts data are compiled independently from tax data. Vice versa, there could be cases where some activities come to the attention of the tax authorities but not of the national accounts authorities. In this connection it should be realized that, depending on the country, the national accounts may be based more or less on tax information. For example, in the United States it is reported that only 6 percent of national income is based on information provided by the tax authorities.

The causes

In a well-working market economy, without a public sector, there would be no underground activities. Incentives for the growth of these activities increase with greater regulation of the economy, larger public sectors, and higher levels of taxation. The factors that stimulate underground activities can be classified under four different headings: taxes, regulations, prohibitions, and bureaucratic corruption, although in several cases, underground economic activities may have been brought into existence by more than one factor.

Taxes. The tax factor has been emphasized in most studies of the underground economy, and particularly in those dealing with the United States, the United Kingdom, and the Scandinavian countries. In recent years, the share of total taxes in the gross national product of many countries has increased substantially, reaching in some cases 30 percent. Further, the marginal tax rates associated with these taxes have been even higher. As tax rates increase, so does the incentive to evade them. When tax rates are high, the cost of honesty also becomes high, and many taxpayers, who, under lower tax burdens, would have been honest, make the transition to tax evasion, even though in some cases only for parts of their incomes.

It is not just the level of the tax rates that is important, but also the general mood of compliance that prevails in a country. This mood may itself be affected by perceptions about the public sector—if these are that public expenditure is wasteful or that the tax burden is inequitably distributed, there may be a tendency not to participate in "above-ground" activities. Further, when tax administration is good and the penalties for evasion significant, high marginal tax rates may not lead to a high level of underground economic activity. Thus, when the attitude vis-à-vis the government and its tax and expenditure policies is negative, when the tax rates are high, and when tax administration is poor, underground economic activity is likely to flourish.

Different taxes may stimulate these activities more in one country than in another. In the United States, the major cause of the underground economy has generally been assumed to be high income tax rates. As a consequence, the studies dealing with this country have emphasized that aspect. In other countries, and perhaps to a more limited extent even in the United States, social security taxes have also been important. In fact, it is likely that these taxes, which in some countries have achieved a very high level, may have been more important than the income taxes. Both of these taxes may...
bring about a kind of black market for labor; if workers can be hired without the pay-
ment of income taxes or social security con-
tributions, they can be paid lower wages. The
worker may gain, as the wage he re-
ceives will be free of income tax and of the
employee’s contribution to social security,
and the employer will gain by the lower
wage bill and by not paying his share of the
social security tax.

Sales taxes also contribute to under-
ground economic activities. The value-
added tax, for example, is reported to have
brought about a proliferation of small and
difficult-to-control enterprises that produce
services or goods sold net of taxes. For
some countries (for example, Italy and
Argentina) there are estimates assessing
the value-added tax evasion at 50 percent.
It is, thus, a fair question to ask whether
the evading activity is being properly mea-
sured in the national accounts.

For developing countries, other types of
taxes are also important factors. Countries
that impose high import duties, which in
some cases exceed 100 percent, provide
strong incentives to smugglers to bring
those goods into the country without going
through the customs offices. The higher
the import duty, and the smaller, more eas-
ily transportable, and more valuable the
product, the greater is the incentive to
smuggle it into the country. As a conse-
quence, smugglers make considerable
 gains from this activity and these gains are
difficult to measure. Estimates for some
countries indicate that they can be enor-
mous. Export duties are another major
cause of these activities. The coffee pro-
ducers who smuggle coffee out of the coun-
try; the cattle raisers who simply cross the
frontier with their cattle to sell them
abroad; and the diamond or emerald min-
ers who take their finds abroad are all
avoiding export taxes and making profits
that are not likely to be properly measured.
Even capital gains and capital transfer taxes
may induce those engaging in the transfer
or sale of property to underassess for tax
purposes the value of their property. In all
of these cases, activities may have been
brought into existence, or channels of dis-
tribution may have been created, or eco-
nomic relationships may have been
changed because of the taxes. The end re-
sult is higher incomes for some, lower tax
revenue for governments, and highly dis-
torted statistics.

Regulations. By and large, the more reg-
ulated an economy, the greater will be the
pressures within it to try to get around the
regulations. In the process, various activ-
ities that cannot be controlled will come
into existence; these will, to some extent,
invalidate the objectives of the regulations
and will be associated with the phenom-
enon of the underground economy. The
regulations may relate to labor markets,
goods markets, domestic financial markets,
and foreign exchange markets.

The regulation of the labor market may
include laws pertaining to minimum
wages, overtime, and the work of minors,
aliens, retirees, and working women.
Many of these are circumvented or ig-
nored. In the process, output is produced,
income generated, and labor utilized in
ways not desired, or even contemplated,
by the government. In many cases a black
market for labor develops.

Goods markets regulations include price
controls, rationing, forced sales of com-
modities to the government or to marketing
boards, import quotas, and export bans.
All of these may generate a black market
for goods as both producers and consumers
try to escape the effects of these regulations
by developing parallel or hidden markets.
Again, the end result is the creation of un-
reported incomes, the distortion of mea-
sured levels of activity, and a loss of tax
revenue. In the United States, the regu-
lation of goods markets during the prohi-
bition era and during World War II brought
about widespread attempts at circum-
vening them. Available estimates indicate
that underground economic activities were
larger during World War II than in any sub-
sequent period. Black markets for goods
have reached epidemic proportions in
some highly regulated African countries,
and the same is reported to be occurring in
some centrally planned economies of
Europe.

Regulations of domestic financial mar-
kets are often associated with constraints
on interest rates and with credit controls.
When these regulations of domestic fi-
nancial markets exist, a black market for
money, sometimes called a curb market,
develops. In this case, interest received
by lenders is for the most part unreported
to the tax authorities and the extent to which
it is properly reflected in the national ac-
counts is an open question.

Examples of regulations of foreign ex-
change markets abound. These are con-
ected with the exchange rates, which may
be widely out of line from the equilibrium
level, or with capital controls. Distorted
exchange rates, together with capital con-
trols, are generally accompanied by at-
tempts at getting around them. Obvious
examples of this type are the over invoicing
of imports, which allows an importer to get
some exchange at official rates and to leave
some of this money abroad, or to sell it in
the black market. Another example is the
under invoicing of exports. The exporter’s
objective is to end up with unreported for-

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reduce their value; therefore, the incomes that the sellers of these drugs receive would also fall sharply.

**Bureaucratic corruption.** In all countries, some public employees find themselves in control of powers that can be used to generate private gains. This private use of public power is obviously improper and frequently illegal, but it is a fact of life in some countries, and examples abound in the literature and in newspapers. In particular countries, for example, it has been reported that government jobs are sometimes literally sold by individuals with the power to dispose of them. In other countries, government contracts are awarded to individuals who are willing to make an under-the-table contribution to strategically located public employees. In still others, where economic activities may require specific licenses, acquiring a license, or, at times, acquiring a license without excessive delay, may be achieved in exchange for under-the-table payments. Licenses for investments, imports, construction, and waivers from particular regulations, or even obtaining public services which, because of supply bottlenecks, are not readily available (such as telephones), can often be obtained by literally purchasing the license, the waiver, or the service from the right person.

The argument has been made that in some countries this payment to a certain extent compensates the public employees for low wages and oils the bureaucratic mechanism by introducing some spurious sort of efficiency. The common denominator of these activities is that they all generate incomes for some people and these incomes are not reported to the authorities. They are not likely to be taken fully into account by those who generate national statistics.

**Consequences**

The existence of a sizable and possibly growing underground economy has obvious consequences that may or may not be serious, and it raises issues of equity, economic policy, and efficiency. This article cannot engage in a full discussion of these issues, but will make a brief reference to them.

**Equity.** The issue of equity is particularly significant in the distribution of the tax burden and incomes. The fact that some people receive incomes that are not taxable implies that to raise a given level of tax revenues, the tax rate on officially recognized activities will have to be higher. Further, even when the economy expands because of underground economic activities, the need for additional public services will go up. For example, those who live on underground incomes still use roads and still send children to school. The reduction in tax revenues and the increase in the need for additional public expenditure as a result of these activities is an aggravation of fiscal difficulties. Equity considerations arise also in connection with income distribution, as very large incomes may be made in connection with underground activities, which may distort the distribution of income that the government wants to achieve.

**Policymaking.** The implications of underground economic activities for economic policy are perhaps more serious. A large underground economy will inevitably be associated with greater difficulty in properly assessing the size of variables that are important for policymaking. For example, if the underground economy is growing faster than the official economy, and is not properly measured by the national accounts authorities, the rate of growth of the country will be underestimated. This could lead to policies that, on the basis of what is officially known about the economy, seem appropriate but are actually overly expansionary.

The official unemployment rate may also be distorted. If people working in the un-

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**Measuring the underground economy**

Economists have been very resourceful in devising different methods for estimating the size of the underground economy. One method is based on attempts to measure directly the various activities that make up this phenomenon, and, through a process of aggregation, the calculation of the total. This method has been used mainly in the United States. Its main weakness is that many underground economic activities are not observable.

A second method, which has given interesting results for Norway and Sweden, includes the use of questionnaires to elicit answers from persons interviewed as to whether they have participated in these activities either as buyers or as sellers. In the case of noncriminal activities, selling the service may imply violation of some law; buying the service does not. Therefore, if the answers received from the buyers give more or less the same magnitude for underground economic activities as the answers received from the sellers, one can have some confidence in them.

A third method, which has been applied in Italy, is based essentially on the difference between the population that, on the basis of demographic data, could be assumed to be part of the labor force and those who officially report to be part of it. These estimates need to be accompanied by some assumptions about productivity in the underground sector. A fourth method, used in the United States and in the United Kingdom, has attempted to estimate the size of the underground economy by comparing the official estimates of the gross national product made from the consumption side with those made from the incomes side. The assumption is that underground economic activities would affect only the income estimations of national product. There are difficulties with this method, as the underground economy is likely to affect both consumption as well as incomes. Thus, some studies of the United Kingdom have attempted to estimate the underground economy by analyzing household budget studies for unusual levels of consumption corresponding to given reported income.

Many studies for a large number of countries have also attempted to measure the activities in question by analyzing monetary statistics, on the assumption that certain monetary aggregates—for example, currency or currency in large bills—may be directly influenced by the size of the underground economy. Still other methods have related electricity use to official output for a region or a town. If the electricity used is much higher than one would expect from the official production level, one can assume that unofficial production is taking place.
Underground economy are listed as unemployed, the unemployment rate will appear higher than it actually is. This again may induce the government to pursue expansionary policies when, in fact, the real rate of unemployment may be much closer to the full-employment rate than the official rate would indicate. For the United States some have argued that the actual unemployment rate may be more than 2 percent lower than the official rate.

The rate of inflation may also be distorted if the underground economy is growing faster than the above-ground one in countries where the services of the former are rendered at lower prices. In this case, the measured rate of inflation may be higher than the real rate. In addition, if the underground economy is connected with black markets for goods, then the reverse may occur, as scarcity of goods in the official economy brought about by price control or rationing may bring about much higher prices in the black market economy. In this case, the official price index is likely to be much lower than the real price index.

The balance of payments statistics, too, are likely to be distorted in the presence of an underground economy, as many capital and commodity flows will not be properly measured. Once again, economic policies based on the official statistics may not be the right ones. The tax burden of a country, as well as the share of public expenditure in gross national product, will be distorted, as total taxes or total public expenditure will be divided by only the officially measured and thus lower gross national product. Therefore, that ratio will appear higher than it actually is. Official statistics on income distribution, as already stated, will also be distorted as those actively engaged in the underground economy may appear poorer than they actually are.

Monetary policy may be distorted if the growth of money is related only to the growth of the official gross national income. If incomes in the underground economy are growing faster than this, then the rate of monetary expansion, determined in relation to the official economy, may be too low for the needs of the total economy. This discussion should be sufficient to emphasize the importance of studying this phenomenon, since economic policy in most countries is strongly influenced by the behavior of the officially measured macroeconomic variables.

**Efficiency.** The issue of efficiency can be approached from different angles. This is, however, a complex issue that would require far more time for a satisfactory treatment. In general, if the underground economy is caused by taxation alone, one will find that, *ceteris paribus*, resources (both capital and labor) will progressively move out of the taxed or official sector into the untaxed or underground sector. This exodus would continue until, at the margin, the rate of return net of taxes in the official economy becomes identical to the untaxed rate of return in the underground economy. Obviously, this movement of resources is likely to imply a substantial misallocation of resources.

However, the issue of efficiency involves somewhat more complex considerations than that of misallocation. As has been emphasized, in some studies related to the Italian situation, the existence of underground economic activities, often carried out within the house by housewives, give to the economy an efficiency that it would not have otherwise. For example, a woman who has children in school and who would find it impossible to hold a regular job, will be able to allocate to this (underground) domestic work those hours when the children are away and consequently do not need her attention. In addition, to the extent that this woman works in her own house, she needs less investment in structures, and there would be less need for roads because no transportation back and forth from work is required. Furthermore, as this person can fully and directly benefit from the additional output associated with any improvement in her human capital or in her equipment, there would be a greater incentive to carry out these improvements. For developing countries, where excessive regulation of the economy has at times brought about excessive rigidities, the underground economy, which in this case might be more properly called the "parallel" economy, has often made a difference between a relatively viable economy and a stagnating one.

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![Diagram: Estimated size of underground economy](image)

*These data show the ranges of estimates made for each country at different times; they are suggestive and should not be taken to be precise.*

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Countertrade: trade without cash?

The cornerstone of postwar world economic relations has been a liberal and multilateral system of international trade and payments. This system, established under the auspices of the Fund and the General Agreement on Tariffs and Trade, fostered an unprecedented growth of international trade: the volume of trade increased almost sixfold between 1950 and 1980. While the far greater proportion of world trade continues to be conducted within the framework of the above-mentioned system, in recent years there has been a growing tendency in some countries to resort to trading practices that constitute a retreat from multilateralism. These practices are collectively known as “countertrade.”

Countertrade may take a variety of forms, but basically it is a barter or a quasi-barter arrangement that more or less explicitly links import and export transactions. It involves trading arrangements between private firms and/or government entities, such as foreign trade organizations, by which the seller is obligated to accept, as a partial or total settlement for his exports of goods (or in some instances services, such as technology or industrial licenses), specified goods or services, from the buyer.

On the basis of the types of goods traded, the financial arrangements involved, and the length of time it takes to complete the transactions, four types of countertrade may be distinguished. These are barter, compensation, buy-back, and counterpurchase.

(1) Under a barter arrangement, the exporter sells specified goods to the importer in exchange for specified goods. This type of transaction, involving a limited number of products and without the participation of a third party, is a one-time operation, and the transaction is completed in a relatively short time. Pure barter is relatively rare because of the difficulties of finding a buyer for the product, which may not be easily marketable, and of negotiating a mutually acceptable price.

(2) Under a compensation arrangement, the exporter agrees to take full or a partial payment in kind for the goods sold, but the exporter transfers the purchasing commitment to a third party who may be an end-user of products or a trading house. Compensation arrangements are also not very common because it takes time to find a suitable third party to whom the exporter can transfer the purchasing commitment.

(3) The third type of countertrade, which is perhaps the most prevalent and involves a relatively large volume of trade, is the buy-back arrangement. Under this the exporter (usually an industrial firm) provides plant, equipment, or technology to an importer (also an industrial firm) and agrees to accept, as a partial or full payment, goods to be produced by the importer with the exporter’s equipment or technology. A variant of this arrangement is trade-related performance requirements, under which foreign investors are required to export a fixed proportion of the goods produced or to use a specified value of locally produced inputs in production. In contrast to barter, compensation, and counterpurchase arrangements (discussed below), where the value of purchases by the exporter is almost always less than (or at most equal to) the value of exports, the value of buy-back commitment may exceed that of the original export transaction. Moreover, the contract period of buy-back arrangements is, by necessity, considerably longer than that of counterpurchase arrangements.

(4) The counterpurchase arrangement is also common and complicated. Under this arrangement, the exporter sells goods, technology, or services to an importer, and agrees to purchase from the latter, within a specified period, a specific total value of goods selected from a list that excludes those produced by the technology being exported. Unlike barter and compensation arrangements, exporters entering into buy-back and counterpurchase arrangements must use a trading firm to market the goods they purchase. The exporters do not use these goods themselves, although under certain buy-back arrangements they may agree to purchase raw materials or parts that could be used in their production processes.

Although conclusive data are difficult to obtain, it is generally accepted that countertrade has become an increasingly important form of trade between West European and East European countries since the mid-1970s. To a lesser extent, the United States also appears to have relied on countertrade arrangements to expand its trade with East European countries. Countertrade has, too, become a feature of trade between developed and developing countries.

Factors in countertrade growth

Several factors have contributed to the growth of countertrade. In the case of the centrally planned East European countries, domestic production can be planned, but exports are not as amenable to central planning, largely because of the difficulty of forecasting foreign demand. Countertrade is therefore considered a way of overcoming uncertainty of domestic production plans and, at the same time, of achieving bilateral balancing of trade—an important objective of foreign trade policy in these countries. Shortages of convertible foreign exchange and the desire to stimulate foreign technology inflows have also motivated East European countries to enter into countertrade arrangements.

In many developing countries, certain industrial and foreign trade activities are nationalized and some of the institutional characteristics that apply to countertrade in East European countries are also present in these countries. In addition, developing countries, particularly those maintaining overvalued exchange rates, have resorted to countertrade for the following reasons: (1) balance of payments difficulties arising...
from sluggish export growth and a rising external debt-service burden have prompted some to seek new ways of economizing on scarce foreign exchange resources; (2) emphasis on the growth of manufacturing sectors, originally aimed at promoting import-substitution, has created overcapacity and has produced pressures to find markets for surplus goods; (3) given the difficulties of gaining access to the markets of the industrial countries for certain primary and manufactured products, countertrade arrangements that commit industrial country exporters to purchasing a given quantity of products over a specified period are seen as a means of penetrating existing markets or establishing new ones; (4) countertrade in the form of buy-back arrangements is seen—by both industrial and the more developed developing countries—as a means of securing reliable sources of essential raw materials while exporting equipment and technology that have become outdated at home; and (5) for exporters (including some in industrial countries) countertrade may have become the only way to overcome the protective trade policies of some countries.

As already mentioned, the magnitude of trade conducted under countertrade arrangements is difficult to estimate. There are several reasons for this. Where governments engage in such arrangements, strategic goods may be involved, so that detailed trade data are not likely to be published. When trade returns are compiled on a commodity basis, they do not usually differentiate between trade conducted under normal trading arrangements and countertrade. Countertrade in the form of buy-back arrangements often extends over several years, making it difficult to estimate the annual volume of trade. One frequently mentioned estimate by the OECD is that up to 15 to 20 percent of the trade between East European and West European countries is conducted under some form of countertrade arrangement. On the basis of this estimate, in 1980 when total East-West trade was $80 billion, countertrade would have amounted to about $12–16 billion. In a recent study by the U.S. International Trade Commission, U.S. imports under countertrade were estimated to have been $279 million in 1980—$170 million of which were estimated to have been from centrally planned economies. Assuming that the annual values of imports and exports conducted under countertrade arrangements are equal, and applying the U.S. proportion of countertrade with the centrally planned economies of 61 percent to the estimate of countertrade in total East-West trade of $12–16 billion mentioned above, global countertrade in 1980 may be roughly estimated to have amounted to $23 billion, or about 1 percent of world trade that year. A number of figures have recently appeared in the press that are much higher than this—as high as 25 percent of world trade—but estimates based on these figures imply implausibly rapid growth of countertrade since 1980.

**Drawbacks**

Although the magnitude of trade conducted under countertrade arrangements is small in relation to world trade, the proliferation of such practices tends to undermine the operation of the multilateral system of trade and payments. Countertrade practices entail many of the undesirable restrictive and discriminatory practices traditionally associated with bilateralism. While, as already mentioned, countertrade practices may, in the short run, be viewed as having some advantages, in the longer run they may have serious shortcomings. Manufacturing firms have to set up subsidiaries to handle countertrade arrangements or employ the services of trading companies specializing in such activities. Export sales linked to countertrade arrangements require careful planning to ensure that the imported products will be of good quality, easily marketable, delivered on schedule, and reasonably priced to take account of the additional marketing costs that may be involved. As already mentioned, one of the more important motives for engaging in countertrade is the promotion of exports. Therefore, when a manufacturing firm enters into a countertrade arrangement, it is essentially performing a marketing function for those producers and may feel compelled to add the cost of marketing to the price of products or to seek a discount on the price of products it purchases.

Countertrade arrangements are therefore time-consuming to conclude and tend to increase the cost of trade because additional risks not usually present in normal bank-financed foreign trade must be covered. Risks increase as countertrade arrangements extend over several years. Uncertainty about the availability and quality of products to be purchased in future years is an especially serious disadvantage. Where a large sale of plant, equipment, or technology is involved, a potential change in the political and national security considerations adds to the uncertainty.

Because they are complex and time-consuming, countertrade arrangements, in some instances, may actually reduce the amount of trade. In the longer run, transactions based on conventional financial arrangements provide a much greater flexibility for importers as well as for exporters and promote growth and the diversification of the country’s exports. Countertrade has been characterized as “trade without cash,” but this is misleading, because in most countertrade transactions there is a need to translate the value of traded goods into cash equivalents. Under complicated arrangements involving more than one transaction over several years, an “escrow account” is usually established at a commercial bank, and each trade transaction is settled through the account, thus involving an imitation of

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**Some examples of countertrade**

- **Under Indonesia’s counterpurchase policy, all foreign companies awarded government contracts for construction projects and major procurements must undertake to export specified Indonesian products, other than oil or natural gas, equivalent to the total foreign currency value of the equipment and materials they import into Indonesia. The export of Indonesian products purchased under these arrangements to a third country is permitted only if the third country is a new market for such products. (Guidelines issued by the Indonesian Government, December 2, 1982.)**

- **In 1983 Greece plans to purchase 30,000 barrels of crude oil a day from the U.S.S.R. at the price of $28 per barrel and to pay for them partially with goods produced in Greece (The Wall Street Journal, April 22, 1983.)**

- **The Malaysian-owned rubber trading company, Sime Darby, is said to have worked out a barter deal with Mexican tire manufacturers under which the Mexican firms paid Sime Darby’s New York-based agency for Malaysian rubber with cocoa beans. Sime Darby, New York, in turn, resold the cocoa beans to confectionery manufacturers in the United States (Far Eastern Economic Review, January 27, 1983.)**

- **The United States aerospace company McDonnell Douglas is reported to have sold aircraft to Romania in return for canned ham “which the firm’s stuff is expected to munch its way through at the company’s canteen for years to come” (Far Eastern Economic Review, January 27, 1983.)**

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payments mechanisms. When counterpurchase or buy-back arrangements are concluded, exporters may have to obtain bridging finance for themselves or provide it for foreign buyers. This increases the financial costs of countertrade transactions. From the standpoint of the developing countries, the dumping of their exports in third markets by importers in the developed countries may be harmful, as it may undercut the normal trade relations that developing countries have with these markets.

At present, there are no international laws or agreements that deal directly with countertrade practices, although some do cover certain aspects. The existing international trade law, the GATT, has no provision dealing specifically with countertrade practices. A number of its important provisions, such as those on national treatment, on internal taxation and regulation, antidumping and countervailing duties, quantitative restrictions, subsidies, state trading enterprises, and emergency action on imports of particular products, may be interpreted to cover certain aspects of countertrade practices. Their applicability has not been examined closely, and some GATT members have proposed a thorough examination of trade-related investment performance requirements.

