

March 1979 / Volume 16 / Number 1

# Finance & Development

A quarterly publication of the International Monetary Fund and the World Bank

## *The exchange rate system: search for stability*

*Also in this issue:*

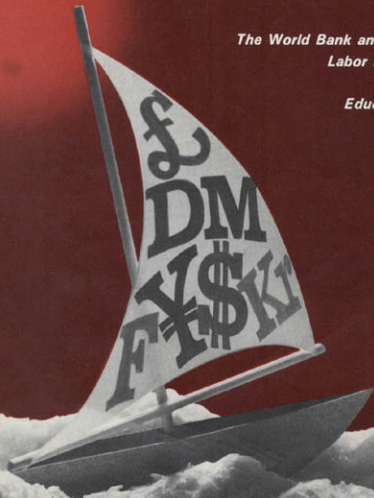
*The World Bank and the world's poorest: IV & V*

*Labor markets in industrial countries*

*Economic analysis of projects*

*Education and income distribution*

*Recurrent development costs*



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# Fourth Annual Review of Project Performance Audit Results is issued

The World Bank's independent Operations Evaluation Department finds that 91 per cent of the 109 World Bank-assisted development projects examined during 1977 have been completed successfully and have been worthwhile investments for its borrowers. (The success is notwithstanding time and cost overruns and other problems experienced by many projects during implementation.) These findings are contained in the *Annual Review of Project Performance Audit Results*, issued toward the end of 1978. The purpose of the Review is to provide lessons of experience relevant to the Bank's current practices that can be applied to the design and implementation of future projects.

The projects encompassed by this latest Review include: 38 in transportation, 20 in the field of public utilities, 17 in agriculture, 16 in development finance companies and industry, 11 in education, and 7 "nonproject" or program loans. The total investment involved in these projects amounts to \$8.5 billion, of which the Bank and IDA financed \$2.2 billion. Because the Review covers projects which are audited after disbursements have been completed (in this case between 1974 and 1977), no "new-style" project in the rural and urban development field, or for population planning and nutrition, is examined. Most new-style projects have yet to be completed.

The Review underscores the need for the World Bank to:

- understand better the local conditions in which it operates;
- ensure that its institution-building efforts do not lead local institutions to be dependent on donors;
- approach more systematically and thoroughly training needs and institutional development, with the borrower playing a progressively larger role in all stages of a project's life;



- remain alert to the possibilities of pilot, rather than full-scale projects, especially where new borrowers or new-style projects are involved.

Of the projects included in this Review, 43 per cent were first projects of their kind in a country or a sector. In the previous Review (see **Finance & Development**, Bank Activity, June 1978) 30 per cent of the projects that were evaluated were the first of their kind. However, despite the diversity and complexity of the problems of development, the review of the projects—almost half of which were located in Africa—shows:

- the cost of 46 per cent of all projects for which estimates were made were less than appraisal estimates, or did not exceed the estimate by more than 10 per cent;
- about half of the projects were either completed on time or did not exceed estimates by more than 25 per cent; and
- of the 58 projects for which economic rates of return were estimated at the appraisal stage, 52 proved to offer re-estimated rates of return of 10 per cent or more at audit.

The *Annual Review of Project Performance Audit Results, 1978* is available free of charge from the World Bank, Publications Unit, Washington, D.C. 20433, U.S.A., or from the World Bank European Office, 66 Avenue d'Iena, 75116 Paris, France.

## *Improving education in Tanzania Sixth IDA project in sector approved*

The International Development Association (IDA), the soft loan affiliate of the World Bank, approved in December 1978 a \$12 million credit for a sixth education project in Tanzania, which is expected to be completed by 1982.

This project will help to increase the supply of middle-level managers and to develop training for skills critically needed in the modern sector. It will strengthen vocational and technical education, improve accountancy training, and set up a program for management training for educational personnel. It will also provide women with greater access to technical education.

Vocational and technical education will be strengthened by increasing the capacity of the Mwanza and Tanga Vocational Centers. They will be provided with additional equipment, boarding facilities for 150 more stu-

dents from distant rural areas at each center, and staff housing which will help to attract and retain qualified instructional staff.

A new Instructor Training Center (ITC) is to be developed at Morogoro where extensive future industrial development is planned. It will provide teachers for Tanzania's National Vocational Training Program, which administers and operates all vocational training and trade testing programs in the country, including the three vocational training centers. The project will help to finance equipment and vehicles for the ITC, instruction and boarding facilities for 160 students, and staff housing. Additional staff houses will be constructed by the trainees.

One of the goals of the Tanzanian Government is to improve opportunities for women. This project helps to increase women's access to technical education by

adding 160 hostel places for women at four existing technical secondary schools. It is expected that the potential for female enrollment will increase from the present 3 per cent of the total to 25 per cent by 1983.

The Dar es Salaam School of Accountancy, established in 1973 by the Ministry of Finance and Planning to provide training for technical and subprofessional personnel, will be expanded to accommodate 215 additional students, increasing total enrollment to 1,015. The project will finance the construction and equipment needed for additional teaching and administrative facilities, boarding, and staff housing.

The existing administrative program for the education sector in Tanzania will be consolidated and expanded. The College of National Education in Bagamoyo will provide in-service management training for 2,800 people during the first five years, at various educational levels, from regional education officers to head teachers. They will be given induction courses, ranging from one to four months, in such subjects as

### World Bank loans approved during second quarter of fiscal year 1979

(Ended December 31, 1978)

| Country <sup>a</sup> | Purpose                                                                         | Amount<br>(In millions<br>of U.S. dollars) |
|----------------------|---------------------------------------------------------------------------------|--------------------------------------------|
| Barbados             | Education                                                                       | 9.0                                        |
| Colombia (2)         | Airports, hydroelectric power                                                   | 145.0                                      |
| Ecuador              | Rural development                                                               | 18.0                                       |
| Guyana (2)           | Forestry, program loan <sup>b</sup>                                             | 15.0                                       |
| Honduras             | Electric power                                                                  | 30.5                                       |
| Indonesia            | Irrigation                                                                      | 77.0                                       |
| Ivory Coast          | Smallholder rubber                                                              | 7.6                                        |
| Kenya (3)            | Geothermal power, rural water supply, sugar                                     | 101.0                                      |
| Korea, Republic of   | Development finance company, highways                                           | 243.0                                      |
| Malaysia             | Integrated, smallholder agricultural development                                | 26.5                                       |
| Mexico               | Small-scale agriculture                                                         | 60.0                                       |
| Morocco              | Phosphate fertilizer production                                                 | 50.0                                       |
| Panama               | Development finance company                                                     | 15.0                                       |
| Peru                 | Water and power engineering                                                     | 8.8                                        |
| Philippines          | Agricultural extension, irrigation, small farmer development, urban development | 104.5                                      |
| Romania              | Chemical industry                                                               | 40.0                                       |
| Syria                | Oilseed processing                                                              | 21.0                                       |
| Thailand             | Irrigation, urban traffic management                                            | 33.5                                       |
| Turkey               | Program loan, oil recovery engineering study                                    | 152.5                                      |
| Yugoslavia           | Agriculture and agro-industry                                                   | 55.0                                       |
| Total                |                                                                                 | 1,212.9                                    |

<sup>a</sup> Figures in parentheses are the number of loans approved for the respective country.

<sup>b</sup> With a \$5 million IDA credit.

## First loan to Barbados

The World Bank made its first loan to Barbados for an education project in December 1978. Barbados has a population of about 247,000 and its per capita income in 1977 was \$1,760. It became a member of the Bank in 1974.

The \$9 million World Bank loan will be used to improve the effectiveness and efficiency of Barbados' education system, make possible the effective application of modern and relevant curricula, and provide a more equitable distribution of educational opportunities. Under the project, 10 primary schools will be constructed, furnished, and equipped to replace 5,880 existing student places in obsolescent schools; six secondary schools will be expanded, furnished, and equipped to provide teaching facilities for practical courses to 2,600 students, of which 1,500 will be new places and 1,100 replacements; another secondary school under construction will be equipped and furnished; the Erdiston Teacher Training College will be expanded, furnished, and equipped to function as a teacher training resource center that will provide continuing education to teachers; the Barbados Institute of Management and Productivity (BIMAP) will be expanded, furnished, and equipped to establish an in-plant training program and advisory services to small-scale enterprises; and technical assistance will be provided to the Ministry of Education for project implementation and to BIMAP to initiate the in-plant training program.

evaluation; report writing; methods of teacher, school, and curricula appraisal; local educational planning; methods of instruction; and scheduling.

The Institute of Education at the University of Dar es Salaam, which is responsible for educational planning, evaluation and research, assistance in curricula development, and in-service training, will be reas-

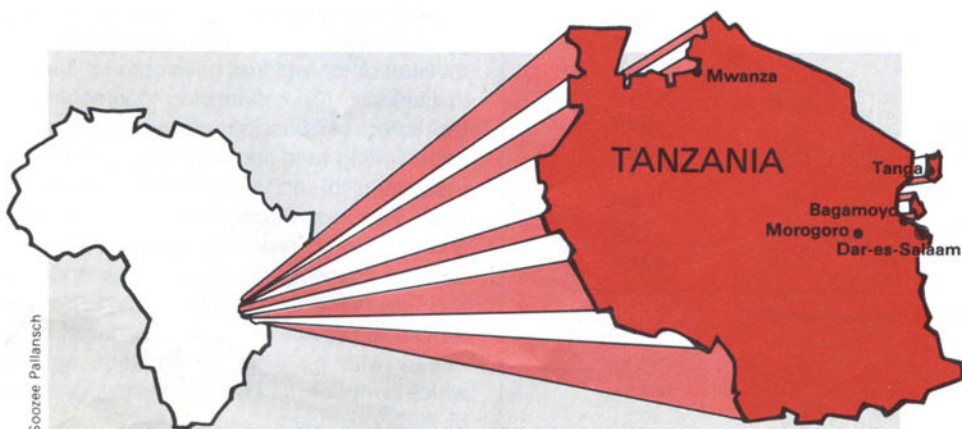
sessed. The Institute's future role will be defined, its staffing needs assessed, and physical expansion planned.

The sixth education project also provides for an improved monitoring and evaluation system to follow up the implementation of this project. The Projection Planning section of the Ministry of Education will carry out the necessary activities in cooperation with the

Ministry of Finance and Planning and the Ministry of Labor and Social Welfare.

The objectives of the sixth education project are in line with Tanzania's Third Five-Year Development Plan (1976-80), which emphasizes the teaching of skills that are in short supply in the country and the equality of opportunity for women. The First and Second Five-Year Development Plans (1964-69 and 1969-74) had placed emphasis on expanding secondary, higher, and adult education, including nonformal education. Specific goals were to end illiteracy by 1975 and achieve universal primary education by 1977 and to devise a program of work experience to develop practical skills and self-reliance. By 1975, almost 90 per cent of the adult illiterate population was enrolled in adult education classes, and by 1978 primary school enrollment included over 90 per cent of the eligible student population.

IDA has helped Tanzania to realize its educational objectives by supporting five previous education projects. Two projects





financed in 1963 and 1969 assisted in the expansion of secondary education and were completed by 1967 and 1976. A third project, financed in 1971 and completed in 1977, assisted the Ministry of Agriculture's training institutes and rural training centers. The fourth project, which was approved in 1973 and is expected to be completed by the end of 1979, is helping to develop multipurpose community education centers in rural areas, improving primary school teacher training, and providing facilities for medical education. The fifth project, which was approved late in 1975 and will be completed in 1982, is financing a program for the training of village management technicians and the diversification of secondary education. The Bank and IDA have also cooperated with the Tanzanian Government in identifying the country's educational and skill needs by making a study of agricultural education, an inventory of secondary school facilities, and two education sector surveys, executing an evaluation and monitoring exercise, and preparing a study of the fiscal implications of Tanzania's goal to achieve universal primary education.

*Pushpa Nand Schwartz*

## Update

# Development Committee reports on LDC access to capital markets

*"The developing countries and access to capital markets" by M.M. Ahmad in Finance & Development, December 1976 explained the work of the Development Committee with particular emphasis on one subject that was under review. This item reports on the results of that effort.*

The Development Committee (Joint Ministerial Committee of the Boards of Governors of the Bank and the Fund on the Transfer of Real Resources to Developing Countries) issued its report *Developing Country Access to Capital Markets* in November 1978.

This monograph (134 pages) assembles the substance of several papers presented

for discussion by the Working Group on Access to Capital Markets of the Development Committee during the period since its inception in mid-1975. The various papers were prepared by the Executive Secretariat with the assistance of the staffs of the International Monetary Fund, the World Bank, and some regional development banks. They also reflect the consultations with representatives of private financial institutions during the period.

The report begins with a summary of the tasks performed by the Working Group during the period, followed by a statistical overview of the access of developing countries to private international capital markets in recent years and ending with a description of the legal and institutional frameworks in important capital market countries as they relate to developing country bond issues/placements in those countries. The data cover the period through 1975 for bond issues and through 1976 for international bank financing. They provide a useful perspective of the role of private financial markets in the financing of developing countries in recent years. The descriptive materials on legal/institutional arrangements affecting access to individual financial markets are informative and remain generally valid.

There is also a discussion of various specific topics considered by the Working Group in their deliberations on the subject of developing country access to private capital markets. The subjects covered include the possibilities for promoting access through: (1) technical assistance to developing country borrowers; (2) the use of guarantees of multilateral or regional development finance institutions; (3) cofinancing operations by the latter; (4) possible development of an underwriting (and liquidity) fund; and (5) development of an international investment trust. The report concludes with a description of existing reporting systems on international financing stocks and flows and how they are being or might be extended or improved to provide the private financial community with additional information against which to judge lending to borrowers in individual countries.

### IDA credits approved during second quarter of fiscal year 1979

(Ended December 31, 1978)

| Country <sup>a</sup>            | Purpose                                                             | Amount<br>(In millions<br>of U.S. dollars) |
|---------------------------------|---------------------------------------------------------------------|--------------------------------------------|
| Bangladesh (3)                  | Drainage and flood control, program credit, technical assistance    | 104.0                                      |
| Comoros                         | Highways                                                            | 5.0                                        |
| Egypt (2)                       | Population, education                                               | 65.0                                       |
| Guinea (2)                      | Power engineering and repair, water supply and sanitation           | 13.6                                       |
| Guyana                          | Program credit <sup>b</sup>                                         | 5.0                                        |
| India (3)                       | Agricultural research, agricultural extension, village cooperatives | 82.0                                       |
| Indonesia                       | Technical education                                                 | 49.0                                       |
| Kenya                           | Agriculture and rural infrastructure                                | 13.0                                       |
| Liberia                         | Water supply                                                        | 8.0                                        |
| Malawi                          | Agricultural development                                            | 22.0                                       |
| Mali                            | Technical assistance and engineering                                | 4.5                                        |
| Nepal                           | Irrigation                                                          | 14.0                                       |
| Niger                           | Irrigation                                                          | 15.0                                       |
| Pakistan                        | Oil and gas production                                              | 30.0                                       |
| Tanzania (2)                    | Tourism, education                                                  | 26.0                                       |
| Yemen, People's<br>Dem. Rep. of | Vocational training                                                 | 4.0                                        |
| Zambia (2)                      | Technical assistance, coffee production                             | 11.0                                       |
| Total                           |                                                                     | 471.1                                      |

<sup>a</sup> Figures in parentheses are the number of credits approved for the respective country.

<sup>b</sup> With a \$5 million World Bank loan.

# 1978 was year of major changes in Fund

Important changes took place in the structure and financial activities of the Fund in 1978. Foremost among these were the Second Amendment to the Fund's Articles of Agreement and its entry into effect on April 1, the completion of the Seventh General Review of Quotas, the decision to allocate 4 billion special drawing rights (SDRs) annually to Fund participants in 1979-81, and the completion of the first two years of a projected four-year period of Fund gold sales. In addition, the Fund's Executive Board made further changes in the basket of currencies that determines the value of the SDR and established a method for its adjustment; moreover virtually all of the quota increases that were proposed in February 1976 under the Sixth General Review of Quotas came into effect in 1978. There was, moreover, a net contraction of Fund credit in 1978, compared with 1977.

This net contraction of Fund credit reflected an unprecedented volume of repurchases, which exceeded members' purchases from the Fund by the equivalent of SDR 1,101 million. In 1977 and 1976 purchases had exceeded repurchases by SDR 488 million and SDR 5,738 million, respectively. Total purchases during 1978 amounted to SDR 3,744 million, including SDR 2,375 million by industrial countries. Twenty-eight developing countries purchased SDR 1,029 million from the Fund in

1978, compared with SDR 725 million in 1977 and SDR 2,749 million in 1976. Of the 1978 total, SDR 178 million was purchased by developing countries of the Western Hemisphere, SDR 395 million by Asian developing countries, and SDR 309 million by African developing countries.

A total of 14 stand-by arrangements were in effect on December 31, 1978 for a total amount of SDR 4,441.98 million, compared with SDR 4,677.45 million at the end of 1977 and SDR 610.94 million at the end of 1976. The amount purchased under these arrangements by December 31, 1978 was equivalent to SDR 2,490.63 million, and the undrawn balance was SDR 2,561.36 million.

When the Second Amendment to the

Fund's Articles of Agreement came into effect on April 1, 1978, it generated important changes in the Fund's activities, including surveillance over members' exchange arrangements, changes in the role of gold and wider uses of the SDR, as well as important innovations in the Fund's operations and transactions. In addition, the Fund's resources were enhanced in 1978, when its Board of Governors adopted two major resolutions, one of which enables members to raise their quotas in the Fund from the present equivalent of SDR 39 billion to SDR 58.6 billion, as a result of the completion of the Seventh General Review of Quotas; the other provides for the allocation of SDR 4 billion annually to Fund member countries that participate in the SDR Department in the three years 1979-81.

The first two years of a projected four-year period of gold sales ended in 1978, and the Fund also completed the second of four annual distributions of gold to members. The Trust Fund made its first payments to members from the profits from its gold auctions, following the decision of the Executive Board that 104 developing countries were eligible to receive such profits.

In 1978 the Fund's Executive Board made certain changes in the basket of currencies that determines the value of the SDR and established a method for its further adjustment at five-year intervals. The changes in-



## Adjustment process is working though dangers remain—*de Larosière*

Despite the recent disturbances in the exchange markets and the underlying imbalance in external current accounts of the major industrial countries, the adjustment process is clearly working, and this should in time lead to more stable conditions in the world economy, said Mr. Jacques de Larosière in a speech delivered at the Overseas Bankers' Club in London on February 5. The Managing Director of the Fund also outlined the major steps that still need to be taken to ensure that the progress made so far is not frustrated.

Mr. de Larosière pointed to the significant adjustment of exchange rates among major industrial countries during 1978 and to the U.S. policy adjustments of last November in coordination with actions taken elsewhere as evidence of the working of the adjustment process.

This coming year, he said, "should also see a further acceleration of domestic demand in Europe coupled with a slowing down in the United States." This would lead to a reasonable expectation of a reduction in the current deficit of the United States and in the surpluses of European countries and Japan.

Despite the encouraging progress toward domestic expansion and reduced current account imbalances in the world economy, Mr. de Larosière identified a number of problems that still remain to be tackled. He viewed the persistence of inflation as the major obstacle to more satisfactory performance in the world economy. Prevailing rates in most countries were still too high to be considered acceptable, he said. He listed other dangers as slow growth of total output and the concomitant underutilization of eco-

nomic resources leading to high unemployment in most of the industrial countries. This situation, he felt, had led to the spread of protectionist trade practices, which pose "a very difficult and potentially dangerous problem."

Mr. de Larosière called for an improvement in the economic performance of the industrial countries and a coordinated approach to noninflationary growth. "There still seems to be room for countries with low inflation rates and a strong balance of payments to give higher priority to faster growth of domestic demand, without incurring the danger of overheating their economies."

It is also necessary for countries with high inflation rates and weaker balances of payments to intensify their efforts to control inflation if sustained economic expansion is to be restored, said Mr. de Larosière.

For the complete text of the Managing Director's speech see *IMF Survey*, February 5, 1979.

volved including two new currencies—the Iranian rial and the Saudi Arabian riyal—while deleting the Danish krone and the South African rand; they also involved updating the number of units of each currency in the basket on the basis of average exports of goods and services over 1972–76. The Executive Board also decided that the interest rate on the SDR would be increased from 60 per cent to 80 per cent of a combined market rate that is the weighted average of short-term interest rates in France, the Federal Republic of Germany, Japan, the United Kingdom, and the United States. The rate of remuneration that the Fund pays on the reserve positions of its creditor members, which had been the same as the interest rate on the SDR, would be 90 per cent of the SDR interest rate, effective January 1, 1979.

Aldo W. Zanzi

## New members

In 1978 six new members joined the Fund. The new members were Cape Verde, Dominica, Djibouti, Maldives, the Solomon Islands, and Suriname.

## Fund transactions, 1977–78

(In millions of SDRs)

|                                          | Calendar year ended December 31 |       |
|------------------------------------------|---------------------------------|-------|
|                                          | 1977                            | 1978  |
| <b>Total purchases</b>                   | 3,425                           | 3,744 |
| Reserve tranche                          | 80                              | 2,536 |
| Credit tranche                           | 2,895                           | 421   |
| Buffer stock                             | —                               | 36    |
| Compensatory financing                   | 241                             | 578   |
| Extended facility                        | 209                             | 174   |
| Oil facility                             | —                               | —     |
| <b>Total repurchases</b>                 | 2,937                           | 4,845 |
| <b>Gold sales</b>                        | 628                             | 469   |
| In connection with auctions              | 211                             | 207   |
| Replenishments up to May 31, 1978        | (211)                           | (92)  |
| Competitive bids                         | (—)                             | (115) |
| Noncompetitive bids                      | —                               | 49    |
| In distributions                         | 417                             | 213   |
| <b>Outstanding borrowings</b>            |                                 |       |
| In connection with oil facility          | 6,440                           | 5,018 |
| Under the General Arrangements to Borrow | 1,576                           | 1,286 |
| From Swiss National Bank                 | 154                             | 79    |

Source: IMF Treasurer's Department.

## Over 4 billion SDRs allocated to 137 countries

The Fund allocated 4,032.7 million special drawing rights (SDRs) on January 1, 1979 to the 137 members that were participants in the Fund's SDR Department on December 31, 1978. The last allocation of SDRs was made in 1972. The latest allocation brings the total of SDRs in existence to more than SDR 13,347.5 million, equivalent to \$17 billion.

In the latter part of 1978, several new countries joined the Fund and became participants in the SDR Department and a number of existing Fund members also decided to become participants, including Lebanon, Libya, Saudi Arabia, Singapore, and the United Arab Emirates. Thus, the allocation was made to 137 of the 138 member countries of the Fund.

The allocations were made in accordance with a Board of Governors' resolution which became effective on December 11, 1978. The resolution approved a proposal of the Managing Director, in which the Executive Board concurred, to allocate about SDR 4 billion in each of the three years 1979, 1980, and 1981. This allocation will be followed by annual allocations on January 1, 1980 and January 1, 1981.

Allocations were made on the basis of existing Fund quotas of those participants that were eligible to receive allocations on the effective date of the resolution at the rate of 10.4 per cent of each participant's quota. (For the actual SDR amounts allocated to participants, see *IMF Survey*, January 8, 1979, page 5.)

In accordance with conclusions reached by the Interim Committee at its September 1978 meeting, the Executive Board has taken several decisions which became effective January 1, 1979 with regard to other aspects of the SDR and the rate of remuneration. The interest rate on the SDR has been increased from 60 per cent to 80 per cent, on the basis of a combined market rate that is the weighted average of short-term interest rates in the United States, the Federal Republic of Germany, the United King-

dom, France, and Japan. The rate of remuneration that the Fund pays on reserve positions of its creditor members, which was the same as the interest rate on the SDR, is now 90 per cent of the SDR interest rate. The Executive Board also decided that the requirement for reconstitution of SDR holdings, that is, the obligation for members to maintain a minimum average balance of SDRs over successive five-year periods, should be reduced from 30 per cent to 15 per cent of average net cumulative allocations.

## Gold sales profits exceed \$2 billion now

In May 1978 the Fund completed the second year of its four-year gold sales program, under which 50 million fine ounces of gold, or one third of the Fund's holdings at the beginning of the period, are to be sold. The total gold sales profits accrued from all auctions held before December 31, 1978 were about \$2.04 billion.

Profits from the gold auctions were paid to members for the first time in 1978 by the Trust Fund—of which the IMF is trustee—following the decision of the Fund's Executive Board that 104 developing countries were eligible to receive such profits. Total disbursements in 1978 by the Trust Fund, including SDR 688 million in loans to 43 members, amount to SDR 1.1 billion.

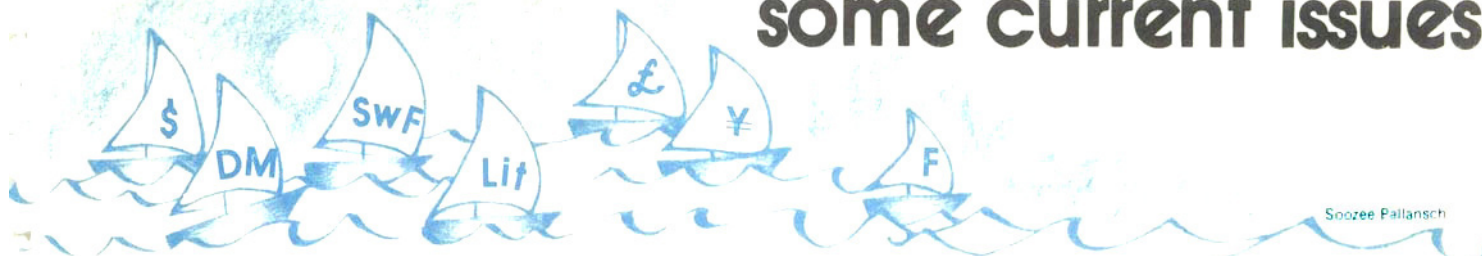
In November 1978 the Executive Directors of the Fund reviewed the amount of gold to be sold monthly and decided to continue with monthly sales of 470,000 fine ounces through May 1979, when another

review of the gold sales program will take place. About 15,840,800 fine ounces of gold were awarded to competitive bidders from the inception of the gold auctions in June 1976 through December 31, 1978. The Fund also awarded 1,384 million fine ounces of gold to noncompetitive bidders between June 1978 and the end of 1978. Among the countries submitting noncompetitive bids were Colombia, Cyprus, India, Kenya, Korea, Malaysia, Mauritius, Mexico, Nepal, the Philippines, and Tanzania.

Ten of the monthly gold auctions held in 1978 used the bid price method, under which all successful competitive bidders are awarded gold at the actual price they bid; the other two auctions in 1978 used the common price method, in which all successful bidders pay the same price. Average award prices at the 1978 Fund auctions ranged from a low of \$170.40 per fine ounce to a high of \$224.02 per fine ounce.



# Exchange rate policy: some current issues



Over the past few years there have been substantial changes in the structure of exchange rates and also marked short-run fluctuations. This article, based on a more exhaustive study in the Fund's 1978 *Annual Report*, examines some technical issues arising from this experience.

**Morris Goldstein and John H. Young**

Under the Second Amendment of the Fund's Articles of Agreement each member country undertakes to collaborate with the Fund and other members to assure orderly exchange arrangements and to promote a stable system of exchange rates. The Articles emphasize that stability at the national level is a necessary condition for a stable international monetary system and, subject to qualifications, each member agrees to foster orderly economic growth with reasonable price stability.

While substantial efforts have been and are being made to achieve greater stability, there is still a significant difference between the objectives of the amended Articles and the state of the world economy. With rates of inflation differing substantially from country to country, and with large current account imbalances persisting among a number of major countries, it is not surprising that exchange rates have at times been subject to large changes and substantial short-run fluctuations.

There is widespread agreement that the increased flexibility of exchange rates has been an important part of the adjustment process, but the size of exchange rate movements in recent years has nevertheless created difficulties for members. As might be expected, members have differing views on the benefits of exchange rate flexibility. Many of the less developed countries that peg their exchange rates to some currency or a combination of currencies, and some of the smaller members of the European common margins arrangement (the "snake"), do not, for example, share the attitude of some of the larger Fund members toward floating. These differing views are outlined and discussed in Chapter 2 of the *Annual Report* for 1978, and this article summarizes the analysis of some of the technical issues considered in that Report. In particular, consideration

will be given here to the extent to which the world has a pegged or floating system, the dispersion of inflation rates, the short-run variability of exchange rates, the concerns of developing countries, and the adjustment process.

## A pegged or floating system?

One question that is frequently asked is the extent to which the present system should be categorized as a floating system. After all, on October 31, 1978, the great majority of Fund members, 95 out of 134, were classified as having pegged rates. Sixty-four were pegged to a single currency, 13 to the special drawing right, and 18 to some other composite of currencies. On the same date, members with floating currencies included 6 that maintained common margins, 5 that adjusted exchange rates for their currencies according to a set of indicators, and 28 that maintained other types of exchange arrangements, including regimes that are described as floating independently. Thus, if the measure is in terms of Fund membership, the system is predominantly pegged.

If, however, the measure is based on the extent to which trade is conducted by countries with pegged or floating rates, the volume of trade of individual members becomes important. Since almost all of the largest countries are categorized under some form of floating, it turns out that less than one fifth of all trade is carried out by members that are classified as having pegged rates. This is, however, a rather crude method of measuring how much trade is carried out across pegged or floating rates. A more effective method is to measure the value of trade that is actually conducted at pegged and floating rates. For example, for those countries that are pegged to the U.S. dollar, only their trade

with the United States, and with other members whose currencies are pegged to the U.S. dollar, will be conducted at fixed rates; their trade with other countries will be carried out at floating rates, as the U.S. dollar fluctuates vis-à-vis other currencies. In the same way, members of the European common margins arrangement conduct trade both with countries that are inside the snake and with others outside it. Although the proportion varies for individual countries, the result is that, on average, less than one third of the total exports of members of the snake is conducted at pegged rates and the rest is carried out at floating rates.

Analyzing world trade flows in this way shows that less than one fifth of all trade moves across pegged exchange rates—a proportion similar to that indicated by simply classifying the trade of countries by the exchange rate arrangements of the country. The similarity in the results arises from the fact that the floating rate trade of members classified as having pegged rates happens to be roughly equal to the pegged rate trade of members with some form of floating currency.

## Dispersion of inflation rates

Aggregate price indices for the various groups of countries show that the exchange rate system has been operating in recent years in the context of high and variable inflation. The average rate of inflation for the 14 industrial countries, as measured by the deflators of gross national product, was about 12 per cent in 1974, 11 per cent in 1975, and was still close to 7 per cent in 1977 and 1978. This may be compared with an average inflation rate for these countries in the period 1961–64 of about 2.5 per cent and in 1965–69 of 3.7 per cent. The inflation experience for other groups of countries over recent years has been even less encouraging, with average inflation rates in the non-oil developing countries, for example, having been roughly twice as high as in the industrial countries.

Of perhaps even greater relevance for the operation of the exchange rate system is the fact that the period 1974–78 has

been one where rates of inflation, growth of real output, and monetary expansion have differed substantially from country to country. It is the intercountry differentials in these variables, rather than their behavior within each national economy alone, that are fundamental in determining exchange rate and reserve changes. An indication of the size of recent and past intercountry inflation differentials can be obtained from Table 1, where a measure of the dispersion of inflation among the seven major industrial countries is computed for the years 1960–73 and 1974–78. Two observations can be made about the figures given. First, the dispersion of inflation among the major industrial countries has been much larger (by a factor of about three) in the period of floating rates than during the period 1960–73. Second, the experience of the years since 1973 suggests that intervals of high average rates of inflation, which are also likely to be periods of large inflation differentials, carry a greater probability of large changes in the structure of exchange rates.

### Short-run variability

The structure of exchange rates was expected to alter in response to the dispersion of inflation rates, but some exchange rate changes in the recent period have been very abrupt, reversible, and difficult to relate to underlying economic conditions. Average daily changes in selected currency rates against the U.S. dollar in the period 1976–78 are shown in Table 2. The influences operating on exchange markets are too numerous and diverse to permit a single explanation for recent exchange rate variability. It is possible, however, to identify some causal factors. For countries with well-developed money and capital markets, conditions in the financial markets are probably more important than those in the goods markets for determining short-run exchange rate movements. Indeed, the foreign exchange market can be thought of as an asset market, and the exchange rate between two currencies regarded as a relative asset price that moves with changes in the relative supply and demand for assets denominated in those currencies. As with other assets, current rates of return, risk factors, and expected future rates of return are important in determining the current price, and when the factors affecting these returns and risks fluctuate substantially, so too does the current price, that is, the exchange rate. In other words, periods of rapidly shifting interest rate differentials, sudden imposition or relaxation of capital and exchange controls, and changing exchange rate expectations are apt to be periods of large short-term ex-

change rate variability, even when relative prices move only slowly.

The influence of exchange rate expectations or, more correctly, changes in exchange rate expectations are perhaps worthy of special note because of the many factors influencing these expectations, and because the factors themselves are subject to frequent change, especially in an environment of high inflation and irregular economic growth. While the factors affecting exchange rate expectations are not directly observable, it is known that they include, *inter alia*, monetary and fiscal policies, relative cyclical positions, current

between the intervention currency and other currencies is likely to result in increased variability in both the country's effective exchange rate and in the local currency price of its imports and exports. Increased short-run fluctuations among the major currencies also may mean that a less developed country's exchange rate (*vis-à-vis* countries with which it conducts an important part of its trade) responds to factors more closely associated with the external position of the country issuing its intervention currency than to its own domestic or balance of payments needs.

Some less developed countries have attempted to minimize these problems by switching from a unitary peg to a peg based on a basket of currencies, but many countries find this solution administratively inconvenient, particularly when there is a single dominant currency used in trade and exchange transactions. In addition, a pegged rate is regarded in some less developed countries as providing, in their case, a viable framework for encouraging price stability, for fostering confidence in the authorities' financial policies, for helping their planning process, and for promoting investment. In brief, the choice of an appropriate peg has become a difficult one for less developed countries in today's exchange rate environment.

The increase in exchange rate fluctuations has also caused problems of portfolio management for the less developed countries, most of which hold nearly all of their foreign exchange reserves in a single currency. While the fluctuations in exchange rates have diminished the store-of-value function of some of the major currencies, the rise and variability in import costs have led to a demand for higher and more assured levels of reserves. Those less developed countries that peg to a single currency whose future value is uncertain may therefore face the dilemma that they need to hold larger working balances in that currency, yet they may also wish to diversify their reserves.

### The adjustment process

There is considerable empirical evidence that relative price changes have a strong influence on the volume of imports and exports. Time is needed, however, for the requisite changes in demand and production to take place, so that only some fraction—say, one fourth to one half—of the ultimate volume effects will be observed over a period as short as a year. It is likely to take time for some consumers to switch from traditional suppliers with whom they may have long-term contracts to producers located in a country that has devalued its exchange rate. In addition, it may be nec-

Table 1  
Seven major industrial countries:<sup>1</sup>  
dispersion of inflation rates, 1960–70  
average and annually for 1971–78

|                 | Mean rate of inflation <sup>2</sup> | Dispersion of inflation <sup>3</sup> |
|-----------------|-------------------------------------|--------------------------------------|
| 1960–70 average | 3.6                                 | 1.5                                  |
| 1971            | 5.5                                 | 1.9                                  |
| 1972            | 5.3                                 | 1.1                                  |
| 1973            | 8.6                                 | 1.9                                  |
| 1974            | 14.6                                | 5.4                                  |
| 1975            | 12.9                                | 5.5                                  |
| 1976            | 10.0                                | 4.5                                  |
| 1977            | 9.8                                 | 4.5                                  |
| 1978            | 7.5                                 | 3.1                                  |
| 1960–73 average | 4.2                                 | 1.5                                  |
| 1974–78 average | 11.0                                | 4.6                                  |

Source: IMF, *International Financial Statistics*.

<sup>1</sup> Canada, France, the Federal Republic of Germany, Italy, Japan, the United Kingdom, and the United States.

<sup>2</sup> The (unweighted) average of annual rates of change of consumer prices in these countries.

<sup>3</sup> The measure of dispersion used is the standard deviation of inflation rates among the seven countries.

account and trade account imbalances, inflation differentials and relative competitive positions, political uncertainties, official intervention in the exchange market, and, of course, the change in the exchange rate itself. The reason changes in expectations are particularly important for exchange rate variability is that the current exchange rate may already fully reflect all publicly available information. Hence, it is only new and unexpected information that will cause market participants to change their evaluation of the future exchange rate, and thus the present exchange rate as well.

### Concerns of developing countries

The short-run fluctuations in exchange rates in recent years have caused problems for the less developed countries, despite the fact that most of them continue to peg their exchange rates. For those countries that peg to a single currency—and most of the less developed countries are in this category—greater exchange rate variability

essary for producers to set up new marketing networks in countries to which they have not previously exported. In contrast to these volume effects, exchange rate changes can affect a country's terms of trade rather rapidly. As a result of this asymmetry of timing, the trade balance generally deteriorates before it begins to move steadily in the expected direction, leading to a "J" curve of the kind described on page 10.

Fund staff estimates of the short-run effects of exchange rate changes on the terms of trade for industrial countries indicate that the first few months following a de-

indexation. Even one year after a depreciation of a country's currency, a discrepancy between the rise in import and export prices has frequently been observed. Staff estimates show that such changes in the terms of trade often have a substantial effect on trade balances, at least for the major industrial countries.

Seen in the light of the preceding discussion, recent trade and current account developments appear less surprising. The snake currencies, the Swiss franc, the Japanese yen, and the pound sterling appreciated against the U.S. dollar and other currencies during 1977. These apprecia-

tions were generally associated with larger trade surpluses (or smaller trade deficits) for the appreciating currencies and larger trade deficits for the United States and some of the other depreciating countries during 1977, although other factors, including volume effects from earlier relative price changes, offset this to some extent. Given the sharp movement of exchange rates in 1977 and the early months of 1978, it would not be surprising if perverse effects of the terms of trade again dominated the initial volume effects and produced a widening of trade imbalances in the short run.

Table 2  
Average daily changes in selected currency rates against the U.S. dollar<sup>1</sup>  
(In per cent)

|                       | 1976        |             |             |             | 1977        |             |             |             | 1978        |             |             |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                       | 1st quarter | 2nd quarter | 3rd quarter | 4th quarter | 1st quarter | 2nd quarter | 3rd quarter | 4th quarter | 1st quarter | 2nd quarter | 3rd quarter |
| Canada                | 0.14        | 0.15        | 0.13        | 0.22        | 0.25        | 0.12        | 0.12        | 0.21        | 0.15        | 0.19        | 0.16        |
| France                | 0.25        | 0.15        | 0.27        | 0.17        | 0.11        | 0.05        | 0.21        | 0.24        | 0.59        | 0.26        | 0.46        |
| Germany, Fed. Rep. of | 0.26        | 0.19        | 0.20        | 0.22        | 0.22        | 0.14        | 0.29        | 0.42        | 0.56        | 0.33        | 0.52        |
| Italy                 | 0.81        | 0.50        | 0.11        | 0.15        | 0.03        | 0.01        | 0.04        | 0.09        | 0.21        | 0.14        | 0.28        |
| Japan                 | 0.10        | 0.11        | 0.16        | 0.15        | 0.21        | 0.26        | 0.18        | 0.30        | 0.32        | 0.48        | 0.62        |
| United Kingdom        | 0.24        | 0.46        | 0.28        | 0.55        | 0.13        | 0.02        | 0.06        | 0.36        | 0.47        | 0.27        | 0.46        |

<sup>1</sup> Average percentage change from previous day in spot exchange rates against U.S. dollar (New York noon quotations).

preciation are generally marked by a much faster rise in import prices in local currency than in export prices in local currency. Essentially, these changes in the terms of trade result from the fact that many countries do not face a given world price for their exports. When such world prices are of dominant importance, as they are for many less developed countries, changes in the terms of trade as a result of an exchange rate change are likely to be small. Changes in the terms of trade are generally more pronounced for industrial countries, the export products of which are differentiated from those of other countries.

Thus, while a country that imports products with prices fixed in terms of foreign currency experiences an immediate increase in the local currency price of its imports following a depreciation, exporters may raise their prices in terms of local currency only partially or with a delay. On the import side, a switch from foreign-produced goods to those produced by the country with a depreciated exchange rate takes time if, as noted above, sources of supply are established and contracts are in effect. Production conditions may be affected fairly quickly by the increased cost of imported inputs, but wage responses to changes in import price rises may be slow, depending on how rapidly import prices affect consumer prices and on the extent of

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Staff estimates of the volume effects of an effective exchange rate change of 10 per cent for the 14 industrial countries indicate that the volume of imports and exports is always altered in the expected direction, but that the size of the response differs from country to country. For example, the response of the volume of imports in the 14 industrial countries to a change in the exchange rate of 10 per cent varies from 1 to 6 per cent. The response of the volume of exports varies from about 7 per cent in France, Japan, Sweden, and the United States to only 3 to 4 per cent in the remaining countries, where either export demand or supply is less price elastic, or the degree of openness of the economy leads to large feedbacks from exchange rate changes to domestic costs and prices.

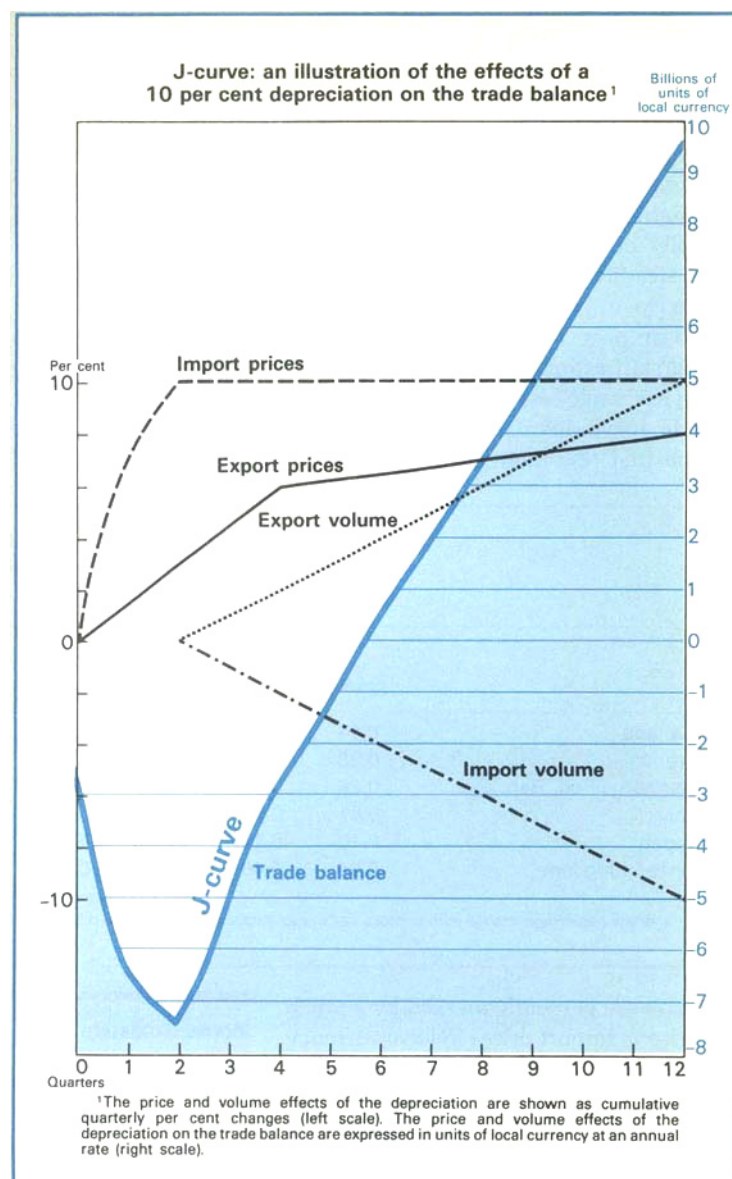
The implication of those estimates is that, other things being equal, the exchange rate changes in 1977 and the early months of 1978 should lead to a substantial improvement in the pattern of trade balances among industrial countries during the next two to three years. For example, if changes in relative prices adjusted for exchange rates up to the middle of 1978 are considered, staff estimates suggest that by 1980 these will lead to a significant improvement in the U.S. trade balance and a major reduction in the surpluses of Japan and the Federal Republic of Germany.

## The J-curve

The term "J-curve" refers to the shape of the adjustment path frequently followed by the trade balance of countries in response to an exchange rate devaluation. The initial impact of a depreciation is often negative because import prices rise more rapidly in local currency than export prices, and there has not been time for the volume of trade to adjust. After a lag, however, the trade balance improves with a reduction in the rate of growth of imports, a parallel rise in the rate of growth of exports, and a reduction in the gap between the price indices of imports and exports. As a result of these factors there is an initial decline in the trade balance, but this adverse movement will be first checked and reversed, leading the trade balance to follow the rising portion of the "J." The economic factors that lead to this result are discussed in the article in the section on the adjustment process.

The chart illustrates the cumulative quarterly effects of a 10 per cent devaluation in the exchange rate of a country on the unit values and volumes of its exports and imports and on its trade balance over a period of three years. The following arbitrary assumptions are made: (1) export unit values in local currency respond to the devaluation at a rate of 1.5 per cent per quarter over a period of four quarters and thereafter at a rate of 0.25 per cent, adding to 8 per cent three years after the devaluation. (2) Import unit values in local currency respond at a rate of 7 per cent in the first quarter following the devaluation and at a rate of 3 per cent in the second, reflecting a complete pass-through after two quarters. (3) After half a year the volumes of both exports and imports begin to respond at a rate of 1 per cent per quarter with the cumulative response extending over two and a half years and adding to 10 per cent three years after the devaluation.

ED



**Illustrative calculation of "J" curve: price and volume effects of a 10 per cent depreciation**

(In billions of local currency units)

| Quarters     | IMPORTS                                                       |                                                               |                                           | EXPORTS                                                       |                                                               |                                           | Trade balance (L/C units) <sup>1</sup> |
|--------------|---------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------|----------------------------------------|
|              | Assumed rate of change in import prices (Cumulative per cent) | Assumed rate of change in import volume (Cumulative per cent) | Value of imports (L/C units) <sup>1</sup> | Assumed rate of change in export prices (Cumulative per cent) | Assumed rate of change in export volume (Cumulative per cent) | Value of exports (L/C units) <sup>1</sup> |                                        |
| Base quarter | —                                                             | —                                                             | 64.8                                      | —                                                             | —                                                             | 62.1                                      | -2.7                                   |
| I            | 7.0                                                           | 0                                                             | 69.4                                      | 1.5                                                           | 0                                                             | 63.0                                      | -6.4                                   |
| II           | 10.0                                                          | 0                                                             | 71.3                                      | 3.0                                                           | 0                                                             | 63.9                                      | -7.4                                   |
| III          | 10.0                                                          | -1                                                            | 70.6                                      | 4.5                                                           | 1                                                             | 65.5                                      | -5.1                                   |
| IV           | 10.0                                                          | -2                                                            | 69.9                                      | 6.0                                                           | 2                                                             | 67.1                                      | -2.8                                   |
| I            | 10.0                                                          | -3                                                            | 69.2                                      | 6.25                                                          | 3                                                             | 67.9                                      | -1.3                                   |
| II           | 10.0                                                          | -4                                                            | 68.4                                      | 6.50                                                          | 4                                                             | 68.9                                      | +0.5                                   |
| III          | 10.0                                                          | -5                                                            | 67.7                                      | 6.75                                                          | 5                                                             | 69.6                                      | +1.9                                   |
| IV           | 10.0                                                          | -6                                                            | 67.0                                      | 7.00                                                          | 6                                                             | 70.4                                      | +3.4                                   |
| I            | 10.0                                                          | -7                                                            | 66.3                                      | 7.25                                                          | 7                                                             | 71.2                                      | +4.9                                   |
| II           | 10.0                                                          | -8                                                            | 65.6                                      | 7.50                                                          | 8                                                             | 72.1                                      | +6.5                                   |
| III          | 10.0                                                          | -9                                                            | 64.9                                      | 7.75                                                          | 9                                                             | 72.9                                      | +8.0                                   |
| IV           | 10.0                                                          | -10                                                           | 64.2                                      | 8.00                                                          | 10                                                            | 73.8                                      | +9.6                                   |

<sup>1</sup> Local currency units.



# The SDR as an international unit of account



Soozee Pallansch

In the context of the widespread fluctuations in the values of major currencies and the Fund's commitment to make the SDR the principal reserve asset, this article reviews the growing interest in international units of account and the SDR. It also discusses the prospects for the use of the SDR in official and private transactions.

## Walter O. Habermeier

This article comments on the role which the special drawing right (SDR) plays as a unit of account from the perspective of international financial relations. This is not the usual perspective from which to look at the SDR. As a rule, the SDR is seen as a monetary asset which is held in the international reserves of central banks and governments and which is used by them much like foreign exchange holdings for the financing of balance of payments (BOP) deficits and surpluses.

At the time SDRs were first allocated by the Fund in 1970, the new asset did not have an identity of its own. It possessed only two of the three fundamental attributes generally ascribed to money: it served as a means of payment among participants and between them and the Fund and could be held by them as a reserve asset; it was not used as a unit of account. The value of the SDR at that time was equal to a fixed quantity of gold, which was the same as the gold content of the U.S. dollar.

The SDR was originally invented to forestall a shortage of reserves of the traditional kind—gold and foreign exchange such as the U.S. dollar and other currencies—and to permit a deliberate, rational, and internationally controlled creation of reserves. Gold reserves had not been rising for many years and the expansion of U.S. dollar holdings depended essentially on the BOP deficits of the United States. Initially, SDR allocations were intended to defend the Bretton Woods par value system—which had contributed so much to real economic growth in the postwar world. Not long after the creation of the SDR, however, the par value system of Bretton Woods was effectively ended. In 1971 the link between gold and the U.S. dollar was broken. For a period, the value of the SDR remained fixed in terms of U.S. dollars. But in 1974, when it had become clear that

a floating U.S. dollar had come to stay for an indefinite period, members of the Fund decided that the value of the SDR was no longer to be determined by the U.S. dollar but would, instead, be calculated each day on the basis of a basket of the 16 most important currencies of the member countries of the Fund. At the same time, the rapidly growing BOP financing conducted through the credit department of the Fund was also denominated in the new SDR. Finally, in April 1978, a legal seal was put on this evolution: when the amendment to the Fund's charter was ratified, the official price of gold was abolished, the members pledged to make the SDR the principal reserve asset and the Fund's own unit of account became the SDR. The remainder of this article focuses attention on this function of the SDR.