Countertrade practices entail many of the restrictive and discriminatory features that are considered undesirable under Fund policies that aim more broadly to reduce bilateralism and exchange restrictions. One such practice, which has become prevalent, is the importation of goods and services in developing countries under Fund policies that aim more broadly to encourage its members to rely on appropriate fiscal, monetary, and exchange rate policies rather than on restrictive practices to achieve balance of payments adjustment. (A report on the Executive Board’s recent review of countertrade practices within the context of the Fund’s continuing examination of bilateralism is contained in the 1983 Annual Report on Exchange Arrangements and Exchange Restrictions, pp. 44–46.)

Shahid Javed Burki

A more integrated and multipolar world economy requires a different approach to global negotiations from that based on the static North-South concept. UNCTAD VI may have been a stepping stone in that direction

Interdependence

The growing interdependence of the world economy is a reality, evident in the recent dramatic growth in global trade and financial flows. Trade represented 10 percent of the combined world GNP in 1960, and had nearly doubled by 1980. Over the past decade, the volume of world exports rose by 69 percent, and real world GNP by 49 percent. While industrial countries’ trade with non-oil developing countries declined slightly as a share of exports between 1980 and 1981, the share to oil exporting countries rose. Imports from developed countries represent an even higher share for developing countries, in the region of 55 percent of their total imports in 1981. Over the last two decades, trade has expanded much faster than growth in world output. Trade growth has also remained unexpectedly resilient in the face of the various “shocks” of the 1970s, in particular the oil price increases and the rapid and substantial exchange rate changes that came with floating rates.

Financial flows also expanded rapidly in the 1970s; net capital flows to developing countries expanded at an average annual rate of 20 percent (in current dollars), falling to 2.2 percent in 1980–82. Total flows from all official and private sources to developing countries rose from $51 billion in 1970 to $96 billion in 1982 (in constant 1981 prices). This decade also saw a substantial change in the nature of financial flows, as private loans and investment and official

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nonconcessional loans became more important than official development assistance for all but the low-income countries. Official development assistance represented about 60 percent of total flows in the 1960s, but only 28 percent in 1982. The financial solvency of a great number of developing and some developed countries became a major preoccupation of the commercial banks and other developed country investors toward the late 1970s. There are several other indications of interdependence: the presence in the industrial world of workers and skilled personnel from developing countries; the transfer of technology from industrial to developing countries; and the flow of private investment from industrial countries to the developing world.

The extent of this growing interdependence is only now beginning to be appreciated. A recent International Monetary Fund study suggested that each 1 percent increase in industrial country real GDP is associated with about a 0.2 percent to 0.3 percent increase in non-oil developing country real GDP, with the elasticity ranging from about 0.7 for major exporters of manufactures to practically zero for low-income countries. There are also indications that this relationship became firmer in the 1970s compared with the 1960s. The evolution and causal links of this relationship can, of course, largely, but not exclusively, be attributed to growing interdependence through trade. Even more striking are the conclusions of another recent study (by Morgan Guaranty Trust) regarding the impact of changes in developing country output on that of industrial countries. According to this study, a 3 percent cutback in developing country GNP would decrease the United States’ GNP by 0.5 percent, that of Japan by 1.1 percent, and that of Europe by 0.8 percent. While the conclusions of these studies are highly tentative in view of the complex relationships between a considerable number of variables, they nevertheless point in the same direction. Does this type of association reinforce the concept of a world divided into an industrial North and a developing South?

Beyond “North-South”

The concept of a North-South dichotomy describes a situation where a small part of the world’s population, largely in the northern hemisphere, has reached a high standard of living, whereas a great majority, generally in the south, is still a long way behind in terms of per capita income. The developing countries have persistently argued their case for changing the structure of a global economic order on the grounds that present they are unequal partners with the industrial nations. While this concept may be politically attractive, it is increasingly inaccurate as a framework for analysis of the dynamics of current world economic development, where many developing countries have grown at rates much higher than those of the industrial countries. One product of this view of the world is the developing countries’ attitude toward trade policy, where the constant, overwhelming emphasis has been on obtaining preferential treatment. With hindsight, however, it is clear that the world trading system has not been static, enjoying unprecedented growth rates throughout the 1960s and much of the 1970s. This trade was to the benefit of the North and South alike, and without much impetus from preferential rules and schemes. Indeed, since 1963, the share of manufactures in OECD nonfuel imports from developing countries rose from 13 percent to 51 percent. Without belittling the contributions of preferential schemes (such as the Generalized System of Preferences) to developing country exports, the question is whether it would not have been to the advantage of developing countries if they had engaged more fully in the multilateral give-and-take of the Kennedy and Tokyo Rounds of trade negotiations. The same paradox may be implicit in the developing countries’ suspicion of multinational corporations—on balance the Third World’s gains from these can be and have been enormous—and for their emphasis on concessional flows. While a great many developing countries needed, and continue to need, large and expanding levels of aid, private lending to and investment in a large number of them have grown significantly without official prompting from developed country governments. Indeed without this increase in commercial finance, the developing countries could not have achieved their robust rates of growth of the 1960s and 1970s.

Growing LDC disparities

The static, quasi-Manichaean description of North-South relations has proved itself wrong. Developing countries as a group, in fact, do not seem to suffer from any common malady other than a relatively low standard of living. And even this is less common than one might suppose; there is a greater difference between per capita income in the more advanced developing countries and the least advanced than there is between the former and many “developed” countries. This should not imply that there are no longer differences between the North and the South nor that many developing countries no longer need considerable assistance. It does imply, however, that many developing countries are now highly integrated into the world economy, and that the differences among them are as sharp as (or sharper than) those between the North and the South.

Developing countries have coped differently with the cumulative effects of such external factors as successive oil price increases and deteriorating export prices. Some succeeded in mobilizing domestic
countries succeeded in saving about 24 per-cent of their GDP. The spread but does not invalidate the argu-
ments. The 1983 World Development Report of the World Bank suggests that pervasive dis-
tortions in domestic economic policies can cost—indeed may have cost—as much as 2 percentage points every year in their GDP growth.

The middle-income oil importing coun-
tries, a category that contains some of the world’s most dynamic economies, had an average GDP per capita in 1981 of about $1,670—compared with $1,250 for middle-
income oil exporters, $270 for low-income economies, and $11,000 for industrial mar-
ket economies. The annual per capita growth rates of middle-income oil impor-
tors over 1960-81 were virtually the same as that of middle-income oil exporters. A number of newly industrialized economies showed extremely high growth rates be-
tween 1960 and 1981. In 1981, the differ-
ence between income per capita in the upper-income developing countries com-
pared to low-income economies was nearly ten to one; the ratio between these coun-
tries and developed countries was about one to four. The comparison between re-
spective purchasing power parities lowers one to four. The comparison between re-
spective purchasing power parities lowers the spread but does not invalidate the argu-
ment. In terms of export performance, middle-income oil importers showed an-
ual volume increases of 7.0 percent in 1960-70 and 4.3 percent in 1970-81, com-
pared with 4.9 percent and -0.7 percent in low-income countries, respectively. Fi-
ally, while the middle-income developing countries succeeded in saving about 24 per-
cent of GDP in 1970-80, the saving rate of sub-Saharan Africa was much smaller, of the order of 9 percent. The saving rate of the middle-income developing countries compares very favorably with developed coun-
tries that, despite considerably higher per capita income, only managed to save 21 percent of their GDP.

The countries with the most impressive growth records have, in most cases, adopted outward looking economic poli-
cies and relied on rapidly rising exports, especially to developed countries, and growing inflows of public and private cap-
tal to finance the imports needed for high levels of capital investment. Many (though not all of them)—especially those with the political will and capacity to make rapid adjustments—have managed to weather the successive “oil shocks” and economic downturns in developed countries. Not only are some of these countries rapidly approaching the per capita income levels of low- to middle-income developed countries but their potential for growth in the med-
ium and long term seems to be as good, if not better.

It is clear that not all developing coun-
tries need preferential trade treatment to compete successfully in developed country markets; in fact, the more advanced among them can provide markets for the goods and commodities of those farther down the development scale. Nor do all poor coun-
tries need external flows on highly conces-
sional terms; because of the sound manage-
ment of their economies many of them can obtain returns on investment significantly higher than the interest currently charged by commercial lenders. The rate of return on investment in the poor countries of South Asia was measured at 19 percent by the 1983 World Development Report.

Meanwhile, developed countries have been beset by problems of stagflation, structural rigidities, and endemic unem-
employment (although here, once again, one would be overgeneralizing in describing this as the situation in all developed countries). Many need to make the same radical adjustments that have traditionally been urged on developing countries, whether to manage their domestic economies better or to resist protectionist pressures that de-
crease the overall efficiency of their econo-
mys and slow down the emergence of a sus-
tained recovery. Developing countries as a group now absorb nearly 30 percent of all exports from developed countries (40 percent of exports from the United States). Hence, whatever is done to aid developing coun-
tries—whether by improving their access to markets in the developed world or by increasing concessional or nonconces-
sional capital flows—is an important macro-
economic precondition for sustained de-
veloped country growth.

New directions

Faced with increased demands for greater international economic cooperation one may be tempted to deplore the slow progress of the individual discussions in the various international forums on these issues. But if these are viewed as a part of a process, one may discern progress in many vital areas—in particular toward a better understanding of the dynamics of the global economy. Thus, when the GATT met at the ministerial level in late 1982, the emphasis was on resisting protectionism, on rolling it back, and on moving forward on various fronts where progress had been lacking in the past. On issues such as barri-
ers to trade in agriculture, the divisions were more among developed countries than between North and South. New is-
issues, such as trade in services, were, how-
ever cautiously, introduced as new subjects for GATT examination, and the developing countries were willing to participate more fully in these deliberations than they had done in the past. At subsequent meetings, there also seems to have been a growing realization among developing countries that they have to be more active in the multi-
lateral system. At the New Delhi meeting of the nonaligned nations in February 1983 the developing countries appeared to move away from the objective of negotiating a new international economic order in one go. They showed willingness to deal sepa-
ately with the issues of trade, commodity price stabilization, and financial flows. At the same time, they were prepared to rec-
ognize that there had emerged a consid-
erable potential for economic cooperation among themselves that could be tackled on the basis of what has come to be called ECDC—economic cooperation among de-
veloping countries.

This evolution of developing country thinking was central to the adoption of the Buenos Aires “platform” for UNCTAD VI in which the Group of 77 indicated that, while global negotiations were still impor-
tant to them, they would focus first on im-
mediate measures to revive the global econ-
omy and their own development. At the same time, some progress was also made at the Williamsburg Summit of the industrial nations toward a better understanding of the dynamics of North-South relations, in particular the recognition that economic re-
covery must be treated in the context of the economic interdependence between de-
veloped and developing country economies. The Williamsburg participants also under-
lined the importance of not limiting their efforts to rolling back protectionism as the recovery proceeded, but to look toward achieving further trade liberalization between developed and developing coun-
tries and between developing countries themselves.

UNCTAD VI—In retrospect

UNCTAD VI was held against this back-
ground. The Conference addressed a con-
siderable number of major issues, many of
which were new. UNCTAD has traditionally been a forum for addressing a vast array of North-South issues. Significantly, its three major tangible achievements have been directed to sharing and stabilizing the global pie. This was true for the Generalized System of Preferences, which was justified by the perceived need of developing countries to obtain a competitive edge over their developed country competitors. This is true for the Code of Conduct for Liner Conferences, the essential result of which is to share liner cargo shipping between developed and developing countries. It is also true for the Common Fund—the linchpin of a series of commodity agreements, whose objective is to introduce greater stability in commodity markets and help commodity producers in developing countries move into more profitable lines of economic activity through the activities of the so-called second window.

At UNCTAD VI, however, the developing countries attached major emphasis to global recovery and to protectionism. Consequently, the conference devoted considerable effort to preparing a common analysis of the world economic situation and an agreed overall strategy for economic recovery and development. In the end, UNCTAD VI adopted resolutions (mostly by consensus) on most aspects of international cooperation for development, including agreement on the next steps to be taken and evolutionary improvements in many areas. Trade proved to be the most difficult area of negotiation. The Group of 77 long resisted any language that suggested that developing countries, too, might improve their trade policies, but they eventually accepted a statement condemning protectionism in general. Certain industrial countries, on the other hand, initially insisted that a rollback of protectionism should be conditional on the long-awaited economic recovery. In the end, developed countries as a group agreed to “halt protectionism by fully implementing and strictly adhering to the standstill provisions they have accepted, in particular concerning imports from developing countries” and to “work systematically toward reducing and eliminating quantitative restrictions and measures having a similar effect.”

On financial issues, previous UNCTAD sessions had been preoccupied with the issue of whether UNCTAD was an appropriate forum to discuss World Bank and Fund matters. The conference finally adopted, by consensus, and without reservations or interpretations, a resolution on multilateral development institutions. This stated essentially that these institutions must be adequately funded for “continuing significant growth in their lending in active pursuance of their increasingly important development role.” The essence of this and other references to the multilateral development institutions was to underline a significant consensus on the important role of these institutions, in general and in respect of particular groups of developing countries, and to emphasize the generally shared concern that developing countries’ liquidity problems and capital requirements are such that they call for continued responsiveness of developed countries to the funding needs of the Fund, the World Bank, and other international financial institutions.

Although these developments can hardly be described as a great advance, they are part of a gradual process that, it is hoped, will lead to a more constructive approach to international deliberations on economic cooperation.

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Korea’s major adjustment effort

A resolute program to meet domestic and external problems, and its costs

G. Russell Kincaid

Non-oil developing countries (NODCs) were confronted with serious economic problems in the early 1980s stemming from the oil price increases in 1979–80, the unprecedentedly high interest rates in international financial markets, and the prolonged recession in industrial countries. Coping with the resulting strain on the balance of payments and with the adverse impact on incomes and growth became a major task of economic policy in NODCs.

Although the deterioration in global economic conditions affected each country differently, Korea’s experience is particularly pertinent for several reasons. First, the Korean economy was particularly hard hit by these external developments because of its total dependence on imported petroleum, its high level of external debt subject to variable interest rates, and its pursuit of export-led growth. Second, the developments mentioned above were compounded by difficulties of domestic origin that together brought to an end a long period of remarkable development, the so-called Korean “economic miracle.” Third, Korea was highly successful in its adjustment efforts: in 1979 its economic performance was close to the average for NODCs; however, by 1982, a vigorously implemented adjustment program had brought the current account deficit and inflation rate well below the mean for NODCs, while real GNP growth was substantially above the average (Table 1). Notwithstanding Korea’s position as the fourth largest debtor among NODCs, its external debt indicators were close to, or below, those of other NODCs.

“Economic miracle”: 1960–79

In a span of two decades, Korea progressed from being one of the world’s poorer countries, with a per capita income of $90 in 1960, to belong to the ranks of the middle-income countries, with a per capita income of $1,600 in 1979. A more than threefold increase in real per capita income was associated with a broad-based improvement in living standards. Substantial and efficient investment in the manufacturing sector transformed a predominantly agricultural economy dependent on foreign aid into a semi-industrial economy with a dynamic export sector, which recorded average annual increases in export volume of 30 percent during this period.

Agriculture’s share in GNP declined from 45 percent in 1960 to 20 percent in 1979, while that of the manufacturing sector rose from 10 percent to 25 percent during the same period. The principal reason for this decline was the rapid growth in the manufacturing sector, based on an expansion of labor-intensive export goods, which averaged 19 percent per annum—more than double the growth rate for real GNP and five times that for the agricultural sector. Reflecting this development, the proportion of the labor force engaged in agriculture declined from about 60 percent to 30 percent, while that of the manufacturing sector rose from less than 10 percent to over 20 percent. The rapid growth in labor-intensive manufacturing goods absorbed large increases in the urban labor force, while real wages rose by about 7 percent per annum.

Korea’s rapid transformation was made possible by socioeconomic factors, as well as by the implementation of appropriate economic policies. Korea underwent a successful land reform during the 1950s, which facilitated the introduction of new agricultural technology and encouraged investment. Widespread education, diligence, and thrift facilitated the transition of rural workers to factory jobs, contributed to higher labor productivity, and supplied the necessary savings for capital formation.

The most important factor, however, was the decision to pursue an export-led growth strategy. With a poor natural resource endowment and little capital, Korea adopted a strategy for growth based on its only abundant resource—labor. Light manufactured products, using labor-intensive techniques, became the key to sustained development. Economic policies encouraged capital accumulation in sectors where Korea had a comparative advantage. The real trade-weighted exchange rate was maintained, except during the late 1970s, at a level that made the export sector competitive. Exporters had virtually free access to imported inputs at international prices. Fiscal incentives that promoted investment in exports included generous depreciation allowances and exemption from indirect taxes on intermediate inputs. The Government also extended export incentives to domestic producers of intermediate inputs used in exports; however, because of the relatively free trade in these inputs, only efficient domestic producers flourished.
The public sector deficit remained relatively small throughout this period partly because the Government relied on selective credit policies to achieve its objectives. A liberal credit policy provided financial resources for working capital and fixed investment within a tightly controlled financial system. The Government owned all five nationwide commercial banks and numerous nonbank financial institutions, through which it set all nominal interest rates and allocated loanable funds to important sectors (mainly exports) at subsidized interest rates. As a consequence of these controls, an unorganized money market emerged. Official interest rates, both for loans and deposits, were maintained at positive real levels in order to encourage domestic savings and discourage capital-intensive investments.

**Emerging problems: late 1970s**

Toward the end of the 1970s, the Korean economy began to show signs of strain from sustained excess domestic demand pressures. A major investment boom, associated with the Government’s ambitious development plan (Fourth Five-Year Plan, 1977–81) raised the investment/GNP ratio from 25 percent in 1976 to 35 percent in 1979. Unlike previous development plans, investment in heavy industry (i.e., machinery, steel, shipbuilding, and petrochemicals) and housing was emphasized. Generally, these investments were more capital-intensive than past investments and subject to a longer gestation period; consequently, the incremental capital/output ratio nearly doubled. The substantial increase in investment did not immediately produce a commensurate expansion in capacity and a large domestic resource gap emerged, exerting pressure on the balance of payments. Rapid credit creation to finance the investment boom further fueled excess demand, and domestic inflation climbed well above the level of Korea’s trading partners. An overheated economy and a diversion of workers for overseas construction projects led to a tight labor market and to increases in real wages that greatly outstripped productivity growth.

The combination of relatively high domestic inflation, sharply rising unit labor costs, and the adoption of a rigid exchange rate policy resulted in a progressive deterioration of export competitiveness. As a result, export volume growth slowed from its historical trend to only 14 percent in 1978 and fell by 1 percent in 1979. While slower growth in foreign demand and rising protectionism contributed to the stagnation of exports, the strong export performance of other East Asian countries suggests that the primary cause was the decline in Korea’s external competitiveness. The current account position deteriorated from a virtual balance in 1976–77 to a deficit of almost 7 percent of GNP in 1979. Domestic factors were the principal reason for this deterioration (Table 2).

By the end of 1979, the immediate outlook for the Korean economy was bleak. The domestic economy was severely overheated and faced major structural problems with supply bottlenecks, overinvestment in heavy industries, and a relatively energy-intensive production pattern. The already difficult situation was greatly compounded by the triple shocks of a doubling in petroleum prices, higher interest rates in international financial markets, and a recession in Korea’s trading partners.

As a result, Korea’s oil import bill increased by $2.7 billion during 1980 to $6.2 billion (28 percent of total imports). Over 60 percent of Korea’s external debt was contracted at variable Eurodollar interest rates that rose to 14.5 percent by the end of 1979, about a 6 percentage point increase over the previous 12 months, and remained at that level throughout 1980. These higher interest rates were a primary cause of inter-

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**Table 1**

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<thead>
<tr>
<th>Year</th>
<th>Korea</th>
<th>NODCs</th>
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<tbody>
<tr>
<td>1979</td>
<td></td>
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<td>1980</td>
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<td>1981</td>
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<tr>
<td>1982</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Current account deficit</th>
<th>As a percent of goods and services</th>
</tr>
</thead>
<tbody>
<tr>
<td>-21.3</td>
<td>-17.9</td>
</tr>
<tr>
<td>-23.6</td>
<td>-20.5</td>
</tr>
<tr>
<td>-17.0</td>
<td>-23.2</td>
</tr>
<tr>
<td>-9.0</td>
<td>-19.3</td>
</tr>
</tbody>
</table>

| External debt | -105.0 | 119.2 | 121.2 | 112.9 | 119.1 | 124.9 | 131.3 | 143.3 |

| Debt service | 15.2   | 19.0   | 18.4   | 17.6   | 20.7   | 20.4   | 20.9   | 23.9   |

- Growth: 6.4 5.0 -6.2 4.8 6.4 2.5 5.4 1.4
- Inflation: 18.3 24.6 28.7 31.0 21.3 32.8 7.3 34.0

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**Table 2**

<table>
<thead>
<tr>
<th>Year</th>
<th>1979</th>
<th>1980</th>
<th>1981</th>
<th>1982</th>
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<tbody>
<tr>
<td>Korea: external adjustment, 1979–82</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

| Exogenously induced change in the current account deficit | -1.3 | -9.4 | -3.2 | 2.2 |
| Oil price adjustment | -1.9 | -4.4 | -1.8 | 0.3 |
| Change in non-oil terms of trade | 2.1 | -2.8 | 0.4 | 1.2 |
| Change in foreign interest rates | -0.7 | -1.1 | -1.1 | 0.8 |
| Other changes in invisibles accounts, excluding overseas construction | -0.8 | -1.1 | 0.3 | -0.1 |
| Extraordinary rice imports | | | | |
| Adjustment effort | -5.6 | 7.3 | 4.3 | 1.0 |
| Change in volume of oil imports | -0.4 | 0.1 | | 0.1 |
| Change in volume of non-oil imports | -8.8 | 4.1 | -1.3 | 1.5 |
| Change in export volume | 2.4 | 3.0 | 4.9 | 1.8 |
| Change in net receipts from overseas construction | 1.2 | 0.1 | 0.7 | 0.6 |
| Actual change in the current account deficit | -6.9 | -2.1 | 1.1 | 3.2 |

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est payments on Korea’s external debt doubling to $2.6 billion in 1980. Foreign demand for exports weakened abruptly in 1980; economic activity in Korea’s export markets fell by 1.7 percent compared with an increase of 5.2 percent in 1979. Moreover, protectionist pressures in these markets intensified and Korea’s non-oil terms of trade deteriorated by 10 percent in 1980.

At the outset of 1980, there was no doubt that Korea faced a major adjustment problem: in the absence of corrective policies, the current account deficit would have increased to over 16 percent of GDP during the year. The severe economic problems were compounded by an equally difficult political and social crisis. The President was assassinated in October 1979; considerable political uncertainty and the worst social unrest in 20 years ensued. The situation did not stabilize until September 1980.

**Adjustment program begun: 1980**

Early in 1980, the Korean authorities started implementing a wide-ranging adjustment program in response to the deterioration in the country’s economic conditions and outlook. The prospective current account deficits were clearly unsustainable. Because of the magnitude of the imbalances, which were partially rooted in the economic structure, it was recognized that the adjustment process would take concerted efforts over several years but that significant progress was required in the first year. The authorities believed that a viable external position was a prerequisite for sustained growth, even though adjustment policies would entail some initial reduction in growth. As the external position improved, economic policies were directed more toward containing inflation and maintaining acceptable growth. These stabilization efforts were supported by a series of stand-by arrangements with the Fund; the most recent arrangement was approved in July 1983 and extends through March 1985.