There is today a growing interest in international units of account, such as the SDR. In one sense, the search for new units of account is a search for greater certainty and stability in international economic and financial relations than can be provided by individual currencies in a floating world. In a more immediate sense, the new units of account, because they are composed of various currencies, can help to mitigate and to distribute fairly the exchange risks created by unstable exchange rates.

For the time being, a number of units of account (old and new) and national currencies are likely to coexist and at times to compete with each other. This is not due to the technical faults of these units but to the divergencies and imbalances that exist in the world economy. Some of the major payments imbalances have been greatly reduced and are expected to decline further, but floating exchange rates can be expected to continue for some time, notwithstanding the efforts to achieve a zone of mone-

tary stability in Europe. Traders and bankers engaged in international business spanning several floating currencies no doubt will have a need for an international standard of value to reduce the impact of these fluctuations on their own operations.

The need for these new units of account was created by two main factors: (1) the reduction of the role of gold as the standard of reference for the value of currencies; and (2) the large, and often violent, fluctuations in currency values which have taken place under floating exchange rates.

## Gold; reserve currencies

There is little dispute today on the basic economic reasons for the breakdown of the "stable but adjustable" link between gold and currencies: first, the disruptive forces of inflation, which the much proclaimed "discipline of gold" could not prevent; second, huge BOP deficits and surpluses, including the oversupply of U.S. dollars to the rest of the world; third, *hot* money flows generated by the distrust in the stable exchange value of major currencies; and fourth, and one of the worst factors, the prolonged defense of exchange rates that had become unrealistic during the last years of the par value system.

One important conclusion of the Second Amendment of the Articles of Agreement of the Fund is that the monetary role of gold should be gradually reduced. Gold has been eliminated from its central role in the Fund, including its role as a standard of value and even as a denominator for registering the exchange value of a currency. The removal of gold from a central position in the Fund has far reaching consequences going beyond the confines of the Fund. Indeed, many international conventions that are based on gold are being interpreted, revised, or reformulated; as a rule, the conclusion is that the SDR should take the place of gold. However, while a few contracts might still be denominated in gold, as a private unit of account, gold is long defunct.

The second major factor which has enhanced the need for some composite currency unit is the fact that large and often



violent fluctuations occur under floating exchange rates. Floating exchange rates have not been an unmitigated blessing, especially when market expectations carry rates too far or move them faster than can be justified by underlying economic conditions or changes in these conditions.

While upward floating rates allow countries to protect themselves better against inflation coming from abroad, downward floating rates can aggravate inflation at home. Floating rates are supposed to prevent maladjustments from arising in the first place, but changes in such rates are difficult to use in the short run as a means of effecting adjustment. The changes in rates under a floating system can and have been occurring at a speed and to an extent that is sometimes in stubborn disregard of the relative prices and costs and interest rate differentials. In addition, they have sometimes induced damaging feedbacks on the domestic economy. For strong currencies, these variations can slow down investment and lead to recession; for weak currencies, they act to speed up inflation, tend to drive up the exchange rates of strong currencies, and further push down the rates of weak currencies.

Major currencies—in particular, the U.S. dollar—seem to be susceptible to such disequilibrating movements. It must be recognized that the gyrations of the U.S. dollar in the exchange markets during much of 1978 were in no small part due to the widespread use of the dollar as a unit of account for international trade, to its large share in the Eurocurrency and other offshore money markets, as well as to its preeminence as a transaction and reserve currency. Once confidence is shaken, there can be large-scale shifts from the reserve currency which can lead to much greater exchange rate depreciation and volatility of exchange rates than would be the case if the U.S. dollar were not performing these international functions. Whatever the reason, this instability has rendered the U.S. dollar less efficient as an international unit of account and as a store of value.

It does not automatically follow, however, that other currencies will be able to fill the gap caused by the instability of the U.S. dollar and play a commensurately greater role as the monetary unit for invoicing foreign trade and for denominating international credit. In the first place, it is possible that the appreciating currencies simply reflect the condition of an unstable dollar. It cannot be assumed that other currencies can or wish to shoulder the responsibilities involved, in part because their money and capital markets are not large enough to undertake the substantial task of financing world trade and international

capital movements on the scale that the U.S. dollar has been used.

Of course, changes in yields will gradually produce some shifts in financing. For example, Japanese traders have been shifting to yen financing and German banks have expanded their deutsche mark loans but, in such cases, the debtors can be concerned about such arrangements in that they carry the risk of further appreciation of the currencies of the surplus countries.

At the same time it is doubtful that the authorities of the surplus countries are eager to have their currencies used more and more as international units of account. Often such a shift goes hand in hand with a greater use of these currencies as vehicle and reserve currencies. A larger external use of a currency in this way not only has advantages, but can have substantial drawbacks: both the exchange rate and domestic monetary policy can become more difficult to manage.

From an international point of view, the shifts from one currency unit to another are not very desirable either. A reserve currency system tends to be highly unstable when the reserve center, wherever it is, cannot reconcile reasonably stable internal conditions with its external economic and financial commitments and functions. It is, however, too much to expect that a country will, in all circumstances, subordinate its domestic economic aims to its external role as a reserve center; herein lies the inherent long-run instability of a monetary system based on reserve currencies. This is a part of the unfinished business of international monetary reform. In due course, national reserve currencies will almost certainly be replaced to a growing extent by international reserves such as the SDR, and national currencies will be used less.

When great uncertainty develops about exchange rates, as has recently been the case, and when exchange rate changes

gather speed in a one-way movement, a number of tendencies may be observed in the market, which weaken monetary standards based on single currencies and encourage composite currency units. These tendencies are not equally strong or equally lasting and some of them already have appeared when exchange fluctuations have been less large and the outlook was less cloudy.

First, attempts are being made to match to the maximum extent assets and liabilities in the same currency and to avoid currency risks. For example, multinational firms will not borrow in the currency with the lowest interest rate but will finance an expansion of their manufacturing or trading activities, say, in the United States, with U.S. dollar credit, even though the interest cost may be substantially higher than taking up credit in another currency. Such attitudes resemble a voluntary freeze on capital movements and tend to delay international payments adjustments.

Second, currency areas tend to grow, and independently floating currencies seek to coalesce. These are welcome developments, but two elements are essential: (1) in order to stabilize successfully exchange rates in such mini-Bretton Woods systems, the economic and, in particular, the monetary policies of the participants must be closely harmonized; and (2) relations with the rest of the world must continue to be based on free trade and payments and on the other principles and objectives which inspired the Fund charter.

Another important tendency is to seek some way to divide exchange risks fairly between parties that are bearing risks in several floating currencies. A greater urgency to use the SDR unit of account and other composite currency units is being felt. In this way the SDR units may serve as a bridge between the major currencies such as the U.S. dollar, the deutsche mark, and the yen, and the currencies linked to them.

### SDR as official unit

It is a major objective of the Fund to put the SDR into the center of the international monetary system. Its members have pledged on the occasion of the last amendment to collaborate with each other and with the Fund to make the SDR the principal reserve asset. Practical steps have been and are being taken to strengthen this evolutionary process.

First, the allocation of SDRs will be resumed by the distribution of SDR 12 billion over the next three years. SDRs are being allocated to lessen the increase in foreign exchange reserves that would otherwise occur through the process of official bor-

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Joseph J. Diana for F&D

rowing on the international markets. If successful, this process should reduce the proportion of reserve currencies in future additions to reserves.

Other steps to improve the SDR are in hand. SDRs can now be exchanged freely among the participants against currency, and such voluntary transfers have already taken place on a large scale. In addition, the interest rate on the SDR will be increased and it will be possible to use SDRs to settle obligations without changing them first into currencies, to lend SDRs, and to pledge them as security for a loan by another central bank or government. Further improvements are high on the agenda. They include forward operations in SDRs and swaps of SDRs and enlarging the number of official institutions that may deal in SDRs. This last point is potentially of great significance for enlarging the volume of SDR-denominated financing in the private markets, since many of the institutions—unlike the Fund—have direct links with the private market. Once such institutions hold SDRs in their books, they are likely to seek to increase their SDR-denominated liabilities by developing transactions in private markets.

Second, the credit mechanism of the Fund, which is denominated in SDRs and guaranteed by Fund members in SDRs, has been substantially expanded over the last few years to cope with large-scale BOP deficits. For much of this expansion, the Fund has issued liquid reserve claims denominated in SDRs. As a result, international reserve assets held in the form of SDR-denominated reserve positions in the Fund have tripled in the last five years from SDR 6 billion to SDR 18 billion. (In comparison, official foreign exchange reserves doubled from about SDR 100 billion to SDR 200 billion in the same five-year period.) In addition, the Fund's capital will be increased from SDR 39 billion to almost SDR 59 billion, and during the next few years the institution will be able to borrow under the so-called Witteveen facility up to about SDR 8.5 billion from the creditor countries.

The low interest loans of the IMF Trust Fund to poor countries are also denominated in SDRs. These loans are financed by a portion of the profits realized in the gold auctions. In the first two years of the gold auctions, the Trust Fund disbursed loans of over SDR 800 million. In addition, since June 1978, the Trust Fund has placed over SDR 300 million as short-term dollar deposits with the Bank for International Settlements (BIS).

In sum, the official market in SDR-denominated credit is no doubt of major and growing importance. While such credit is

largely connected with the activities of the Fund, this is no longer exclusively the case. A number of international official agencies—for example, the African Development Bank, the Arab Monetary Fund, and the Nordic Investment Bank—have adopted the SDR as their unit of account and some of these institutions have begun to place SDR-denominated deposits with private commercial banks.

A few of the smaller Fund members are pegging their currencies to the SDR; many others manage their currencies by pegging them to custom-made baskets of currencies usually composed to reflect the geographical distribution of their foreign trade. In a number of instances, these baskets do not differ much in practice from the SDR basket. Thus, a small "SDR area" exists not by special design, but because pegging to the SDR has helped these Fund members in the developing world to stabilize their external and internal positions and to better protect their economies from the effects of instability elsewhere.

### SDR in private markets

SDRs are distributed and used only in the official field. But the Fund has no copyright on the use of the SDR as a unit of account. In fact, developments on the international scene will help to give the SDR a firmer and more permanent footing in the private market.

Usually, the private interest in the SDR is strongest when the U.S. dollar is weak. A few transactions are then arranged, but as soon as the U.S. dollar improves the volume tends to ebb. Preferably, however, the SDR should be viewed as an all-weather instrument and not as a short-run speculative alternative to currencies. The viability of the SDR rests on the proposition that it is more stable than individual currencies and that it helps give a means of exchange stability to those whose business is either in SDRs or who are exposed to exchange risks in several currencies in proportions approximately matching the composition of the SDR.

For the time being, the private market for SDRs is still small but more than a dozen commercial banks are presently actively accepting short-term currency deposits indexed in SDRs and many more are interested in developing this business. The banks accepting SDR deposits usually will try to cover themselves, for example, in the forward markets or make loans in the individual currencies which comprise the SDR. Less frequently, they extend SDR-denominated loans. Interest rates on SDR-denominated deposits have been readily quoted to the Fund and can, of course, be checked against the calculated forward ex-

change value of the SDR. Except for public bond issues (which consist of less than SDR 150 million), complete information about the volume of SDR operations is not available.

The private financial market in SDR-denominated paper is a somewhat specialized market—this is reflected in the relatively low volume of notes traded, in the predominance of short maturities, and in the fact that little if any redepositing seems to take place. There are, however, three potential sources of future growth: (1) the rising number of official institutions based on the SDR and engaged in the private markets; (2) the trend toward diversification of central bank reserves, including a possible desire of central banks to cover open SDR-denominated positions resulting from their indebtedness to the Fund; and (3) the deficit countries, which are familiar with the SDR and may be willing to take up medium-term banking credit indexed in SDRs to spread their currency risk.

As regards the Fund, no plans exist at the moment to issue SDR-denominated notes to the market, although the legal possibility exists for the Fund to do so with the consent of the members whose currencies it would use as a vehicle. As a trustee of the Trust Fund, the Fund could also, if it so wishes, place SDR deposits with commercial banks. So far, however, all deposits have been placed with the BIS.

For the moment, the Fund acts as a center of information for the private SDR markets. It calculates and publishes daily the official spot exchange value of the SDR for more than 40 currencies. In the near future, forward SDR rates against a number of important currencies might be published on a regular basis; the Fund is also collecting information on the private SDR markets, especially on the SDR interest rates, on the volume of SDR deposits and SDR credits, and on bonds denominated in SDRs.

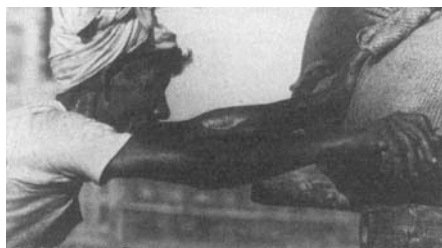
Since the Fund is committed to make the SDR the principal reserve asset, these conclusions on the role of the SDR as a unit of account in the private market may look rather modest. In my view, however, it would be wrong to conclude that the use of the SDR as a unit of account in the markets is an idea whose time has still not come. The role of the SDR officially and privately can only grow. It is both a symbol and an instrument, like the Fund itself, for the markets and for governments alike to promote stable exchange rates and to maintain free international trade and payments as essential elements of economic growth and well-being.





## The World Bank and the world's poorest: IV

Mr. Robert S. McNamara, President of the World Bank, spoke of "absolute poverty" during his address to the Annual Meetings of the Bank and the Fund in Nairobi in 1973, as "a condition of life so degraded by disease, illiteracy, malnutrition, and squalor as to deny its victims basic human necessities." Absolute poverty, he said, was the lot of 40 per cent of the peoples of the developing countries. There was a marked shift in emphasis of the Bank's development policies following Mr. McNamara's speech at Nairobi. This series of articles explains how the Bank is meeting the challenge of poverty in its member countries.



## The problem of water supply and waste disposal

Real per capita incomes have grown in almost all developing countries during the past 25 years. Yet the ultimate goal of development is not just higher incomes; at the minimum, it is the use of these incomes to give all people access to the goods and services necessary for a healthy and productive life. Today there is no more than a handful of cities or towns in the developing countries where the water is always safe to drink. Indeed, the burgeoning pressure of population growth is even threatening existing levels of health and hygiene.

### Yves Rovani

Life expectancy for many people living in the villages, slums, and shanty towns of developing countries has improved dramatically over the past few years. Smallpox and plague have been almost eradicated, while many other killer diseases have been contained. Infant deaths, though still high, have been reduced, while medical advances, better nutrition, and increases in income and wealth have increased adult life expectancy. But a productive life involves not merely being alive but being well. Medical advances imply that, until birth rates fall significantly, there will be

rapid increases in population in the developing world; this, in turn, will put pressure on natural resources, especially water, and create ever-expanding problems of pollution, as waste disposal facilities buckle under the strain.

The rationale for Bank lending for water supply and waste disposal is that adequate supplies of safe water and sanitary waste disposal are essential conditions for achieving a reasonable level of economic and social development (although they are not, of course, sufficient by themselves). Thus the lending objectives in the sector

are to provide these services for as many people as possible, to do this in the most efficient way, and to ensure that the full benefits of the services can be realized.

Lending for water supply and waste disposal has been increasing rapidly in recent years. The Bank's first loan in the sector was in FY 1962, and 15 loans had been approved by FY 1968. During the following five years this number more than doubled and it has increased from 32 to 59 during the past five years. In all, 104 loans were made in the sector between FY 1962 and FY 1978 for projects costing a total of \$6 billion, of which the Bank financed over \$2 billion. In addition, many loans for agriculture, rural development, urban sites and services, and tourism have had water supply and waste disposal components.

In the early years of lending for water supply, the Bank was mainly concerned with ensuring the efficiency of investments in source, transmission, and conventional distribution works and in building up strong sectoral institutions. From the early 1970s, in response to Bank strategy first spelled out in Nairobi, there has been a shift in the emphasis of lending toward providing efficient and affordable water supply and waste disposal facilities for all, including the poor in the rural and urban fringe areas. This shift has been made possible, and supported, by an extensive program of research. This program has, for example, developed guidelines for water tariff systems to meet three goals simultaneously: (1) to enable the poor to receive basic service levels at prices they can afford; (2) to recover the investment costs of water supply networks and contribute to the expansion of these networks; and (3) to avoid waste of water. Extensive research has also been conducted into low-cost technologies for the disposal of human waste to improve both the health of people at all in-

come levels and the quality of the environment in which they live.

This article reviews the nature and extent of the problems of inadequate supplies of safe water and of insanitary means of waste disposal in developing countries and discusses the Bank's efforts to alleviate the situation.

### The problems

Insanitary living conditions have debilitating effects which lower the productive potential of people as well as the quality of their living environment. The list of diseases related to deficiencies in water supply or waste disposal is terrifying (see Table 2); in many areas these diseases account for almost all infant deaths, a large proportion of adult deaths, and a very large proportion of adult sickness. In Bombay, which received a water supply loan in FY 1979, over 40 per cent of recorded deaths are related to inadequate water supply and sanitation. It is the poor, of course, who suffer most—those in the urban slums as well as those in the rural areas. They lack information on the real effects of insanitary conditions, their access to safe water and proper waste disposal is restricted, and they can afford neither to protect themselves from infection nor to cure it.

The productive potential of poor households is also reduced by the time and energy spent in obtaining sufficient quantities of water to meet basic needs. In many rural areas, drawers of water, most of whom are women, commonly walk up to five miles a day to their nearest acceptable water source and still have to join lengthy queues when they arrive.

Yet few countries have managed to overcome the deleterious effects of inadequate water supply and waste disposal facilities. Although the past 25 years have seen an expansion in the supply of water and sew-

erage services in some areas, the quality of service in many places has declined dramatically. Recent estimates suggest that fewer than 500 million of the 2,400 million people in the developing countries have access to adequate supplies of safe water and adequate waste disposal facilities, and the number of those without access is growing by 70 million every year.

Between 1970 and 1975, per capita investment for water supply in the developing world was between \$10 and \$20 in the towns and less than \$5 in the villages, while investment in waste disposal was lower still. On the basis of estimates by the World Bank and the World Health Organization (WHO), construction costs for urban water supply (with a mix of house or yard connections and public standposts) are in the range of \$50–150 in 1978 prices for each additional person served. A comparable range for simple piped systems in rural areas would be \$30–50. Costs of waterborne waste disposal are, however, much higher; in towns and cities they may be as much as \$600 per capita. Recent research by the World Bank has identified alternative sanitation technologies which may reduce this figure to below \$100 and, in rural and urban fringe areas, to less than \$40.

Given the magnitude of the service gap, meeting the population's needs through conventional technologies has been a financial impossibility for many developing countries. That is why, for example, only one quarter of urban dwellers in these countries has waterborne waste disposal facilities. But there are many other reasons for low service levels and for the relatively low priority given to investment in the sector. One is that the health benefits from improved water supply and waste disposal are difficult to isolate and practically impossible to measure. In pursuing development objectives, there has been excessive concentration on "growth," as represented by statistical measures of increases in income rather than measures of "real" increases in peoples' standards of living. Moreover, these estimates of growth have been based on measures of commodity production, irrespective of whether these commodities satisfy the real needs of the poor.

International conferences have recently set objectives of providing reasonable access to safe water supply and adequate sanitation to everyone by 1990, but if these targets are even to be approached, three fundamental steps must be taken. First, national development priorities must be changed to ensure that considerably more funds are used for increasing investment in, and maintaining efficient operation of, water supply and waste disposal facilities.

Table 1  
Water supply and waste disposal loans and credits, FY 1962–78

(In millions of U.S. dollars)

|         | Water supply |       | Water supply & waste disposal <sup>1</sup> |       | Waste disposal |       | Total |         |
|---------|--------------|-------|--------------------------------------------|-------|----------------|-------|-------|---------|
|         | No.          | \$    | No.                                        | \$    | No.            | \$    | No.   | \$      |
| 1962–68 | 12           | 102.0 | 3 <sup>2</sup>                             | 52.4  | —              | —     | 15    | 154.4   |
| 1969–73 | 17           | 379.8 | 11                                         | 234.9 | 4              | 49.9  | 32    | 664.6   |
| 1974    | 5            | 117.9 | 2                                          | 43.8  | 1              | 12.0  | 8     | 173.7   |
| 1975    | 2            | 41.5  | 5                                          | 41.6  | 3              | 62.0  | 10    | 145.1   |
| 1976    | 4            | 111.5 | 6                                          | 201.6 | 1              | 21.5  | 11    | 334.6   |
| 1977    | 6            | 127.5 | 7                                          | 137.2 | 1              | 36.0  | 14    | 300.7   |
| 1978    | 8            | 115.9 | 2                                          | 3.5   | 6              | 255.8 | 16    | 375.2   |
| Total   | 54           | 996.1 | 34                                         | 663.7 | 16             | 437.2 | 104   | 2,097.0 |

<sup>1</sup> Including engineering and other loans.

<sup>2</sup> Includes two loans to East Pakistan that are excluded from the total; the loans were reappraised and were made to Bangladesh in FY 1973.



Second, financial and economic policies must be adopted within the sector to enable it to sustain a rapid expansion. Third, countries must develop a long-term strategy for the sector which permits them to take full advantage of the many available, but hitherto unutilized, low-cost techniques, especially in waste disposal, in order to reach the greatest number of people in the shortest possible time.

### Water supply

During the 1960s, Bank lending for water supply was almost exclusively for large cities and was generally regarded simply as a contribution to economic infrastructure, like investment in other public utilities such as power and telecommunications. The goals of lending for water supply and waste disposal have changed since the early 1970s. A major new aim is to ensure that the water produced is supplied to the entire population, while meeting concerns for health and environmental aspects of development. There has been a growing number of loans for small towns and villages. Increased emphasis has also been placed on distribution systems; the use of low-cost techniques designed to improve the access of the poor to water supplies has become an integral part of loans to countries in many parts of the world. In the past four years, for example, over half of the loans and credits have included finance for standposts (simple taps in public places) or other low-cost methods of providing water service.

In its own operations, the Bank recognizes that water supply contributes in several important ways to the economic and social development of any country. It is a basic need for all people for drinking, washing, and food preparation; it is also, at higher levels of consumption, a commodity like many others in the market. For nondomestic consumers—industry, agriculture, and services—water supply is to varying extents an essential input in the production process, while it is also used for safety purposes, such as fire fighting, and for contributing to a healthy environment. These various types of demand provide the framework and justification for many of the different pricing techniques and service standards which are often combined in a single project.

The Bank aims at building institutions capable of setting targets for the sector, formulating policies and programs, and implementing these programs by mobilizing the needed financial resources as well as attracting, motivating, and training staff. An important part of this task is to ensure that tariff policies are developed to meet financial, social, and economic objectives. A

major financial objective is to make the sectoral institutions—be they state-owned companies, municipalities, or government departments—financially viable. This means that revenues from tariffs should cover all operating costs and debt service as well as a reasonable part of the institution's investment program. A major social objective is to make the service affordable to everyone. This means that the cost of the first few liters of consumption should not be more than, say, 2–5 per cent of the disposable income of the poorest consumer. The economic objective (giving due regard to the other objectives) is to charge

tariffs for most of the water consumed to cover the (usually increasing) costs to the economy of augmenting water supplies and extending distribution networks, and at the same time to discourage waste.

In general, the Bank has been able over the past few years to encourage borrowers to move toward tariff policies which take these considerations into account. This usually involves internal cross-subsidization—that is, setting tariffs high enough for the larger consumers in order to subsidize consumption by the poor. Since, in most countries, consumption of water by the poor is only a small part of total con-

Table 2  
Diseases related to deficiencies in water supply or sanitation

| Group                   | Diseases                             | Route leaving man <sup>1</sup> | Route entering man <sup>1</sup> |
|-------------------------|--------------------------------------|--------------------------------|---------------------------------|
| Waterborne diseases     | Cholera                              | F                              | O                               |
|                         | Typhoid                              | F, U                           | O                               |
|                         | Leptospirosis                        | U, F                           | P, O                            |
|                         | Giardiasis                           | F                              | O                               |
|                         | Amoebiasis <sup>2</sup>              | F                              | O                               |
|                         | Infectious hepatitis <sup>2</sup>    | F                              | O                               |
| Water-washed diseases   | Scabies                              | C                              | C                               |
|                         | Skin sepsis                          | C                              | C                               |
|                         | Yaws                                 | C                              | C                               |
|                         | Leprosy                              | N(?)                           | ?                               |
|                         | Lice and typhus                      | B                              | B                               |
|                         | Trachoma                             | C                              | C                               |
|                         | Conjunctivitis                       | C                              | C                               |
|                         | Bacillary dysentery                  | F                              | O                               |
|                         | Salmonellosis                        | F                              | O                               |
|                         | Enterovirus diarrheas                | F                              | O                               |
|                         | Paratyphoid fever                    | F                              | O                               |
|                         | Ascariasis                           | F                              | O                               |
|                         | Trichuriasis                         | F                              | O                               |
|                         | Whipworm ( <i>Enterobius</i> )       | F                              | O                               |
|                         | Hookworm ( <i>Ankylostoma</i> )      | F                              | O, P                            |
| Water-based diseases    | Urinary schistosomiasis              | U                              | P                               |
|                         | Rectal Schistosomiasis               | F                              | P                               |
|                         | Dracunculosis (guinea worm)          | C                              | O                               |
| Water-related vectors   | Yellow fever                         | B                              | B mosquito                      |
|                         | Dengue plus dengue hemorrhagic fever | B                              | B mosquito                      |
|                         | West-Nile and Rift Valley fever      | B                              | B mosquito                      |
|                         | Arbovirus encephalitides             | B                              | B mosquito                      |
|                         | Bancroftian filariasis               | B                              | B mosquito                      |
|                         | Malaria                              | B                              | B mosquito                      |
|                         | Onchocerciasis                       | B                              | B <i>Simulium</i> fly           |
|                         | Sleeping sickness                    | B                              | B tsetse                        |
|                         | Hookworm ( <i>Necator</i> )          | F                              | P                               |
|                         | Clonorchiasis                        | F                              | Fish                            |
| Fecal disposal diseases | Diphyllobothriasis                   | F                              | Fish                            |
|                         | Fasciolopsiasis                      | F                              | Edible plant                    |
|                         | Paragonimiasis                       | F, S                           | Crayfish                        |

Source: R.J. Saunders and J.J. Warford, *Village Water Supply: Economics and Policy in the Developing World*, The Johns Hopkins University Press, 1976.

<sup>1</sup> F = feces; O = oral; U = urine; P = percutaneous; C = cutaneous; B = bite; N = nose; S = sputum.  
<sup>2</sup> Though sometimes waterborne, more often water-washed.



sumption, this cross-subsidization is generally possible without charging the larger users a price which would either be economically unjustified or politically infeasible. However, there are still many countries where water charges are so low that they subsidize all consumers. There is little justification for this where fiscal resources are limited and where much of the water produced is consumed by large residential and commercial users. Demands by these users should be met at the least cost to the economy. Indeed it may be essential to serve large users in order to realize economies of scale and to generate the financial surplus needed to subsidize services to the poor.

Since the provision of adequate supplies of safe water is only one element in the broader concept of sanitation, investment in water supply must also be examined in terms of its effect on the environment. The most direct environmental effect normally relates to the disposal of waste water which in most cases is, in turn, related to water consumption. The typical per capita consumption from a standpost or communal well is below 25–30 liters a day; this level of use normally does not produce disposal problems of any health or environmental importance. For a house connection, however, typical consumption is usually 100 liters or more a person daily and a sewer system is usually required to carry away wastewater. Thus, the disposal of the water introduced into a community must be considered at the time the water supply project is designed, even though the actual implementation of a wastewater disposal project may be some time in the future. For the same reason, the standards for levels of water supply service should be carefully evaluated to discourage unnecessarily high water consumption which would require an early introduction of sewerage.

## Waste disposal

The provision of safe drinking water alone is not sufficient to control most of the debilitating diseases resulting from insanitary living conditions. They can only be eliminated as a major public health hazard if proper excreta disposal and training in personal and food hygiene is provided together with water supply services. This growing recognition of the value of adequate waste disposal, enabling the full benefits of water supply to be realized, is reflected in the changing pattern of Bank loans over time. The proportion of water supply projects with waste disposal components has rapidly increased from 41 per cent before FY 1974 to 60 per cent in the past five years.

Unlike water supply, which is accepted as absolutely essential for human health and well-being and about whose delivery few technical problems exist, excreta disposal suffers from misconceptions about objectives and the means to achieve them. The conventional technology, waterborne sewerage, evolved in industrialized countries as a vehicle for carrying away the large quantities of water used by households and industry. Because the flush toilet itself accounts for 30–40 per cent of a household's water use, the disposal of the collected wastewater became a significant environmental hazard. Thus expensive treatment techniques were required to separate water from excreta before discharge. In a developing country, if community health were seen as the ultimate objective of waste disposal rather than user convenience, the collection and treatment of excreta could be accomplished with much less expense and fewer environmental hazards than those associated with sewerage. Where people do not need to use large quantities of water or do not have the facilities or incomes to do so, as is likely to be the case for some years to come in many developing countries, sewer systems may not be required. Despite that, waste disposal alternatives to sewerage are rarely considered. Given the high cost of sewerage (from three to five times the per capita cost of water), it is not surprising that investment in this subsector is lagging.

As a result, many urban areas have small sewer systems serving the affluent areas, with the urban poor and rural areas largely neglected and without formal means of waste disposal. In contrast to water supply where service levels for 75 per cent to 85 per cent of the population provide reasonably good service because the consumer who is not officially served at least has access to standposts, fountains, or connections belonging to friends and neighbors,

someone without his own waste disposal facility generally has no access to public systems or those of friends. As a result, it is not unusual to find alleys, backyards, and even streets used as sites for defecation, endangering public health and the environment even in cities which nominally have a sewer system.

Another complicating factor is the varying perception different groups of people have about the role of waste disposal—a concept which includes proper disposal of human wastes as well as other types of animal, domestic, or industrial wastes. In many social contexts, human waste is a commodity, in demand like any other, for use as composting material, bio-gas generation, or directly as a fertilizer. In others, it is the obverse of a commodity; that is, people—and the community to which they belong—simply wish to dispose of it as cheaply and conveniently as possible. Even in communities where human waste is regarded as a commodity, it may not be so regarded at all levels of development or income, simply because cheaper or more convenient substitutes (such as chemicals in the case of fertilizer or other fuels in the case of bio-gas) may become available. In such cases, since human waste (unlike most other commodities) continues to be produced irrespective of the fact that the demand for it suddenly declines, the need for waste disposal facilities may arise very quickly indeed.

To cope with these complications and differing goals of the subsector, Bank projects include not only sewerage to dispose of wastewater and excreta in areas served with house water connections, but also provide means of excreta disposal in those areas which cannot be sewered in the foreseeable future—such as areas of low water consumption where residents cannot afford the high cost of sewerage. This probably includes the majority of rural communities and as much as 50 per cent of the urban areas. (According to WHO, of the 75 per cent of the urban inhabitants with adequate excreta disposal facilities, only about one third are served by waterborne sewerage.) On the other hand, sewers are occasionally justified where the high water consumption of part of the community and industrial/commercial development have resulted in gross pollution along the low-lying areas near rivers where most of the poor live. In such cases, sewerage investment does benefit the poor directly through connections or, more often, indirectly through improving their environment. The recent projects in Algiers and São Paulo are examples of sewerage schemes which clean up rivers flowing through massive slum settlements.



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The institutional and financial aspects of waste disposal operations are similar to those of water supply; in fact, very often the water supply agency is also responsible for waste disposal. Charges for waste disposal services are often based on water consumption, particularly in the case of waterborne sewerage. The policies successful in water supply—low minimum tariffs for low-income customers and higher tariffs for the well-to-do—can be applied. In addition, it is not unusual to recover a part of the cost of waterborne sewerage by means of real estate or other taxes, such as an environmental improvement tax, because benefits accrue even to those inhabitants of a community not connected to the system through the general environmental improvement.

### Research and operations

The change in emphasis of the Bank's lending policies since 1970 toward providing adequate, convenient, and safe water supply and waste disposal at prices the poor can afford has been made possible by the findings of the Bank's operationally oriented research program in the sector. A study on village water supply, which was one of its first major research projects, emphasized two areas: (1) the economic, social, financial, and administrative issues characteristic of rural water supply and waste disposal programs; and (2) the almost insurmountable problem of quantifying the benefits of investments in the sector so that they could be incorporated into project analysis (see Reading List). It became clear that there were two preconditions for rapid improvement in the access of low-income groups to adequate water supply and sanitation facilities: first, the acceptance of service standards that were not too high; and second, the introduction of appropriate (not necessarily advanced) technologies. Research into water supply and waste disposal has since been dominated by these two considerations. As an example, recent studies of the design of low-cost water distribution systems aim to provide designers with a kit of simple analytical tools to test the effect of various design alternatives on costs.

The largest research effort in the sector has been on low-cost waste disposal—a field which had, until recently, been largely neglected in both developed and developing countries. The work aimed at identifying the technologies appropriate for providing urban fringe and rural communities with socially and environmentally acceptable water supply and waste disposal services at a cost they could afford. The study covered 29 countries at various stages of development, with different cultural, in-

dustrial, and environmental features. It demonstrated quite conclusively that not only are low-cost waste disposal methods functioning successfully but that the potential for replication elsewhere is high.

Research has also been carried out on low-cost technology for water supply projects, such as developing simple rural hand pumps to replace existing ones—which tend to be expensive, difficult to maintain, and failure-prone—as well as new, cheaper types of well screens and wood bearings for pumps.

How can these research results be translated into practice? The World Bank is the executing agency for a United Nations Development Program Global Project demonstrating the feasibility of low-cost water supply and waste disposal techniques in rural and urban fringe areas. This will be achieved through the development of prototype systems in consultation with local communities and using local consultants. The methods identified consist of replicable technologies which will reduce the costs of providing water supply and waste disposal services and simplify operation and maintenance and which are economically and socially acceptable to the intended beneficiaries. The Project is currently being undertaken in 13 countries.

Some training or demonstration schemes have already been incorporated into Bank projects. One example is the loan made in FY 1977 to the Philippines to provide water supplies in provincial cities, which included \$200,000 for training local staff in the rural areas to design, build, and operate small systems. Under the Bank's loan to Nicaragua in 1978 for rural water supply and sanitation, the rural hand pumps and well screens developed under Bank research projects, as well as the wood bearings for pumps, are being tested. In addition, other aid agencies are proposing the trial installation of the well screens in several countries.

To date, the Bank has lent to 53 countries for water supply and waste disposal projects. The first few loans in a country usually have a significant impact on the financial viability and absorptive capacity of sectoral institutions in the country, and set the stage for more loans in the sector which will reach more and more people in these countries. Over 70 per cent of the Third World population which does not have adequate supplies of safe water or adequate waste disposal facilities is located in 20 developing countries. Therefore, to carry out the goals of serving large numbers of people and to provide the maximum number of people with basic water supply and waste disposal facilities in the shortest possible time, much of the Bank's increased

lending in the sector should be concentrated in a few countries, namely, Bangladesh, Brazil, Burma, Egypt, Ethiopia, India, Indonesia, Kenya, Nigeria, Pakistan, and the Philippines.

Over the next five years, it is expected that over 100 loans, for over \$4,000 million, will be made for water supply and waste disposal, and that this program will double in the following five years. An increasing proportion of the proposed lending program will be directed toward expanding and redesigning public services so that the poor will have better access to them; as a result, it is estimated that the proportion of poverty-oriented projects in the sector will increase from 47 per cent in FY 1978 to about 75 per cent in FY 1983. There is probably no more direct or more evident way to improve the living standards of people than to provide them with safe water and sanitary waste disposal. Fortunately, this is a field in which the Bank has a strong base of constructive achievement from past efforts. Even if only this aspect of the Bank's program to help meet the basic needs of the world's poorest were achieved, much would be accomplished.



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The World Bank  
and the world's poorest: V



World Bank photo

# The Bank and the development of small enterprises

Over the next 25 years, vast numbers of workers in the developing countries will need to find jobs outside agriculture, which is now their main source of employment. Although many of these countries are developing a viable and growing industrial sector, employment in industry has not expanded correspondingly. This article examines why this has happened and discusses the Bank's attempts to increase employment opportunities by encouraging the development of small local enterprises, as part of its program to reach the absolute poor.

**David L. Gordon**

Unemployment—or rather blatant underemployment in unproductive occupations yielding bare subsistence—is pervasive and persistent in most developing countries. And it is becoming more serious. Taking the developing world as a whole, the labor force expands by about 26 million persons each year, and the numbers are increasing. Roughly two out of three of these new job-seekers will need to find employment off the farm, some in villages and small towns closely linked with agriculture but the majority in larger towns and cities. And urban employment, in substantial part, must be provided through manufacturing or other industrial activities.

In most developing countries industry has been the most dynamic growth sector—with output expanding at an aggregate rate

of 6.7 per cent from 1960 to 1970 and 4.5 per cent from 1970 to 1975 in the low-income developing countries. But industrial employment has not kept pace. In Latin America, between 1960 and 1969, the rate of growth in manufacturing employment was only 40 per cent that of output for the sector. Other countries for which statistics are available show a consistent lag, by varying amounts.

Part of the reason for this disparity is that developing countries have often given priority to capital-intensive, technologically sophisticated industries—basic steel, petrochemicals, heavy machinery, vehicles, cement, and so on—that employ few people at very high investment costs, often upwards of \$200,000 a job. Further, in the establishment of other new industries of more modest scale and complexity, the sponsoring entrepreneur or government agency often opts for an advanced technology, involving heavy use of capital and energy, in preference to alternatives that are more in keeping with the country's human and natural resources and capital availability.

These relatively capital-intensive techniques may be adopted because of effective sales efforts, or availability of external finance linked to imported equipment, or

insufficient knowledge of alternatives; the more modern, capital-intensive technologies are almost always supported by marketing, servicing and financing agencies that outclass those that support simpler approaches. Sometimes, also, the choice may reflect an assumption that anything other than the latest technology is second or third best and would perpetuate the country's industrial backwardness. This assumption has often led governments to provide credit at below market interest rates, and concessional tariff and tax treatment, for imported capital equipment—which helps to make it profitable for entrepreneurs to buy such equipment and correspondingly reduce their labor requirements. Some countries have put an outright ban on used or “obsolete” equipment.

As a result, the technologies designed for rich, high-wage societies are introduced, often perversely, into the labor-surplus capital-deficit developing world. Indigenous industries, unable to make the jump into the production patterns of the late twentieth century, cannot upgrade their plants gradually and they fall by the wayside. The resulting dualism of an industrial sector based on foreign technology coexisting with an underutilization of local resources can have serious economic and social effects.

### Appropriate alternatives

It is sometimes argued that really there is no choice, that economically feasible alternative technologies do not exist. Certainly insufficient attention has been paid to the development of such alternatives, but studies of a wide range of industries show that labor-intensive techniques are available and can yield a higher return than the conventional options.

A current research project of the World Bank has reviewed numerous studies that analyze the technologies used in nine im-

portant industrial product lines—shoes, cotton cloth, cotton yarn, bricks, cornmeal, sugar, beer, leather, and fertilizer. Its initial findings are that the use of the most “appropriate” technologies (those yielding the highest present discounted value relative to capital investment), compared with the use of more capital-intensive conventional plants, would provide 1.1 to 20 times as many jobs per unit of capital invested, the ratios varying by industry but all strongly positive. Other indices also favor the “appropriate” pattern. A hypothetical composite picture for all nine product lines shows the following comparisons:

|                                | Appropriate technology | Capital intensive technology |
|--------------------------------|------------------------|------------------------------|
| Employment (numbers)           | 304,613                | 59,436                       |
| Wage incomes (\$ million)      | 152                    | 30                           |
| Non-wage income (\$ million)   | 647                    | 345                          |
| Total value added (\$ million) | 800                    | 374                          |
| Capital/labor ratio (\$)       | 2,955                  | 15,142                       |
| Value added per worker (\$)    | 2,625                  | 6,363                        |

### Less capital per job

Labor-intensive industries are often those in which smaller firms predominate and are economically viable. Even within a given industry, however, a considerable range of firm size is often feasible, with the smaller ones usually requiring less capital per worker and per unit of value added. Not all small firms use labor-intensive technology; some large plants may do so, but on average the smaller the enterprise the less the capital invested per job.

Other considerations also weigh in favor of small enterprise:

- Small firms, using simple technology, can often adjust more readily to a developing country's social and cultural environment, and can more easily develop links with nonmanufacturing sectors and avoid the duality associated with large units, which are often owned by or are dependent on foreign companies; this is particularly important in countries that are just starting on the road to industrialization.
- Development of smaller enterprises helps to enlist broader participation in economic benefits and decisions.
- Small firms are often technically innovative, devising or adapting production techniques suited to the country's particular circumstances; the most modern technologies offer little scope for improvement through indigenous ingenuity.
- Small enterprises can often better serve the limited, fragmented markets typical of

many developing countries than larger units.

- The development of small enterprises facilitates the dispersion of manufacturing activity, and so can help reduce regional imbalance, urban concentration, and (often) adverse environmental impact.

On the other hand, it is evident that, for some industries, economies of scale are so important that very large, capital-intensive units are mandatory. Examples are synthetic fertilizer and other petrochemicals, basic steel, and heavy equipment. But even industries where large size is often assumed to be typical and inevitable—such as automobile, truck, and tractor manufacture—can be organized quite efficiently, largely on the basis of production by small units; about 95 per cent of the companies producing for Japan's automotive industry are small firms—over 45,000 of them by recent count. Shipbuilding requires heavy capital investment, but hundreds of shipfitting operations are highly labor-intensive, and involve components that can be produced by still more labor-intensive small units.

In assessing the employment created by industrial investment, one must take account also of secondary and tertiary effects. Apart from the jobs directly created in a particular manufacturing process, there are auxiliary services, suppliers of material inputs, wholesale and retail distributors of the product, and so on. Jobs in these associated activities usually constitute a multiple of the direct manufacturing employment, and their capital cost per job is usually much lower. Thus, the manufacturing industry can be a powerful engine for employment creation as well as for economic growth, if the cost of the industrial jobs is not so high as to swamp the auxiliary employment contribution.

### Achieving balance

The concept of technologies smaller in scale, simpler, and more labor-intensive than most Western or Soviet models is beguiling; it is also frequently valid. But to steer between a rather romantic “small is beautiful” approach and the uncritical acceptance of “modern” technologies as intrinsically superior requires a hardheaded analysis of specific country and industry situations. It may help to simplify the analytical process and make it easier to give appropriate emphasis, balance, and sequence of development to different industrial categories, in the light of relative factor endowments, if policy biases that exist in many countries can be reduced or eliminated. Such biases often tend to distort the allocation of resources, by underpricing capital equipment, infrastructure, and ser-

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Giuseppe Franchini for F&D

vices for large industries, pushing up their labor costs, or overprotecting them from import competition. This approach should help market forces to favor, rather than discourage, an efficient mix and interaction of labor-intensive and capital-intensive production modes. The Bank's country economic and industry sector studies attempt to analyze existing distortions and their effects, and the likely shape of an undistorted industrial development pattern, as a basis for a continuing dialogue with governments on industrial strategy.

It would be unrealistic to assume, however, that a proper adjustment of factor prices (even if that could be done to everyone's satisfaction) would by itself cause the optimum mix of large or small, capital-intensive or labor-intensive, to evolve. In the first place, large firms possess certain inherent advantages more or less regardless of their economic efficiency. They are more immune from risk of failure, in the sense of disappearing or being abandoned; they will usually be propped up indefinitely or, if their performance is too dismal for too long, they will continue under new ownership or management. They have more market influence and bargaining power than smaller competitors or associates, and may use this strength to stifle competition or to encroach on the profit margins of smaller dependents. They have readier access to public officials and bankers, who have an occupational predilection toward bigness.

Smaller firms do not usually have such a safety net; those that fail disappear. Typically, entrepreneurs have personally to oversee and make decisions on most aspects of their business. When specific problems of law and regulation, finance, technology, or marketing arise that are beyond the limits of their expertise (as may frequently occur at crucial stages of a firm's survival, or its expansion, or transition into a more sophisticated product line or market), they cannot afford to employ consultants to advise them. Moreover, the public infrastructure and services available to these firms are often inadequate, their financial resources scanty, and credit institutions unsympathetic. These disabilities, which inhibit their efficient operation, are due in part to the widely prevalent view that they are necessarily inefficient and not conducive to the development process.

There may be a need, therefore, for a variety of governmental interventions: to counteract the simplified, often wrong-headed, impression just mentioned; to restrain unfair competitive practices by larger firms; to supply needed technological and business information and advice; to ease

access to institutional credit on reasonable terms, for worthy productive purposes; to facilitate, and in a measure regulate, the development of mutually advantageous cooperation between small and large firms through, for example, subcontracting or marketing arrangements. Such intervention, properly designed and accessible, should enable small firms to function more efficiently, to make a greater contribution to activities that are not subject to major economies of scale, and to function alongside and reinforce big firms in doing the things that they, as small undertakings, do best.

On the other hand, one must recognize that governments sometimes overprotect client enterprises, small as well as large, that should rather be subjected to a more vigorous competitive stimulus. So again, public measures in support of small enterprise need to be selectively and judiciously applied.

### The Bank's involvement

The World Bank Group finances industry through three loosely coordinated channels: (1) through direct loans or credits from the Bank or the International Development Association (IDA), usually of \$50 million and up, for major industrial projects, often government-owned or sponsored; (2) through loans and investment by the International Finance Corporation (IFC) in private sector projects smaller than those financed directly by the Bank but relatively large in the country concerned; and (3) through lines of credit (and some equity investments by the IFC) for national or regional development finance companies (DFCs), which retail credits to local enterprises in accordance with terms and criteria agreed with the Bank and subject to the Bank's supervision and approval. The last channel, which delegates the responsibility for day-to-day loan appraisal and subsequent administration to DFCs in the respective developing countries, enables the Bank to address the needs of a much greater number of smaller and more dispersed enterprises than it could possibly deal with directly. Nevertheless, even through these locally based institutions, Bank financing has generally been accessible only to the larger, relatively capital-intensive segment of industry, perhaps the top 20 per cent in number—firms that may be small by the standards of industrial countries but loom large in the local economy.

In 1975 the Bank began to look seriously at the case, and the potential, for assisting in the development of small enterprises. The sector policy paper approved in 1977, *Employment and Development of Small Enter-*

*prises*, concluded that this objective holds promise and deserves support. It estimated that only 8 per cent of prior Bank and IDA lending channeled through DFCs had so far gone to small enterprises, and it proposed a major increase in this share—notionally to about one third of total lending in FY 1981. In FY 1978 the share reached 24 per cent.

Most World Bank projects to assist the development of small enterprises incorporate a variety of nonfinancial elements as well as provision of credit and (sometimes) equity financing. An especially comprehensive project was the object of a loan to Mexico approved early in 1978. It comprises:

- A credit and guarantee program to enable small and medium-sized firms to obtain needed equipment and working capital. Loans are made and administered by the commercial banking network and are reviewed and guaranteed by a special national entity.
- An expanded program to provide risk capital, on a temporary and minority shareholder basis, to strengthen the financial viability of promising small firms.
- A program to lease plant and equipment to small and medium-sized enterprises, thereby reducing their need to tie up capital in the initial or expansion phases of development.
- Establishment and training of a corps of industrial development extension agents to help small entrepreneurs to identify and diagnose their problems, to prescribe solutions where possible, or to introduce or refer entrepreneurs to appropriate sources of financial or technical assistance.

These elements appear in most other small enterprise development projects financed by the Bank—sometimes introduced simultaneously, sometimes in stages, and often building on or supplementing domestic initiatives or the efforts of other aid-givers. Frequently, also, the Bank undertakes or assists studies of the incentive structure, government procurement policies, subcontracting policies and procedures, and other institutional questions that may substantially affect the development of small enterprises.

Bank and IDA loan commitments since the start of FY 1978, when the new emphasis on small-scale enterprise became effective, show a dramatic shift in that direction—based on preparatory work in the preceding two years. The dollar amount of loans earmarked for small enterprises was over 10 times the average for the preceding four years. But even on the most optimistic assumptions, Bank and IDA projects can be of direct assistance to only a small fraction of the burgeoning labor force in the



developing world that the agricultural sector can no longer absorb. The Bank contribution will be mainly by way of experiment and example.

However, in attempting to address the problem of urban and off-farm rural poverty by expanding employment in industrial and related activities, the Bank has been led to examine in greater depth the industrialization strategies appropriate for countries with differing characteristics and at different stages of development. The result has been partly to give greater emphasis to support of small enterprises, through a variety of intermediaries, and also to clarify the desirable balance and interaction between small and large enterprises, in order to maximize the yield of both employment and output for the benefit of the countries in question. These findings, as they emerge, are being incorporated into the Bank's policy dialogue with member governments; it is hoped that they may stimulate initiatives of much broader scope, with roots deeper in the local soil, than the Bank could conceive or carry out. This fractional contribution, if it is indeed seminal, will justify the effort.