Economic policies in 1980 reflected the Government’s determination to face the challenges with bold and resolute actions. The won was depreciated by 17 percent in January 1980 to restore external competitiveness and decline further during the year under a flexible exchange rate policy; for the year as a whole, the won depreciated by about 30 percent on a trade-weighted basis. To alleviate demand pressures, the 1980 budget (formulated in late 1979) was revised and its deficit reduced as a percentage of GDP by cuts in real current expenditures—largely wages—and by deferring investment projects. Fiscal policy, on a cyclically adjusted basis, was contractionary. Credit policy was also tightened; real domestic credit growth slowed to 5 percent in 1980, compared to an annual average increase of 15 percent during 1977-79. Interest rates were raised by 6 percentage points; real interest rates, however, turned substantially negative as inflation accelerated. More moderate wage increases were promoted through a massive campaign to educate the public about Korea’s economic problems.

Demand-management policies were supplemented by measures designed to correct structural supply weaknesses in the economy. Reorganization of certain key heavy industries was begun to alleviate past overinvestment and to promote efficiency. Investment strategy shifted from capital-intensive industries toward high skilled labor-intensive products, such as semiconductors, electronics, and telecommunications equipment, in a continuing effort to compensate for Korea’s diminishing comparative advantage in low wage, labor-intensive products. The main thrust for enhancing productivity was to come from increased competition in domestic industries, resulting from reduced import barriers, greater foreign investment, and diminished government intervention.

A major financial sector reform was initiated to improve financial intermediation by relying more on market signals to allocate financial resources. The first steps were taken to denationalize the banking system, to liberalize financial markets, and to eliminate the difference between preferential and general interest rates. To reduce dependence on imported oil, the Government launched a long-term energy plan centered on the development of nuclear power and incentives for energy conservation. In order to encourage conservation, prices of petroleum products were raised above the level of international prices by increasing domestic prices by 170 percent between January 1979 and February 1980.

Implementation of these stabilization and structural policies resulted in substantial external adjustment in 1980 that limited the increase in the current account deficit to only about one quarter of the rise induced by the deterioration in the external environment (Table 2). Nearly all the adjustment took place in the non-oil trade account. Export volume rose by 11 percent, as increased export competitiveness offset the effects of recession in Korea’s export markets. Non-oil imports contracted by 16 percent, reflecting the effects of the depreciation of the won and stagnant aggregate demand. Adjustment efforts of this magnitude were not without costs; real GDP declined by 6.2 percent—the first decline in over 20 years—and inflation soared to its highest level in over a decade. Financial policies were only partially responsible for these outcomes. A disastrous rice harvest in late 1980, caused by adverse weather, led to a 22 percent drop in agricultural production; nonagricultural production rose by about 1 percent. Energy price increases, the depreciation of the won, and the crop failure accounted for about three quarters of the rise in prices and masked the moderation in the underlying inflation.

**Efforts continued: 1981–83**

During 1981, the authorities continued to pursue their objectives to reduce the external imbalance and lower inflation but relaxed policies somewhat in order to counter the domestic recession. Fiscal stimulus was
provided by increasing public spending, particularly capital expenditures, and cutting tax rates. Investment projects were concentrated on rural infrastructure—with the goal of raising incomes of urban workers. As a result, the public sector deficit rose to 5 percent of GNP from 3.5 percent, and, on a cyclically adjusted basis, the impulse of fiscal policy became expansionary.

There was also a marked easing of monetary conditions; real domestic credit rose by 16 percent to accommodate the larger fiscal deficit and to provide sufficient credit to the private sector. Nevertheless, real interest rates rose throughout 1981 and, in the fourth quarter, turned positive. The won depreciated by 6 percent against the U.S. dollar, but with the strengthening of the U.S. dollar against major currencies, the nominal effective exchange rate remained constant. Consequently, the real effective exchange rate appreciated by about 5 percent as domestic inflation remained higher than foreign inflation.

Structural reforms initiated in 1980 were continued: the reorganization of heavy industries was completed; a second commercial bank was denationalized; and interest rate ceilings on certain short-term commercial paper were eased. Import liberalization also continued as the proportion of imports on unrestricted categories rose to 75 percent in 1981 from 69 percent in 1980.

Korea's external adjustment effort—equivalent to about 4 percent of GNP—remained substantial in 1981. The significant improvement in external competitiveness achieved in 1980 contributed to a 20 percent growth in export volume. The volume of oil imports was unchanged in spite of the return to high growth rates, due in part to successful conservation efforts, including the large domestic price adjustments, while non-oil imports, excluding rice, rose by only 5 percent in real terms. Most of this adjustment effort was offset by sizable rice imports necessitated by the poor harvest in 1980, a further deterioration in the terms of trade, and still higher foreign interest rates. Nevertheless, the current account deficit declined. The objectives for growth and inflation were also largely met; real GNP rose by 6.4 percent and inflation fell to 13 percent.

Adjustment efforts were moderated in 1982 and 1983 with the emergence of a sustainable current account deficit. Economic policies during this period have aimed at achieving price stability with acceptable growth and some improvement in the current account position. Budgetary policy has been the principal tool of the Government's adjustment strategy as fiscal policy, on a cyclically adjusted basis, once again turned contractionary. The high nominal income elasticity of the tax system was the main reason for the further reduction in the fiscal deficit. Monetary policy's support of the objectives for 1982 and 1983 was constrained by a crisis in May 1982 in the organized money market, which disrupted the flow of funds to firms. To avoid a generalized financial crisis, bank credit was increased at an annual rate of 50 percent during the third quarter of 1982. With normalization of financial conditions in the fourth quarter of 1982, the authorities turned to a tighter monetary policy; by mid-1983, nominal credit expansion had declined to its lowest level in over a decade. Real interest rates remained positive throughout 1982 and 1983 and averaged about 4 percent. The won's depreciation against the U.S. dollar has continued at about 6 percent per annum during 1982–83. The nominal effective rate also depreciated, while Korea's better relative price performance led to a depreciation of the real effective exchange rate that reversed the appreciation in 1981.

The pace of structural reform was quickened in 1982–83. Within the financial sector, the Government denationalized all nationwide commercial banks, eliminated preferential interest rates, replaced direct credit control through credit ceilings on individual banks by indirect control through reserve money management, and authorized two new commercial banks and numerous nonbank financial institutions. To stimulate foreign direct investment, the number of industries in which foreigners can invest was increased substantially, approval procedures were simplified, and restrictions on repatriation of capital and dividends were removed. High-technology industries have been encouraged by the formation of a venture capital system, greater expenditures on research and development, and new manpower training programs. Korea has also continued to liberalize imports.

The current account deficit in 1982 was almost half its level in 1981; two thirds of this reduction stemmed from an improvement in the terms of trade and lower foreign interest rates, while adjustment policies accounted for the remainder. Non-oil import volume increased by 6 percent, partly due to reduced rice imports, while real oil imports declined. In spite of weak external demand and the rise in protectionist pressures abroad, export volume rose by 6 percent or in line with the export performance of Korea's competitors in East Asia.

Output growth slowed to 5.4 percent under the influence of the weaker export performance, contractionary fiscal policy, and the return of agricultural expansion to its trend growth rate after the sizable expansion of the previous year. Inflation fell to 5 percent as import prices, in domestic currency terms, were unchanged and domestic inflation was moderated by the Government's anti-inflationary policies.

Data for 1983 are as yet incomplete. Nevertheless, there are clear signs that price stability has been achieved along with dynamic output growth and a sustainable current account deficit. Prices rose by only 3 percent over the 12-month period ended July 1983, while real GNP expanded by an estimated 8 percent in the first half of 1983. During the first seven months of 1983, the current account deficit was $1.2 billion or about 3.5 percent of estimated GNP.

Korea's adjustment path since 1979 has neither been smooth nor easy, but it has led to considerable success. In response to the deterioration in external conditions and pent up excess demand pressures, and notwithstanding considerable domestic turmoil, Korea adopted strong adjustment policies in early 1980. The magnitude of the adjustment effort was unprecedented for Korea—amounting to almost 13 percent of GNP over 1980–82. Over half of this adjustment effort was undertaken in 1980 at the cost of a slowdown in real growth. Nevertheless, when viewed from a longer-term perspective, the costs associated with the Korean adjustment program were substantially less; its average annual growth of real GNP was about 3 percent during 1980–82 or equal to the mean for all non-oil developing countries. During 1982, Korea's current account deficit, as a percentage of exports of goods and services, was less than half the average for NODCs; the level of Korea's inflation was only about one fifth the average for NODCs; and Korea's real growth was 4 percentage points above the average for NODCs. Consistent application of adjustment policies by Korea during the 1980s has succeeded in establishing a viable external position and in providing the basis for sustained growth with low inflation.

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Energy transition in developing countries

Issues in adjusting to higher prices and exploiting potential energy resources

Yves Rovani

Since the dramatic change in energy prices in 1973, the world economy has been volatile and uncertain. After the initial shock, many felt that the problem would be a short-term financial one—manageable because the international money market was flexible, commodity prices were booming, and interest rates lagging behind inflation. Since the late 1970s, however, the problem has become more complex: inflation and the measures taken to combat it have contributed to a slowdown and eventual recession in the rich countries; world trade has stagnated, commodity prices have slumped; and protectionist pressures have intensified. Developing countries have experienced lower export earnings, vastly increased indebtedness, a reduced flow of external capital, and lower economic growth.

One of the most difficult tasks facing the majority of these countries (but one that is unavoidable if they are to resume healthy growth) is to adjust their economies to the higher costs of energy. For many, expanded investments to increase energy production and to raise the efficiency of their energy use will be central to the process of economic growth. These investments require:

- The mobilization of funds on an unprecedented scale, both externally and from domestic sources, particularly through operating surpluses in energy enterprises; and
- The upgrading of human resources to ensure that investments in energy development form part of a rational strategy, and that energy programs and projects are designed and executed in a cost-effective manner.

Moreover, these extra investments have to be made at a time when the aggregate oil import bill of the oil importing developing world has risen to $62 billion per annum (absorbing almost a quarter of total export earnings and over 50 percent for some countries). Further, borrowing for energy investments is double the level it was five years ago, and the creditworthiness of many of these countries has been eroded.

Two recent developments—the slowdown in world energy consumption and the significant softening in international oil prices—give the developing countries a temporary respite from the rising financial burden of importing energy. They do not, however, lessen the need for adjustment to higher prices.

Since 1980, global energy consumption has risen hardly at all and oil demand has fallen significantly. This is due partly to energy conservation and oil substitution measures, particularly in the industrial countries, and partly to the slowdown in economic activity. But though it is difficult to establish the relative importance of these two factors, it is widely agreed that even with continued conservation, the revival of global economic activity will result in a higher rate of energy consumption. As Chart 1 shows, the World Bank estimates that between 1980 and 1995 the developing countries' commercial energy consumption will almost double. This is an annual growth of about 4.5 percent on average, or about the same rate as their projected growth in GDP over this period (of 4.8 percent).

As in the rest of the world, the developing countries' oil consumption will grow...
much more slowly than total commercial energy consumption (at about 2.7 percent per annum, which is less than half the comparable rate for the 1970s). Nevertheless, this will still entail a 30 percent increase in their oil consumption in absolute terms by 1995. Moreover, despite this slowing down in the growth for oil demand and notwithstanding the major efforts that are planned to increase indigenous oil production, the oil importing developing countries will still need to increase their oil imports by over 30 percent between 1980 and 1995. These trends will make the developing countries a major global oil consumer. In incremental terms, these countries will account for the whole of the projected global increase in oil demand, offsetting declines in oil use by other country groups. Their share of global oil consumption will also rise from 20 percent in 1980 to 27 percent by 1995.

This expected revival in oil demand in the developing world is one important factor why the long-run trend of international oil prices is forecast to be rising. Obviously, short-term fluctuations in oil prices cannot be ruled out, but low prices, say in the other country groups. Their share of global sources costing, at the margin, more than $20-25 a barrel. Moreover, it is now generally agreed that giant oil fields that could be developed at lower costs than this are highly unlikely to be discovered. Recent experience has also shown that synthetic substitutes for oil are likely to be much more expensive than was initially envisaged.

Managing demand

Developing countries have already made progress in adjusting to higher energy prices. It is crucial for their future development that this adjustment be not only sustained but given additional momentum. The key elements of an adjustment strategy consist of: increasing the efficiency of energy use through rational pricing and demand management measures; undertaking an expanded and diversified program of investments to expand the supply of indigenous energy; raising resources to meet these new investment needs; and, finally, in order to carry out these tasks effectively, strengthening the management and institutional capacity in the energy sector.

Developing countries can improve the efficiency of energy use in virtually all sectors. There are many ways of achieving this, ranging from appropriate pricing policy to the provision of technical assistance and information to the main users. Experience has shown clearly that appropriate energy pricing is the single most effective way of managing demand. In many oil importing developing countries, changes in oil prices have been quickly reflected in the prices paid by final users; between 1975 and 1981, the growth in their real domestic prices kept pace with international prices. In contrast, in many oil exporting developing countries, retail petroleum product prices are still well below international prices. Moreover, in both groups of countries there are still distortions in the relative retail prices of different petroleum products. In the sector as a whole, more efforts need to be made in most countries to bring the price of domestically produced “fuels” (principally electricity but also coal and gas) more in line with the opportunity costs of supply.

Appropriate pricing usually needs to be supplemented by demand management programs. There are several reasons for this. First, energy users may be unaware of the potential for using energy more efficiently, or of the technical options available for doing so. Second, institutional or policy factors may reduce interest in saving energy—this is particularly true in state enterprises that are protected from competition and have their input and output prices regulated. Third, shortages of finance, or imperfections in the systems allocating finance, may make it difficult to finance economically attractive projects that improve the efficiency of energy use but do not expand production capacity. For the larger energy users—such as industrial plants, large public and private transport enterprises, and electric power utilities—direct government assistance and support may be necessary to identify and realize savings through such low-cost improvements as better energy management and maintenance, as well as through large investments in retrofitting and process change. For smaller users, the priority will be to develop policies conducive to efficient utilization as well as suitable institutions to provide firms and households with the information, incentives, and know-how to improve their own energy efficiency.

In the broader economic sense, a whole range of strategic and policy choices affect the future pattern and growth of energy demand in each country. The increased cost of energy requires a more critical review than is customary of the expansion plans of energy-intensive industries, the policies affecting the choice of transport modes, the design of commercial and institutional buildings, the urbanization patterns, the sources of primary energy for electric power, and the design and operation of petroleum refining facilities.

Increasing supply

Since 1973, developing countries have recognized that higher international oil prices make it worthwhile to exploit and develop indigenous energy resources that had previously been uneconomic, and most of them have strengthened programs to increase domestic energy supply. Analysis of the supply potential and market requirements of the developing countries indicates that their production of commercial energy could rise to almost double the 1980 levels, reaching 3.1 billion tons of oil equivalent, in 1995. About a third of this increase would be in the production of oil, 27 percent in coal, 22 percent in natural gas, and 19 percent in primary electricity drawn mainly from hydro and nuclear power (Chart 2). In the aggregate, this projected increase amounts to half of the projected global incremental commercial energy production over 1980-95 and it will result in the developing countries supplying over a third of the world’s commercial energy supply by 1995, as compared with one fourth in the 1970s. These projected increases in supply are based on an in-depth country-by-country evaluation of energy resources and production potential and take into account the limitations imposed by the growth of energy demand and the pace of fuel substitution programs in the developing countries. They reflect the fact

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that only a fraction of the enormous potential for exploiting indigenous energy sources in the developing world has been realized to date.

**Financing energy investment**

Realizing the necessary investments will pose an enormous financing problem and will require far-reaching changes in the way energy operations are managed. Several developing countries have substantially increased their investments in energy. In Turkey, investments (in 1980 dollars) rose from $780 million in 1973 to $2.2 billion in 1980; in India, investments in the oil and gas sector grew at an average annual rate of about 25 percent, while overall energy investment during the same period grew about 19 percent per annum. In Pakistan, the share of energy in national investment increased from 15 percent in 1975 to 21 percent in 1981.

However, the investments of the past few years are dwarfed by the requirements for the future. Countries will need to devote a much larger share of their total resources to energy development than in the past. As a rough guide, energy investments may claim 4 percent of GDP in the 1980s compared with 2–3 percent in the late 1970s. The World Bank estimates that developing countries will need to invest $30 billion a year in energy production (in 1982 dollars) during 1982–92 (see table). About $60 billion of this required investment is in electric power, which is becoming more capital-intensive because of an increasing reliance on hydro resources and coal-fired thermal generation. Investments in oil are also likely to rise dramatically from historical levels and amount to about $40 billion a year, while gas and coal account for the remainder.

Two general points need to be emphasized about these estimates of investment costs. One is that energy investments are becoming more and more expensive. For example, to generate a kilowatt of hydroelectricity can require three to four times as much investment as to generate a kilowatt by burning oil. Second, costly as they are, the investments projected are not only necessary and technically feasible—they will also remain economically attractive under a wide range of oil prices. Most of them would still be profitable even if the world oil price settled at a much lower level, that is, at $25 a barrel in 1983 dollars.

Just over half of the total sum required by developing countries, or $66 billion a year, is needed in domestic currencies. Especially in power and coal, where 60–75 percent of the financing needed is for local costs, expansion programs will stand or fall on the ability to raise domestic resources. This calls for strong action, first, to reform pricing policies, so that consumers pay the economic costs of supply, allowing enterprises to finance expansion; and, second, to modernize management, so that enterprises are more efficiently run.

The other part of the resource requirement—$64 billion a year—is for foreign exchange. At present, the foreign exchange flows to developing countries for these purposes amount to only $25 billion a year. The size of the difference speaks for itself.

But there is an additional difficulty, which concerns the distribution of investment flows among countries and among "fuels." The middle-income countries will,

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### Commercial energy investment requirements in developing countries, 1982–92

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<tr>
<td><strong>Electric power</strong></td>
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<td>Nuclear</td>
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<td>Geothermal</td>
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<td>Thermal</td>
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<tr>
<td>Transmission and distribution</td>
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<td>Total</td>
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<td><strong>Oil</strong></td>
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<td>Exploration</td>
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<td>Development</td>
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<tr>
<td>Other</td>
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<tr>
<td>Total</td>
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<td><strong>Refineries</strong></td>
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<td><strong>Natural gas</strong></td>
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<td>Explorations</td>
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<td>Other</td>
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<td>Total</td>
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<td><strong>Total</strong></td>
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*Includes maintenance of old fields, enhanced and secondary oil recovery, pipelines, and infrastructure.
*Includes investments in refinery modifications necessary to achieve a balance between petroleum product supply and demand within developing countries, as well as investments in refinery rehabilitation and replacement of old plants and in energy conservation measures. These estimates could vary by as much as 20 percent, depending on assumptions concerning the refinery mix in China, and on the extent to which product imbalances in the developing countries are met through direct trade in refined products. Estimates exclude investments in infrastructure development, which amount to about $10 billion.
*Distribution of gas from major transmission pipelines to residential and commercial users.

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**Chart 2**

**Commercial primary energy production in developing countries, 1970–95**

<table>
<thead>
<tr>
<th>Year</th>
<th>Oil</th>
<th>Coal</th>
<th>Natural gas</th>
<th>Primary electricity</th>
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<tbody>
<tr>
<td>1970</td>
<td>173</td>
<td>86</td>
<td>28</td>
<td>0</td>
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<tr>
<td>1980</td>
<td>220</td>
<td>180</td>
<td>36</td>
<td>10</td>
</tr>
<tr>
<td>1995</td>
<td>280</td>
<td>240</td>
<td>50</td>
<td>20</td>
</tr>
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</table>

**Notes:** United Nations J-series and World Bank estimates.

1. Total excludes alcohol, oil shale, tar sands, and other conventional primary energy sources that may add a small amount (up to 10 million toe, or less than 0.5 percent) to developing country energy production by 1996, but whose prospects are too uncertain to quantify.
2. Tons of oil equivalent.
3. Includes hydropower, nuclear, and geothermal electricity.

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by and large, be creditworthy enough to borrow from commercial banks and to obtain export-related credits on commercial terms. As a group, they currently obtain 50 percent of their external energy financing from these two sources. Most of those exporting oil can also obtain equity financing from international oil companies.

Low-income countries, by contrast, receive very little direct private investment and obtain 80 percent of their external energy borrowing from multilateral and concessional bilateral sources. For many of them, the viability of future energy development programs will depend on the expansion of financing from these sources. In 1975-80, official sources provided about $4 billion a year (in 1982 dollars) for energy in developing countries at all income levels. The low-income countries need about $8.6 billion annually in foreign exchange, but if present external financing patterns for energy continue, they can expect a total of less than half this amount from all sources.

Perhaps the most vulnerable part of the projected investment program—though frequently the most promising from the point of view of national development—is that for oil and gas in oil importing countries. The estimated foreign exchange requirement of $9 billion a year for oil and gas projects in these countries is about equal to the current publicly guaranteed financing flows for the whole energy sector in these countries.

Improving energy management

Throughout the developing world, making the best use of the resources available for energy investments will be a complex task for governments. The sheer increase in the number of potential energy projects and the size of energy investment programs poses a major management challenge. Added to this, there are several reasons why energy investments, at the national and enterprise levels, can be peculiarly difficult to plan and manage:

- The resource base is uncertain;
- The technologies to be used are often new, rapidly changing, and risky;
- Investments are lumpy, often large in relation to GDP, and mistakes are expensive;
- The investments need a long planning horizon. Over 10-20 years, there is a wide range of possible patterns of growth and demand for energy. It is risky, but often worthwhile, to keep some strategic options open as long as possible;
- Last, energy is an input or an output in almost all productive activity. Not only do energy investments compete with those in other sectors—decisions on them cannot be taken without considering their relationships with trends and policies in the rest of the economy.

Energy investments thus need to be conceived as part of a national energy development strategy that clearly defines supply and demand objectives, the measures that will be used to achieve them, and the respective roles of the various public and private agencies involved. Planning and implementing such a strategy, and ensuring that investments are designed and implemented in a cost-effective manner, requires a supportive policy environment and, extremely important, people with training and experience.

The World Bank's role

The principal objective of the Bank’s energy program is to assist developing countries to define and implement an appropriate development strategy for the energy sector. The urgency and the magnitude of the necessary structural adjustments demand greater attention to policy and management issues, preinvestment studies to formulate better strategies for energy supply and utilization, and the mobilization of financing. The Bank functions as a catalyst in promoting strategy formulation, policy reform, and institutional improvements; and in mobilizing external sources of technology and finance to implement effectively the changed investment priorities in developing countries. It has expanded and diversified its energy lending and is putting greater emphasis on assisting borrowers in the choice and use of new technologies, strengthening institutions, and improving the policy framework in the energy sector.

The Bank’s dialogue with national policymakers covers a wide range of issues; these may include demand management and pricing, interfuel substitution, investment planning, resource mobilization, and the respective roles of public and private agencies in the development of the sector. This work has made an important contribution in helping to define “energy” as an integrated sector in many developing countries. Because of the unfamiliar issues posed by a sudden change in relative costs of different forms of energy, there was a clear need for assistance to developing countries in evaluating their main energy issues and options. To meet this need, the Bank collaborated with the United Nations Development Program in launching the Energy Sector Assessment Program, which is designed also to serve as a framework for further multilateral and bilateral assistance in the sector. Studies of 21 countries have been completed under this program and another 14 are in an advanced stage of processing. This program is being followed by an Energy Sector Management Program designed to provide a rapid and flexible response to governments who request technical or management assistance in implementing the strategy proposed in the energy assessments and in carrying out prefeasibility studies to identify priority energy projects.

The Bank’s advice is backed by a significant amount of lending for energy projects, making it the single most important official source of external capital for energy development in the developing countries. Its energy lending has risen from $1.5 billion in fiscal year 1979 to about $3.8 billion in fiscal year 1983 (including $3.3 billion in concessional IDA credits). Further, the Bank has made a special effort to mobilize additional external financing and promote opportunities for direct private investment. During fiscal year 1979–83, the $12.9 billion of Bank lending for energy was associated with another $12 billion of cofinancing from other external sources. A key feature of the Bank’s energy lending is that it has been the increase in lending for oil and gas exploration and development, from $112 million in 4 projects in fiscal year 1979 to $1 billion in 17 projects in fiscal year 1983. In this period, the Bank has supported petroleum projects in 36 countries. Energy lending has also been diversified to support the development of coal and other primary energy sources.

While the need and the scope for increasing the scale of Bank involvement in the energy sector is clearly considerable, the Bank’s financial contribution will be a limited one: energy cannot claim more than 25 percent of its total lending without compromising programs in other sectors. Despite the scarcity of IBRD and IDA resources, continuation of Bank involvement at this level is justified by the priority that the energy sector has in the overall adjustment process for many developing countries, by the complex and substantial adjustment that is urgently required within the energy sector in member countries, and by the very large volume of financing necessary to carry out such adjustment.
Industrial energy conservation

Integrated conservation efforts could reduce industrial energy consumption by an estimated 20–25 percent.

Harinder Kohli and Edilberto Segura

The recent drop in international petroleum prices is unlikely to diminish the fundamental challenge that both developed and developing countries face in adjusting to the high cost of energy. For oil importing developing countries, the challenge is all the more acute since even a modest growth of their economies will generate increased demand for energy.

In most developing countries, initial efforts to reduce the cost of imported energy have centered on increasing the domestic supply of energy. While most have increased the average level of energy prices and some have rationed energy supplies, other institutional and policy measures necessary to reduce energy demand have not yet received adequate attention. Yet for most developing countries, more efficient utilization offers substantial opportunities to improve their energy situation. Increasing domestic energy supplies normally takes several years to yield significant results, while many energy conservation and demand measures can produce more immediate results. The objective of energy conservation measures, however, is not merely to minimize the cost of energy relative to GDP but also to maximize the rate of GDP growth for given energy prices, subject to environmental and other constraints. For most purposes, though, minimizing the cost of energy relative to output is consistent with maximizing GDP.

While in most industrial countries the industrial, transportation, and household sectors are all major consumers of commercial energy, in many developing countries—due to their frequently mild climates and less intensive urban transportation needs—the main energy consuming sector is industry, accounting for an average of about 40 percent of total commercial energy consumption. Preliminary studies prepared in the World Bank indicate that as much as 20 to 25 percent of industrial energy consumption could be saved with adequate conservation measures. Through such measures, the additional energy supplies required for economic growth could also be reduced, thus alleviating, to some extent, the financing constraints in developing country economies.

The energy intensity of a country’s industrial sector is affected by a number of factors, including the type of industry and the process used. Some industries, such as ammonia or aluminum production, consume large amounts of energy. The operation of petroleum refineries may, in itself, require 5 to 9 percent of the total crude processed. By contrast, other manufactures, such as electrical and mechanical equipment, have considerably lower energy intensity. Likewise, modern and efficient ammonia plants based on steam reforming of natural gas may require only 60 percent of the fuel that older processes had needed. Other factors affecting energy intensity are the type of energy used (for example, processes using coal normally require larger quantities, though at a lower unit cost, than oil and gas); the age of the plants (efficiency declines with age); the climatic conditions (more energy is used where space heating is required), and the general operating practices and skills of the plant operators (maintenance and losses due to inoperational plants).

With the exception of a few countries such as China and India that rely substantially on coal, most developing countries meet their industrial energy requirements primarily with petroleum products. Non-commercial fuels, such as bagasse and wood, also play an important role in some industries. In most countries, most plant design and equipment were developed prior to the energy price increases of the mid- and late 1970s and were designed to minimize capital investments and to take advantage of low energy costs. This has resulted in higher energy consumption and lower investment costs than today’s costs and technological developments would justify. Many processes also involve massive conversion of petroleum raw materials with significant losses of energy during the transformation process. While some of these losses are unavoidable, much useful energy is wasted. With increasing energy prices, it is becoming economically attractive to recover much of this wasted energy through the installation of additional equipment.

Conservation potential and costs

There is, thus, considerable economic scope for additional investments in existing plants to improve the efficiency of energy utilization. Such investments would reduce total energy consumption and improve production capacity utilization.

The range of specific energy consumption measures can roughly be divided into two groups: short-term measures, which require small investments and consist mostly of better maintenance and process control, including, for example, insulation and steam system efficiency improvements; and medium-term measures, which require larger investments in retrofitting of existing plants and additions to facilities, including waste heat recovery, combined heat and power generation, increased use of waste fuels, improved process controls, and replacement of inefficient equipment.
in developing countries

Potential energy savings and investment in developing countries

<table>
<thead>
<tr>
<th>Industry</th>
<th>Process or product</th>
<th>Range of energy savings (in millions of tons of oil equivalent a year)</th>
<th>Range of investment required (in billions of 1982 U.S. dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron and steel</td>
<td>Steel</td>
<td>3.3 - 7.6</td>
<td>0.8 - 2.7</td>
</tr>
<tr>
<td>Electrometallurgy</td>
<td>Aluminum (from alumina)</td>
<td>0.3 - 0.5</td>
<td>0.1 - 0.2</td>
</tr>
<tr>
<td>Petroleum</td>
<td>Refining</td>
<td>3.8 - 6.5</td>
<td>0.7 - 1.5</td>
</tr>
<tr>
<td>Chemicals</td>
<td>Ammonia</td>
<td>0.4 - 0.9</td>
<td>0.1 - 0.2</td>
</tr>
<tr>
<td>Cement</td>
<td>Dry and wet</td>
<td>5.7 - 7.0</td>
<td>1.3 - 1.9</td>
</tr>
<tr>
<td>Pulp and paper</td>
<td>All grades</td>
<td>1.6 - 2.2</td>
<td>0.5 - 0.8</td>
</tr>
<tr>
<td>Food</td>
<td>Cane sugar</td>
<td>2.8 - 3.2</td>
<td>0.5 - 0.7</td>
</tr>
<tr>
<td>Textile</td>
<td>Finishing</td>
<td>0.5 - 0.6</td>
<td>0.1 - 0.2</td>
</tr>
<tr>
<td>Glass</td>
<td>All grades</td>
<td>1.5 - 1.7</td>
<td>0.4 - 0.5</td>
</tr>
<tr>
<td>Bricks</td>
<td>All grades</td>
<td>0.9 - 1.3</td>
<td>0.2 - 0.4</td>
</tr>
<tr>
<td>Other industries (estimated)</td>
<td></td>
<td>17.0 - 34.0</td>
<td>3.4 - 10.2</td>
</tr>
<tr>
<td>Total (estimated)</td>
<td></td>
<td>37.8 - 65.5</td>
<td>8.1 - 19.3</td>
</tr>
</tbody>
</table>

Note: Details may not add up to total because of rounding.

Estimating potential industrial energy savings for all developing countries is a complex task. Using industry-specific data, a recent World Bank study has estimated that developing countries, as a group, could save 5 to 10 percent of total industrial energy consumption through short-term measures and 10 to 20 percent by medium-term measures (see table). The largest industrial energy conservation potential lies in steel, petroleum refining, cement, and chemical industries (including fertilizers).

While the potential for saving energy in industry is substantial, the investment required to achieve it is proportionately modest. For short-term measures, the average investment cost per ton of oil equivalent saved per annum is estimated to be between $175 and $350. For the medium-term measures, the average investment costs range from $400 to $550 in petroleum refining and chemicals and from $850 to $950 in the iron and steel industry.

At today's crude oil price of about $200 per ton, most short-term measures would recover their investments in 12 to 18 months. In many process industries where naphtha is used as a raw material, or in applications where gas oil is used as fuel, the capital costs would be recovered in less than 8 to 12 months. For the majority of the medium-term investments, this period is normally between two to five years when energy saved has the less expensive fuel oil equivalent value, and between nine months to three years when it is equivalent to the more expensive naphtha/gas oil value. The economic rates of return range between 50-125 percent and 20-50 percent for the short- and medium-term measures, respectively. Total investment requirements of developing countries to achieve these potential savings are estimated at $8-$19 billion for short-term measures and an additional $47-$86 billion for medium-term measures, averaging less than three years in terms of payback period. Because of managerial, financial, and other constraints these measures cannot be implemented all at once. If developing countries pursue active energy conservation programs, the implementation of all possible short-term measures would require between three to seven years, and medium-term measures may take seven to ten years.

These investment estimates include only potential measures for energy conservation in existing plants and facilities. Interfuel substitution and the installation of new, more efficient plants require substantial additional investment. The experience of the World Bank in about a dozen industrial energy conservation projects in ten countries indicates that interfuel substitution measures are often as economical as purely energy-saving measures. Such interfuel substitution measures involve switching from more expensive, often imported, forms of energy (such as naphtha, gas oil,
nergy conservation measures are imple-
mented along with interfuel substitution
sectors. In many instances, the major en-
ergy conservation measures are imple-
mented along with interfuel substitution
investments.

Implementation
In a free market economy, the adjust-
ment of energy prices to long-term oppor-
tunity cost levels should, in theory, provide
sufficient incentive for consumers to adjust
their energy consumption. Experience in
developing countries, however, has indi-
cated that industrial and other consumers
are slow to invest in energy conservation
measures, even where the potential eco-

nic and financial benefits of such in-
vestments are visible and excellent. This
is due to four factors: (1) the lag, perhaps due
to inertia, in responding to changes in in-
put prices, particularly when existing facili-
ties have operated well in the past and
when energy represents a relatively low
portion of operating costs; (2) the complex-
ity of energy conservation investments,
caution over the innovative nature of many
of the proposed devices, and the risks in-
volved in interrupting production flows; (3)
the low visibility of these investments,
which normally consist of a large number
of separate items and facilities; and (4) the
current economic climate, which has made
it difficult to generate the substantial re-

ources needed for new investments.

Technical, financial, and economic barri-
ers may also intervene. At the plant level,
lack of information about the appropriate
technical options and the absence of
expertise in energy management often
hamper conservation, as does the non-
availability of specialized energy auditing
capabilities and the lack of suitable equip-
ment and instrumentation. Financial stum-
bling blocks include scarcity of capital, high
interest rates, and lack of simple, accessi-
ble forms of medium-term financing for
energy-saving equipment. Common eco-

nomic obstacles are energy prices below
portunity costs, distortions in relative
prices of different energy products, and

cost-plus product pricing systems that re-
duce incentives for energy efficient use.

Many of these constraints are more seri-
ous in developing countries than in indus-
trial countries. For example, in developing
countries, the technical skills needed are
not as readily available; sophisticated tech-
niques to alert industrialists about eco-

nomics of energy-saving investments are
not common; and distortions in relative
pricing are also generally more serious. To
surmount these barriers, integrated energy

avings programs must often be designed
and implemented at the national level. Key

lements in such programs include (1) ap-
propriate energy and product pricing; (2)
energy management and audit programs;
(3) technical and financial assistance; and
(4) institutional and regulatory measures.

Pricing; management and audit
Appropriate industrial energy pricing
policies must take into account both the ab-
solute and relative price levels of the vari-
ous energy sources and, where relevant,
the rate structure that will provide ade-
quate incentives to improve energy effi-
iciency through both conservation and fuel
conversion. Although the pricing strategy
will depend on individual country condi-
tions, domestic energy prices for industrial
energy normally need to reflect economic
opportunity costs. Rate structures for
power or gas are also important in that re-
spect. Declining block rate structures that
unduly lower unit costs with increased en-
ergy consumption may, for example, re-
duce incentives for energy conservation.
Some countries used quota systems for key
energy products so that consumption
above the quota carries a substantially
higher price. Further, it is of utmost im-
portance that the government's intention
to rationalize energy pricing policy be an-
nounced in clear terms.

Experience suggests, however, that ade-
quate energy pricing is a necessary, but
generally not sufficient, condition for an
effective conservation program. The overall
product pricing policy for industry is also

racial. In countries where prices are ad-
ministered and manufactured products are
 priced on a cost-plus basis to guarantee re-
turns to the producers, there is often no
real incentive to save energy.

A policy of high or increasing energy
prices will have its full effect only to the
extent that enterprises are adequately in-
formed about the various energy savings
measures that are technically and eco-

nomically feasible; this is a particularly im-
portant problem in developing countries.
Energy costs, of course, account for vary-
ing shares of total production costs de-
pending on the industry concerned. Where
energy costs are proportionally modest, en-
terprises might give higher priority to in-
vestments that improve their productivity
or competitiveness through other means.
Because of the complexity and variety of
possible solutions, it is important to design
an integrated energy conservation program
that also includes an array of nonpricing
measures and programs.

Energy audits of large- and medium-
sized energy-intensive facilities constitute
the core of any national program for indus-
trial energy savings. Energy audits are nec-

esary to estimate the potential for energy

avings, to identify the individual mea-
sures implied and their cost, and the eco-

mic viability of the investments. The
type of audit needed depends on process
energy consumption intensity, the com-
plexity of the in-plant energy distribution
and utilization systems, and the objectives
pursued.

In-depth audits require a detailed analysis
of energy flows and balances for each major
energy-using piece of equipment and may

volve up to 30-50 man-months of tech-
nical input. They are recommended for
-arge steel, chemical, fertilizer, cement,

finery, and paper plants. General energy

uits, while also requiring the preparation
of a plant's energy balance, involve less
technical analysis of the individual facilities
and may take up to 8-12 man-weeks of
technical services. They are more approp-
rnate for facilities with a simpler energy
use pattern and are sufficient for most
medium-sized facilities in food, textile,
bricks, and similar industries. Brief audits
collect essential data through basic energy
accounting; that includes, for example, to-
tal fuel and electricity consumption by type
for a given period (generally the previous
year). They normally involve three-five
days of consulting services. Such brief audits indicate relative performance in energy consumption and are usually adequate for most small-sized plants. They also furnish the basic data for national estimates of potential savings and benefits.

Energy audits may be either voluntary or mandatory, though in many countries they are generally mandatory for establishments exceeding a certain energy consumption threshold (for example, 1,000 tons per annum of fuel oil equivalent). Some countries also provide subsidies for energy audits or provide free brief audits or plant surveys. Crucial to the effective performance of an overall energy audit program is the development, through training, of domestic energy auditing capabilities, particularly with respect to general and brief audits. The training and appointment of energy coordinators or energy management teams in the major energy-consuming enterprises can assure follow-up on the audits and introduce better management practices.

Technical, financial assistance

Promotion and information campaigns, both at the national and plant levels, have been useful in creating an awareness among industrial managers, employees, and the public at large of the benefits of energy savings. Brochures, pamphlets, general or subsector seminars, and energy savings contests have proven effective educational devices. Training programs in conservation or auditing can be addressed to energy auditors, energy managers of enterprises, boiler operators, and maintenance engineers with significant results. For more complex needs, technical assistance can be provided in the form of free audits or audit assistance, technical advisory services, or referral services.

Most countries that have formulated national industrial energy savings programs have provided, at least initially, some financial assistance and incentives for conservation investments. In general, grants initially used for energy savings projects in industrial countries have been phased out and replaced over time by preferential interest rates, accelerated depreciation, and other tax-related incentives. Subsidies for energy audits have, however, been maintained in many countries. When energy prices are low, some form of financial assistance for capital investments might be needed during the transition period, provided its amount is reduced as energy prices are gradually increased to their opportunity cost. The desirability of such a subsidy should, however, be weighed against the merits and feasibility of a policy of faster energy price increases. Also important is the need to provide simplified access to medium-term financing for investments in energy savings, particularly for small- or medium-size enterprises that embark on relatively small energy conservation projects.

Finally, in most developing countries, technological possibilities for alternative energy sources and uses remain largely unexploited. It may be appropriate in the developing countries with more advanced technological infrastructure to undertake formal and institutionalized industrial research into alternative energy sources and uses.

Institutional, regulatory aspects

Institutional and regulatory mechanisms are often necessary to complement market signals and synchronize the various elements of integrated industrial energy conservation programs. Since 1973-74, most industrial countries have established energy conservation centers that coordinate information, training, and technical assistance on conservation matters, often in collaboration with training or technical assistance for other purposes, and sometimes with private sector participation (as in Japan and France). Only a few developing countries have established such centers. Some, however, are in the process of being set up, with Bank assistance, in Bangladesh, Hungary, Pakistan, Peru, Portugal, Thailand, and Turkey.

To have maximum impact, the energy conservation centers should be organized and staffed on the basis of an in-depth review of the industrial sector, the potential for energy savings, and the capabilities of the domestic technical specialists. All existing centers render information and promotion services, and most carry out energy audits and sponsor training programs—the training of plant energy managers and local energy auditors being of special importance. Only rarely are these centers directly involved in financial assistance (particularly in view of the trend away from grants for energy conservation to credit and tax incentives).

While the regulatory framework varies, most developed countries have enacted basic energy conservation laws of a very technical nature. These generally set energy consumption standards for boilers, furnaces and other combustion units, and sometimes for industrial lighting, space heating, and other items. Energy consumption standards by product are significantly more difficult to establish and administer. The usefulness of and the compliance with such standards varies considerably from country to country. Most such regulations also require the mandatory appointment of energy managers and the mandatory performance of energy audits in industrial establishments that exceed minimal energy consumption standards, and these are particularly applicable to most developing countries.

To be successful, energy conservation regulations need to be complemented with appropriate measures for promotion, incentives, and free technical assistance. The exact blend in this “carrot and stick” approach must, however, be determined by individual country circumstances and industry response.

World Bank role

During the last few years, the World Bank has assisted some 20 countries in developing programs primarily aimed at improving energy conservation in the industrial sector. Our experience shows that industry and governments in developing countries are increasingly aware of the large potential for energy savings in the industrial sector and the significant impact that this could have in reducing costs and improving balance of payments situations. The realization of this potential, however, could be a long and slow process unless governments carry out vigorous and comprehensive measures and campaigns to induce industries to initiate and implement required investments. International financial institutions such as the World Bank can play a catalytic and increasingly important role in assisting member countries in designing and implementing comprehensive energy conservation programs.

Recent Bank publications on energy

Potential and Prospects for Industrial Energy Conservation in Developing Countries, forthcoming.

The Energy Transition in Developing Countries, $6 (paper).


Copies are available from the Bank's Publications Unit. Please see page 19 for ordering information.
Interest rates in five major countries

Interest rates reflect the cost of borrowing for different types of borrowers. The discount rates (Chart 1) reflect the cost at which monetary authorities provide funds to the monetary system and indicate the monetary policies being pursued. The money market or call money rates (Chart 2) reflect the cost at which financial institutions may obtain liquid funds in the market, while the government bond yield (Chart 3) is indicative for the cost of long-term loans.

Changes in interest rates are closely related to the general price variations, although the latter are generally more pronounced. A real interest rate is calculated using government bond yields deflated by the price index of private domestic demand as the most representative indicator of overall price changes (Chart 4). In periods when prices were rising faster than nominal interest rates, “real” interest rates were negative. This was notably the case in periods of international price shocks, such as those experienced in 1951-52 (following the Korean hostilities) and 1974-75 and 1979 (following the oil price increases). A noteworthy feature is the historically high level of real interest rates in most countries in 1980-82, which reflects the increased borrowing requirements mainly to finance growing budget and balance of payments deficits.

Notes:
Discount rates are the official interest rates at which the monetary authority lends to financial institutions; the data are reported for the end of the period.
Money market rates are the annual average rates that represent the cost of short-term borrowing between financial institutions.
Government bond yields represent annual average yields to maturity of long-term government bonds.
“Real” interest rates represent the yields of government bonds deflated by domestic prices. The indicator for domestic price changes is derived from the implicit deflator of national accounts data on private domestic demand (sum of private consumption and gross fixed investment).
Interest rates in the developed world have pervasive and important effects on debt, growth, and commodity exports in developing countries

Padma Gotur

Interest rates in the developed world have turned sharply positive, leading to a further deterioration of their terms of trade and forcing many countries to expand their external borrowing and increase their debt-service burden yet more. The effects of these increased payments, combined with the impact on their current accounts of the world recession, resulted in a sharp curtailment of growth of these countries’ output.

The surveys of international financial developments in the Fund’s World Economic Outlook and other studies indicate the relative importance of the different factors accounting for this deterioration in the developing countries’ balance of payments and illustrate the diversity of their experience. Of an increase of $66 billion in the aggregate current account deficit of non-oil developing countries between 1978 and 1981, the oil trade balance accounted for $18 billion; net interest payments accounted for $24 billion; and the cyclical element in the terms of trade accounted for $21 billion. The relative impact of these factors also differed across groups of developing countries. While all the non-oil exporting countries were severely affected by the rise in oil prices, the middle-income countries, particularly those of the Western Hemisphere, were seriously hurt by the increase in interest rates, because of their significant dependence on borrowing from the international banking system. For the low-income countries, on the other hand, the interest payments were generally less important as they relied to a larger extent on official sources of financing on concessional terms. These countries, however, were seriously handicapped by the steep decline in the prices of commodities, which often constituted their only exports.

Further, some countries had a net asset position vis-a-vis the international banking system. The higher interest rates earned on such assets helped to compensate partly for the higher interest payments on their overall net debtor position, since it was with respect to banking obligations that interest rates rose to particularly high levels. Countries in this position in June 1982 were China, Egypt, Ethiopia, Ghana, India, Kenya, and Pakistan. However, in general, the non-oil developing countries had a net liability position and were therefore adversely affected by the rising real rates since the late 1970s.

Interest rates and debt

International interest rates have been highly volatile since the early 1970s and have reached postwar peaks over the past several years. As measured by Eurodollar interest rates—which, except for a country risk premium, are representative of the terms at which developing countries borrow from private international sources—nominal rates tripled from 1976 to 1981. Real rates of interest, defined here as nominal rates adjusted for concurrent increases in prices, have fluctuated even more. Adjusted for increases in the GNP deflators for the industrial countries, real rates of interest as perceived by lenders were negative during the mid-1970s and turned sharply positive toward the turn of the decade to average almost 6 percent for 1979–82—markedly above historical norms. Real rates of interest, as perceived by developing country borrowers—that is, adjusted for changes in these countries’ export unit values—have been even more volatile and
reached extremely high levels (15-20 percent) in 1981-82 (Chart 1).

The average interest costs paid by the developing countries have not risen as steeply as international interest rates would suggest. For instance, whereas market rates roughly tripled from 1976 to 1981, average interest rates paid on the developing countries' medium- and long-term debt rose from 5 to 9 percent (Chart 2). These markedly lower average rates reflect two principal factors. First, a significant part of the total debt (some 50 percent in 1981) consists of long-term fixed interest rate loans that, unlike the rates on new bank lending shown in Chart 1, reflect the much lower interest rates prevailing before the mid-1970s. Second, a fairly sizable fraction of the debt (about 30 percent in 1981) is from official creditors (including the multilateral institutions), who have generally continued to charge low concessional interest rates, despite small increases.