**ED**

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# Labor market developments in the major industrial countries

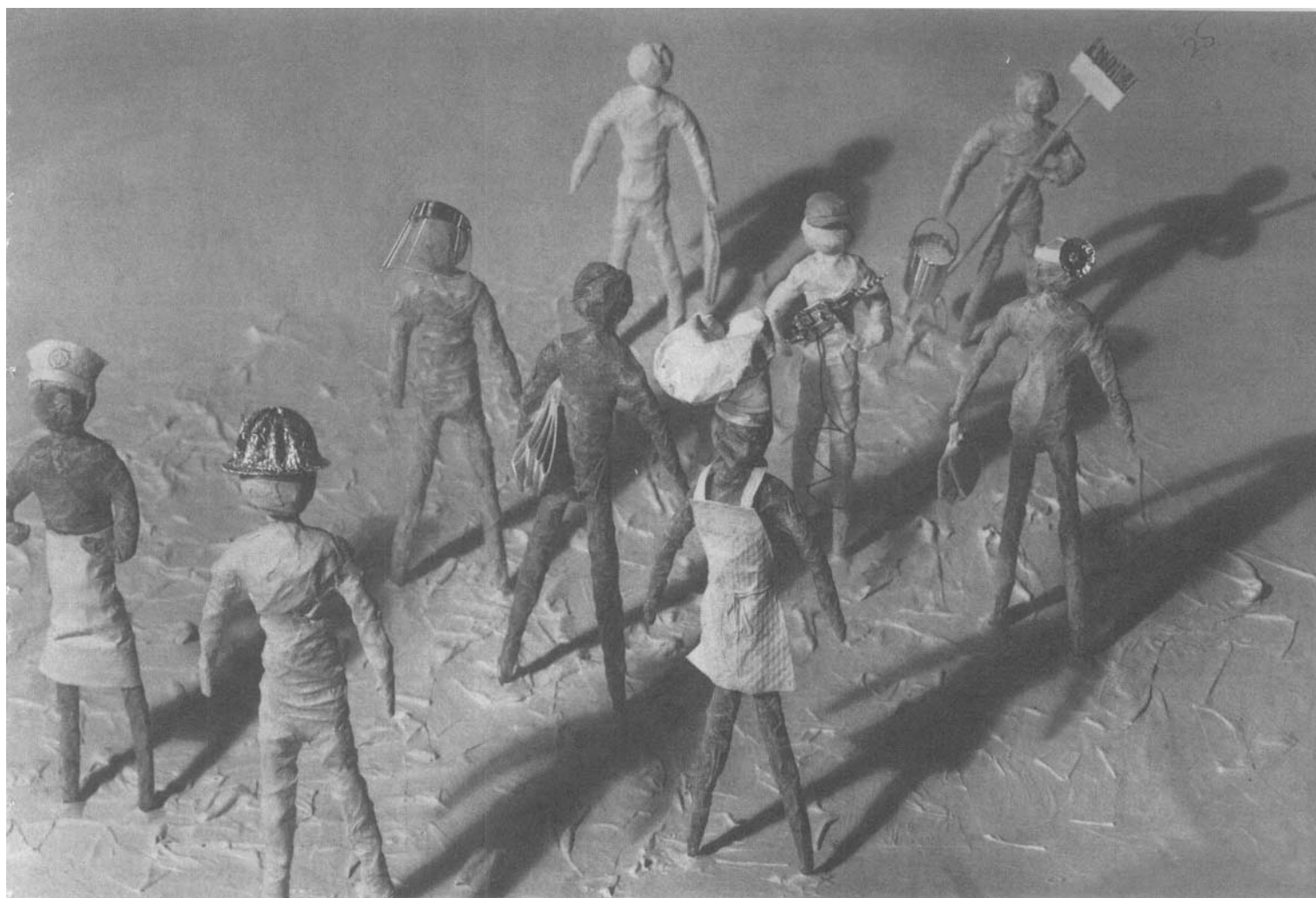
Unemployment has remained at a very high level in the major industrial countries since 1975. However, this absence of a marked change in the overall unemployment rate does not reflect a uniform experience. There has been a considerable diversity of underlying labor market developments in individual countries. This article analyzes recent labor market conditions from a historical perspective.

**Michael Deppler and Klaus Regling**

The economic forces affecting recent unemployment rates have been generally similar among the seven major industrial countries (Canada, France, the Federal Republic of Germany, Italy, Japan, the United Kingdom, and the United States). First, on a long-term basis, various structural changes in labor markets have tended to push up national unemployment rates in most of these countries. Second, the impact of cyclical developments on unemployment rates in the past several years has resulted in a number of broadly parallel movements among countries, as might have been expected. However, this semblance of uniformity masks a very considerable diversity of developments in the supply and demand for labor underlying national unemployment rates.

## Unemployment

The overall unemployment rate in the major industrial countries has declined only slightly since the trough of the 1975 recession. In that year, reported unemployment in these countries reached 5.1 per cent of the combined labor force, a rate substantially above the rates (varying between 2.3 and 3.5 per cent) that prevailed during the 1960s and early 1970s (see Table 1). Overall, the unemployment rate for the larger industrial countries hovered close to 5 per cent from 1976 through 1978.



Art by Soozee Pallansch, photo by Joseph J. Diana

Behind this virtual constancy of total unemployment in the industrial countries since 1975, however, were some contrasting developments for individual countries. In the United States, the unemployment rate declined by about  $\frac{3}{4}$  of a percentage point per annum from 1975 to 1978. Within-year developments have not been very even, but the cumulative decline of 3 percentage points in the U.S. unemployment rate from the monthly peak of 9.1 per cent reached in May 1975 is certainly the most impressive performance among the industrial countries. In both the Federal Republic of Germany and Japan, unemployment rates were substantially unchanged from 1975 to 1977; for 1978, however, an increase in unemployment occurred in Japan, while the German unemployment rate edged downward. In Canada, France, Italy, and the United Kingdom, unemployment rates increased 1–2 percentage points from 1975 to 1977 and (on a year-over-year basis) worsened further or remained high in 1978. (See Table 1 for a note on the data for Italy.)

In reviewing the major factors behind these developments, one is impressed by the importance of purely cyclical influences. The increase of more than  $1\frac{1}{2}$  percentage points in the overall unemployment rate between 1973 and 1975 is hardly surprising in light of the stagnation of ag-

gregate output over this period. Similarly, the small overall decline in unemployment since 1975 is consistent with the concurrent moderateness of the average rate of growth in output (reflecting the slow pace of recovery outside the United States). The importance of purely cyclical considerations is further borne out by the intercountry differences in growth rates, especially in relation to the countries' respective potentials: the country with an average growth rate well above potential (the United States) has enjoyed a noticeably improving labor market; those countries with growth rates close to potential (the Federal Republic of Germany and, to a lesser degree, Japan) have had unchanged labor markets; and those which, for various reasons, restrained growth to rates averaging well below potential have experienced deteriorating labor markets. Clearly, the cycle has been the main factor behind changes in unemployment rates since 1973.

### Partly offsetting shifts

Be that as it may, the "well-behaved" cyclical movements in unemployment rates in the major industrial countries have been a result of unusual—and partly offsetting—developments both within and among countries in the demand for and the supply of labor. The larger industrial countries as a group have experienced unusually rapid

growth in both the labor force and total employment since 1975; that is, shifts on the supply side have been partly neutralized by shifts on the demand side of the labor market. However, these movements have stemmed from diverse developments in individual countries, and the shifts which have not been completely offsetting have affected the unemployment rates themselves.

Chart 1 highlights the distinct outward shift in the unemployment/vacancy relationship evident in most countries for which relevant data are available. In each of the three cases illustrated, achieving a given unemployment rate today appears to require a relatively greater unsatisfied demand for labor (a larger number of vacancies) than was needed 10–15 years ago. Or, to put it the other way, a given unsatisfied demand for labor (as measured by vacancies) is now accompanied by a larger number of unemployed than was true a decade or so ago. More generally, the chart illustrates the increased mismatch at the margin between the supply of and the demand for labor. For the most part, this change in the relationship between unemployment and vacancies is thought to have stemmed mainly from the supply side. That is, the jobs that are available are less likely than they once were to be taken by the job-seeker because his alternatives—unem-

ployment compensation or alternative sources of income—have improved. It is possible, however, that the difficulties may have stemmed from the demand side as well—for instance, where new technology has caused compositional shifts in job-skill requirements.

A major exception in the general pattern of shifts just described is the Federal Republic of Germany where there is no clear-cut evidence of an increasing mismatch between vacancies and unemployment, except perhaps for a rather small shift in this regard between the early 1960s and the late

1960s-early 1970s. This comparative absence of structural impediments in the German labor market may be due to the large flows of migrant workers, which may have enabled a better matching of demand and supply than would otherwise have been possible.

### Labor force developments

For the larger industrial countries as a group, labor force growth fluctuated rather narrowly around 1 per cent per annum throughout the 1960s and the first half of the 1970s. The only exception was a spurt to a 2 per cent rate in 1973, at the cresting of a strong cyclical upswing in economic activity. Since 1975, however, labor force growth, despite historically high rates of unemployment, has accelerated to about 1½ per cent per annum. From 1975 to 1978, the labor force grew faster than in any other three-year period since the 1950s.

This acceleration in the growth of the labor force is not accounted for by the growth of the working-age population, which has, if anything, slowed down in recent years to about 1 per cent per annum, compared with an average of about 1¼ per cent per annum in the 15 years prior to 1973. Rather, the accelerated growth reflects a rise in the participation rate—the proportion of the working-age population that is holding, or looking for, jobs. This rate dropped by about 1½ percentage points in the first half of the 1960s (because of structural shifts, noted later); it remained unchanged at about 68 per cent of the working-age population during the rest of the 1960s and the first part of the 1970s. The participation rate then increased in 1973 and 1974 in response to boom conditions, but fell back somewhat in 1975 as labor market conditions deteriorated sharply.

This cyclical pattern is a classical one. The main feature is simply that high unemployment rates “discourage” potential employees so that, in effect, they drop out of the measured labor force; conversely, low unemployment rates “encourage” such persons once again to look for work, thus returning to the labor force. In contrast to this traditional pattern, participation rates have risen rather than fallen over the past several years, despite the high rates of unemployment. Indeed, without these increases, the overall unemployment rate of the major industrial countries in 1978 would have been about 1 percentage point lower.

Among the major factors that may explain the increased participation rates, is the ongoing (noncyclical) increase in the participation rates of women in several countries (see Table 2). A second factor is the significant and prolonged downward

Table 1  
Seven industrial countries: selected indicators of labor market developments,  
1960–78<sup>1</sup>

(Annual changes in per cent, unless otherwise indicated)

|                               |                                | 1960–73<br>Average | 1974 | 1975 | 1976 | 1977 | 1978 <sup>2</sup> |
|-------------------------------|--------------------------------|--------------------|------|------|------|------|-------------------|
| Canada                        | Unemployment rate              | 5.2                | 5.3  | 6.9  | 7.1  | 8.1  | 8.4               |
|                               | Labor force                    | 2.8                | 4.1  | 3.7  | 2.5  | 3.0  | 3.7               |
|                               | Employment                     | 2.9                | 4.4  | 1.9  | 2.2  | 1.9  | 3.4               |
|                               | Productivity <sup>3</sup>      | 2.6                | –0.8 | –0.6 | 3.2  | 0.8  | 0.1               |
| United States                 | Unemployment rate              | 4.9                | 5.6  | 8.5  | 7.7  | 7.0  | 6.0               |
|                               | Labor force                    | 1.8                | 2.6  | 1.8  | 2.3  | 2.8  | 2.9               |
|                               | Employment                     | 1.9                | 1.8  | –1.3 | 3.2  | 3.5  | 4.2               |
|                               | Productivity <sup>3</sup>      | 2.2                | –3.1 | —    | 2.4  | 1.4  | –0.3              |
| Japan                         | Unemployment rate              | 1.2                | 1.4  | 1.9  | 2.0  | 2.0  | 2.3               |
|                               | Labor force                    | 1.3                | –0.5 | 0.9  | 1.0  | 1.4  | 1.5               |
|                               | Employment                     | 1.3                | –0.6 | 0.4  | 0.9  | 1.3  | 1.2               |
|                               | Productivity <sup>3</sup>      | 8.8                | –0.7 | 2.1  | 5.1  | 3.8  | 4.4               |
| France                        | Unemployment rate              | 1.8                | 2.8  | 4.0  | 4.4  | 5.0  | 5.4               |
|                               | Labor force                    | 0.9                | 0.9  | 0.1  | 0.6  | 0.1  | 0.6               |
|                               | Employment                     | 0.7                | 0.7  | –1.1 | 0.1  | –0.5 | 0.2               |
|                               | Productivity <sup>3</sup>      | 4.9                | 2.1  | 1.4  | 4.5  | 3.5  | 2.9               |
| Germany,<br>Fed. Rep. of      | Unemployment rate              | 1.0                | 2.6  | 4.7  | 4.6  | 4.5  | 4.4               |
|                               | Labor force                    | 0.2                | –0.4 | –0.9 | –1.0 | —    | 0.3               |
|                               | Employment                     | 0.2                | –1.8 | –3.4 | –0.5 | 0.1  | 0.4               |
|                               | Productivity <sup>3</sup>      | 4.3                | 2.2  | 0.9  | 6.7  | 2.7  | 2.8               |
| Italy <sup>4</sup>            | Unemployment rate              | 3.3                | 2.9  | 3.3  | 3.7  | 4.3  | 4.3               |
|                               | Labor force                    | –0.7               | 1.5  | 1.0  | 1.1  | 1.3  | 0.7               |
|                               | Employment                     | –0.6               | 2.2  | 0.5  | 0.7  | 0.8  | 0.6               |
|                               | Productivity <sup>3</sup>      | 5.8                | 2.0  | –4.0 | 5.0  | 0.9  | 1.4               |
| United Kingdom                | Unemployment rate              | 2.3                | 2.6  | 3.9  | 5.4  | 5.8  | 5.7               |
|                               | Labor force                    | 0.3                | 0.2  | 0.7  | 1.2  | 0.9  | 0.2               |
|                               | Employment                     | 0.2                | 0.4  | –0.5 | –0.7 | 0.5  | 0.3               |
|                               | Productivity <sup>3</sup>      | 2.7                | –1.9 | –1.1 | 3.7  | 1.2  | 3.0               |
| Major industrial<br>countries | Unemployment rate <sup>5</sup> | 2.8                | 3.5  | 5.1  | 5.0  | 4.9  | 4.7               |
|                               | Labor force                    | 1.1                | 1.1  | 1.0  | 1.3  | 1.6  | 1.7               |
|                               | Employment                     | 1.1                | 0.6  | –0.7 | 1.4  | 1.7  | 1.9               |
|                               | Productivity <sup>3</sup>      | 3.7                | –0.9 | —    | 3.9  | 2.2  | 1.9               |
| Major European<br>countries   | Unemployment rate <sup>5</sup> | 1.8                | 2.4  | 3.7  | 4.4  | 4.7  | 4.7               |
|                               | Labor force                    | 0.2                | 0.4  | —    | 0.4  | 0.5  | 0.4               |
|                               | Employment                     | 0.2                | 0.2  | –1.3 | –0.3 | 0.1  | 0.4               |
|                               | Productivity <sup>3</sup>      | 4.4                | 1.0  | –0.4 | 5.1  | 2.1  | 2.6               |

Source: national statistical publications and Fund staff estimates.

<sup>1</sup> The figures shown in this table are not comparable among countries since they are based on the differing labor force definitions and concepts used by the respective national statistical agencies.

<sup>2</sup> Partially estimated by the staff.

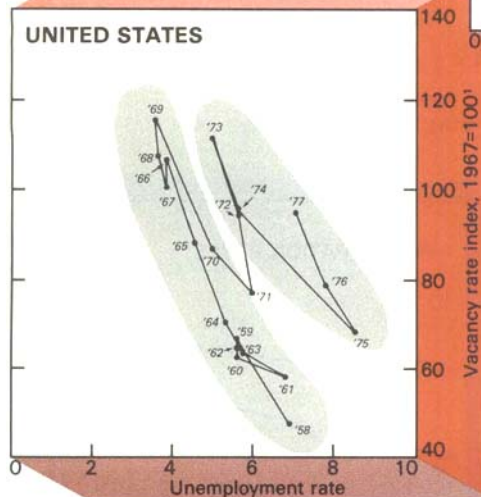
<sup>3</sup> Real GNP per person employed.

<sup>4</sup> A large-scale methodological revision in the Italian labor force statistics was initiated in 1977. The figures shown here for 1977 and 1978 are staff estimates corresponding to the old definitions.

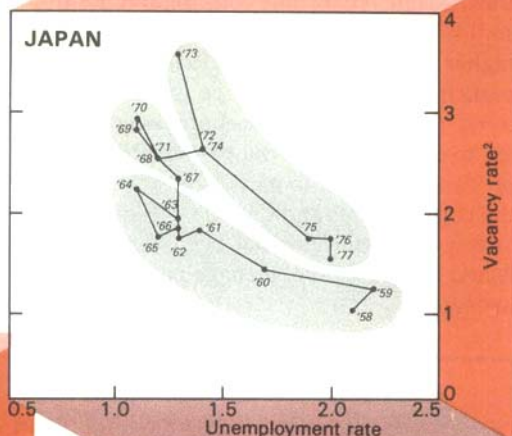
<sup>5</sup> Unemployed as a per cent of total labor force.

Chart 1  
Selected industrial countries:  
relation between the  
unemployment and  
vacancy rates

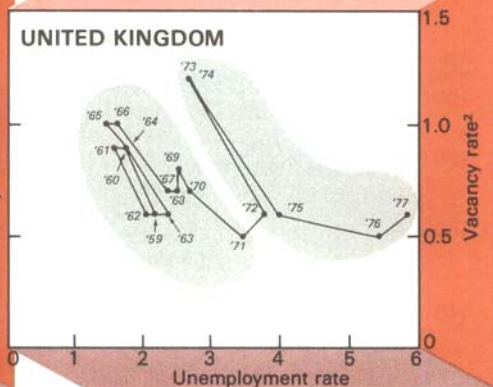
#### UNITED STATES



#### JAPAN



#### UNITED KINGDOM



Source: OECD Labour Force Statistics and Fund staff estimates.

<sup>1</sup>The Conference Board's index of help-wanted advertising in newspapers, scaled by the ratio of the labor force in 1967 to the labor force in each year.

<sup>2</sup>Vacancies notified to employment offices or labor exchanges as a per cent of the labor force.

A third factor encouraging participation has been the combination of improved benefits and reduced opprobrium attached to unemployment. Most countries have liberalized their unemployment compensation systems, initially as part of a general upgrading of social security arrangements and later as a response to the high and persistent levels of unemployment. These improved benefits have had the effect of tending to raise unemployment since they reduce the opportunity costs of being unemployed. Since these benefits also raise the opportunity costs of not seeking employment, however, they are thought to have affected participation rates as well. For instance, the prolongation of unemployment benefits has the effect of extending the stay in the labor force of those who would otherwise withdraw.

Finally, participation rates are thought to be bolstered by the array of job-creating and job-preserving programs recently introduced by many governments. While these programs have been generally successful in sustaining employment, they have also had the secondary effect of attracting into the labor force individuals who would not otherwise actively seek employment. Indeed, the conclusion of one study for France on this subject is that such countervailing increases in participation rates may have largely negated the effects on

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Joseph J. Diana for F&D

Table 2  
Labor force participation of women<sup>1</sup>  
(In per cent)

|                       | 1958              | 1965              | 1970 | 1977 <sup>2</sup> |
|-----------------------|-------------------|-------------------|------|-------------------|
| Canada                | 30.0              | 36.0              | 41.1 | 52.0              |
| United States         | 41.4              | 44.3              | 48.9 | 55.5              |
| Japan                 | 60.8              | 55.8              | 55.4 | 52.9              |
| France                | ...               | 46.1 <sup>3</sup> | 48.2 | 50.3              |
| Germany, Fed. Rep. of | 49.0              | 49.0              | 48.1 | 48.4              |
| Italy                 | 38.5 <sup>4</sup> | 31.1              | 29.1 | 30.9              |
| United Kingdom        | 47.1              | 48.8              | 50.5 | 56.9              |

Source: OECD Labour Force Statistics and Fund staff estimates.

<sup>1</sup> Women in the labor force as a percentage of the female working-age population.

<sup>2</sup> Or latest year available (1975 for France; 1976 for Italy).

<sup>3</sup> 1968.

<sup>4</sup> 1959.

pressure on real incomes of households arising from the inflation and recession of 1974-75. This factor is thought to have accelerated the trend toward multiple-income-earner households; that is, partly in response to the faltering purchasing power of many household incomes and/or to the unemployed status of the traditional income earner, many women entered the labor force for the first time.

unemployment of some of the public sector employment programs.

#### Varying trends

These generalizations with respect to the overall labor supply are not equally consistent with the experience in each of the major industrial countries. Indeed, there is a considerable diversity of experience among countries, a diversity that is rooted



in the first instance in contrasting historical trends in labor force growth (see Chart 2). In the United States and Canada and, to a lesser extent, Japan, the growth of the labor force has been far greater than in Europe, where the trend has been relatively flat.

Developments within Europe have also been quite divergent, with moderate growth rates in the United Kingdom and France, but flat or shrinking labor forces in the Federal Republic of Germany and (through 1972) Italy. In the main, these differences reflect corresponding differences in the growth rates of the working-age populations. In this respect, the much lower growth rates in Europe can be traced to lower birth rates during World War II and to migration from Europe to North America. Among the major European countries, population growth has been highest in France—partly the result of an array of fiscal incentives—and lowest in the United Kingdom. In the Federal Republic of Germany, only an influx of migrant workers prevented a decline in the working-age population after the closing of the eastern border in 1961.

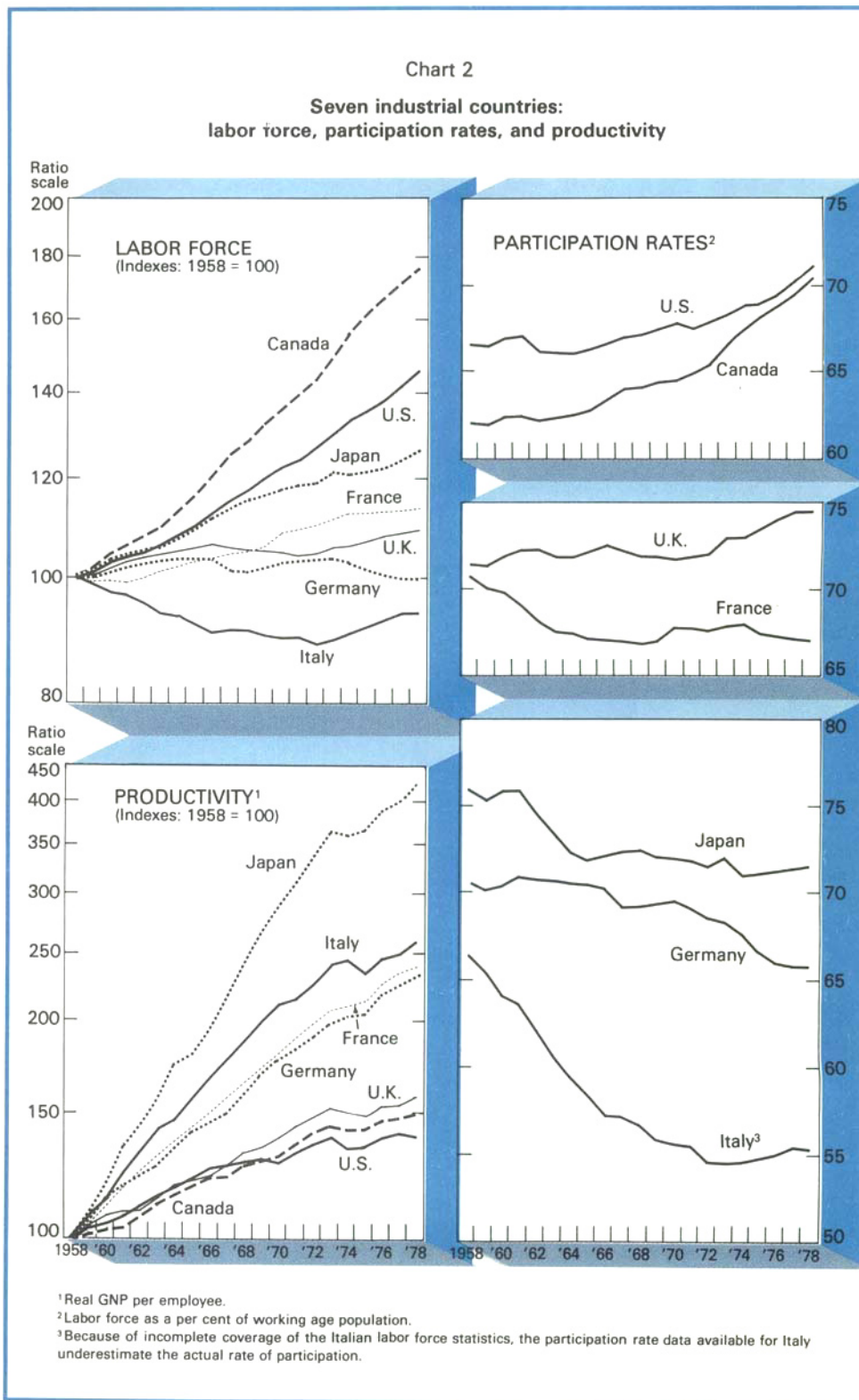
The contrasting labor force developments are also rooted in divergent trends of participation rates. For the span of years shown in Chart 2, these rates increased rapidly in the United States and Canada and, to a lesser extent, in the United Kingdom, but tended to decline, particularly during the earlier years, in the other countries. These differences can be explained in part by the different starting positions. In the late 1950s, participation rates in most European countries and Japan were noticeably higher than those prevailing in North America; by the mid-1970s, these differences had been largely eliminated.

This convergence of participation rates is particularly evident for the female component of the labor force (see Table 2). In the United States and Canada, participation rates for women increased dramatically throughout the 1960s and into the 1970s, but have only recently become comparable to those prevailing in France, the Federal Republic of Germany, and the United Kingdom. By contrast, Italy and Japan experienced sharp declines in female participation rates, particularly in the early 1960s. These declines were mainly due to structural shifts within the respective economies from agriculture (in which female participation rates were quite high) to industry (where they were much lower); that is, as families shifted from one sector to the other, many women dropped out of the labor force.