Nevertheless, interest rates paid by developing countries have risen steeply over the past several years, reflecting in part changes in the sources and structure of the debt. Between 1973 and 1981, there was an increase from about 36 percent to about 44 percent in the proportion of commercial bank lending to the total debt of non-oil developing countries—such lending is typically linked to a variable interest rate base such as the LIBOR (London interbank offered rate), modified for an allowance to compensate for bank exposure and country creditworthiness. As it is this part of the total debt that carried the highest rates, this rise is significant, particularly when account is taken of the fact that the nominal value of total debt rose almost fourfold over the period. Meanwhile, the proportion of concessional loans in the total long-term debt declined from 43 percent in 1974 to 28 percent in 1981, while the proportion of variable interest rate loans increased from about 16 percent to about 37 percent during the same period. Besides raising average interest costs, these shifts also had the effect of reducing average maturities and grace periods, since maturities and grace periods on loans from private creditors are typically shorter than those from official creditors.

As a result of these changes in the structure of their external indebtedness, developing countries were exposed to the sharp rise in interest rates of 1979-82. The middle-income countries were especially affected because they borrowed proportionately more from private sources. For these countries, the increase in interest payments raised the debt-service burden, which in turn added to the risk premium on new loans and thereby led to a further rise in their interest payments. Countries with large floating rate obligations also faced complicated debt management problems, arising not only from the increase in the real cost of such obligations but also from the extreme volatility of interest rates as well as of exchange rates. (For a discussion of the impact of floating rates, see "Floating interest rates and developing countries" by Paolo Neuhaus in Finance & Development, December 1982.)

The rise in interest rates, the rapid growth in external indebtedness, and the changes in the composition of that debt led to a significant increase in the non-oil developing countries' debt-service payments (Table 1). Interest payments accounted for the bulk of the rise. Taking account of the foreign exchange holdings of developing countries and on the basis of total net banking liabilities of over $200 billion, each percentage point increase in Eurodollar interest rates represents a rise of over $2 billion a year in their interest payments. For countries in the Western Hemisphere, debt-service payments amounted to over 50 percent of export earnings in 1982.

The implications of such increases in debt-service payments very much depend on parallel developments elsewhere in the economy. These are discussed later, but the key role of the inflation rate and of its relationship to interest rates deserves mention here. If interest rates are lower than inflation rates, as was the case in the mid-1970s, increases in interest payments, in fact, mask a net real transfer of resources to the debtor countries. The size of the transfer depends on the rate of inflation, the maturity of the loan, and the margin between the interest rate and the inflation rate. However, for any given relationship between interest and inflation rates, an acceleration of inflation, such as occurred in the late 1970s, entails, in effect, a faster amortization of the real loan. The shortening of the underlying average maturity depends on the original maturity of the loan and the pace of the rise in inflation (see G. Russell Kincaid, "Inflation and the external debt of developing countries" in Finance & Development, December 1981). Finally, if interest rates rise more than inflation, as has clearly been the case since 1978, the real debt-service burden rises commensurately. In such circumstances, borrowers are under pressure to refinance their payments and can be severely handicapped by
fluctuations in export receipts or any dislocation in capital markets.

**Effects on commodities**

Aside from their effect on debt service, the high real interest rates of the past several years have significantly lowered the prices of non-fuel primary commodities exported by the developing countries. These commodities accounted for about half of their export earnings on trade other than oil in 1980. Although the increasing importance of manufactured exports has partly mitigated the effects of unstable commodity export earnings for some middle-income countries, the primary sector continues to play a major role in the determination of GNP and the generation of foreign exchange resources in many developing countries, particularly in those with low per capita incomes.

Theoretical and empirical analyses of commodity markets have shown that shifts in demand for commodity exports have been caused primarily by the business cycle and the changing pace of price inflation in the industrial countries. Since 1977, however, other factors have also been important—namely, changes in interest rates, in exchange rates, and in international liquidity.

Interest rate changes have a direct impact on the transactions, inventory, and speculative demands for primary commodities. The transactions demand for a commodity pertains to its use as a raw material in the production processes of intermediate and final goods in the consuming countries, or for other direct consumption purposes. An increase in the cost of inputs, resulting, for instance, from an increase in the real interest rate, raises the cost of production of the finished product. The consequent decrease in the quantity produced reduces the derived demand for all inputs used in the production process, including commodity inputs, unless the producer can fully pass on the higher cost to the consumer.

The inventory and speculative demands both depend on expected changes in the price of the commodity relative to the nominal interest rate, but the inventory demand is also affected by the expectations of price changes in the finished product. This demand stems from the role of raw material stocks as a buffer against uncertainties about their supply or fluctuations in sales of intermediate and finished products. Higher real interest rates reduce inventory demand by raising the opportunity cost of holding inventories and thus discouraging inventory replenishment and commodity purchases. Such interest rate-induced fluctuations in inventories tend to reinforce the effect of the business cycle on inventories held by firms.

The speculative demand for commodities arises from the expectation of capital gains or losses from changes in the market value of the commodity net of holding costs. Since the difference between the nominal interest rate and the expected rate of increase in the price of the commodity gives the expected real cost of holding the commodity, an increase in interest rates reduces the speculative as well as the inventory demand for the commodity.

Interest rates also have other, less direct effects on commodity prices. For instance, the unusually high real interest rates of the past several years are likely to have exacerbated the declines in industrial production and output in developed countries and hence reduced their demand for imports of industrial raw materials. Another channel of influence has been via exchange rates. The high level of international interest rates has largely reflected developments in U.S. interest rates, developments that have fostered large capital inflows into the United States and a marked appreciation of the U.S. dollar, which, in turn, tend to reduce the demand for dollar-priced primary commodities. Various analyses have suggested that, other things being equal, a 1 percentage point appreciation of the U.S. dollar vis-à-vis the currencies of other industrial countries typically leads to a ½ percent decline in the dollar price of non-fuel primary commodities. Given the more than 30 percent effective appreciation of the U.S. dollar from 1980 to late 1982, a sizable decline in commodity prices is thus implied.

In sum, higher real interest rates have depressed commodity prices as a result of their demand-reducing effects. Admittedly, these interest rates have also raised the costs confronted by primary product exporters, but these supply-reducing effects have been swamped by the demand effects and the competitive nature of the markets in question. Empirical analyses have concluded that increases in interest rates have a statistically significant negative effect on real commodity prices, with the effect being strong for agricultural raw materials and metals. Further, it appears that interest rate movements have a stronger influence on commodity prices during periods of increased interest rate instability than in periods when rates are moving.
within a small band. However, even without the use of sophisticated estimation techniques it is clear that increases in nominal and real interest rates have depressed commodity prices in 1981–82 over and above the commodity price reduction attributable to the stagnation of industrial demand in consumer countries (Charts 3 and 4). The effects of lower commodity prices and the accompanying deterioration in the terms of trade on those developing countries that export commodities are serious for middle-income countries, but are particularly severe for the low-income group that is proportionately more dependent on primary commodities for export earnings.

Instability in commodity prices, rooted in part in fluctuating interest rates, also creates a problem because of its effects on the cost of borrowing. Changes in real interest rates, based on adjustment of nominal rates by movements in export unit value indices, make it difficult to forecast the real cost of borrowing. Real rates determined on this basis became highly volatile in the 1970s as export prices were subject to considerable variation, especially in those countries that exported only one or two primary commodities. This difficulty in predicting real borrowing costs, even on fixed rate debt, compounded the debt management problems faced by developing countries.

Effects on growth

During the mid-1970s, the relatively easy availability of private international bank credit at negative real interest rates encouraged a rapid growth of investment spending in developing countries. This growth was generally associated with significantly increased productivity, incomes, and export capacity in the developing world during the 1970s. The middle-income countries (the largest developing country borrowers) accelerated their real investment spending to about 8 percent per annum—half a percent above the average rate of the 1960s—at a time when the growth of investment in the mature industrial economies fell from about 6 to under 2 percent per annum. A Fund study of the experience of a sample of 20 of the higher-income developing countries suggested that the increases in external borrowing of the period generally helped finance investment outlays rather than spending for consumption. Nevertheless, the relatively easy availability of credit at negative real interest rates may have encouraged some countries to maintain ultimately unsustainable levels of imports and to avoid the reductions in consumption and investment—and therefore growth—rates that would otherwise have been called for. Moreover, the negative real interest rates of those years may have led to distortions in the allocation of foreign as well as domestic resources.

However, if the low real interest rates of the mid-1970s may have resulted in possibly undue rates of investment spending, the subsequent rise in real interest rates has had the opposite effect. It has contributed to the slowing of growth in the developing world and threatens these countries' medium-term growth prospects as well. The steep rise in the real costs of borrowing has narrowed the range of economically attractive investment opportunities, as it has reduced the real rate of return (after allowance for the increased cost of borrowing) on all investments. Though this may force decision-makers to be more selective in screening investment projects, it is a development that, if sustained, is likely to dampen investment, and hence overall growth, over the medium term. The impact is especially severe on past investments financed through floating rate debt. The economic viability of these investments has been undermined by the higher real internal rates of return required to match the increase in real interest costs. Further, regardless of whether they were financed using fixed- or floating-rate debt, rates of return on past investments depend on actual and projected revenues that in turn depend on the path of output in the developed world and on the prices of the developing world's exports. But these elements have, in general, been adversely affected by the international recession, to the further detriment of the profitability of investment in the developing countries.

In the short term, this deterioration in profitability together with the sharply lowered levels of export earnings has significantly slowed spending and the process of income generation in these countries. The rise in interest payments to foreign creditors induced by increased rates has also amounted to an increase in the leakages from the spending stream, thus further weakening aggregate demand and output.

Further, following a host of developments related to the increase in real interest rates—the decline in the perceived profitability of both past and future investments, the sharply higher debt-servicing costs, and the worsened outlook for export earnings—there was a reassessment by financial markets of developing countries' capacity to service external debt. As a result, commercial lending to these countries has been severely curtailed since 1982, forcing many of them to reduce imports and cut back growth. For the non-oil developing countries as a group, growth slowed continuously from some 5.5 percent in 1977–79 to about 1 percent in 1982. While much of this slowdown cannot be traced directly to the rise in interest rates, there is little doubt that the steep rise in those rates was a major contributory factor.

The debt-service problem differs in intensity among the different groups of developing countries according to the size, source, and terms of their indebtedness. The problem is particularly serious for several countries of the Western Hemisphere that have become heavily indebted to private creditors at relatively high real rates of interest. Several of these countries have had to substantially reduce their imports and to negotiate substantial reschedulings of their existing debt-service obligations. For these countries, outright declines in output were common in 1982.

Outlook

The outlook for economic recovery and resumption of growth in the developing world is dependent, principally, on the strength of the revival of economic activity in the industrial countries and the associated resumption of growth in international trade. Such a resurgence in industrial country demand for imports from developing countries should improve their prices, which would, in turn, help reduce the real cost of foreign borrowing for the exporters. Further, an increase in these exports would improve the current account positions of the developing countries, augment their foreign exchange reserves, and enable them to meet debt-service obligations better and to finance productive domestic investment. Nevertheless, the pace and durability of the economic recovery and the associated improvement in relative commodity prices depend critically upon the lowering of real interest rates, which remain very high. This is particularly important in the present recovery, which is being led by interest-sensitive components of demand—stock rebuilding, consumer durables, and residential construction—that will, it is hoped, be followed by an increase in fixed business investment in the industrial world.

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The year 1983 marks the centenary or multicentenary of the birth of significant heretics, the most important one, of course, being Martin Luther. Two economic heretics were born in 1883. Joseph Schumpeter (who had propounded an unorthodox theory of interest) and John Maynard Keynes.

Keynes was, in the first place, a civilized human being with wide-ranging interests. He was a gifted essayist; one of the most sensitive accounts of the human effects on a patriot of a lost war is his "Dr. Melchior: A Defeated Enemy," in which he describes the attitudes of the German economic negotiator at the armistice negotiation after World War I. His first technical work, his fellowship dissertation, was in the field of probability. He came to economic theory through his practical work; his interest in theory was always a reflection of the particular economic policy problems he wanted to solve. In these he was involved all through his adult life, sometimes as a formulator, sometimes as a critic of official policy.

He was a bitter critic of the reparations provisions of the Treaty of Versailles of 1919: the payment of reparations was (nearly) impossible, because the transfer would occasion a violent terms of trade loss for the paying country. Bertil Ohlin showed that the transfer could come about not only through a change in relative prices but also, in an extreme case, entirely through offsetting changes in the volume of expenditure in paying and receiving countries, effected via fiscal policies implemented in a good faith effort to pay reparations. Nevertheless, Keynes had made an important practical point: a sudden change in the payments pattern can be very costly due to terms of trade changes, quite apart from the political cost of reparations.

The avoidance of financial reparations after World War II (transfers in kind were exacted) reflects this lesson. Today's debt problem poses dangers similar to the reparations problem—insofar as a sudden switch from a negative to a positive resource gap is required, even though debtor countries are not expected to switch all at once to the net borrowing level that may be appropriate in the medium term, and creditor countries as well as banks are being exhorted with some success to continue to ease this transition by increasing their loan exposure. Another lesson of the reparations controversy, still appropriate today, is the need for the creditor countries to expand their overall expenditure and reduce their barriers to imports; it will be ignored at their peril and that of the world.

For a brief time, Keynes—basically a free trader—flirted with protectionism. He also, briefly, espoused a simple multiple rate system for the United Kingdom to shield the overvalued pound. Trade would proceed at the devalued rate (brought about by offsetting surcharges on imports and subsidies on exports), while financial transactions would take place at par in order to protect the investment income of the United Kingdom.

In "The Economic Consequences of Mr. Churchill," Keynes made an important point on how not to calculate an equilibrium exchange rate; there are many recent examples of Churchill's mistake. The United Kingdom's return to the prewar parity of the pound was justified by comparing the wholesale price indices in the United States and United Kingdom. But the relationship between worldwide wholesale prices and those in a country heavily dependent on trade unavoidably stands close to the exchange rate of that currency vis-à-vis any major foreign currency. Wholesale price relationships cannot be used to determine purchasing power parity (even if that was all we had to worry about).

General Theory

As an economist, Keynes is remembered mainly for the General Theory of Employment, Interest and Money published in 1936, although his Treatise on Money is considered more important by some theorists. The General Theory was heretical in several respects when it was written. It appears far less so today, partly because so much of it has been accepted into conventional wisdom and partly because some overenthusiastic generalizations by Keynes himself, but mainly by his many naive followers (they were often respected academics), have been reduced to their proper proportions.

One of the heresies ascribed to Keynes was the thesis that even in the absence of uncertainty generalized industrial unemployment could be a state of competitive equilibrium, requiring expansionary policies as a cure. Critics of Keynes have argued that even if falling nominal wages would be offset by falling prices, so that real wages would not fall (initially), the real money supply would rise in the process; thereafter demand would rise, which would eventually restore full employment (presumably, the rise in demand would raise prices relative to nominal wages, which would be held down by unemployment). In fact, Keynes was aware of this real balance effect, but he thought that it would operate very slowly and would be bought at a horrendous cost. A different interpretation of Keynes' fear of persistent mass unemployment has become more prominent recently. That is, sustained unemployment may be explained not by the impossibility of reducing real wages but rather by the high information costs that are engendered by disequilibrium, which makes nominal wages (even in the absence of institutional wage floors) respond only slowly to changes in prices.

The idea that expansionary policies could cure generalized industrial unemployment as long as the real wage is flexible was discovered or at least instinctively practiced by others before Keynes; after all, it seems to have been preached in (pre-Friedmanian) Chicago. As Roberto Campos has pointed out to me, there seems in any case to be a somewhat disconcerting complementarity between Friedman and Keynes: the practice of naive Friedmanian policies may be about to recreate the conditions in which the world may need a new dose of Keynesianism (and, perhaps, the opposite was also true).

Keynes was, of course, writing about unemployment in industrial countries and not about underemployment in developing countries, which is due not to excessive real wages but to the peculiarities of the income distribution system in noncommercial agriculture. Developing countries have learned at their cost that underemployment cannot be cured by monetary expansion. And...
industrial countries have also learned at their cost and, unfortunately and unfairly, at the cost of the rest of the world, that expansionary policies cannot cure their type of unemployment where the real wage is not flexible.

Keynes both believed in the need for monetary expansion in a depression and doubted its efficacy when compared to fiscal policies. Fiscal-monetary controversies are eternally modern. Today, industrial countries seem to be able to use only monetary policies to combat inflation. Keynes' problem was the liquidity trap—interest rates could not fall enough in a cyclical or secular collapse of the marginal efficiency of capital to stimulate private investment; monetary expansion would be ineffective; and fiscal policy would have to step in. Few would today defend the (secular) stagnationist hypothesis even in the wealthiest countries—and particularly not since the two oil shocks of the 1970s have presented the world with the need for a new productive structure aligned with new price relationships. In any case, Keynes' inventiveness was equal to the stagnationist thesis. He disinterred the writings of the German-Argentine economist Silvio Gesell who had proposed a negative real interest rate to be brought about by stamps that would have to be affixed to money periodically to maintain its legal tender characteristics. As a means of maintaining investment in a depression, Gesell's prescription would have been a better way than to make interest rates negative through inflation.

**Keynes, the Fund, and the Bank**

The creation of an international Clearing Union was for Keynes the cornerstone of postwar economic reconstruction. He insisted from the outset that to avoid the economic disorganization of the interwar period, there was also a need for other international economic institutions (though the Clearing Union deserved precedence because it could finance these institutions and because debit and credit balances held by the Union could serve as indicators to guide them). Among them he specified bodies charged with the promotion of postwar relief, rehabilitation, and reconstruction; commodity control; international investment; the maintenance of price stability and control of the trade cycle; and international trade. He also mentioned the possibility of financing a peacekeeping body via the Union. The genius of Keynes and the others who started the reconstruction process was to realize that the institutional infrastructure had to be in place before the war ended if it was to be established at all. Coordination and the acceptance even of enlightened leadership would become more difficult after the war. It is unfortunate that those who established the infrastructure vastly underestimated the size of the task.

Keynes' original idea of a Clearing Union was different not only in scope but in structure from the American-inspired Fund that was to emerge. The main difference in the latter respect was that Keynes' Union would have created whatever internationally acceptable assets it needed to finance its operations simply by recording overdrafts in its books. All members would have been obliged to accept the corresponding liabilities of the Fund in settlement of international claims. The Fund requires a collection of currencies and other international assets (owned or borrowed) to finance its operations and not all of them are usable at all times. More important and embarrassing, the degree of usability of these assets, and therefore the possible scale of operations of the Fund at any time, is unforeseeable. It is interesting to remember that in addition to the British and American proposals, there was also a Canadian one, which, on the whole, followed more closely the American than the British design. It had an extremely interesting feature that, in case of need, required countries to lend their currencies to the Fund up to 50 per cent of their quota. The idea of a lending obligation (as distinct from voluntary agreements, even long-term ones, to lend) to reinforce quota resources is one that might have made the recent life of the Fund easier, although it can always be claimed that quotas would have been correspondingly scaled down. Like the Fund in its initial incarnation, Keynes' Clearing Union laid great stress on the need for preventing speculative capital flows.

Keynes' Union would have given members more automatic access to its resources than the Fund has done. But conditionality of access was definitely part of the Keynesian concept for persistent debtors. There might have been parallel fines for excessive debtors and creditors (and, from the outset, greater freedom to change exchange rates).

Would an enlarged access policy, which has been so helpful to the international community recently, have been possible in a Clearing Union? Keynes regarded each member's quota as the limit of its indebtedness to the Union. There is, however, no technical reason why the Union's articles of agreement could not have permitted the waiver of this limit, just as the Articles of Agreement of the Fund allow it to waive its access limits. Enlarged access could not have failed for lack of financing under the Union: Keynes was insistent that there must be no limit on members' credit balances held with the Union. However, J.J. Polak has suggested to me that this unlimited financing obligation under the Clearing Union might well have made potential creditor countries even more reluctant to agree to enlarged access than they have been.

Although the name of Keynes is generally linked to the deliberations at Bretton Woods concerning international monetary arrangements, it is important to recognize that he took a keen interest and played an important role in the establishment of the International Bank for Reconstruction and Development (an institution whose creation was the initiative of the U.S. Treasury). Keynes was the Chairman of Commission II at Bretton Woods which concerned itself with the Bank. He had mentioned the need for an investment institution both for cyclical and for developmental purposes in his memorandum on the Clearing Union, though at first he was skeptical on the Treasury proposals. He foresaw not only the immediate functions but also the subsequent, broader role of the Bank. In his own words, "It is likely, in my judgment, that the field of reconstruction from the consequences of war will mainly occupy the proposed Bank in its early days. But as soon as possible, and with increasing emphasis as time goes on, there is a second primary duty laid upon it, namely to develop the resources and productive capacity of the world, with special reference to the less developed countries."

* * * *

It would be hard to improve on the summary of Keynes' significance in the editorial preface to his celebrated posthumous article, "The Balance of Payments of the United States," published in the June 1946 Economic Journal: "The world has lost one of the very few with the imagination, courage and leadership needed to restore civilisation and build a firm economic base for peace and happiness. Britain has lost the chief architect of the economic policy which made victory possible, her chief advocate in economic negotiations, the brain which more than any other was shaping her economic future. His friends have lost one who embodied for them not only all that was finest in liberal civilisation and learning, but also all that was firmest in moral strength, human affection and intimacy. Economics has lost the inspiration of one who for a generation has been the centre of every controversy, the fountain of new ideas, the iconoclast who destroyed to build better, the thinker who more than any other in the history of our science has helped to make man master of his fate."
As previous articles in Finance & Development have noted, the current state of the world economy points to the need for a vigorous role for the multilateral financial institutions. The World Bank, as the world’s leading development assistance institution, is at the center of efforts to promote economic growth in developing countries. To carry out its functions, however, it needs the support of all its members. This article assesses the climate of support for development aid within the United States.

Changing public attitudes toward aid

The need for a constituency in the United States

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Attitudes toward foreign aid in the United States seem to have moved full circle in the last 40 years. Foreign aid first surfaced as an issue before the U.S. public when the Bretton Woods agreement was concluded in 1945, creating the World Bank and the International Monetary Fund. The intended role of the Bank was not then described in terms of providing “foreign aid,” but that is what it amounted to: a transfer of resources to nations that needed help to recover from the effects of World War II. The underlying notion was that the health of the world economy required systematic assistance from nations in a position to provide it to others that could put it to good use. It was thought that the burden of this aid should be fairly shared among donors, that it should be divorced from short-term foreign policy considerations, and that tough economic conditions should be imposed upon aid recipients. A multilateral institution with a strong independent management seemed best suited to accomplishing these purposes.

Since 1945, U.S. attitudes toward foreign aid have passed through several phases. First came the Marshall Plan: U.S. aid to meet recovery needs in Western Europe that exceeded the resources of the World Bank and other then-existing institutions. The Marshall Plan succeeded, and went out of business as intended. It left a legacy; the U.S. public came to expect its aid to produce large and evident effects very quickly, and then to terminate. This view, irrelevant to conditions in developing countries, was to plague later planners of U.S. aid.

The next phase of aid came in 1949, when President Harry Truman announced his Point IV program of U.S. technical assistance to developing countries for development and humanitarian purposes. The Marshall Plan succeeded, and went out of business as intended. It left a legacy; the U.S. public came to expect its aid to produce large and evident effects very quickly, and then to terminate. This view, irrelevant to conditions in developing countries, was to plague later planners of U.S. aid.

Then came the Korean War: U.S. security assistance was provided to help nations threatened by external aggression

strengthen their armed forces and their economies. The term “Mutual Security Program,” used to describe this aid, reflected its intent, which increasingly overshadowed the original humanitarian aims of the Point IV program.

With the passage of time, this dichotomy was resolved: the informed U.S. public concluded that both development and security aid were needed and that, since the purposes of the two types were very different, they should be separated from each other in both the appropriation process and their administration. This separation was effected in 1957, when a separate instrument for U.S. bilateral development aid, the Development Loan Fund, was created. Public U.S. attitudes came to focus increasingly on “new directions” in U.S. bilateral aid as the main means of helping poor people in poor nations. Western European countries and Japan also mounted increasingly large programs of bilateral development aid.

In the United States, this trend toward rising bilateral development aid peaked in the 1970s. In the latter part of that decade, it became increasingly clear that the U.S. Congress intended to hold U.S. bilateral development aid to a nominal level at or below $2 billion (not counting PL 480 concessional sales of surplus U.S. agricultural commodities). A very large scale U.S. bilateral program to transfer capital for development purposes was evidently not in the cards.

Since 1980, Peter McPherson, the Director of the Agency for International Development in the Reagan administration, has moved U.S. bilateral development aid increasingly toward support of technological cooperation. In carving out this special niche for bilateral aid, McPherson is taking account of its limited size and is building on U.S. public attitudes that have favored technical cooperation and assistance ever since the Point IV program was announced in 1949.
The multilateral role

This view of U.S. bilateral development aid leaves infrastructure building more and more to the multilateral development banks. President Jimmy Carter took the lead at successive annual economic summit meetings in urging other industrial nations to support the expansion of these institutions—particularly the World Bank. He focused congressional and public attention increasingly on the Bank as the spearhead of U.S. development assistance. The share of total U.S. aid going to multilateral development banks increased steadily during his administration. There were objections from those in the administration who wanted to see more emphasis placed on bilateral aid, because of its supposed short-term foreign policy benefits. President Carter, however, continued to give top priority to the multilateral banks’ long-term development purposes, whose fulfillment he considered essential to a healthy world economy.

As a result, the multilateral development banks became increasingly the main battleground for conflicting U.S. attitudes toward development aid. Opponents of foreign aid focused their attention on multilateral aid because, as Willie Sutton said in explaining why he robbed banks, “that’s where the money is.” Opponents’ attitudes were enhanced by concern over lack of U.S. “control” over the Bank’s operations. They objected to enlarged activity not only by the World Bank but also by its concessional loan window, the International Development Association.

IDA had been founded partly because of a U.S. initiative in the late 1950s, when Senator A.S. Mike Monroney and Undersecretary of State Douglas Dillon joined forces to this end. At first, it elicited strong support in the United States, where concern was then focusing on the need for more aid to the poorest countries. In recent years that support has weakened, not only for the reasons cited above but also because IDA’s concessional terms make it especially vulnerable to attack and reduction in the U.S. appropriation process.

Now, as at the time of Bretton Woods, the World Bank is seen by interested Americans as the key element in the continuing transfer of public resources to developing nations; it is viewed by critics and proponents of aid alike as the only institution capable of mobilizing development resources on the scale that is needed. This makes it the focus of congressional debate for and against development assistance. For reasons already discussed, the balance of this debate has tended to go against multilateral aid in the last few years. The question is whether that balance can be readdressed in the years ahead.

The constituency; the battles

The business and banking communities in the United States are aware of the importance of the World Bank. At a time when most large U.S. businesses derive a substantial part of their earnings from operations abroad, it is easy to perceive how effective multilateral aid contributes to these earnings. Some U.S. labor leaders must share this perception. While reflecting their members’ concerns about building up competitive industries abroad, they cannot escape the fact that employment in U.S. exporting industries depends, to a considerable extent, on growth in the developing countries that buy these exports.

Church and humanitarian groups in the United States have not yet focused their attention on multilateral aid, despite the central role that this aid has played in the war on hunger and poverty. The achievement of virtual food self-sufficiency in India, Pakistan, and Bangladesh has been the greatest victory in that war to date; it could not have been achieved without World Bank aid. Over time, U.S. church and humanitarian groups will increasingly conclude that the best way of eradicating human misery is to have an expanding world economy, and that the multilateral institutions are essential to this end.

What do these changing U.S. public attitudes portend for the future of the Bank? Under its present and past leadership, the institution has maintained the high professionalism of its staff and the independence of its management. The continuing quality of the institution’s work is thus not in question; the quantitative level of its efforts is.

Two areas are particularly worrisome:

- World Bank lending at market rates should grow as the needs and absorptive capacity of such middle-income development nations as Brazil and Mexico increase. Given the limitations on commercial lending, these nations will have to attract public loans, as well as private lending and investment, if they are to make a strong contribution to the global economy. Since the World Bank lends money at market rates and has never had a default, it can secure these increased resources from the private market. But governments must first give their approval. The attitude of the United States on this point has yet to be fixed. But the health of the U.S. economy and of the economies of other industrial countries is at stake; they cannot prosper if their trading partners in the developing world stagnate.

- By contrast, IDA requires appropriated funds, since it provides concessional loans to poor countries that cannot service all the loans they need on hard terms. The Bank’s management has advocated $16 billion as a realistic target for the Seventh Replenishment of IDA. Taking account of inflation, this is not a large increase over the $12 billion pledged for IDA VI. But the U.S. Congress has become increasingly resive at appropriating growing sums for an institution it cannot control. The outcome hinges on the willingness of other donor nations to make increased contributions to IDA, perhaps through a supplemental fund, even if the United States does not fully match their contributions. Whether other donors do this will probably depend partly on whether they believe that this is a temporary problem or an indication that the United States is permanently committed to a less generous posture toward the Bank and IDA.

These two battles—over increasing the lending of the World Bank and over replenishing IDA—cannot be won without stronger support for the Bank from the U.S. public. Leaders in the U.S. private sector will have to be more vigorous in sharing their views about the need for multilateral aid with the executive branch and the Congress. Businessmen, bankers, the churches, labor, and other U.S. groups—all will have to play a key role to this end.

Almost every facet of U.S. governmental activity has a constituency to which the U.S. agencies charged with that activity can turn for counsel and support. There is no major constituency to which the U.S. executive branch and the Congress can turn with respect to the World Bank and the regional development banks. Such a constituency needs urgently to be created. Changing U.S. attitudes toward development aid make this feasible, as well as necessary. More private citizens probably now recognize the need for strong Bretton Woods institutions than at any time since 1945. These institutions were given unequivocal public support by President Ronald Reagan at the Bank-Fund Annual Meetings in 1983. The future of the Bank depends on whether a powerful and active U.S. constituency comes into being to translate this support into congressional action.

The policies of other donor countries, as well as the United States, hinge on whether this is done. In the long run, it will be difficult to expect other countries to increase their contributions without U.S. leadership. They may conceivably be willing to bridge a temporary gap, but they will have to be convinced that it is temporary—that is, that a turn around in U.S. attitudes is under way. This depends, in good part, on whether action in the U.S. private sector is mounted to this end.

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Minimizing the burden of recurrent costs

World Bank project experience in sub-Saharan Africa indicates a need for more cost recovery and better planning

Jacob Meerman

There is universal recognition that investment is a key element in expanding the productive capacity of developing countries. As a consequence, their governments have become increasingly active investors. But the accumulated capital and the associated large public organizations that have resulted have also brought an expanding budgetary burden of recurrent expenditure, particularly as much recent investment has taken place in the nonmarket sectors, such as education and health care. When a country is growing, as most developing countries were during the 1970s, this burden is more manageable because of the concomitant growth of government revenues. But if growth stalls—the situation in many countries today—recurrent costs frequently become excessive and the problem is manifested, among others, in ill-maintained highways, schools without textbooks, or equipment out of service for lack of spare parts. Yet, quite apart from these cyclical causes of the problem, many governments now have a burden of recurrent expenditure that they would be unable to fund even in normal circumstances.

In sub-Saharan Africa, with its exceedingly low income per capita, the problem also has another dimension. Insofar as services such as medical care, potable water, and sanitation are publicly produced, governments cannot provide them to more than a minority because their domestic revenues and policies to direct resource allocation are so seriously constrained. This "structural shortage" of resources is an important reason why, for instance, life expectancy at birth is so low in the region, namely, 47 years as compared to a global average of 63 years. Consequently, the recurrent cost problem in sub-Saharan Africa is not only manifest in an inability to keep existing organizations running at capacity; it is also evident in an inability to provide services adequately to the population. Indeed, even if adequate services were developed, say with the aid of some foreign donor, maintaining them would be quite beyond the fiscal capacity of the national governments. For this same reason, improving fiscal management is a far more pressing issue in Africa than in regions with higher incomes and stronger government institutions.

The reasons for the inability of governments to meet their recurrent obligations for existing facilities are various, but similar throughout the world. In many countries, the excess demand for recurrent resources is partly a result of the institutional separation between government budgeting and planning. The ministry of planning concerns itself with investment and its finance, frequently relying on extrabudgetary resources such as foreign loans, while the ministry of finance may be quite unaware of the new recurrent costs that it will later be called upon to cover once the capital is invested. In brief, recurrent budgeting tends to be incremental—the finance ministry gives the others what they received the previous year, plus a little more, and does not plan for longer-term developments. Occasionally, this tendency for capital to exceed recurrent funding is increased by donor agreements to cover local costs for governments unable to do so during the project period in the (often vain) hope that the authorities will be able to pay them after the project is implemented.

In addition, many of the economic activities undertaken by governments in the area that could be fully self-financing are not covering their costs and are, in one way or another, dependent on government subsidies. Prices for the output of public enterprises, utilities, or state farms may be eroded by inflation; cost recovery may be inefficient; costs of production may be excessive because of overstaffing; or the principle of full cost recovery may lack political support. In sub-Saharan Africa, parapublic enterprises undertake most or at least a large share of these activities, and typically include production in industry, transport, large-scale marketing, or housing. Rather than becoming rapidly expanding self-financing organizations that generate a surplus for additional investment as well as develop skilled labor and enhance managerial capacity, most have become serious fiscal burdens. Hence, national growth slows because the parapublic sector stagnates and does not provide the needed basic outputs, but rather consumes much of any surplus that might be invested.

Although increased taxation to raise revenues is feasible in many countries, it can be greatly increased in but a few countries in Africa. Most taxable African production is already heavily burdened; there is substantial evidence that in many countries agriculture, for instance, is stagnating in part because after taxes producers can only barely cover their costs. Higher growth rates, which would increase government revenues to ease the shortage, are thus made more difficult, and countries find themselves in a vicious circle of deficit, excessive taxation, reduced growth, and deficit.

Partial cost recovery

The Bank's approach is that the projects to which it contributes and which are in the market sectors (that is, those whose output is normally sold at full cost) should generate enough resources to cover at least recurrent costs, if not part or all of capital costs (depreciation plus net return). In several sectors, however—education, subsistence food-production, and health care, for example—the Bank finances projects in which typically neither recurrent costs nor debt service is covered by charges on outputs generated by the project. Here, the costs are expected to be borne by the government budget.

But even in these sectors, partial cost recovery to reduce the burden of the recurrent funding on the government budget is possible. Many governments in West Africa, for example, not only pay all of the educational costs of secondary and higher education but also provide students with free room and board and a stipend. Yet in many of these same countries, enrollment rates for primary school are less than 50 percent because governments are financially unable to extend primary education to most of the rural population, while the
villagers themselves are too poor to be able to cover the costs. Frequently the beneficiaries of the free higher education come from the better-off urban families who would be able to pay for much of it directly. But even if they cannot, the value of the education they receive puts them in a favorable position to obtain and repay student loans, since their increased lifetime earnings from higher education are considerable. The Bank has frequently emphasized recovering costs from the beneficiaries of high schools and universities to release more funds for primary education. Nevertheless, the policy of free education at the higher levels is extremely popular and governments have been unable to move away from it.

Partial cost recovery is also necessary if expansion in urban services is to keep pace with urbanization, since in most countries urban growth is more rapid than the growth of government resources to finance it. Following a history of lending for public utilities, transportation, and industry, in 1972 the Bank started lending to finance the provision of low-cost city housing sites, municipal services, and slum upgrading (this involves improving streets, water supply, and sanitation, and providing technical assistance to city management and administration). In 1980, the Bank carried out an assessment of its experience in East Africa with cost recovery from urban projects. Its findings seem generally applicable to cost recovery from urban projects elsewhere. Six problems emerged: political ambivalence, inadequate legislation, delay in granting land tenure, absence of sanctions, weak administration, and the unwillingness of beneficiaries to pay. Evidence suggested that the ability to pay was less a problem than the willingness to do so. Various studies showed that 15–25 percent of the income of average urban households was spent on shelter, and that the charges for the self-help shelter provided through Bank projects were less than this range for all except the poorest.

Political ambivalence, even outright resistance, was the most serious cause of delays in starting cost recovery, especially for upgrading. Countries with successful cost recovery from urban projects, such as Kenya, had broad support among political leaders, civil servants, and project beneficiaries. In Botswana and Zambia, however, the principle was accepted only grudgingly because some people, frequently from higher-income groups, had traditionally received similar or better services free.

Administering sanctions for nonpayment was also a serious problem in both site and services and upgrading projects. The repossession of serviced sites was frequently obstructed by both inadequate legislation and political ambivalence. In the case of upgrading costs, it was difficult to identify an effective sanction for nonpayment. Repossession or eviction was not realistic. Neither was legal if the house was privately owned; where either was legal, families knew that governments would often avoid evictions rather than take the risk of creating new squatter areas. Zambian authorities attempted disconnecting water and electricity, but where families did not simply reconnect the services, those who shared the services and had paid regularly stopped paying. In general, families initially willing to pay for urban project services became confused and discouraged because of delays in promised improvements, delays in the delivery of tenure documents (often due to legislative problems), and poor information on amounts due and how payments were to be made.

Full cost recovery

The Bank believes that public utilities—providing power, water, sewage disposal, and telecommunications—should fully recover their recurrent expenses and their debt service and provide some self-financing for expansion. External benefits and social considerations allow this principle to be relaxed for projects in the water and sewage sectors, but revenues should always cover operating expenses and debt service. Covenants on rates of return and cash flow are used to ensure this result. This does not imply that each component of an operation has to be entirely self-supporting. Progressive “block tariff” structures are often recommended by the Bank for water supply and power investments. These charge low rates for the initial block of consumption, steadily increasing them as consumption rises. In this way, the average cost per unit to the poor is less than that to the better off, who consume more, and services can be expanded to both without fiscal subsidy.

One of the obstacles to recovering costs in power projects in sub-Saharan Africa has been the inadequate increases in charges eroded by inflation. To restore the real value of revenues, the Bank’s financial covenants for power projects in West Africa now typically include automatic tariff adjustments as the price of fuel and other costs rise with inflation. But many governments have been reluctant to permit automatic increases. Frequent revaluation of fixed assets because of inflation has also been common, and useful insofar as tariffs are designed to ensure a minimum financial rate of return to fixed assets. But covenants requiring such returns are falling into disuse. This is partly because of the complexity of measuring an adequate rate of return given rapid inflation and partly because of the association of high rates of return with colonial exploitation. Instead, covenants are increasingly defined to ensure a cash flow that will cover depreciation plus debt service and finance a substantial share of new investment. In some cases, the latter has been 40 percent of annual added capacity.

In the 1960s, World Bank highway loans for the region included covenants for earmarking a portion of motor fuel taxes for road funds, partly to assure adequate funding for highway maintenance. In practice, only a small part of the funds was used for maintenance; most were used to construct new roads and to improve existing ones. If the earmarked funds from the user taxes had been set against maintenance, most could have been financed until about the end of 1973. But maintenance was given low priority and worldwide inflation beginning in 1973 exacerbated the shortage of funds for maintenance, as the commonly used fixed motor fuel taxes per liter or gallon were not increased to keep pace with price rises.

In addition in many countries, including most of those in the Sahel, governments have become so short of funds that they have long since virtually ceased earmarking revenues for maintenance. At the same time, they have been very reluctant to move to the inflation-proof ad valorem tax, which sets the tax as a fixed percentage of the price of motor fuels. As a result, there has been such a widespread deterioration in road networks that in many countries the maintenance problem goes beyond routine needs. Many highways have deteriorated so badly that complete reconstruction is necessary. Almost every country that is a member of the World Bank in West Africa, for example, has at least one highway maintenance loan, typically for equipment, spare parts, and training.

Conclusions

The Bank’s experience with cost recovery, which is not atypical of that of other donors, suggests some general conclusions. First, the institutional causes of recurrent cost problems imply that countries need a plan not only for development expenditures, which most have, but also for the recurrent outlays associated with those development expenditures, including other future budget claims. Moreover, the typical independent approach of different ministries toward undertaking investments, with inadequate concern for budgetary implications, needs to be coordi-
In particular, the estimation of government financial contributions to projects involving foreign aid should be centralized in the budget office. During preparation of development projects, no matter how they may be funded, a realistic estimate needs to be made, based on the entire budget and its future evolution, of whether there will be sufficient uncommitted resources to support the new government activities. Donors also need to look hard at the fiscal implications of their combined activities in the context of the ongoing budget situation of the recipient country.

A second conclusion of this examination of the recurrent cost issue is that cost-benefit analysis might usefully be applied to services involving direct investments in people. The World Bank, as do other donors, does not apply cost-benefit analysis as an input into an analysis of the economic desirability of education projects, for instance. Although there may be technical problems in estimating the economic benefits from education, not to use such analysis is paradoxical, since the scarcity of educated people is the most fundamental constraint on growth in sub-Saharan Africa. Indicative use of cost-benefit analysis—suitably hedged, because risks are high and quantitative estimates of benefits are hazardous—might nevertheless make donors willing to consider funding the recurrent costs of education. This is a very important consideration, since recurrent government expenditure for education is typically one of the largest components in the current expenditure budget. Such analysis would also be useful in determining the best allocation of funds among the different levels and kinds of education.

Perhaps of even more pressing importance in many sub-Saharan African countries is some measurement of the effectiveness of expenditure for ongoing education. The enormous and very impressive expansion in the numbers enrolled in schools has brought with it very low quality education in many countries. There, the economic rate of return to improving certain existing educational services may well be higher than the returns to expanding the numbers of the educated.

A final conclusion is that those activities that can clearly pay part or all of their own way should be encouraged to do so. Telecommunications, public utilities, highways, and export agriculture can generate their own funds—capital and recurrent. On the one hand, they are well suited for concessionary financing of their capital expenditures; on the other, they usually produce an output that can be sold or taxed in ways to permit substantial surpluses. Consequently, it is unwise to let them deteriorate so far that they can no longer produce these surpluses. In highway transport this may require greater funding of the road maintenance organization. In several other sectors it means tariffs indexed so as to offset inflation. In the subsidy sectors—certain urban services, education, health care—all of these could be more widely available if the recipients were to pay a greater part of their costs. In general it means another approach in which the goal of providing basic goods to all is coupled with the necessity of recipients, normally, to contribute to the costs of their production.

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Finance & Development / December 1983 43
Maintaining financing for adjustment and development

The 1983 Annual Meetings of the Boards of Governors of the IBRD, IDA, IFC, and the Fund were held in Washington, DC, September 27–30.

A report on the main themes emerging from the Meetings

The atmosphere at this year's Meetings was more positive than that surrounding the 1982 Meetings in Toronto, which had been marked by a sense of crisis regarding the health of the global economy. Yet while progress had been made in major areas, there was widespread agreement among Governors that the transition to sustained, noninflationary growth had by no means been fully achieved. First, economic recovery had been relatively strong in North America in 1983, but it had not been significant in many other industrial countries, and had been negligible in most developing countries. Even in North America, the outlook for a sustained recovery that included a revival of business investment remained uncertain.

Second, many developing countries had undertaken courageous and difficult adjustment measures and some had had marked success, but their prospective balance of payments deficits, the outlook for financing, and the continuing uncertainties with regard to world trade and growth, left them no alternative but to persevere in their efforts.

Third, the world's financial system had weathered a series of severe strains in 1982 and 1983 through prompt and vigorous action by the international community. This in itself was a major achievement; nevertheless, the management of external debt, the high level of interest rates in real terms, and the ongoing volatility in exchange markets all called for continued attention and for an active financing and surveillance role for the Fund. At the same time, the still difficult international economic environment required the Bank and its affiliates, the International Development Association, and the International Finance Corporation, to pursue vigorously their policy dialogue in support of an adjustment process leading to sustainable medium-term economic growth.

Global economic prospects

"The central task of policy in present circumstances is to consolidate the recovery that is taking hold and to ensure that it is extended and sustained," Jacques de Larosière, Managing Director of the Fund, stated in his opening remarks to Governors. This theme was echoed by speakers from industrial and developing countries alike, who acknowledged that a prerequisite of success was to maintain the progress achieved in bringing down inflation. While some believed that there was already more room for maneuver in those countries that had brought inflation rates down to relatively low levels, it was generally recognized that a rekindling of inflationary expectations through a premature relaxation of financial policies would only serve to endanger the still fragile economic revival.

Sustained noninflationary growth would also be threatened, many speakers pointed out, if real interest rates remained high. In addition, a number commented that high interest rates added to the already severe debt-service burden of developing countries. A reduction of 1 percentage point in international interest rates, it was noted, would result in an approximately $2 billion reduction in debt-service payments for those countries. Large fiscal deficits, by absorbing a high proportion of available savings and by undermining confidence in the authorities' commitment to financial discipline, helped to maintain interest rates at levels that could impede the revival of the business investment crucial to the maintenance of growth. It was, therefore, essential that governments should act to reduce fiscal deficits progressively over the medium term.

The much-sought recovery in investment activity would be aided by policies designed to increase both domestic and international competition; such measures should increase flexibility in wage-setting procedures and remove subsidies and other price-distorting measures. It was considered especially important to reduce protectionism, which not only hindered structural adjustment in the developed countries but also posed a major obstacle to the expansion of the developing countries' exports and thus to their prospects for growth and for servicing their external debt. The persistence of protectionist pressures was regrettable and the major developed countries, in particular, should take action to rescind measures of protection, many Governors stressed.

Indeed, it was agreed that the outlook for the non-oil developing countries as a group remained the most worrisome aspect of the international economy. As A.W. Clausen,
President of the Bank, noted: "Most [developing] countries have experienced, in differing degrees, deteriorating per capita income growth, stagnating government revenues, and serious balance of payments and debt-servicing difficulties."

Governors from developing countries, in particular, emphasized the heavy social and economic costs that adjustment entailed. All acknowledged that a considerable measure of external adjustment had already taken place in many countries, often in conjunction with Fund support. Nevertheless, it was agreed, those efforts needed to be continued if viable external payments positions were to be achieved and if growth and development were to return to reasonable levels.

A crucial element in support of adjustment was the provision of adequate financing. Many Governors singled out for praise the active coordinating role that the Fund had played in the past year in working with official creditors, central banks, the Bank for International Settlements, other multilateral agencies, and the commercial banks to arrange a series of financial packages for countries faced with severe debt management problems. Speakers also commended the World Bank for providing complementary support to the adjustment process in the medium and long term through its active dialogue with member countries on policy improvements, institution-building, and other aspects of structural reform. In addition, Governors called for increased lending by IDA, particularly in sub-Saharan Africa, and the expansion of the activities of IFC supporting private sector development.

Given the reduction in flows of commercial credits to the developing world, speakers considered that the catalytic role of the Fund would continue to be a major factor in mobilizing the resources required to complement the adjustment effort of developing countries. For the same reason, those countries should also seek to create the conditions that would make direct foreign investment more attractive. In addition, speakers suggested, it would be essential to increase the flow of official development assistance, particularly to the low-income countries with little access to private capital markets. Governors also emphasized that neither the Fund nor the Bank and its affiliates could play their parts effectively without sufficient resources.