Movements in the male participation rates have been less pronounced and more

uniform; such rates declined in all countries except Japan, but considerably more so in Europe, where they had been at higher levels. The steeper decline of male participation rates in Europe is due to the trend toward more education, which has led to a large drop in the participation rate of teenagers, and to earlier retirement. In the United States and Canada, where a relatively long education has been well established for some time, teenage participation increased.

As was mentioned earlier, the acceleration of labor force growth over the past several years has stemmed from a marked increase in participation rates, after almost a decade of near stability. It may be deduced from Chart 2 that this development has resulted from (1) a continuation of past trends in Canada, France, and the Federal Republic of Germany; (2) a deceleration, and indeed some reversal, of earlier negative trends in Italy and Japan; and (3) noticeable gains in participation rates in



the United States and the United Kingdom. The increase in the overall participation rate for these countries is thus seen to be due partly to the cessation of past negative trends; only in the Federal Republic of Germany have such trends continued—mainly because of the reduced number of migrant workers, who generally have above-average participation rates. A noteworthy aspect of these developments in participation rates, however, is the uniform lack of any sizable and lasting decline (like the ones observed, for instance, in the Federal Republic of Germany and the United States during their recessions of 1967 and 1971, respectively) in reaction to the exceptional unemployment rates of the past several years.

## Employment

Given the unusually rapid growth of the labor force, and the small rise in real gross national product (GNP) in the industrial countries since 1975, one may wonder why unemployment has not risen more than it has. For the major industrial countries as a group, the explanation is that employment growth has also been unusually rapid—estimated at some 1½ per cent per annum for each of the years 1976–78. Although these increases followed a year in which aggregate employment fell sharply for the first time in many years, they are nevertheless surprising in relation to the corresponding pace of output. Indeed, the implied average rate of productivity growth (on a real GNP-per-person-employed basis) from 1973 to 1978 was only 1½ per cent per annum, compared with the average annual rate of 3.7 per cent for the 1960–73 period (see Table 1). For the seven-country group, employment declined less than output from 1973 to 1975, as might have been expected during a recession; but, despite the implied redundancy of part of the employed labor force in 1975, employment responded promptly to the rebound of output in 1976. This was followed by a further increase in employment of 1.7 per cent in 1977 and a similar increase for 1978, despite below-average rates of output growth in both years.

The experiences of individual countries have varied—sometimes markedly—from the overall trend (see Table 1). Employment in the Federal Republic of Germany, for instance, has declined substantially since 1973; cumulatively, the drop in employment from 1973 to 1977 amounted to 5½ per cent. In the United States, on the other hand, employment increased by 3.2 per cent and 3.5 per cent in 1976 and 1977, respectively, and it is estimated to have increased by a further 4 per cent in 1978. In part, these differences reflect correspond-

ing differences on the supply side of the labor market, as discussed above. Differences on the demand side of the market, however, are equally important.

There are two aspects to this question. First, there are the different rates of output expansion. For example, growth of output has been noticeably higher in the United States than in the Federal Republic of Germany since 1973, and it is therefore not surprising that the demand for labor has been more buoyant in the United States than in the Federal Republic of Germany. However, these differential rates are not sufficient to explain the contrasting developments in employment. Thus, while output growth in the United States from 1973 to 1977 was only about ½ per cent per annum larger than that in the Federal Republic of Germany (2 per cent versus 1½ per cent), employment in the United States increased at an average rate of about 1¼ per cent per annum, while employment in the Federal Republic of Germany declined at an average rate of about 1½ per cent.

This contrast reflects a second principal factor behind intercountry differences in the demand for labor: the prevalence of marked differences in underlying rates of productivity growth, which are evident in Chart 2. Since the late 1950s, productivity growth in the United States, Canada, and the United Kingdom has averaged about half that of the continental European countries and about one third that of Japan. To put it another way, the maintenance of existing levels of employment required annual rates of output growth of the order of 2–2½ per cent in the United States, Canada, and the United Kingdom, 4–5 per cent in the continental European countries, and 8–9 per cent in Japan. Thus, given the rates of output growth, it is the differences in trend rates of productivity growth that explain, for the most part, the large differences among countries in the demand for labor. Employment has been weak in the Federal Republic of Germany because output growth has been disappointing relative to the trend rate of productivity growth, and conversely for the United States.

The other striking feature of Chart 2 is the remarkable extent to which, over the past several years, all the major industrial countries have experienced slower rates of productivity growth. In several cases, most noticeably that of the United States, there are indications that the deceleration began prior to 1973. Since then, however, every country has experienced a marked slowdown in productivity growth, that in the Federal Republic of Germany being the least pronounced.

From the perspective of employment, the question is whether this slowdown in

recorded productivity growth is due to a redundancy of part of the presently employed labor force or to a deceleration of the underlying productivity trend. In view of the sluggish pace of output growth, the slowdown in productivity growth since 1973 can be at least partly regarded as a normal cyclical phenomenon reflecting the natural propensity of employers to limit the various tangible and intangible costs associated with the firing and hiring of employees. Indeed, this “hoarding” of labor has become a widespread phenomenon in recent years, especially in Japan and some European countries. In these countries, traditional, contractual, and/or legislated agreements between management and labor have made it increasingly difficult for an employer to lay off redundant workers. A long-standing example of such practices is Japan’s traditional “lifetime” system of employment which accounts for the relatively low level of unemployment in that country. It has been estimated that, if U.S. labor market practices prevailed in Japan, the Japanese unemployment rate would currently be around 6 per cent (instead of 2½ per cent). Similarly, in Italy, government regulations and agreements between employers and unions have sustained employment by reducing overtime and normal weekly working hours. Finally, in all of the major industrial countries, employment has also been sustained (to the detriment of productivity) by a host of government employment programs, such as the public service employment programs, and the wide variety of fiscal incentives designed to entice employers into hiring (or at least not firing) employees.

To a certain extent, therefore, the recent slowdown in productivity growth is a normal cyclical phenomenon that may be unusually persistent in the present cycle, for the reasons just mentioned. If so, the implication is that there may be some significant underutilization of labor that needs to be worked off through above-average rates of output growth before one can expect to witness widespread declines in unemployment rates—and a return to more normal rates of productivity growth. This explanation seems hardly satisfactory, however, for countries (such as the United States) where large increases in employment have occurred over the past several years. In face of the rapidly increasing demand for labor in such countries, it seems implausible to suppose that there is much redundancy in the employed labor force. Given the path of output growth, the strong employment gains in these countries would appear to have been the result (rather than the cause) of the decline in the rate of productivity growth.

**FD**

# A new approach to the economic

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The calculation of an economic rate of return has become a standard feature of project evaluation. Yet, as traditionally defined, the rate of return does not focus adequately on the scarcity of investable resources faced by developing countries, nor on their need to alleviate extreme poverty. A new approach in project analysis has therefore been developed which provides a framework designed to assist systematic decision making in this area.

**Anandarup Ray and Herman G. van der Tak**

The World Bank lends for projects that contribute to the development objectives of the borrowing countries—primarily faster economic growth and the alleviation of extreme poverty. The economic analysis of a project assesses its likely impact on the relevant development objectives by comparing the various ways in which the scarce resources required by the project might be used instead. These resources may include different types of labor and skills, land, imported and domestic equipment and materials, and so on. The costs of the project are the forgone benefits which these resources would have produced elsewhere, which must of course be less than the project benefits if the project is to be a sensible one.

Cost-benefit calculations also help to identify the critical parameters of a project. In an agricultural project, for example, the key measures that determine the outcome, and therefore need to be closely examined, might be the yield per hectare, the labor-

intensity of farm operations, or the expected prices for the project's output. This identification helps to improve the project design, or at least to indicate the chances of the project having its expected benefits. Trade-offs between different policy objectives are analyzed by testing how a project's net benefits increase or decrease as, say, the project design is changed to give more benefits to poorer income groups.

The framework for cost-benefit analysis along these lines has been extensively discussed in recent years within and outside the World Bank, resulting basically in two types of improvements. First, some of the old concepts of analysis, such as the shadow exchange rate, have been redefined and in the process made more precise. Second, an attempt has been made to make the framework more relevant to policy objectives in developing countries, stressing the flexibility needed to adapt the analysis to the great diversity of situations to which it is to be applied. This article is concerned especially with this second aspect.

## **Cost-benefit analysis**

The costs and benefits of a proposed project are always measured against an alternative situation—generally that of not proceeding with the project at all. Thus, the benefits and costs are those expected from the project over and above those expected without it. Net benefits to be realized over future years are given a present



# analysis of projects

value and are expressed in constant prices (adjusted for purely nominal changes due to inflation) to demonstrate whether the total net benefits over the life of the project will be positive or negative.

Another approach, equivalent to the first, compares the return on the investment in the project with the return on investment at the margin in the economy, that is, the "opportunity cost of capital." When the economic rate of return on the project is above the opportunity cost of capital, the project clearly helps the economy; conversely, if it is below, the project will involve an outright waste of resources.

It is often thought that a project needs to be analyzed carefully only when it appears marginal. But a project with a high rate of return, of, say, 100 per cent, is not necessarily an acceptable investment, since there may be better ways of designing the project. A highway may be designed according to different standards or it may be started later; an irrigation project may be designed to supply water thinly over a large command area or concentrated in a smaller area; there may be several hydroelectric sites or different techniques for generating enough power to meet the growth in demand, and so on. Project analysis attempts to ensure that the chosen option for a project is the best possible—not only in terms of its size, technology, and location, but also in terms of the ultimate beneficiaries and the quality of output. The analysis, in short, must demonstrate that the proposed

project will create more net benefits to the economy than any other option. To be sure, the search for a better option may be limited by practical considerations, including its cost; but it is always wasteful to proceed with the project if a better option is known to be feasible. Since it is not sufficient for the calculation to show only that undertaking the project is better than doing nothing, it is necessary to define costs and benefits carefully in most cases.

The definitions of costs and benefits used in the economic analysis of a project depend on the national objectives that are to be included in that analysis. When the only objective is the maximization of the total income of the economy, then the costs are the reductions in income suffered elsewhere due to the project's use of scarce resources, and the benefits are the additions to the total income brought about by the project. If a second objective were to be included, say, the reduction of income inequality (the "equity" objective), then the project's effects on equality would have to be taken into account—an increase in income disparity in the country due to the project would be a cost, and a reduction a corresponding benefit. Another objective could be the alleviation of absolute poverty, as distinct from merely reducing the income gap between rich and poor. These last two objectives would involve weighting the income gains flowing to the poor more heavily than the gains flowing to the affluent.

$$S = E - C(B - \frac{d}{v})$$

$$v = \left[ \frac{q}{i} \right] / R$$



World Bank photos



An attempt to calculate the effects of a project on such broad objectives as growth, poverty, or equity, and to assign weights to them according to a country's socioeconomic preferences, poses difficult problems for economic analysis, since market prices do not necessarily provide a satisfactory basis for measurement. Prices which do reflect the proper weights to be given to the various objectives are called accounting or shadow prices. If, for example, a unit of labor is used in a project, the resulting sacrifice in the economy's total income would be the shadow price of that labor, if maximizing total income were to be the only selected objective. If equity were also an objective, then a different shadow price would be used which would also take into account the project's effect on equity. To distinguish between these different types of shadow prices, the shadow prices related to the income objective only are usually called "efficiency" prices; by contrast, the shadow prices reflecting total income measured with differential income weighting are called "social" prices.

Not all objectives need to be, nor indeed can be, reflected in each cost-benefit analysis. Suppose that a country is not particularly concerned about reducing poverty, or that it can do so more effectively through means other than the project. It would then be proper to exclude poverty-alleviating aspects altogether from the design of the project, let alone from its economic analysis. On the other hand, if the alleviation of poverty were a prominent consideration, then it must be included in the analytical framework if systematic decisions are to be made about the relative merits of projects which have different effects on poverty. However, if the analysis tries to incorporate too many objectives—say, more than three—it may become too complex for practical use.

The issues addressed and the precision desired in the analysis tend to vary over the project cycle. The study of an irrigation project might begin with the choice of the areas to be irrigated, move on to the choices regarding the operation of the particular schemes devised within a project, and then proceed to alternative methods of cost recovery. The economic analysis of alternatives is likely to be relevant to all such decisions. Even though the analysis of project designs is bound to be rather crude in the early stages, it should still incorporate the relevant socioeconomic objectives.

### The traditional approach

Cost-benefit analysis has traditionally focused only on maximizing incomes (an objective variously referred to as the "economic," the "efficiency," or the "social

surplus" objective). To be precise, the traditional approach is defined in terms of total real consumption of goods and services in the economy, rather than of incomes, since the economic welfare of individuals is related to their levels of consumption rather than to their incomes per se. A project investment reduces the total goods and services available for current consumption but increases the level of consumption possible in the future. Projects also change the relative consumption levels of various individuals in the economy, both at a point in time and over time. In order to judge the worth of a project from the national point of view, it is necessary to aggregate the various gains and losses accruing to different individuals over different periods into a single gain/loss measure. For this, some rules or conventions need to be chosen to define how the different gains and losses can be compared.

The traditional practice has been to regard all gains and losses at a point in time to be equivalent, regardless of whether they affect the poor or the rich. The practice

does, however, treat the gains and losses accruing in different periods differently—future gains and losses being discounted to make them comparable to changes in consumption during the current period. Once aggregate consumption is defined in this way, the cost-benefit analysis can proceed to measure the project's net impact on total consumption over time.

This traditional framework has been very helpful in organizing thought and focusing attention on the economy-wide changes in total income and consumption that result from a project. However, the choice of a discount rate for making changes in future consumption comparable to changes in current consumption can be a source of major inconsistencies. The lower the discount rate, for example, the more weight is given to future gains in consumption relative to sacrifices in current consumption, and hence the greater the importance given to savings and growth. A low discount rate—of, say, 2–6 per cent—may be appropriate for cost-benefit analysis in a developing country which has a commitment to rapid growth. However, the opportunity cost of capital in such a country, reflecting the yield expected on investment, may in fact be much higher because the level of investment is low in relation to existing opportunities and available funds are invested efficiently.

### Premium on savings

If the yield on investments in an economy exceeds the yield necessary to compensate people for lower current consumption, then the level of investment is clearly inadequate—a situation which is presumed to be a key feature of most developing countries. In such a case, simply discounting future costs and benefits by the opportunity cost of capital, as in the traditional approach, gives incorrect results since consumption gains and losses in different periods are not properly compared. If, instead, the rate appropriate for discounting future consumption—the "consumption rate of interest"—is used, this will also lead to errors as it underestimates the productivity of investments and thereby causes additional investments resulting from the project to be undervalued. To reflect properly both the relative value of current and future consumption and the unsatisfactory level of investment, it is necessary to use the "consumption rate of interest" as the discount rate in combination with a special premium for adjusting the value of investment expenditures. Thus, if a 5 per cent return is all that is necessary to compensate for a sacrifice of \$1 in current consumption, but if that \$1 when invested yields 10 per cent, then investment



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at the margin should be regarded as twice as valuable as current consumption.

This introduction of a premium on investment, and thus on savings, requires the project analyst to judge how much of the income created by the project would be saved. Since the public sector and the private sector, and the different income groups within the private sector, save at different rates, one needs to estimate how the incremental income derived from the project is going to be distributed among the various beneficiaries. Great precision is not necessary in this estimation. A distinction between, say, three income groups in the private sector—the very rich, the very poor, and a large middle-income group—may be sufficient.

An investment premium makes investments more attractive in those public or private sector enterprises that reinvest a greater share of their profits productively.

levels of investment in the economy, then the scarcity of foreign exchange is reflected in the premium on investment. It has recently become clear that the so-called "shadow exchange rate," or "shadow price of foreign exchange," as used in traditional analysis, does not bear on the scarcity of foreign exchange in this sense. This "shadow exchange rate" is only a device for correcting the distortions in the relative prices of internationally traded and non-traded goods, and for that purpose it is also used in the new method.

There are practical difficulties, of course, with the use of a premium on investment. It is often hard to decide the proper size of the premium, and estimating the increases in income and savings of different groups from a project may be a demanding task. Would it then not be better to rely solely on qualitative judgments in this respect? The World Bank, for example, has always

such as employment, income inequality, and the alleviation of poverty are to enter into the economic analysis. Gains and losses to different income groups will then be weighted differently to reflect these concerns, by giving more value to benefits to the poorer groups. For this purpose it would be necessary to assess which income groups are expected to gain or lose from the project. A broad distinction between only a few income groups is likely to suffice in practice. An even simpler distinction of beneficiaries into only two groups, above or below a threshold level of poverty, would suffice if the reduction of absolute poverty is the desired objective.

It is sometimes thought that even though governments may be concerned with income distribution and poverty alleviation, they need not introduce such concerns into project decisions, but instead should rely on other instruments of policy. Even though most governments have many policy instruments available which could directly or indirectly affect equity and poverty among their populations, the majority of developing countries seem to have found poverty redressal or the alteration of income distribution very difficult. The redistribution of land, for example, is generally crucial to redistributing incomes in most of these countries; but effective land reform has often proven infeasible, and land taxes are notoriously difficult to administer. The imposition of progressive income taxes also has practical limits, especially if serious adverse effects on earning incentives are to be avoided. Moreover, reliance on indirect taxes, or on inflationary finance, would affect the allocation of resources adversely and tend to weigh more heavily on the relatively poorer groups.

In many developing countries, therefore, the introduction of equity or poverty objectives into project selection tends to be an important complement to other policy measures. It is usually easier to locate projects in backward areas or to design them for urban or rural poverty groups than, for example, to change the tax system or to redistribute assets directly through a national land reform. It is much harder to shift the distribution of existing assets than to direct the creation of new assets in favor of the poor—although the allocation of public sector investments also has political constraints.

The current practice in the World Bank treats the alleviation of absolute poverty as a very important aspect of many of the projects it finances. In order to orient projects toward this goal, several informal rules of search are used in the identification stage, such as upper limits for the cost per job created, or for the acceptable cost per

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## In many developing countries... the introduction of equity or poverty objectives into project selection tends to be an important complement to other policy measures.

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On the other hand, any gains derived by the poor tend to be penalized, insofar as these classes tend to save less of their income gains than the rich. Investments in heavy industries, such as steel and petrochemicals, and in revenue-generating utilities, such as power and telecommunications, are likely to become relatively more attractive. Large-scale mechanized farming and estate plantations will perhaps also be favored. In other words, the premium will tend to make capital-intensive projects more attractive and reduce the emphasis on employment generation. Higher taxes on consumption goods, on income, and on land will appear more desirable, assuming that the government uses the tax revenues productively. The allocation of investment funds between private and public sectors may also be affected, insofar as these sectors have different propensities to reinvest and different levels of efficiency. If such differences are considered significant, they should be reflected in different investment premiums for the public and private sectors.

A primary purpose of the new cost-benefit analysis is to take proper account of the "scarcity of foreign exchange" faced by many developing countries. It is often thought that this "scarcity" is also allowed for in traditional analysis. However, the scarcity value of foreign exchange depends on the economic objectives it adversely affects. If the benefit of additional foreign exchange is that it permits higher

placed strong emphasis on financial viability, high levels of cost recovery, replicability, and other policies which directly or indirectly reflect concern about the scarcity of investable resources. Unfortunately, qualitative adjustments in project decisions rarely work satisfactorily. Suppose the economic rate of return of a project, measured without an investment premium, is marginally above the cutoff rate; can this project still be rejected if all of its gains are expected to be spent on additional consumption? Or, can a project with an unsatisfactory rate of return be accepted if all of its gains are expected to be reinvested? It is clear that answers to questions such as these implicitly involve a quantification of the value of savings and investment. Such implicit, ad hoc quantification can, however, lead to grossly inconsistent project decisions.

### Inequality, poverty, and basic needs

Introducing the investment premium does not require any change in the basic economic objective of traditional cost-benefit analysis, which will still treat consumption gains or losses to different individuals equally. The premium focuses on the correct assessment of a project's impact on total consumption, but does not affect the concept of the costs and benefits that are being aggregated.

The concepts themselves, however, will need to be changed if concerns with issues

beneficiary. However, search rules are not an adequate substitute for a fully integrated analysis of the conflicts between objectives, such as more employment or income for the poor versus more rapid growth in output. In land settlement projects, for example, the question frequently arises whether to allocate small units to each settler and thus spread the benefits widely or to allocate fewer, larger units in the interests of higher productivity of land use. A rule restricting the cost per beneficiary may be counterproductive in such cases unless it is derived from a full analysis of the trade-offs involved.

If poverty or equity objectives are introduced in the analysis then suitable rules must be specified for aggregating the various gains and losses accruing to different individuals into overall benefit and cost figures for each year of the life of the project. The decision maker who rules on a project, or the advisor who recommends a project, must necessarily use a scheme for weighting the gains and losses of different income groups. The question for any particular country is then which type of weighting scheme is most realistic and relevant for this purpose? Should one choose the equal weights used in traditional practice or should one differentiate according to income groups? The answer to this question obviously depends on the specific socioeconomic priorities of the country for which the project is planned, and no single weighting scheme is universally applicable. But these priorities are usually not explicitly formulated, and the analyst is faced with having to deduce their relative importance.

It is, however, possible to test the plausibility of relative weights reflecting different policy objectives by analyzing various national policies. For example, equity is often an important aspect of taxation policy, and there is always an exemption limit for income taxes. Moreover, many governments run large subsidy programs for the poor. Such policies suggest that if a person is poor enough, then an extra dollar to him is valued more highly than an extra dollar of government revenue, and therefore there is a critical or break-even point—the “critical consumption level”—at which marginal private gains are socially worth just about as much as marginal increases in government revenues. A person should not receive subsidies unless the level of consumption he can afford is below this critical level. If the country concerned is deeply committed to growth, as are Brazil, Ivory Coast, and Korea, for instance, then heavy weight is given to generating incomes for investment, and hence this critical consumption level should be very low.

The cutoff point for subsidies might then be at an income level which is only, say, 25 per cent of the national average. Subsidies will thus tend to be restricted to the very poor groups in such countries. If, on the other hand, the country is more concerned with equity or with alleviating poverty, as are, say, Sri Lanka and Tanzania, the appropriate critical consumption level would be much higher, perhaps as high as 75 per cent of average income. The critical consumption level is a relative income measure in the country and is usually well above levels representing absolute poverty. It is widely used in practice, especially in the context of project-related pricing and cost-recovery policies.

The critical consumption level is one of the benchmarks for assigning distribution weights that reflect a country's policy priorities. There are many other tests that can be devised to determine the most reasonable weighting scheme for the country concerned. Generally speaking, assigning equal weights to different income groups, as in the traditional economic analysis, would appear to be appropriate only in exceptional cases. Some degree of differentiation between income groups, at least to take account of extreme wealth and extreme poverty, is usually likely to be more realistic.

The introduction of different weights for different income groups would counteract some of the effects of giving special weight to the generation of additional investment. Projects which lead to additional savings and reinvestment will still be favored, other things being equal, unless the benefits accrue to those below the critical consumption level. Labor-intensive operations and employment generation will be favored to the extent that the additional labor income accrues to the poor.

The differences between countries can be easily reflected in the analysis since the emphasis given to employment, equity, or poverty alleviation can be “controlled” by varying the critical consumption level: the lower the level, the less the importance given to such concerns. However, since the same differential income weights and the same critical consumption level are to be used for all projects within a country, it is clear that ad hoc judgments are avoided by this method. The use of poverty or equity considerations on an ad hoc basis tends to give a “free license” to accept any and all projects that help the poorer groups. In contrast, the new approach demands consistency and discipline in project choice.

Another important objective for many developing countries is to meet the “basic needs” of their people. Definitions of basic needs vary, but the principal interpretation

treats certain goods and services as basic needs or “merit wants” that should be satisfied as a matter of government policy, rather than being met through charity dependent on private preferences. The planners or policymakers decide therefore which needs are basic, and what quantity and quality of service should be provided. They fix the weights that determine the importance to be given to additional consumption of the goods or services which meet the basic needs of various (usually income) groups, and how soon these needs should be fully satisfied in relation to other objectives of growth and distribution. These specific basic need weights are a straightforward variation on, and complement, the more general distribution weights discussed above.

The economic rate of return of a project defined in terms of prices that incorporate distributional weights (social prices) may be called its “social rate of return.” It will frequently differ from that calculated on the basis of traditional efficiency prices. There is no built-in tendency for social rates to be higher than the traditional rates of return. The new approach is designed in such a way that the social rates will be higher only to the extent that any increases in consumption due to the project accrue to those below the poverty line, and will be lower to the extent that the project increases the consumption of the relatively affluent. Social analysis does not make it easier to justify projects, but it tends to justify different projects, that is, projects that favor the poor and/or increase the level of investments in the economy.

The rigid adherence to one particular set of weights, as in traditional cost-benefit analysis, appears too doctrinaire to be appropriate for all developing countries, or even for the same country at different stages of its development. In countries where the distribution of project benefits is important, the traditional way of analyzing projects is only a partial indicator of the economic impact of a project and is not necessarily a reliable guide to project decisions. The new approach, on the other hand, focuses directly on the hard choices facing developing countries between growth and redistribution and is likely to improve the decision-making process. As the experience with social pricing in cost-benefit analysis accumulates and the methodology is adapted accordingly, it is likely to become a widely employed tool of analysis, not only in the World Bank but also in other international and national institutions with responsibility for selecting projects which best meet the policy objectives of the country concerned.