**Role of the Fund**

The continued volatility of exchange rates and the related need for closer coordination of economic policies among the major industrial countries received considerable attention from Governors, who commented particularly on the Fund's surveillance role in that area. Several noted that fluctuations in exchange rates not only contributed to uncertainties, which could hamper both investment and trade flows, but they were also a factor encouraging protectionist tendencies. Governors welcomed, therefore, recent efforts to develop more effective consultation procedures among the major countries, and they urged that the Fund's Article IV consultations with members should be strengthened to focus more closely on the international impact of domestic policies.

The implementation of Fund-supported adjustment programs had been instrumental in maintaining commercial bank lending to a number of debtor countries. As one Governor stated: "[the Fund's] effective, innovative response to the strains of the past 12 months represents a landmark in its history." For the debtor countries to attain lasting creditworthiness, and for the Fund to retain its credibility, it was essential that adjustment programs should be sound and realistic and that they should be successfully implemented. Governors recognized that the conditionality applied to the use of Fund resources was needed for that purpose. "There is no single path of adjustment applicable to all countries," one Governor observed; therefore, the Fund should continue to tailor the programs it supported to the specific needs and circumstances of individual countries. Concerned that the Fund appeared to be increasing its conditionality, particularly with respect to the use of resources under the special facilities (the compensatory financing and buffer stock financing facilities), some speakers urged that conditionality be applied flexibly in light of the current difficult world economic situation.

The continued availability of Fund financing to support adjustment was a major concern addressed by virtually all delegates. Since the 1982 Annual Meetings, negotiations on the Eighth Review of Quotas and the expansion of the General Arrangements to Borrow had been concluded, and, in advance of the Annual Meetings, the Interim Committee of the Board of Governors of the Fund had agreed to continue the enlarged access policy in 1984. Interim Committee members' views differed considerably on the level of access that was appropriate under that policy. However, a compromise solution was reached, with annual limits of 102 or 125 percent of quota, three-year limits of 306 and 375 percent of quota, and cumulative limits of 408 or 500 percent of quota "depending on the seriousness of the balance of payments needs and the strength of the adjustment effort."

As at present, it was also agreed that the Executive Board should retain the flexibility to approve stand-by or extended arrange-
ments for amounts above the access limits in exceptional circumstances. The enlarged access policy would be reviewed annually in light of all relevant factors, including the magnitude of members’ payments problems and developments in the Fund’s liquidity position.

A number of speakers at the plenary sessions considered that, given the persistence of large balance of payments imbalances and the contraction in commercial credit, the degree of access to Fund resources after the new quotas come into effect should have been more liberal if the financial position of member countries was to improve. They regretted the decision taken by the Interim Committee, arguing that it was particularly unfortunate that, at a time when the Fund was asking lenders to increase their exposure in the developing countries, it was reducing access to its own resources. Such a development would give the wrong signal to the international financial community, they believed.

Other Governors, while supporting a continuation of the enlarged access policy in light of the payments imbalances that many members continue to face, commented that the policy was always intended to be temporary and that therefore access should, in due course, be gradually scaled down to customary lending limits. The agreement reached by the Interim Committee, they noted, constituted a compromise solution that would not reduce potential access in absolute terms for any member of the Fund. In addition, the Executive Board would retain the flexibility to approve, in exceptional circumstances, programs for amounts in excess of the revised limits. In the words of Willy De Clercq, Chairman of the Interim Committee: “…there are no losers…the international community is the winner.” Some speakers also stressed that the enlarged access policy had to take into account the likely availability of resources to the Fund.

It was for this reason, among others, that Governors focused closely on the Fund’s liquidity position. In its communiqué the Interim Committee had reaffirmed that quota subscriptions should be the primary source of financing for the Fund, and all Governors stressed the urgency for national authorities to take the action necessary to bring the quota increases under the Eighth Review into effect. However, some Governors, particularly those from the developing countries, considered that the quota increases were insufficient to meet the demands on Fund resources and urged that the Ninth General Review of Quotas be advanced. It was generally agreed that, given the severe liquidity constraints faced by the institution, Fund borrowing, preferably from official sources, would have to increase, and Governors fully endorsed the Managing Director’s efforts to secure additional financing to bridge the growing gap between the Fund’s commitments and the available lines of credit.

All Governors favored the maintenance of the special facilities, but their views were divided on specific access limits. Many, supporting the retention of present limits (100/125 percent of quota under the compensatory financing facility and 50 percent of quota under the buffer stock financing facility), also stressed the need to ensure that the quick-disbursing and low conditionality features of the facilities were maintained. Some Governors considered that access to the special facilities should be reduced after the Eighth Review of Quotas became effective, since this would be in line with the revisions in enlarged access policy. A few suggested that such access should be reduced by a proportionally greater amount in order to shift the balance of Fund financing to the conditional facilities. The Interim Committee called on the Executive Board to consider the matter as early as possible.

An allocation of SDRs in the current basic period was also discussed. Most Governors considered that the arguments for an SDR allocation had been strengthened by recent developments. Commercial bank lending had contracted, restricting the supply of reserves, which had fallen to levels that could place a constraint on economic recovery, and inflationary pressures had weakened in many parts of the world. Further, a new allocation would be consistent with the objective of enhancing the role of the SDR as a major reserve asset. Some Governors, on the other hand, held the view that the case for a further allocation remained to be made. They were not convinced that there was a long-term global liquidity shortage, or that an SDR allocation would help to alleviate the debt problem or spur growth, as others had suggested. However, Governors welcomed further consideration of the issue as a matter of priority.

Role of Bank, IDA, and IFC

Governors pointed out that the demands on the Bank, IDA, and the IFC for financial and nonfinancial assistance over the next several years promised to be greater than before. Given the prospect of economic recovery, the developing countries would feel it essential to compensate for the slippage and delays in their investment programs that had occurred during the last three years of recession. In this light, there was serious concern that the Bank’s projected lending level would be virtually stagnant over the next several years and that its net transfers to borrowing countries were projected to decline after fiscal year 1985. Many Governors called for a real increase in Bank lending of at least 5 percent per annum. They recognized that in order to overcome the fundamental constraints on the Bank’s lending level an expansion of the Bank’s capital base was required. Governors looked forward, therefore, to fruitful discussions beginning in the near future on a General Capital Increase; it was hoped that an agreement would be reached before the end of fiscal year 1986. As one group of speakers put it, “the long-term needs of the borrowing countries can only be addressed in the context of a General Capital Increase.”

In addition, a Selective Capital Increase was required to realign member countries’ voting rights following the Fund’s Eighth General Review of Quotas. Several Governors felt that a Selective Increase of $20 billion was justifiable; but another view held that no more than $3 billion was required. At a meeting of the joint Bank/Fund Development Committee, the majority of members favored a compromise figure of $8 billion; this would permit the needed realignment of member countries’ voting rights as well as a modest increase in the Bank’s lending program. The Development Committee instructed the Bank’s Executive Directors to “work out the specifics” of such a Selective Increase by the end of 1983.

Governors noted that the recent decline in capital flows, both public and private, had severely impaired development momentum. The cutback in concessional flows had been particularly damaging to the low-income countries and, as one Governor remarked, “massive increases” of official assistance in the future were unlikely. IDA’s role as the chief source of concessional assistance, institutional support, and policy guidance for the poorest countries was acknowledged as being of increasing importance. Virtually all Governors expressed profound concern, therefore, at the slow progress of negotiations on IDA’s Seventh Replenishment (IDA7).

Noting the difficult experience with the Sixth Replenishment—the Association had had to cut back its planned commitments because of a shortfall in its resources (due mainly to a major donor’s failure to honor its pledge on time) and emergency “bridging” arrangements had had to be instituted for fiscal year 1984—many Governors felt it essential that IDA7 should be implemented on an adequate and secure basis in fiscal year 1985. Given the dire needs of IDA’s borrowers—which now include China—some Governors supported the IDA management’s proposal for a $16 billion Re-

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plenishment; others considered an IDA7 of $12 billion an indispensable minimum. The position of the United States, however, implied that $9 billion was all that could be realistically achieved at this time. Governors stressed that while major differences remained among donor countries on the size and burden-sharing arrangements for IDA7, a compromise had to be reached that would ensure that the minimum needs of IDA’s expanded recipient community could be met; include an objective and equitable burden-sharing arrangement; and reflect the multilateral nature of the Association. Some Governors said that they regarded the negotiation of IDA7 as the “acid test” of the international community’s spirit of cooperation.

While underlining the need to maintain official assistance flows, many Governors also highlighted the importance of private capital to the development process. Several speakers felt that the Bank should give increased attention to stimulating direct private investment. In this context, the IFC’s role in catalyzing the flow of capital, technology, and modern management from private sources for development purposes received broad endorsement. A number of Governors expressed strong support for a proposed $750 million increase in the IFC’s capital base. This would allow it to achieve an investment growth rate of 12 percent a year over 1985–89 and expand the breadth of its operations, particularly in its low-income member countries.

Governors recognized that an expanded use of cofinancing was another important way in which the Bank could catalyze the flow of financial resources to the developing countries. It was noted that in January 1983, the Bank had introduced new cofinancing instruments that permitted it to participate directly in commercial bank loans. Resources mobilized in this way would complement the ongoing cofinancing activities with official sources and with export credit institutions. While several speakers stressed that the purpose of cofinancing should always be to bring additional resources to the developing countries and that it should not become a precondition of Bank lending, there was general encouragement for the Bank’s expanded use of cofinancing arrangements with public and private sources.

Looking ahead to the Bank’s role in the 1980s, one group of Governors felt that more attention should be given to formulating a specific medium- and long-term strategy for the Bank that would equip it to address the problems facing its borrowing countries. At the same time, several speakers stressed that sound and disciplined domestic economic policies were the most important contributions any country could make to its own development. The Bank’s work had its greatest impact, they said, in an environment in which efficiency, savings, and investment were encouraged.

Among the challenges facing the Bank, the continuing plight of sub-Saharan Africa was given particular emphasis. A group of Governors stressed that the current food supply crisis in Africa was of “emergency” proportions and that the long-term solution depended on achieving adequate production levels, which would require adequate levels of assistance. Another major challenge commented on by Governors was the developing countries’ investment needs in the energy sector. The Bank’s 1983 report, The Energy Transition in Developing Countries, estimated that the developing countries would need to invest about $130 billion a year in this area for the rest of the decade. A number of Governors felt that the Bank’s financial contribution in this sector played an important role by attracting private sector investors to high priority, economically sound projects; they also endorsed the Bank’s role in supplying policy advice, institutional support, and technology transfer. On the other hand, one view held that it was inappropriate to lend scarce Bank and IDA resources for financially attractive energy projects when alternative sources of financing were clearly available.

There was also some discussion of the expanding role of the nonproject component of Bank lending. Several Governors stressed that project financing was the Bank’s raison d’être and that departures from this should be approached cautiously and implemented carefully under clearly enunciated guidelines. Other Governors felt that the Bank’s nonproject loans—especially for structural and sectoral adjustment—were the most appropriate and effective vehicles for responding to the borrowing countries’ changing needs and circumstances. Several speakers suggested that the Bank might increase this type of lending and also be more flexible regarding the conditionality attached to these loans.

Many Governors applauded the flexibility the Bank had shown in introducing the Program of Special Assistance (approved by the Executive Directors in February 1983). By expanding its economic policy dialogue; accelerating disbursements for the maintenance, rehabilitation, and completion of high priority projects; expanding sectoral and structural adjustment support; increasing the share of Bank financing in projects; and expanding export development funds, the Program was aimed at helping the Bank’s borrowing countries to restore their development momentum (since IDA already finances a high percentage of its projects’ costs, the Program relates primarily to Bank projects.) It was estimated that the Program would increase Bank disbursements over fiscal years 1983–85 by $2 billion and that net transfers would increase by 25 percent. Several Governors felt that the Program should be supplemented so that it could have more effect on the lowest-income countries and that it should be expanded beyond its projected two-year time frame. However, given the resource constraints facing the Bank, Governors welcomed the Program as a “step in the right direction” in an extraordinarily difficult economic period.

New challenges

In the four decades since Bretton Woods the world economic and financial system had undergone profound transformations, many Governors observed. The growth and diversification of the world economy and the increased interdependence of the constituent parts had presented a series of challenges to the Fund and the Bank that the institutions had met with remarkable adaptability and skill.

Some Governors, while praising the efforts of the Bretton Woods institutions in support of the international trade and payments system, suggested that “nothing short of a fundamental review” was called for, in the words of one speaker. The time was approaching, they believed, when an international conference should be held to re-examine the structure of the system.

Other Governors felt that it was wrong to assume that the world’s economic and financial problems could not be resolved without an overhaul of the system. The current difficulties facing the world economy would be more readily overcome through sound domestic policies and the promotion of coordinated economic performance. This did not rule out, of course, examination of specific ways in which the existing international system could be improved. Many Governors urged a reinforcement of international cooperation, believing that such mutually supportive efforts should be encouraged to improve the process of adjustment in the international system and advance the prospects for the sustained betterment of living standards in all member countries. There was resounding support for the roles of the Bank and the Fund in this process and, as the Chairman of this year’s Meetings, Spain’s Finance Minister Miguel Boyer, commented, it was up to the member countries of both institutions “to support their further evolution vigorously and to strengthen their ability to achieve the goals on which we have all agreed.”

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David K.H. Begg

**The Rational Expectations Revolution in Macroeconomics: Theories and Evidence**
Johns Hopkins, Baltimore, MD, USA, 1982, 304 pp., $25 (cloth), $8.95 (paper).

Frank Hahn

**Money and Inflation**

Rational expectations theory was originally developed by monetarist economists to buttress their arguments that demand management policies could not be used to affect the real economy. Both these books contribute to the intensified debate over the scope for policy intervention. Both are to be commended for their care in divorcing the discussion over the appropriate modeling of expectations formation from the deeper debate over the characteristics of the macroeconomic equilibrium within which these expectations operate. Both are clearly written, using a level of mathematics appropriate for graduate economics students.

Begg’s emphasis is on how to model expectations. He convincingly argues that rational expectations are more compatible with the basic postulates of competitive, optimizing agents and markets than are adaptive or static expectations. He presents results of econometric tests on the parameter restrictions imposed on reduced form equations by the rational expectations hypothesis. These tests are, however, conditional on the underlying model.

Next, Begg surveys the debate on stabilization policy, concluding that only in the special case of market-clearing models does the theory imply that demand policies have no effect on such real variables as unemployment or real output. Then, in perhaps the most interesting chapter, he analyzes consumption and investment functions, focusing on the dynamic adjustment to unanticipated events. The sudden jumps in asset prices, characteristic of equilibrium paths under rational expectations, yield a very different pattern of demand activity in the short run than extrapolative expectations would indicate.

While Begg’s book is an excellent introduction for those who wish to add rational expectations to their economic toolkit, it does not, finally, shed much light on the deeper questions of the appropriateness of alternative model structures. Professor Hahn, in inimitable style, does attack the new wisdom of monetarism in three essays. He is concerned with the logic behind the use of rational expectations in a monetarist model to derive propositions about policy neutrality.

In the first essay, Hahn argues that rational expectations may be a two-edged sword for monetarists. For expectations are only important in economies that progress from one equilibrium to the next, and this focus implies that the key issues are in the dynamic transition period. But by assuming continuous competitive, price-clearing markets, the monetarists skirt the main issue. Hahn argues that to evaluate monetary policy, the role of money must be properly understood; that given rational expectations, the existence of money implies it has a role not performed by other interest-bearing assets; that this role may involve intertemporal substitution, liquidity, and self-insurance; and, thus, that any monetary theory that does not incorporate these elements is unlikely to be robust. In essence, Hahn argues that monetarists find no role for monetary policy because they introduce money in an ad hoc fashion into their models.

In the second essay Hahn asserts that monetary policy can affect real variables. Arguing that rational expectations by themselves do not yield a unique price path, and stressing the lack of a full price formation theory, he claims that adjustments are likely to reflect the historical pattern of investment and future expectations. Agents would then respond to both real and monetary variables in forming a conjectural equilibrium. Hahn stresses the complexity of labor supply decisions, where the social character of work distinguishes labor from other commodity transactions. Relative, as well as absolute, wage levels may be important determinants of unemployment. Then, monetary policy could be effective in pushing the economy toward a Walrasian equilibrium.

The last essay tackles the monetarists’ pet subject of inflation. Why is inflation viewed as such an evil if monetarist conditions hold—that is, if inflation does not affect real magnitudes? Hahn dismisses the normal explanation of inflationary costs—the loss in consumer surplus of holding lower money balances, the effect on liquidity, the variability of prices, the resulting tax distortions—and concludes that the current overriding concern with inflation implies that it is not simply a monetary phenomenon but rather one characteristic of a “bootstrap economy” featuring declining output and employment levels. Rather than attacking inflation, policy should be geared to alleviating the latter phenomena, perhaps perversely (and in the Keynesian mode) by expansive monetary policies.

This collection offers a valuable reminder of the major problems unaddressed by simple monetarist models. Considering the influence of these models on present policies, this is a sobering presentation. The practical message is that the preoccupation with inflation may be misplaced, diverting attention from more fundamental distortions in tax systems and labor markets that should be the focus of macroeconomic management.

Lance Taylor

**Structuralist Macroeconomics: Applicable Models for the Third World**

Professor Taylor has written an informative and provocative book on development issues and policies for “countries at middle and low levels of GDP per capita.” His basic approach, the major macrobalance equations, relies heavily upon the two-gap models of development economics: the internal balance (investment equals national savings plus foreign savings) and the external balance (foreign savings equals imports plus interest minus exports plus workers’ remittances). Both are ex post, and Professor Taylor studies the adjustment mechanisms that bring them into balance in the real and the financial sectors. In the short run, these adjustments are examined in terms of their impact on economic growth and income distribution; in the long run, they are analyzed with regard to the transitions between constant growth paths and the economic stability of the solutions.

Using increasingly complex models, the book analyzes numerous topics in development economics. The ground is prepared in the earlier chapters by one and two sector models of the real economy, which allow Taylor to trace the consequences of food subsidies, increases in nominal wages, and higher agricultural exports. A model of a financial sector, comprised of a central bank, commercial banks, firms, and individuals, is then introduced. With this, Taylor is able to show that a policy of financial liberalization, which attracts funds into the banking system through an increase in deposit rates, need not be expansionary. Having underscored the uncertainties that hover around short-run monetary actions, he then adopts a longer-term perspective and indicates how a

Homi Kharas
monetary contraction would, under certain circumstances, result in both a drop in output and wages and an increase in inflation.

At this stage the author unveils the full two-gap model. In neoclassical models, the two-gap problem is resolved by free trade; however, the author points out that these economies are not structurally similar to the neoclassical world—"few countries permit free trade, full employment of resources is rarely observed, and the law of one price is more often than not in abeyance." Therefore, this model takes the two gaps as binding, employing a disequilibrium approach. The output level and the distribution of income, instead of free trade, bear the brunt of adjustment; and the implications of capital flows for the balance of payments are examined. In this context one interesting finding that emerges from an analysis of the crawling peg is how a move to slow down the crawl in order to restrain inflation could limit the growth of the economy.

The major conclusions of this book concern the impact of standard stabilization policies—monetary contraction, devaluation, abolition of government price controls, financial and trade liberalization, crawling pegs, and wage freezes. Taylor is critical of the Bank and the Fund for recommending these policies, which he feels have been based on highly aggregated and simplistic economy-wide models, but his own book is not above reproach in this regard. The adverse consequences of these stabilization policies, according to the structuralist approach, seem counterintuitive; yet they flow logically and mathematically from the author's assumptions. The empirical relevance of these assumptions, however, still needs to be ascertained, and debate continues over whether these conclusions are a mathematical curiosity or an accurate description of economic relationships.

There is no question, though, of the importance of this book for practitioners of development economics. Its most useful message is that structuralist macroeconomics focuses on individual economies as separate entities and as such each economy's structural characteristics need to be carefully studied before any "canned" solutions can be safely applied.

R. Kyle Peters

Alan Lewis

The Psychology of Taxation

St. Martin's Press, New York, 1982, x + 257 pp., $27.50

Lionel Robbins remarked that "The borderlands of Economics are the happy hunting grounds of minds averse to the effort of exact thought" and included in these "ambiguous regions" the alleged "psychological assumptions of Economic Science." The declared aim of Lewis' study is to show that psychological attitudes can be observed and investigated and that these investigations can improve "predictions and comprehension of economic phenomena."

The book examines the main areas where psychological attitudes to taxation may be important, in the link between taxation and public expenditure, in tax evasion, and in work motivation. An early conclusion is that people usually support government expenditures but do not make the connection with the taxes needed to finance that expenditure. The difficulty for psychologists lies in framing questions that link the price of public spending in terms of taxation and the benefits of taxes in terms of public service. If taxes and expenditure are discussed in the even more complicated context of macrofiscal policy, then not only does "fiscal ignorance" block taxpayer perceptions but "for most people fiscal policy is not an important issue and respondents look for guidance to the interviewers."

What emerges from this examination of numerous publications is that tax and fiscal consciousness are affected, in part, by the information governments choose to impart, and a principal recommendation is that governments simplify and provide better explanations of their fiscal systems. Some governments have tried to do so, but it might be preferable to emphasize the old economic assumptions of self-interest and allow taxpayers to offset the cost of hiring professional help to complete their tax returns rather than emphasizing "government services" and "cheerfulness."

The interesting chapters (9 and 10) on tax evasion raise many issues; but does it help our prediction capability much to know that tax evasion is considered by most people to be a crime comparable in seriousness to stealing a bicycle? Of course, there is room for a "vast effort in civic education" to combat tax evasion, but such advice comes perilously close to common sense. Similarly, it might be important to know whether high marginal tax rates discourage work effort but the chapter on work motivation and taxation does not help prove that they do. The most comprehensive study on the topic suffered from "lack of attention to detail and inadequate control"; other studies indicated it was taxpayers' "perceptions, feeling and attitude towards taxation that determined its effects." Quite so, but if there are as many reactions as there are taxpayers, are we much further forward unless we go into the even more difficult world of "group decision making"?

The problems of using psychological investigations are perhaps more overwhelming than ignoring them. Reliance on surveys raises doubts about the context of the interview, the attitude of the interviewer, the phrasing of questions, and, most imponderable of all, whether the person interviewed would or does act in the way he says he would. Lewis agrees that such attitudes, opinions, and fiscal preferences are not "facts" and, as anyone who has helped create national income accounts knows, the so-called "hard figures" become less yielding the closer you get to them. Economics uses suspect data the whole time but in a data spectrum from hard to soft, Lewis is inviting economists to use some pretty squishy stuff.

In view of an impressive synthesis of a vast number of sources (the bibliography is 18 pages), it may seem churlish to question the author's omissions but some of the most interesting (and perhaps answerable) questions about psychology and taxation relate to attitudes toward different taxes and different expenditures. Most of the text refers to taxation without discriminating between taxes on personal income, corporate income, wealth, land, excises, customs, value-added tax, and so on. (The index does not refer individually to any of these categories.) Psychological attitudes to paying, say, personal income taxes are likely to be very different to paying value-added tax or excises. Interview techniques might, for instance, yield useful data on individuals and their attitudes toward different income taxes or their preferences between income taxes and sales taxes. Finally, developing countries are mentioned only once—immigrants from developing countries 'less acclimatized to a relatively high tax culture' were less likely to comply fully with the tax assessment process—yet it is likely that substantial differences in psychological perceptions of taxation exist between industrialized and less industrialized countries.

Psychological attitudes may be able to improve economic prediction and the comprehension of economic phenomena but their contribution, to date, has been small. Robbins argued that economists are interested in economic consequences and does it matter, as Lewis asks, what goes on in the "black box" between tax stimulus and tax reaction? The overall assessment of this interesting and provocative book seems to be that, for the time being, it still seems to matter more to the psychologist than to the economist.