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# Financing education for income distribution

How much education and for whom? At what cost and at whose expense? These are the basic issues education policymakers in every country have to decide. This article uses examples from Colombia and Brazil to show how in developing countries the provision of education could help to redistribute income, were the financing, pricing, and taxing of such services appropriately designed.

**Jean-Pierre Jallade**

The belief that the provision of wider opportunities for education has a beneficial effect on the distribution of income holds a strong popular appeal. But in fact, the increased investment in education that has taken place in the Western world over the past decade does not seem to have had the expected impact on the incomes of the poor. The distribution of income in the United States, for instance, has remained practically constant since World War II, in spite of obvious and enormous progress in the distribution of educational opportunities. In other industrialized countries, there seems to be practically no relationship between education inequality and income inequality. In the developing world, the Latin American scene is not very encouraging either—Mexico has experienced a worsening in its income distribution, while achieving considerable progress in the education sphere between 1960 and 1970.

What are the reasons for the seeming lack of impact of expanded education systems on income inequality? Nobody denies that education does provide individuals with extra earning power, but the fact is that the numerous earning functions computed around the world have, so far, failed to give a clear picture of how much extra earning power it is directly responsible for. Controversies over the respective importance of socioeconomic background, native ability, and education on the determina-

tion of incomes will be with us for some time to come as economists and other social scientists grapple with how to measure and weigh these variables, and elaborate adequate econometric models. Furthermore, the influences of education and of other variables on incomes probably vary according to the time period under consideration, levels of education, socioeconomic groups, ability, economic environment, and so on. These observations are leading policymakers to realize that education is only one factor among other determinants of income, which need to be combined to achieve social progress. In other words, the spread of education is a necessary, but not a sufficient, condition for greater income equality.

This article will take the experience of the public financing of education in Colombia and Brazil to illustrate three propositions. First, contrary to the often expressed belief of many social reformers, there is no reason why education per se should be an equalizing force in society. Second, government participation in the provision of education cannot bring equity to unequal societies simply through subsidies. It should be financed through progressive taxation. Third, to promote long-term equity, the returns to education should be taxed progressively as the incomes of educated individuals rise and the net public subsidies accruing to different socio-

economic groups must be inversely related to incomes.

## **Education and income inequality**

The appropriate, but sometimes overlooked, starting point for a discussion of how education can contribute to a wider distribution of incomes in developing countries is that in most of these countries there exists a situation of income inequality. Unequal incomes result in unequal savings and investments. In order to redress this income inequality through education one and, if possible, two conditions should be fulfilled: low-income groups should be able to invest more in their own education than high-income groups; and/or the rate of return of their investment—that is, their ultimate earning power less the costs of education—should also be at least as high as that of high-income groups.

But a study made of these problems in Brazil and Colombia during the early 1970s shows that low-income groups benefit less than the rich from education, and that government subsidization tends to exacerbate the inequity. For instance, the empirical data collected in Brazil show that adults in the highest income category—that of non-farm males—earn 13 times as much as their counterparts in the lowest category (farming females with a low socioeconomic background). They are also in a much better position to provide their children with basic education. They have an enrollment ratio of 78 per cent as against only 37 per cent for the farming females. Moreover, their children can also expect a rate of return on their investment which is usually higher than that expected by their counterparts in the lowest group (see Table 1).

The Brazilian situation, which is probably typical of most Latin American countries, shows that education per se cannot



reduce inequality in the long run. To what extent can government policies concerning the financing, pricing, and taxing of education services affect the impact of education on income distribution? The case for government involvement in education is usually made on two grounds: economic efficiency and social equity. In most developing countries, the subsidization of education is governed by the general and simple rule that everyone is equally entitled to the same amount of public subsidy for a

source of revenue than indirect taxation, which is not progressive. Thus, the extent to which government involvement in the provision of education affects income inequality depends on the distribution of both taxes and education subsidies among income groups.

A detailed, empirical study of these problems was carried out in Colombia in 1970. The analysis of the distribution of education subsidies showed that in urban Colombia middle-income families (earning

dren, whether enrolled or not enrolled, in each income group, they definitely appeared to benefit high-income groups more than low-income groups. The picture in rural Colombia was quite similar to that of urban Colombia—with the one big difference that education subsidies were, across the board, much lower in rural than in urban areas.

The extent to which the distribution of taxes across income groups offset the distribution of education subsidies is shown in Table 3. The table shows that, on average, Colombian taxpayers receive 33 pesos worth of education subsidies whenever they pay 100 pesos in taxes and that low-income groups receive back, in the form of education subsidies, a much higher proportion of their taxes than high-income groups. In fact, this proportion decreases regularly from low-income to high-income groups, which shows that not only do high-income groups pay for their education through their taxes but also that government involvement in the provision of education in Colombia contributes to redistribute income from high-income to low-income groups.

However, when each level of education is examined separately, it can be seen that only the public financing of *primary* education has a strong and positive effect on the distribution of income by redistributing income from the 13 per cent richer families to the 87 per cent poorer families, the cut-off point being 60,000 pesos a year. The redistributive effect is strongly beneficial to the 40 per cent poorer families (earning under 12,000 pesos a year), more than three fourths of whom live in rural areas. These families receive 87 per cent of their taxes back in the form of public subsidies for primary education.

The picture that emerges from secondary education is quite different: here, the main beneficiaries are two middle-income groups, including about 48 per cent of all families. In other words, the public financing of secondary education redistributes income from both the 40 per cent poorest and the 13 per cent richest families to a sort of lower middle class, 80 per cent of whom are living in urban areas and whose incomes are in the 12,000–60,000 pesos range. The situation for higher education is very similar, except that the two income groups subsidized by both the poor and the rich are higher up in the income scale. Families in these groups represent close to one third of all families, they are almost exclusively urban and earn between 24,000 and 120,000 pesos. Thus a redistribution of income from the poor and the very rich to the upper middle class takes place through the public financing of higher education.

Table 1  
Brazil: earnings, enrollment ratios, and rates of return to education, in 1972

|                                                          | Monthly earnings<br>(In cruzeiros) | Enrollment ratios in basic education | Social rates of return to: |                           |
|----------------------------------------------------------|------------------------------------|--------------------------------------|----------------------------|---------------------------|
|                                                          |                                    |                                      | Primary education          | Lower secondary education |
|                                                          |                                    |                                      | (In per cent)              |                           |
| <b>Total males—nonfarm</b>                               | 873                                | 78                                   | 23.5                       | 13.1                      |
| Males with a low socioeconomic background                | 247                                | 63                                   | 22.7                       | 10.5                      |
| <b>Total females—nonfarm</b>                             | 380                                | 77                                   | 21.2                       | 12.6                      |
| Females with a low socioeconomic background <sup>1</sup> | 187                                | 64                                   | 30.6                       | 11.2                      |
| <b>Total males—farm</b>                                  | 252                                | 45                                   | 21.1                       | 11.0                      |
| Males with a low socioeconomic background                | 91                                 | 37                                   | 18.5                       | 6.5                       |
| <b>Total females—farm</b>                                | 112                                | 45                                   | 13.9                       | 10.4                      |
| Females with a low socioeconomic background              | 64                                 | 37                                   | 15.7                       | 11.5                      |

Source: Tables 1 and 4 in "Basic Education and Income Inequality in Brazil: The Long-Term View" Jean-Pierre Jallade, World Bank, Working Paper No. 268, June 1977.

<sup>1</sup> Having a head of household earning less than 200 cruzeiros a month.

given amount and type of education. In other words, education is subsidized, and therefore, priced regardless of incomes. This is true for free public education and for fee-paying education as long as fees do not cover the total costs.

Needless to say, this pattern of subsidization has at best a "neutral" effect on incomes. In fact, it probably has an adverse effect because high-income groups tend to remain longer in the education system than low-income groups and therefore receive larger public subsidies. This may be particularly true in many developing countries where the distribution of educational opportunities, and subsidies, is very unequal. In some countries, high-income groups may pay for the education of their children via taxation when the tax system is sufficiently progressive (that is, when tax rates rise with incomes). But this is far from being the case everywhere, especially in the developing world where progressive direct taxation is a much less important

annually between 24,000 and 120,000 pesos) received higher subsidies per child enrolled than either very low- or very high-income families (see Table 2). When education subsidies were related to all chil-

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Table 2  
Colombia: distribution of public subsidies for education among income groups, 1970

| Income bracket<br>(Pesos/year) | Subsidies<br>per child<br>enrolled<br>(Pesos) | Subsidies<br>per child<br>in each<br>income group<br>(Pesos) |
|--------------------------------|-----------------------------------------------|--------------------------------------------------------------|
| <b>Urban Colombia</b>          |                                               |                                                              |
| 0- 6,000                       | 1315                                          | 640                                                          |
| 6,000- 12,000                  | 1136                                          | 490                                                          |
| 12,000- 24,000                 | 1357                                          | 636                                                          |
| 24,000- 60,000                 | 1691                                          | 852                                                          |
| 60,000-120,000                 | 1521                                          | 848                                                          |
| 120,000-240,000                | 1201                                          | 784                                                          |
| Over 240,000                   | 986                                           | 605                                                          |
| Total                          | 1469                                          | 746                                                          |
| <b>Rural Colombia</b>          |                                               |                                                              |
| 0- 6,000                       | 552                                           | 83                                                           |
| 6,000- 12,000                  | 552                                           | 127                                                          |
| 12,000- 24,000                 | 554                                           | 183                                                          |
| 24,000- 60,000                 | 554                                           | 276                                                          |
| 60,000-120,000                 | 333                                           | 333                                                          |
| 120,000-240,000                | 200                                           | 200                                                          |
| Over 240,000                   | 100                                           | 100                                                          |
| Total                          | 533                                           | 125                                                          |

Source: Tables 3-10, 3-15, and 3-16 in *Public Expenditure on Education and Income Distribution in Colombia*, Jean-Pierre Jallade, World Bank Occasional Papers No. 18, Johns Hopkins Press, 1974.

countries is an open question. It is clear, however, that any policy aimed at making a system of finance more equitable should act on either the structure of public subsidies or the structure of taxation.

### Scaling subsidies to income

To overcome the better ability-to-pay for education of some as compared to others, public subsidies should be inversely related to incomes. No country has ever put this policy into practice, so it is hard to foresee its impact on, say, the demand for education, the quality of education, and the internal and external efficiencies of educational systems. But there exists one important situation—in Colombia—where education is subsidized and, therefore, priced differently for the poor and the rich, and this could yield useful clues about what would happen if subsidies were inversely related to incomes.

In many countries a fully subsidized public education sector coexists with a not-so-heavily subsidized private education sector. On the whole (with some important exceptions, such as Japan), public schools tend to recruit a student body mainly from low-income groups. Conversely, little subsidized, expensive private schools tend to cater to the needs of high-income groups.

in 1970 as against over two thirds in 1940. In the same way, enrollments in public teacher training institutions have decreased from 80 to 70 per cent during the same period. Enrollments in private institutions have increased accordingly.)

Although this may promote equity in the short term, it would tend to harm low-income groups in the long term since the "private" education sector would provide a better education and higher ultimate earning capacity than the subsidized system. The existence of private education services for the rich has always faced fierce opposition from many policymakers. Their fear is that, as soon as the full cost—or something sufficiently close to it—of educational services are charged to some groups the quality of the most common type of education will deteriorate owing to the lack of a strong political constituency. Those with the highest purchasing power will foster the "best" service, which will yield the highest returns (in the form of examinations passed and, ultimately, earning opportunities), and those with a lower purchasing power will go for cheaper education. Thus, the "privatization" of education may serve to maintain, if not foster, long-term income disparities, especially if the size of the returns to education is positively associated with the importance of the private finance component in educational costs. In this case, the search for equity in the provision of education through an income related pricing system might run against long-term equity.

How far are the fears of these policymakers justified? Is it valid to assert that private education yields higher returns than public education? The only evidence available to support this assertion is circumstantial—rates-of-return calculations have, so far, never been carried out simultaneously and comparatively for public and private education. However, although the situation probably differs from country to country, one has to assume from an economic standpoint that those who seek and gain access to fee-paying schools in spite of sometimes fierce competition and dire financial strain, do so in order to improve on the rate of return which they could get from an equivalent education in a tuition-free school. In Latin American countries, the suspicion that the returns to private education do more than simply offset its higher costs is founded on the above-average ability of private schools to prepare students to gain access to the upper levels of the education system.

So, although the gradual "privatization" of education as income rises may help in promoting short-term equity among taxpayers in the provision of educational ser-

Table 3  
Colombia: distribution of taxes and public subsidies for education among income groups, 1970<sup>1</sup>

| Income bracket<br>(Pesos/year) | Number of<br>households<br>(in per cent) | Subsidies<br>for education | Subsidies<br>for primary<br>education | Subsidies<br>for secondary<br>education | Subsidies<br>for higher<br>education |
|--------------------------------|------------------------------------------|----------------------------|---------------------------------------|-----------------------------------------|--------------------------------------|
| (As percentage of taxes)       |                                          |                            |                                       |                                         |                                      |
| 0- 6,000                       | 19.0                                     | 117                        | 109                                   | 9                                       | 0                                    |
| 6,000- 12,000                  | 20.2                                     | 83                         | 77                                    | 4                                       | 2                                    |
| 12,000- 24,000                 | 24.9                                     | 72                         | 49                                    | 18                                      | 5                                    |
| 24,000- 60,000                 | 22.9                                     | 55                         | 22                                    | 20                                      | 14                                   |
| 60,000-120,000                 | 8.8                                      | 23                         | 4                                     | 7                                       | 12                                   |
| 120,000-240,000                | 3.4                                      | 10                         | 1                                     | 3                                       | 6                                    |
| Over 240,000                   | 0.8                                      | 2                          | —                                     | 1                                       | 1                                    |
| Total                          | 100.0                                    | 33                         | 16                                    | 9                                       | 8                                    |

Source: Tables 3.19 and 3.20 in Jallade, *op. cit.*

<sup>1</sup> Education subsidies are computed on the basis of enrollments and public expenditures by level and type (public or private) of education.

It is clear that the positive effect of the public financing of education on the distribution of income in Colombia is only due to the financing of primary education which strongly benefits the poor. This positive effect is partly but not wholly offset by the negative income distributive effects of the public financing of secondary and higher education which benefit most the lower and upper middle classes respectively.

Whether or not the Colombian case is "typical" of many other Latin American

Thus, it would seem that one way to make sure that education subsidies benefit low-income more than high-income groups would be to foster a private, little subsidized, education sector in which high-income groups can enroll their children.

This is, to a certain extent, shown by Colombia, which has undergone a certain "privatization" of some of the key levels of its education system during the past 30 years. (Only one half of university students were enrolled in public universities

vices, it still has to be proven that it does not contribute to inequity in the long term.

## More progressive taxes

It seems that the only way to introduce more equity into the provision of educational services without the harmful effects of "privatization" is to increase the progressivity of the tax system. In a country like Colombia, this could be achieved through an additional tax on higher incomes, which would be earmarked for the financing of secondary and higher education. Such a tax would help to remove the adverse effects of the public subsidization of those levels of education on the distribution of income by increasing the tax payments of high-income groups. The objective of this tax would be to make sure that the rich will be at least paying for the subsidies which they receive. Of course, the tax rates corresponding to the various income groups could be manipulated in order to achieve any degree of income redistribution. In the long run, their gradual decrease could be geared to the gradual equalization of education subsidies across

income groups as low-income groups gain access to the higher levels of education, without altering the rest of the tax system.

This Colombian example illustrates some of the issues concerning the impact of government policies on income inequality through the financing of educational services. This is, however, only the short-term aspect of the problem. In the long run, the concern for equity leads to an inquiry into the distribution of the returns to education among socioeconomic groups. Taxation of these returns in a progressive manner may be required in order to achieve a positive impact on income inequality.

A convenient way to assess how the various socioeconomic groups as a whole fare with regard to both the subsidization of education investment and the taxation of the returns to this investment is to adopt the viewpoint of the state, and include the entire population in the assessment. The taxes levied on the returns to education could be interpreted as a way for the government to get back part of the money spent in subsidizing access to education. Taxes would be the benefit stream of gov-

ernment subsidization of education, while the outlays incurred to subsidize individuals to reach a certain level of educational attainment would be the cost stream. The "net" amount of subsidies distributed by the government to each educated person would be assessed by the present value of all the taxes paid on the returns to this education by the educated person during his entire lifetime, minus the subsidies received to reach this level of educational attainment. The "net" subsidy per educated person would then be multiplied by the proportion of people reaching the level of education under consideration in each socioeconomic group to arrive at the comparative costs of education to the government for each group.

Such an analysis was carried out for Brazil at the beginning of the 1970s. The distributive impact of subsidizing (and taxing the returns from) basic education are summarized in Table 4, which compares the situation of the educated from different income groups with the situation of the group as a whole. The table shows that the present values of "net" government subsidies

## Rates of return to education and income distribution

Conventional "human capital" theory uses two rates of return to education to assess the overall degree of subsidization of education by the government—the private and the social rate. Both rates are computed on the incomes of the educated. The private rate is usually higher than the social rate—the private rate being based on after-tax earnings and private costs (excluding public subsidies), while the social rate is computed on the basis of before-tax earnings and total costs of education (including public subsidies). As a result, the difference between the private and the social rates reflects, on the benefit side, the tax stream paid by educated people and, on the cost side, the public subsidy required to reach the level of education under consideration. A big difference between the two rates means a high level of overall or "net" subsidization (high public subsidies to reach a certain level of education and low taxes afterward) while a small difference means that the subsidies received to reach a certain level of education are nearly offset by the taxes paid afterwards by educated individuals during their active lives.

However, traditional rate of return calculations are of little use for income distribution purposes because they are usually carried out at an aggregate level (using *mean* incomes for each age education group) in order to compare efficiency between education cycles—for instance by showing that the *average* rate of return in primary education is superior to that of secondary education. Such calculations fail to provide any clue about the resulting impact on income inequality. What is needed is a breakdown by socioeconomic groups so that one can compare the subsidies accruing to and taxes paid by the various socioeconomic groups for each level of education.

Such a disaggregate analysis was carried out in the case of Brazil (see the table).

The table shows that, by and large, educated people in disadvantaged groups are equally or more subsidized than those of other groups. In the same way people engaged in farming occupations appear to enjoy higher "net" subsidies than those in nonfarming occupations. It does appear, therefore, that government involvement in subsidizing the provision of education and taxing its returns is oriented in the right direction.

|                                             | Difference between private and social rates of return to primary education | Difference between private and social rates of return to secondary education |
|---------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>Total males—nonfarm</b>                  | 1.2                                                                        | 0.8                                                                          |
| Males with a low socioeconomic background   | 1.5                                                                        | 0.9                                                                          |
| <b>Total females—nonfarm</b>                | 1.5                                                                        | 1.5                                                                          |
| Females with a low socioeconomic background | 4.6                                                                        | 1.4                                                                          |
| <b>Total males—farm</b>                     | 3.0                                                                        | 1.5                                                                          |
| Males with a low socioeconomic background   | 4.0                                                                        | 1.0                                                                          |
| <b>Total females—farm</b>                   | 2.9                                                                        | 3.0                                                                          |
| Females with a low socioeconomic background | 2.9                                                                        | 3.1                                                                          |

Source: Table 4.

A major deficiency of this approach, however, is that it focuses exclusively on the individuals who invest in education, and discounts nonparticipants. And it is not enough for redistributive purposes to know that the few disadvantaged who gain access to a certain level of education are more subsidized than the many coming from privileged groups. One also has to relate the levels of subsidization to the numbers able to take advantage of it. In other words, what is needed is what could be called, for want of a better word, a "redistributive" approach, that seeks to compare the "net" impact of government involvement in the financing and taxing of education across socioeconomic groups as a whole, including those who invest and those who do not invest in education. The discussion of subsidies and taxes in Brazil in the latter part of the article, and the data in Table 4 provides an illustration of this approach.

**Table 4**  
**Brazil: allocation of "net" government subsidies for basic education among socioeconomic groups**

|                                             | Enrollment ratios in basic education (In per cent) | Present value of "net" subsidies allocated by the government to each educated individual with: |                           |        | Present value of "net" subsidies allocated by the government to each person in the group |
|---------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------|--------|------------------------------------------------------------------------------------------|
|                                             |                                                    | Primary schooling                                                                              | Lower secondary schooling | Total  |                                                                                          |
|                                             |                                                    | (In cruzeiros)                                                                                 |                           |        |                                                                                          |
| <b>Total males—nonfarm</b>                  | 78                                                 | 327 <sup>1</sup>                                                                               | -1,640                    | -1,313 | -1,024                                                                                   |
| Males with a low socioeconomic background   | 63                                                 | 148                                                                                            | -1,820                    | -1,672 | -1,033                                                                                   |
| <b>Total females—nonfarm</b>                | 77                                                 | -71                                                                                            | -1,950                    | -2,021 | -1,556                                                                                   |
| Females with a low socioeconomic background | 64                                                 | -112                                                                                           | -2,012                    | -2,124 | -1,359                                                                                   |
| <b>Total males—farm</b>                     | 45                                                 | -496                                                                                           | -2,370                    | -2,866 | -1,290                                                                                   |
| Males with a low socioeconomic background   | 37                                                 | -526                                                                                           | -2,420                    | -2,946 | -1,090                                                                                   |
| <b>Total females—farm</b>                   | 45                                                 | -558                                                                                           | -2,390                    | -2,948 | -1,327                                                                                   |
| Females with a low socioeconomic background | 37                                                 | -560                                                                                           | -2,380                    | -2,940 | -1,088                                                                                   |

Source: Table 7 in Jallade, *op cit*.

Note: The discount rate to compute the present values is 20 per cent.

<sup>1</sup> Positive present values means that the taxes recovered on educated individuals' incomes offset the outlays incurred by the government to subsidize this type of education.

allocated to each educated individual are higher for females and farm workers than for males and nonfarm workers respectively. Educated individuals in the subgroup "with a low socioeconomic background" are also usually getting higher subsidies than their counterparts in the group as a whole. When the analysis is limited to those participating in education it seems that low-income educated persons are more heavily subsidized by the government than high-income educated persons.

A different picture emerges when all individuals in each group—both educated and uneducated—are included in the analysis. For instance, in spite of their higher incomes, females engaged in nonfarm activities are more subsidized than farming males or females (but also more than their male, better-paid counterparts). In the same way, subgroups including only persons "with a low socioeconomic background" are, on an average, less subsidized by the government than larger groups in spite of their lower incomes. It seems thus that low-income groups are rather less subsidized than high-income groups—which means that the government is not, through its subsidies and tax policies, oriented toward distributing incomes in a more equitable way.

A more progressive taxing of the returns to education could be achieved through an "education tax" on the incomes of educated individuals. Such a tax would seek to

lower the present value of "net" government subsidies accruing to high-income groups and increase this value for low-income groups. As the above analysis has shown, the degree of progressivity of tax payments would be determined on the basis of (1) the present "net" subsidy received by each educated individual in any given group and (2) the enrollment ratio for the same group. Progressivity in tax payments could, of course, vary according to the amount of income redistribution sought.

Progressive taxation of the returns to education through an "education tax" could be most simply achieved by adding or removing a few percentage points in the existing income tax rates of educated individuals in each socioeconomic group. Admittedly, this is not a conceptually perfect solution. The tax base would be absolute income instead of, as it should be, that particular fraction of additional income which is due to additional schooling. However, the advantages of coupling the "education tax" with the income tax would be important from the operational viewpoint. In addition to administrative simplicity, such a tax would probably be more easily accepted if it takes the form of a few additional points in the income tax rate structure without a change in the tax base, rather than if it were a new set of necessarily substantial tax rates applied to a small tax base, namely, additional incomes due to

additional schooling. No overhauling of the existing tax system would be necessary and the new rates would be kept flexible in order to take into account changes in the subsidies received and taxes paid by each group.

The proposed "education tax" would also help to shape a pattern of incentives to acquire education that would be conducive to greater equality of educational opportunity, since the private returns from education of high-income groups would be reduced more than the returns of low-income groups. The proceeds of this tax would be used to increase the subsidization of education of low-income groups and improve the availability and quality of educational services available to them.

Nothing so far has been said about the political feasibility of these proposals. Apart from the obvious statement that such feasibility will vary greatly across levels of education within a single country, a possibly good test of a government's willingness to proceed with these proposals and of their likely acceptance by the public is provided by the financing of other public goods in the country. If the financing of such goods as health care, public transportation, and subsidized housing is designed in such a way that its impact on the distribution of incomes goes in the right direction, the case for a progressive system of education finance should be easy to make. If the opposite situation prevails, the chances of education being singled out among other semipublic goods to receive distinctive treatment are weak.