Alan Tait

Finance & Development / December 1983 49

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The Struggle for Development


The postwar growth of the development “industry” has been phenomenal; it is no longer an esoteric subject for scholars; politicians, civil servants, and others have also taken a keen and publicized interest in it. This outcome is natural; people are not willing to accept a dualistic world society with rich and poor states, and, with the rapid accession of many countries to independence, the world has become a laboratory for testing development theories and models. The volume under review is interesting from two points of view: it brings together the recent development experience of a number of countries and compares this to that of two old-timers, the United Kingdom and Japan; it provides, moreover, eclectic and diverse analyses of these experiences.

The British experience is presented here as being pioneering—one that was in many respects unique rather than archtypal, although the analysis by J.K.J. Thomson appears to support the “domestic” basis for the United Kingdom’s growth and recognizes the role of overseas trade in fostering it. Martin Bronfenbrenner emphasizes the role of agricultural taxation (and the consequent delay in the transfer of benefits of growth to the rural sector) in financing Japan’s economic growth. Both experiences bring out some of the difficulties of current development efforts: the United Kingdom, by becoming the world’s workshop, benefitted from the later industrialization of other countries, and few countries (except, perhaps, the U.S.S.R. in the 1930s and 1940s) can sponge on the rural sector the way Japan did to foster industrialization.

Through the articles of Gordon White, Terry Byres, and Regis de Castro Andrade, respectively, the book also covers the experience of three large countries—China, India, and Brazil—which have varying degrees of state participation in development. Both India and (pre-1949) China had large and direct state intervention, while Brazil allowed private enterprise, both domestic and foreign, a considerably free hand, with the state lending the required support. China faced a difficult political time during the interwar period, and its industrialization efforts did not take off, India, after a brisk start, saw its industrial growth faltering after 1965; Brazil’s vast land resources gave it the semblance of a frontier economy, but here, too, development proceeded only fitfully.

Among the smaller countries discussed, the Republic of Korea and the Democratic People’s Republic of Korea provide two poles. In the Republic of Korea, Tony Michell argues that U.S. military aid freed state resources for infrastructure development, while Japan provided the export market for its goods and the state directed this process. But while the Republic of Korea began with relative equality, after 1970 inequality (though not necessarily absolute poverty) appears to have been accentuated. On the other hand, the Democratic People’s Republic of Korea has pursued a highly autarkic and highly nationalistic development approach. Purely in terms of growth rates achieved, Gordon White finds the results have been far less significant than the Republic of Korea’s.

Africa offers its own examples of varying degrees of state intervention and reliance on private enterprise. Bienefeld notes the ironic dependence of Tanzania’s self-reliance strategy on large foreign aid flows, while Godfrey, in his fragmented analysis of the Kenyan experience, cites the emergence of a local bourgeoisie within an international system of production that offers fading prospects for future growth.

The two remaining papers, Ennio Rodríguez’ on Costa Rica and Anthony Coughlan’s on Ireland, both examine open and democratic systems. Coughlan calls Ireland a nonpoor underdeveloped country, with the state playing an important role, both direct and indirect, in fostering investment. Costa Rica has developed on the basis of its agricultural resources without the exploitation of labor that has prevailed in many other countries.

Very few general lessons and conclusions can be derived from these heterogeneous experiences. Whatever the path taken, diverse growth strategies, including the Republic of Korea’s, seem to have stalled for the moment; and, whatever the strategy adopted, there is constant need for adaptation, a factor that gives the state an important role in development. Questions still remain: Japan, starting later than India and depending upon state enterprise, has developed faster than India, perhaps because India’s private enterprise operated under the handicap of foreign rule and the benefits of its railway system were not internalized but leaked to the colonial power. The progress of China and the Democratic People’s Republic of Korea, insulated from external pressures, has not been notably fast. In this feast of analytical and empirical assessment of country development strategies, the papers of Thomson, White, Byres, Michell, and Coughlan, as also Bienefeld’s overview, are, to this reviewer, outstanding, and make the book a noteworthy contribution to the development debate.

Phiroze Medhora

In Search of Excellence


What distinguishes the best run and most successful companies from their less successful brethren? Thomas Peters and Robert Waterman have produced a stimulating answer. Based on research supported by McKinsey and Company, the management consulting firm, the authors find that the “excellent” companies in the United States share eight principal characteristics: (1) they are driven by overriding nonquantitative values; (2) have a bias for action; (3) stay close to their customers; (4) foster autonomy and risk-taking among their staff; (5) generally look to the rank and file as the best source of quality and productivity gain; (6) focus their attention on a limited range of activities; (7) maintain lean staffs and simple organizations even in the very largest companies; and (8) decentralize to the greatest extent possible while remaining highly centralized for certain functions.

It is interesting to note that these conclusions with respect to organization structure are quite in the same case as with the advice that McKinsey and Company gave the World Bank in the early 1970s. On the basis of a McKinsey report, the Bank adopted a complex matrix organization that the authors now find is a type studiously avoided by the best-run U.S. companies.

The conclusions of the study are provocative and in many ways appeal to common sense, yet the methodology may leave questions in a reader’s mind. The conclusions are supported wholly by anecdotal evidence. While the study encompassed 43 companies, the anecdotes are drawn from a much smaller set. Clearly the authors were greatly impressed by the approaches of a few companies, such as IBM and Hewlett-Packard.

The book also completely ignores the impact of the economic environment on the success of the excellent companies. In fact, an implicit thesis of the book is that if certain managerial and organizational approaches are right, success can ensue, virtually irrespective of the economic environment.

Despite these shortcomings, this is a stimulating book. The notion that companies can achieve excellence through identifiable managerial and organizational approaches raises the prospect that in development, the excellent companies create the economic environment, rather than the other way around. Moreover, this thesis raises hope for state-owned as well as private enterprises.

Dale Weigel
Industrial Policies for Growth and Competitiveness


In view of the poor performance of the world economy during the past three years, this book, which reports on the first stage of a larger research effort, is very timely. Explicit policies may be needed to supplement market forces in adapting economies to the post-OPEC world. Industrial policy aims to increase an economy's supply potential by shifting production functions and the composition of factor inputs; it emphasizes growth, productivity, and competitiveness. This study comprises a descriptive overview of the issues surrounding industrial policy: a definition of the concept, the underlying economic rationale, and the philosophy and experience of industrial and developing countries in policy implementation. Industrial policies can be either general—seeking to stimulate supply through economy-wide fiscal or monetary measures—or specific to particular sectors, industries, or firms. Examples of policies include direct subsidies, government corporations, public sector purchases, loan guarantees, interest subsidies, aid to research and development, and tax breaks. The book includes country studies of the major industrial economies and key developing countries.

Roy Behl and Barbara D. Miller

Local Government in the Third World: A Case Study of the Philippines

Prager, New York, 1983, xvi + 260 pp., $29.95.

This book draws attention to an important issue but raises two questions: are the analysis and recommendations appropriate to the Philippines and can they be generalized to other countries? Its recommendations—that local authorities rely less on ad hoc supplemental budgets and more on longer-term planning; that central government give more discretion over expenditure allocations to local authorities; that real property taxes be held tax bases from local authorities. Although the book includes country studies of the major industrial economies and key developing countries.

John Williamson

The Open Economy and the World Economy


The world economy is changing rapidly; today's concerns and problems differ from those of, say, ten years ago. Textbooks, unless they deal solely with pure theory, must be up-to-date to be useful. This book is up-to-date on most issues including the outbreak of worldwide inflation and the problem of the "oil deficit"; it just misses the huge external debt problems that emerged in late 1982. It is clearly written, and ample for the readership intended, that is, advanced undergraduate students. It should have particular appeal to students in developing countries, since it drops the traditional two-country approach in favor of one based on a small country trading with the outside world treated as parametric.

Alicia Puyana de Pelacios

Economic Integration Among Unequal Partners


Based on the experience of the Andean Group, this book analyzes the problems of economic integration among developing countries with small national markets and uneven economic development. The study is divided into three parts: (1) the historical, political, and theoretical backgrounds that led to integration proposals in Latin America; (2) the dynamic effects of economic integration, such as the expansion of trade in new and more sophisticated products and the promotion of new investment; and (3) the problems that arose with programs attempting to harmonize the divergent national economic policies. A useful book for both economists and political scientists.

Hermann Sautter

Regionalisierung und komparative Vorteile im internationalen Handel

Mohr, Tübingen, Federal Republic of Germany, 1983, xiii + 353 pp., DM 98 (paper).

This study of regionalism and comparative advantage in international trade examines developments in the direction and composition of trade over the last 50 years. Its statistics confirm widely held notions about the important role of three "polar" regions (Japan, North America, and Western Europe) but find no clear tendency toward an increase in regionalism. The direction and composition of trade appear primarily determined by relatively invariant geographic, cultural, and economic factors rather than by a deliberately regionally oriented trade policy. The author doubts that regional trade liberalization and "common market" schemes are suitable alternatives to worldwide liberalization or that such schemes facilitate more closely coordinated structural adjustment on a global basis.

Karel Jansen

Monetarism, Economic Crisis and the Third World


Karel Jansen's survey article provides a useful introduction to this collection of lectures given at the Institute of Social Studies in The Hague in 1982. This analysis of monetarism on a world scale and discussion of its implications for countries at different stages of development and with different systems of economic organization spans a variety of theoretical perspectives: monetarism, Keynesianism, structuralism, and Marxism. The importance of monetary policy is clearly brought up in interesting articles by Robert Mundell, who traces monetarism from ancient to present times, and Jacques Polak, who analyzes its global implications for the international economy. The Keynesian approach and the role of state intervention are explored by Francis Cripps and Lai Jay-Awaderna, and the socialist-Maoist viewpoint is represented by Ernest Mandel and Michael Ellman. Dudley Seers recalls the debate between structuralism and monetarism that took place in Latin America some 25 years ago, and, finally, Brian Van Arkadie discusses structural adjustment in Tanzania. In sum, a somewhat disparate collection of papers; while there is not much new ground broken, individually the papers are interesting and readable.

Kathleen J. Murphy

Macroproject Development in the Third World: An Analysis of Transnational Partnerships


Using data from 1,600 large projects started or planned between 1970 and 1979 in 90 developing countries, Murphy summarizes the sectoral and country distribution and explains the special problems of coordination and management that have accounted for average cost escalations of between 100 and 149 percent on troubled projects and for typical completion delays of one to two years. The characteristics of the main customers and multinational suppliers are presented, with an analysis made of the strengths and weaknesses of different types of transnational partnerships in project sponsorship and in contractual arrangements for technology transfer and project management. The key to success proved to be the right balance of risks and rewards between hosts and their multinational guests, since relative powers shifted during the project's lifetime and unanticipated problems occurred. Although the summary tables are sometimes unclear and inconsistent, the book gives useful insights into the structure of project partnerships and the critical linkages that owners should consider in establishing effective control and accountability to stakeholders.

F. Gerard Adams and Lawrence R. Klein (editors)

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Hazards of import substitution

I was interested to read Anne O. Krueger's article, "The effects of trade strategies on growth," in your June 1983 issue. As a practicing trade economist who has worked on commercial policy issues in a number of developing countries in Africa and Asia, I found myself in complete agreement with Professor Krueger's main conclusions.

However, in my view, in conventional economic analysis, insufficient attention is paid to some important socioeconomic factors which tend to exacerbate the problems generated by import substitution policies. Such policies tend to be self-perpetuating because of the power of the vested interest groups they help to create. One such interest group will comprise all those having a direct financial stake in the protected domestic industries (and these may include leading figures in the political and commercial life of the country). Another significant interest group is composed of the bureaucracy charged with the administration of the numerous regulations and controls associated with an import substitution policy. Any move by the government toward trade liberalization could lead not only to a loss of jobs within the administration, but, no less significant, to the loss of valuable income arising from the "emoluments" received from the public for the approval of import licenses or for speeding up the notoriously slow bureaucratic process.

Recommendations for policy changes in the area of trade strategy which fail to take into account the above-mentioned factors may have little chance for acceptance and implementation by the governments concerned.

Ben Bardan
Raanana, Israel

Anne O. Krueger replies:

Mr. Bardan's point is quite correct, although it is hardly accurate to say it is neglected in conventional analysis. It is widely recognized that one of the major problems of liberalizing restrictive trade regimes lies in the opposition that comes from those who gain from receiving import licenses and selling behind a wall of protection and who would lose by liberalization.

Prosper the plough

The article, "Managing oil wealth" by Jahangir Amuzegar (September 1983) is very much to the point. Mr. Amuzegar obviously speaks from experience.

From observation in Iran, before the revolution, I would add only one suggestion: more attention to agriculture. New industries, supported by petrodollars, drew people to the cities. Food became in short supply and prices rose. To avoid unrest the government imported food and imposed price controls. At the same time inflation cut the real income of the peasant farmer. Without incentives, the farmers produced less and dependence on imports increased. Rice, a staple food in Iran, was imported, as were apples, oranges, mutton, and white cheese, although Iran produces all these products.

Efforts to improve the lot of the peasant, although well meaning, were ill-managed. Land from the large states was redistributed to the farmers, but the cooperatives, which were supposed to supply the services such as fertilizer, seeds, and maintenance of the underground irrigation canals (ganats), formerly provided by the great landowners, were not adequately supported.

Too often aid to the farmer was confused with protection of government-owned infant industry. For example, a government-owned nitrogenous fertilizer plant forced dealers and cooperatives to take their fertilizer in place of imports, but did not make deliveries when fertilizer was needed and a year later dealer and cooperative warehouses were full of fertilizer hardened in the bags and totally useless. The fertilizer factory, which had no salesmen on the road, could not understand the reluctance of the peasants to use the fertilizer and complained that the factory was forced to dump products in the export market. Concurrently, farm-to-market roads were neglected and little effort was made to improve distribution beyond periodic campaigns against profiteering.

There were some exceptions to the neglect of agriculture. A large-scale sugar industry, based upon both beets and cane, was established; poultry-raising was underway near the cities; and there was a good agricultural experiment program. In general these successes were in heavy industry, such as sugar refining, which could be managed from offices in Tehran, or new enterprises, such as battery raising of poultry, which had little connection with traditional agriculture and were run by businessmen. Educational limitations prevented the peasants from taking full advantage of the experiment stations.

Nothing gave the peasant farmer what he most needed: easy access to supplies and to markets.

George Gilson
New Jersey, USA

Jahangir Amuzegar responds

Agriculture has been the Achilles' heel of economic development in almost all developing countries—oil or non-oil—and not exclusively a pre-1979 Iranian problem. A new World Bank report on Africa's farm problems and recent press accounts of food shortages, increased food imports, and rationing indicate that an ideal "managing of oil wealth" involves a lot more than mere "more attention to agriculture."

What is aid?

I read your quarterly with great and sustained interest; its articles, graphs, and tables are always well done in every area, and they are easy to read—which is not always the case with other publications.

The complaint I should like to make in this letter is not a direct one, for as you mention in an article, "ODA from developed countries" (June 1983), you use the data from each country...as you receive them. In Table 2, p. 29, France, my country, appears—with the exception of the Netherlands and Sweden—to be by far the most generous. Fortunately, you do mention in the text that the ODA percentage of GNP quoted for 1981 included the ODT (Overseas Departments and Territories).

For 20 years I have been urging in France and Portugal that the following not be included as assistance to developing countries: assistance to colonies (this is the result of an historic process) and assistance to the ODT, which are regarded as départements (and I am far from wanting these countries to separate from France). A distinction should be made between grants and loans. Although some progress has been made in this respect, it is not enough.

I feel that an institution such as yours should have made an effort to include in this table, not a little footnote which most people will not read, but a separate heading for the figures, even if only approximate: for ODT (which accounted for 40 percent of ODA in 1981) and assistance to foreign countries.

Naturally, every country tends to favor its former territories, or countries to which it is close; this is normal but it should not be represented as ODA.

A. Nordon
Paris
Articles

Adjustment and growth June page 13
Agricultural growth and rural nonfarm activities Hans P. Binswanger June page 38
Arab concessional assistance, 1975–81 Zubair Iqbal June page 31
Aspects of the safety net for international banking G.G. Johnson September page 30
Capital utilization in manufacturing Helen Hughes March page 6
The challenge of development today Ernest Stern September page 2
Changing public attitudes toward aid Henry Owen December page 39
Coffee and cocoa trends Takamasa Akiyama and Ronald Duncan March page 30
Cofinancing—new World Bank approaches March page 40
Countertrade: trade without cash? Kyung Mo Huh December page 14
Debt rescheduling: what does it mean? John Maynard Keynes December page 26
Devaluation and adjustment in developing countries Nicholas Kaldor June page 35
Devaluation in developing countries: the difficult choices Karim Nashashibi March page 14
Economic impact of defense expenditures Shuja Nawaz March page 34
The effects of trade strategies on growth Anne O. Krueger June page 6
Energy transition in developing countries Yves Rovani December page 24
External debt—the continuing problem March page 22
Family planning and health: the Narangwal experiment Rashid Farouque June page 43
Fiscal deficits and Fund-supported programs Margaret Kelly September page 37
Government employment and pay: some international comparisons Peter Heller and Alan Tait September page 44
The importance of interest rates in developing economies Anthony Lanyi and Rustu Saracoglu June page 20
Improving the quality of education in developing countries Stephen Heyneman March page 18
Industrial energy conservation in developing countries Harinder Kohli and Edilberto Segura December page 28
Interest rates and the developing world Padma Gotur December page 33
International money, credit, and the SDR Wm. C. Hood September page 6
Is there cause for export optimism? Olly Havylyshyn and Iradj Alikhani June page 9
Issues in external debt management Nicholas Hope and Thomas Klein September page 23
Korea’s major adjustment effort G. Russell Kincard December page 20
Main developments in the European Monetary System Horst Ungerer June page 16
Maintaining financing for adjustment and development Gerard Rice, James Corr, and Susan Fennell December page 43
Management: a limiting factor in development Pierre Landell-Mills September page 11
Management and institutional development Arturo Israel September page 15
Managing oil wealth Jahangir Amuzegar September page 19
Measuring macroeconomic performance Donald Donovan June page 2
Minimizing the burden of recurrent costs Jacob Meerman December page 41
ODA from developed countries Ines Garcia-Thoumi June page 28
Opportunities and constraints in international lending David Williams March page 24
Private sector petroleum exploration in developing countries Keith Palmer March page 36
Protectionism Anjaria et al. March page 2
Reducing poverty September page 10
Sources of payments problems in LDCs Mohnis S. Khan and Malcolm Knight December page 2
Taxes and growth Keith Marsden September page 40
Toward a more orderly exchange rate system Jacques Artus March page 10
The transfer of technology Carl Dahlman and Larry Westphal December page 6
UNCTAD VI: for better or for worse? Shahid Javed Burki December page 16
The underground economy Vito Tanzi December page 10
Unemployment in the major industrial countries Lloyd Kenward June page 24
What are credit ceilings? G. Russell Kincard March page 28
What you think of Finance & Development Whither the Global Negotiations? Jagdish Bhagwati September page 34
The World Bank and the training and visit system Joslin Landell-Mills June page 41
World economy in transition Inflation and related variables September page 48
Interest rates in five major countries December page 32
International reserves, 1948–82 June page 34
Trade shares and trends, 1950–81 March page 39

Books

Argy, Victor, The Postwar International Money Crisis, reviewed by Andrew Crockett, September, p. 49
Begg, David K. H., The Rational Expectations Revolution in Macroeconomics, reviewed by Homi Khuras, December, p. 50
Buenfeld, Manfred and Martin Godfrey (editors), The Struggle for Development, reviewed by Phiroze Medhora, December, p. 50
Currie, Lachlin, The Role of Economic Advisers in Developing Countries, reviewed by Guy Pfefferman and Vinod Thomas, March, p. 42
Frame, J. Davidson, International Business and Global Technology, reviewed by Carl Dahlman, June, p. 49
Freeman, Christopher, The Economics of Industrial Innovation, reviewed by Carl Dahlman, June, p. 49
Gibney, Frank, Miracle by Design, reviewed by Shahid Yusuf, September, p. 51
Hahn, Frank, Money and Inflation, reviewed by Homi Khuras, December, p. 48
Jones, Leroy P. (editor), Public Enterprise in Less-Developed Countries, reviewed by Mary Shirley, September, p. 50
Kindleberger, Charles P. and Jean-Pierre Laffargue (editors), Financial Crises, reviewed by Andrew Crockett, September, p. 49
Lewis, Alan, The Psychology of Taxation, reviewed by Alan Tait, December, p. 48
Little, Ian M. D., Economic Development, reviewed by Javad Khalilzadeh-Shirazi, June, p. 48
MacAvoy, Paul W., Crude Oil Prices, reviewed by Adrian Lambertini, June, p. 50
Maddison, Angus, Phases of Capitalist Development, reviewed by Subimal Mookerjee, September, p. 50
Mascarenhas, R. C., Technology Transfer and Development, reviewed by Carl Dahlman, June, p. 49
Nakamura, Takafusa, Economic Growth in Pre-War Japan, reviewed by Shahid Yusuf, September, p. 51
Odeil, John S., Japanese Manufacturing Techniques, reviewed by Shahid Yusuf, September, p. 51
Peters, Thomas J. and Robert H. Waterman Jr., In Search of Excellence, reviewed by Dale Weigel, December, p. 48
Schonberger, Richard J., Japanese Manufacturing Techniques, reviewed by Shahid Yusuf, September, p. 51
Stewart, Frances and Arjun Sengupta, International Financial Cooperation, reviewed by Claudgio Loser, March, p. 42
Taylor, Lance, Structuralist Macroeconomics, reviewed by R. Kyle Peters, December, p. 48
Williamson, John (editor), IMF Conditionality, reviewed by Bahram Nowzad, September, p. 49
The following Occasional Papers have recently been published by the Fund:

No. 20. *Alternatives to the Central Bank in the Developing World*, by Charles Collyns.

Not all newly independent countries choose to set up full-fledged central banks, and many of the alternative arrangements that have been adopted in the developing world are described in this Occasional Paper. The present institutional diversity is described in terms of deliberate adaptation by countries to their own socioeconomic conditions.

No. 21. *World Economic Outlook: A Survey by the Staff of the International Monetary Fund*.

This annual survey provides a statistical record of past and prospective developments in the world economy; analyzes the significance of these developments and the problems they present; and discusses the main issues of policy confronting member countries and the international community. The latest study is particularly timely because of the incipient economic recovery from prolonged conditions of high inflation and low growth.

No. 22. *Interest Rate Policies in Developing Countries*, by the Staff of the Research Department of the International Monetary Fund.

The accumulated experience of developing country members of the Fund with the issue of interest rate policies is analyzed in this paper. The impact of these policies is studied in terms both of their effects on savings and of their role in demand management.


This paper provides a description and analysis of developments in the international capital markets in 1982 and the first part of 1983 and examines market conditions and prospects for financing flows, in particular for developing countries, over the near term. Attention is also given to trends in certain key macroeconomic variables that underlie market demand and supply relationships and determine the general economic environment in which lending decisions are made.


Data on public sector employment and pay for 64 developing countries and 24 member countries of the Organization for Economic Cooperation and Development are analyzed in this paper. The analysis focuses on such topics as the size of government and public sector employment, the relative level of public and private sector salaries, the degree of inequality in a government’s salary structure, and the development of intercountry indices to analyze the levels of government wage rates and government employment.

Prices: Occasional Paper No. 21, the *World Economic Outlook*, is available for US$8.00 (US$5.00 for university libraries, faculty, and students) with delivery by surface mail and for US$11.00 (US$8.00 for university libraries, faculty, and students) with delivery by air or first-class mail.

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