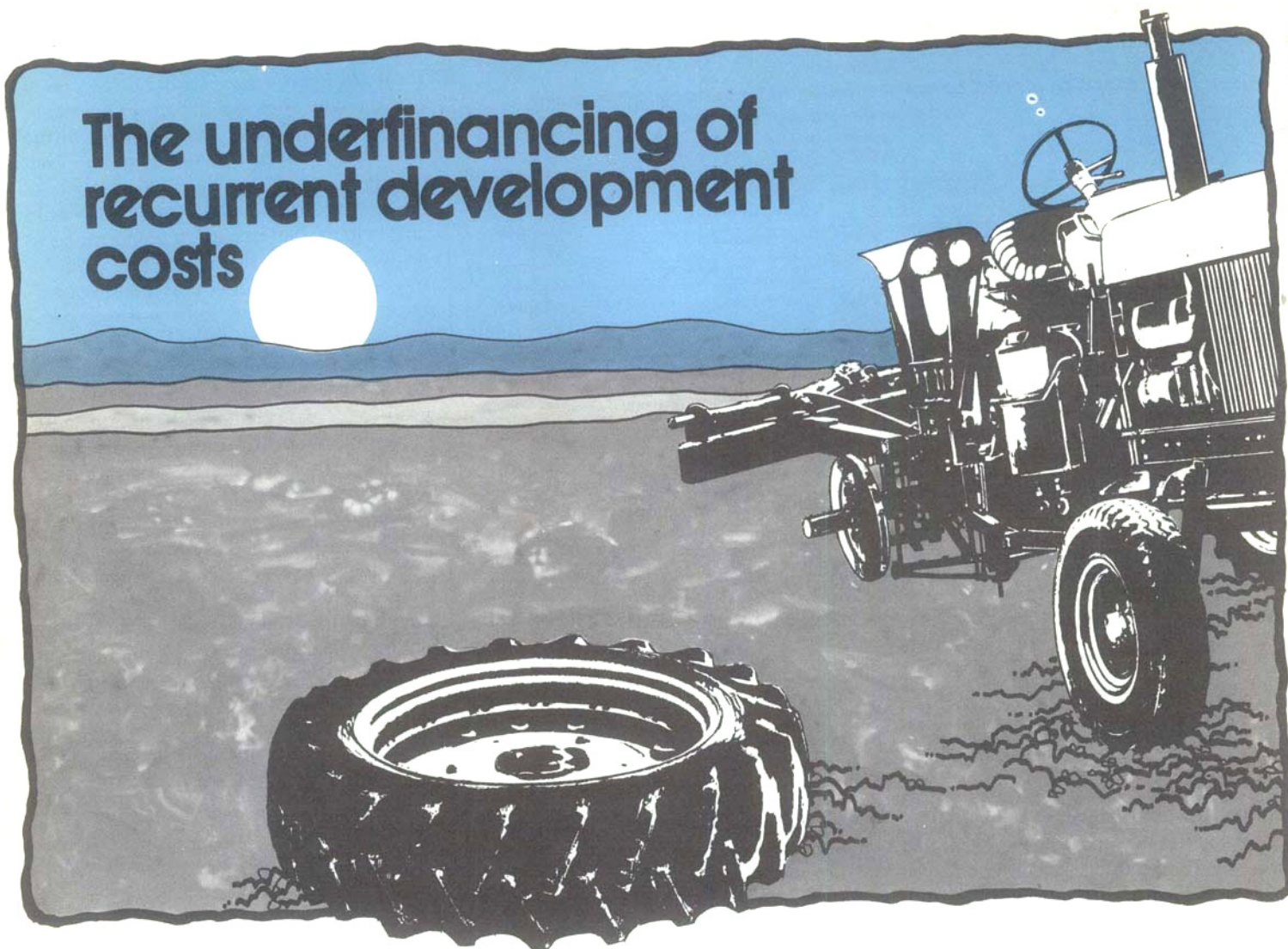
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#### Related reading

- Jean-Pierre Jallade, *The Financing of Education: An Examination of Basic Issues*, World Bank Staff Working Paper No. 157. July 1973.
- Jean-Pierre Jallade, *Public Expenditures on Education and Income Distribution in Colombia*, World Bank Staff Occasional Papers No. 18. Baltimore and London: The Johns Hopkins University Press, 1974.
- Jean-Pierre Jallade, *Student Loans in Developing Countries: An Evaluation of the Colombian Performance*, World Bank Staff Working Paper No. 182. June 1974.
- Mats Hultin and Jean-Pierre Jallade, *Costing and Financing Education in LDCs: Current Issues*, World Bank Staff Working Paper No. 216. May 1975.
- Jean-Pierre Jallade, *Basic Education and Income Inequality in Brazil: The Long-Term View*, World Bank Staff Working Paper No. 268. June 1977.



# The underfinancing of recurrent development costs



While most governments concentrate their efforts on new development investments, they often fail to provide adequately for the recurrent operational and maintenance costs of previous development projects. The result is a wasteful underutilization and neglect of many projects and programs. This article examines why this problem has emerged, why it persists, and offers some solutions.

## Peter Heller

Both the theory and practice of development policy would suggest that investments are a major factor in economic growth. Yet throughout the developing world the productivity of public investments and programs that are already in place has been seriously jeopardized by the failure of governments to provide adequately for their operation and maintenance over time. Rare is the country that has not witnessed this phenomenon. In Colombia, new tarmac roads have suffered rapid and premature deterioration for lack of maintenance. Throughout West Africa, many new schools have opened without qualified teachers, educational materials, or equipment. Agricultural projects are often starved for extension workers, fertilizer, or seeds. In the Sahel, pastoral wells constructed for livestock projects have fallen

into disrepair. In Bolivia, doctors are often stranded at rural health centers for lack of gasoline for their vehicles.

The resulting loss in productivity and the deterioration of capital stock not only affect existing projects and programs but cast a disturbing shadow on the economic viability of future investment programs. As developing countries and donors place increasing emphasis on new programs to provide for social infrastructure, the problem is likely to be exacerbated. This article will explore why the recurrent costs of public sector projects are "underfinanced" and examine alternative policies that donors and countries could introduce to solve this problem.

## The causes of the problem

The problem is a by-product of the active development efforts of the last two decades. The share of public investment in gross national product in the developing world has risen during this period, reflecting an expansion in the absorptive capacity of most countries for public investment, stimulated by subsidized external aid flows. Since any new project or program inevitably needs some staff and materials for its

operation and maintenance, these investments have obviously engendered the need for subsequent recurrent expenditure. The expansion of a school system necessitates teachers, books, and pencils. The development of rural health facilities creates a need for drugs, doctors, nurses, and other supplies. Roads require a regular program of maintenance. Although some of these costs have been met by charging consumers, most public projects and programs have been deliberately subsidized, and thus their operation and maintenance has depended on the flow of funds from the public treasury. Unfortunately, this flow has generally not been sufficient.

For some countries, this inadequate flow of funds for maintenance reflects government inability to mobilize sufficient resources. Many developing countries are unwilling to mount an adequate tax effort or even to keep the growth of tax revenues equal to the rate of economic growth. But even where a country is mobilizing a relatively large share of its potential taxable resources, there are at least three reasons why the problem of inadequate funds for recurrent costs may still emerge.

First, the recurrent funding of projects is usually financed out of the recurrent budget appropriation. Since both donors and borrowers often tend to equate development expenditure with investment, and recurrent expenditure with consumption, there are both external and internal pressures to curb recurrent expenditure in order to generate "public savings" to finance investment. This leads to arbitrary ceilings on the expansion of the recurrent budget—ceilings which are often completely unrelated to the level of new or existing unmet commitments.

Second, for a given amount of investment expenditure, a development program's ultimate recurrent expenditure requirements will depend on the mix of projects being implemented in each sector. For example, countries placing heavy emphasis on projects in health, agriculture, and education and in rural and urban development will, for a given unit of investment, require higher recurrent outlays than countries investing mainly in physical infrastructure—such as roads, dams, airports, and telecommunication facilities (see the table). Thus, a shift in the sectoral composition of a public investment program may require an increase in recurrent expenditure in excess of the potential increase in public sector revenues. This does not reflect on the productivity of these projects, but simply means that the character and timing of their output flows may not lead to sufficient immediate growth in tax revenues to finance their recurrent costs.

The third reason why developing countries often cannot supply adequate funds to maintain and operate existing projects is that there are other important claims on public budgetary resources. The demands for defense, redistributional transfers, civil

budgetary demands on limited resources seriously affects the allocation of resources to a project. When the recurrent budget is squeezed, for instance, and unemployment is of particular concern, the government may cut down its purchases of goods and services for a project rather than dismiss personnel. This often leads to projects long on staff and short on supplies and spare parts.

In general, external aid flows have only exacerbated this problem by enabling a country to increase the level of its investment without directly encouraging the growth of recurrent revenues. Though recipient governments could conceivably reduce their own investment as funds flow in from abroad by shifting resources to the recurrent budget, donors strongly discourage this. Similarly, some donors (with the notable exception of some European countries) shy away from providing long-term recurrent financing—particularly if it implies funding local costs.

The recent important emphasis on income distribution and the elimination of poverty by external donors, moreover, has sharply changed both the priorities of lending for development and the character of domestic development programs. In the past, donors had a bias in favor of providing aid for economic infrastructure. Such projects were easier to implement, gave a visible and concrete form of output, and, by providing foreign exchange, helped to alleviate some of the principal bottlenecks of development. However, the current emphasis on projects in education, health, and population bodes a significantly higher recurrent expenditure per unit of investment. Even the technology of physical infrastructure projects themselves has changed—witness the interest in high-maintenance rural feeder roads as opposed to low-maintenance trunk bitumen roads.

Thus, the effect of external aid is to stimulate a sharp expansion in ultimate recurrent expenditure commitments. In the context of other pressures on the recurrent budget, these commitments will be difficult to meet.

This problem has not gone completely unnoticed within the donor community. This partly reflects a wider recognition that current expenditure may prove as productive as capital expenditure in the development process. In part, it also reflects the effects of inadequate maintenance on donor-financed projects. For example, several road projects funded by the World Bank have threatened to deteriorate so severely that subsequent loans have been made to develop the borrowing country's capacity for road maintenance. For some rural development and livestock projects,

**Illustrative summary of the recurrent expenditure implications of projects as a proportion of investment expenditure across development sectors ("r" coefficients)<sup>1</sup>**

| Sector                                           | "r" coefficient |
|--------------------------------------------------|-----------------|
| <b>Agriculture</b>                               |                 |
| Fisheries                                        | 0.08            |
| Forestry                                         | 0.04            |
| General agriculture                              | 0.10            |
| Livestock                                        | 0.14            |
| Rural development                                | 0.08–0.43       |
| Veterinary services                              | 0.07            |
| <b>Buildings</b>                                 | 0.01            |
| <b>Education</b>                                 |                 |
| Agricultural colleges                            | 0.17            |
| Polytechnic schools                              | 0.17            |
| Primary schools                                  | 0.06–7.0        |
| Secondary schools                                | 0.08–0.72       |
| Universities                                     | 0.02–0.22       |
| <b>Health</b>                                    |                 |
| District hospitals                               | 0.11–0.30       |
| General hospitals                                | 0.183           |
| Medical auxiliary training school                | 0.14            |
| Nurses college                                   | 0.20            |
| Nutrition rehabilitation unit                    | 0.34            |
| Rural health centers                             | 0.27–0.71       |
| Urban health centers                             | 0.17            |
| <b>Housing</b>                                   | 0.03            |
| <b>Manufacturing, commerce, and construction</b> | 0.01            |
| <b>Roads</b>                                     |                 |
| Feeder roads                                     | 0.06–0.14       |
| Paved roads                                      | 0.03–0.07       |
| <b>Social and rural development</b>              | 0.04            |
| <b>Tourism</b>                                   | 0.05            |

Source: World Bank and IMF data.  
<sup>1</sup> These coefficients are drawn from a very restricted sample of developing countries and are meant to illustrate the variability one can observe across sectors and projects. EXAMPLE: If a polytechnic school costs \$1 million to construct and equip, on the basis of an "r" coefficient of 0.17, we can estimate that it would cost on average \$170,000 in each subsequent year to pay the teaching staff, to operate the facilities, and to maintain the building.

service wage increases, and so on inevitably compete with the recurrent needs of development projects and programs. Coupled with the political difficulties of choosing between these conflicting demands, the planning and budgeting process, unaware of the consequences of cutting the flow of resources, often fails to identify when serious losses in project productivity may occur. Often the pressure of

the World Bank has financed the recurrent costs of agricultural extension and of the provision of agricultural inputs during the initial development of a project.

Another approach has been to introduce explicit covenants or "earmarking" schemes to ensure the local financing of the recurrent costs of a project. This, however, has several important drawbacks. Such covenants generally specify the host country's obligation to maintain a project "adequately" or to provide specific amounts of funds. This may resolve any underfinancing of the donor's projects; but if the entire development program has excessive recurrent expenditure requirements, the effect will simply be to drain resources from development projects that lack such covenants. Similarly, earmarking particular tax revenues (as opposed to user charges) for a project may channel resources away from projects with equal or greater need. Neither policy addresses itself to the root of the problem and both introduce their own rigidities into the budget allocation process.

### Why does this problem persist?

A curious aspect of the "underfinancing" problem is its persistence. The managers of an ill-maintained school, health center, or agricultural extension project are presumably well aware that they are not providing, and cannot provide, adequate services. Anyone who drives on a road with potholes recognizes the need for maintenance. Why are investments made if they are likely to be underfinanced? Are the decision makers who allocate recurrent budgetary resources unaware of these problems? Do they deliberately decide that other claimants of resources have a higher priority? In fact, the contradiction probably persists both because the problems are not rapidly signaled and because their consequences are not readily perceived.

The problem partly derives from the administrative structure common to the financial and sectoral ministries of developing countries which separates the investment and current budgeting functions. The task of the bureaucracy in charge of investments is to generate, evaluate, negotiate, and implement new investment projects—and not to provide for their recurrent costs. The pressures to implement particular projects and to garner external funds are dominant considerations. Post-implementation costs, if considered at all, enter only into the particular project's appraisal process. In any case, the problem of financing such costs lies several years in the future. Thus, there is little pressure to worry about the adequacy of future recurrent funding. Moreover, the recurrent im-

plications of the pool of current projects is usually not considered.

Logically, future recurrent funding of all current projects should be the responsibility of the planning bureaucracy at the time alternative investment programs are considered. The myopia of planners is hard to understand. It may reflect the sheer absence of data on the recurrent expenditure implications of projects, the planners' own preoccupation with the realization of new investments, their macroeconomic policy focus, or their neglect of the impact of underfinancing on future productivity. Certainly the literature on planning and project evaluation offers little guidance on how to deal with this problem. By definition, a project with an acceptable social rate of return has a stream of present value in excess of its social costs. The possibility that scarce recurrent budgetary resources might jeopardize a project's future output is rarely incorporated in the project evaluation process.

Why is the problem not signaled by those in the sectoral ministries responsible for overseeing recurrent expenditure? Each year they receive project requests for additional recurrent funds that presumably detail shortages and operating difficulties caused by inadequate funds. In pooling the requests from all the institutions funded by a ministry, does not the total requested increase in appropriations suggest something about the degree of underfinancing?

Yet even at this early stage the signaling process is often defective. For many sectors, the accounting process does not readily generate information on the recurrent costs of individual projects or programs, since such data are often not needed for the actual appropriation process, and the task of collecting the data may be beyond the limited staffing capacity of those responsible for preparing the recurrent estimates. Thus, the insufficiency of resources may be signaled only by a chorus of complaints. But even when projects are man-

aged individually and there does exist some quantitative measure of the degree of underfunding, project managers are not trained to measure the resulting economic losses. Thus, it is difficult for the finance officer in a ministry to evaluate the relative economic merits of the many requests for additional funds.

At the ministry of finance level, the ceiling for total recurrent expenditure is set on the basis of aggregate fiscal considerations—such as the availability of revenue, the desired level of the recurrent surplus, or the overall budget deficit. This ceiling will effectively limit any sector's increase in appropriations. The amount of revenue that a sector can use to augment a project's operating expenditure is further limited by the impact of inflation and rising wages on its budget. Although the relative growth of a sector's appropriation may be influenced by an unusually large project coming on line, other factors are equally important in determining its allocation (the relative influence of its minister, the effectiveness of the sector's financial bureaucracy in making its case for further funds, and so on). The cry of inadequate resources may be heard, but to the finance ministry the level of fiscal demand, particularly for "public consumption," will always be far in excess of available resources, and the implications for growth and productivity of meeting one request and denying another completely unapparent or subjective. In effect, the movement of a project from the investment to the recurrent budget signals its fall from "budgetary" grace, a decline in its "visibility," and its need to scramble for a share of recurrent funds.

### Identification of the problem

What policy options are available to countries and donors faced by this problem? First, it is absolutely fundamental that donors systematically and regularly incorporate diagnostic analyses of the present and future severity of the problem of meeting recurrent costs in their annual country reporting systems. It is extraordinary that there is so little information on a problem of such significance to the joint goals of donors and borrowers alike. Such an analysis would entail the following:

- Identification of the recurrent expenditure implications of a wide range of projects for a representative sample of developing countries; the routine generation of recurrent expenditure statistics in the process of project appraisal would quickly develop an important data base for planning in many countries. More important, it would explicitly identify for local planners the recurrent implications of each new project.

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- Systematic analyses of whether existing projects and programs are currently underfinancing in developing countries. In many developing countries, inadequate maintenance and operation of the existing capital stock is one of the central development problems. Procedures must be developed to obtain a proper value for the existing capital stock and for the desirable level of corresponding recurrent funding.

- Diagnosis of the likelihood of future underfinancing; a helpful shortcut for such an analysis is to calculate for each project the ratio of its net recurrent expenditure requirements to the total investment outlay. This is called the "r" coefficient. Both within and across sectors, one would expect considerable variation in the level of these coefficients, as illustrated in the table. Given these coefficients, a prospective test of the long-term macroeconomic fiscal consistency of a country's public sector development program could be routinely made using fiscal data available to the Fund and the World Bank. Recent studies on Kenya, Ivory Coast, Malawi, and the Sahel illustrate the methodology. Simulations of the fiscal impact of shifts in the level and sectoral composition of the program could be readily made.

- Project appraisal analyses of the sensitivity of a project's output to underfinancing; that is, to determine what will be the level of project output at different levels of recurrent funding. How sensitive is a project to the inadequate provision of particular inputs (gasoline, skilled labor, and so on)? Such an analysis would help define the minimum set of inputs that a project needs to be productive. It would also allow quantification of the trade-off between the gains from new investment and the losses from underfinancing old ones. In the event that a sector's recurrent funding remains insufficient, it would also allow a more rational allocation of the limited funds.

## Solutions

If a country's existing public capital stock is grossly undermaintained or operating inefficiently, or if such problems are likely to emerge in the future, there are at least seven policies the government can adopt to ensure consistency between the level of future recurrent expenditure and revenue. At a macroeconomic level, it could (1) restructure its public expenditure program by reallocating funds from the investment to the recurrent budget, perhaps diverting funds to the maintenance and operation of existing programs; (2) cut less essential recurrent expenditure; (3) increase the tax effort of the public sector; and (4) increase the elasticity of the tax system.

At the project selection level, the government could (5) change the composition of the investment program to favor programs or investments with lower recurrent expenditure implications; (6) modify the technology of projects to have higher present investment costs at the expense of lower future recurrent outlays; and (7) introduce fees for the use of project services. The World Bank has emphasized that reliance on user charges should be extended from the traditional sectors of power, water, and transport to irrigation, agricultural credit, and urban sites and services schemes. Even in such social sectors as health and education, a modest reduction in the subsidy for some services may be appropriate. In many cases, user charges extend the potential coverage of important socioeconomic programs.

Each of these policies focuses either on cutting the overall recurrent expenditure commitments engendered by an investment program or on raising the amount of available revenue for their funding. All of them reflect solely the criterion of ensuring fiscal consistency between the growth in public expenditure demands and the likely availability of public resources. Although this criterion should be satisfied, other equally important criteria enter into the selection of projects and technology.

Specifically, the adoption of these policies may conflict with the achievement of other governmental objectives and are not without cost. In (5) above, the choice of a low "r" value technology may effectively conflict with a desire for highly labor-intensive employment generating projects. In (7), increasing the user charges for public services may conflict with distributional goals. In (6), changing the composition of the development program to achieve lower overall recurrent costs may conflict with other objectives. Where such conflicts emerge, the government has no choice but to consider other policies to raise revenue and cut expenditure (as in (1) through (4)). If not, the alternative would be further underfinancing of projects.

Though none of these proposals are particularly easy to implement, it would be valuable for officials to go through the process of considering them. By exploring the fiscal effect of alternative project packages, technologies, or pricing policies, a country's economic policymakers should become considerably more aware of the likely dimensions of their "underfinancing" problem.

Other options are available. In examining any sector's future development, the administration might consider the desirability of curtailing or consolidating existing

projects. There may, for instance, have been an overexpansion of schools, hospitals, and agricultural extension projects; in such cases, the marginal gain from adequate financing of a smaller set of projects may significantly exceed the loss from dropping others. This could be quantified if adequate data on the output losses associated with underfunding were available.

Finally, the government could seek greater rationality in the allocation and management of resources through improvements in the performance of local planning, budgeting, and accounting systems. Such reforms have been discussed in past issues of *Finance & Development* (see the articles by A. Premchand in June 1974, March 1975, and December 1975).

What options are available to an external donor concerned about the long-term economic viability of its project loans? In the design and selection of projects, donors might regularly consider the development of short-term to medium-term projects specifically oriented to the maintenance of the public sector capital stock. Once an institutional maintenance capacity is established and incorporated in a country's budget, its claim on future resources is solidified. Equally important, the donor might consider the absorption of all or a part of the recurrent costs of a project in the early years of its initial operation. The recurrent financing could then be tapered so that these costs become fully borne by the host country within two or three years of implementation.

Such an approach would have several advantages. It would ensure that recurrent costs are fully considered in the design and evaluation of projects, it would provide detailed data to budget planners, and it would ensure that an adequate level of recurrent funding for a project is built into a sector's budget. Once the project is fully operational it would then be more resilient to cutbacks when its funding is transferred to the local budget. By providing external technical assistance in the operation of the project, the donor could augment the absorptive capacity of a country in operating its projects. Finally, such a policy would also imply a productive shift in external aid funds from the investment to the recurrent budget.

Adoption of these proposals could never completely prevent the occurrence of underfinanced projects and programs. There is always uncertainty over how a project and an economy will evolve in the context of a changing international economic environment. These proposals would ensure that the problem of adequate recurrent financing is not lost sight of in development planning and budgeting.





Richard Blackhurst, Nicolas Marian, and Jan Tumlr

## **Trade Liberalization, Protectionism, and Interdependence**

General Agreement on Trade and Tariffs (GATT) Studies in International Trade, Geneva, Switzerland, November 1977, 79 pp., \$6.00.

This timely essay surveys the trends in production and trade since World War II, reiterates the case for further reductions in the barriers to trade, and examines the roots of the recent rise in protectionism in the industrialized countries. This review deals only with the latter two parts.

At the outset, it may be noted that the essay would appeal to specialists and nonspecialists alike; while it minimizes the use of jargon, there is no loss in analytical rigor. The case for further liberalization of trade is based on the concept of comparative advantage and the essay recalls its main elements for the nonspecialist reader. Briefly, such liberalization reduces the distortion of domestic prices relative to international prices, leading countries to produce and export more in sectors in which they are relatively more efficient and to import more in sectors in which they are relatively less efficient. This specialization leads to lower prices (a gain for consumers) and to greater output given the existing amount of resources (a production gain). It is well known that for these gains to accrue, there is a need to shift resources from less efficient to more efficient domestic uses and not necessarily to sectors in which any given country has the absolute advantage (that is, in which it is the most efficient in the world). In addition, there are two other gains that might be expected from trade liberalization, namely, the economies of scale that could be realized through the enlargement of markets and the pressure for innovation and higher productivity arising from increased foreign competition.

The essay reviews the three main arguments commonly advanced against reducing barriers to trade: (1) that the transitory or permanent income effects of liberalization are unevenly distributed within a given economy; (2) that an increase in the importance of foreign trade in national income for-

mation would heighten the domestic economy's vulnerability to macroeconomic disturbances of external origin; and (3) that excessive dependence on imports is undesirable, especially in view of the 1973 oil embargo.

The authors of this essay find none of these arguments convincing. First, it is argued that the focus should be on the gains for the economy as a whole rather than the costs of adjustment in the adversely affected sectors in terms of a transitory or permanent contraction of activity and employment.

With respect to the second argument, it is conceded that when the world's major economies are on the same phase of the business cycle (as was the case in the boom and subsequent recessions of 1972-75) it is more likely for the international economy to be a source of economic disturbances than a buffer for domestic instabilities. However, it is stressed that over the long term there is no evidence of an increasing tendency for business cycles to be synchronized and that, in any case, the costs of increased vulnerability to external shocks must again be measured against the gains from trade liberalization.

As for the third argument, the notion of excessive dependence on imports is not considered to be as important as the first two arguments because it is identified with the fear of exposure to embargoes and other arbitrary actions of producer cartels. From this point of view, the study rightly points out that the prospects for the formation of successful cartels for important products other than petroleum are quite slim. However, if the same notion is alternatively expressed in terms of desired levels of domestic production, it could not be as easily dismissed. To the reviewer, this is the fundamental rationale for import restrictions accompanying agricultural support programs in industrialized countries, "emergency planning" in certain countries, import-substituting industrialization in the developing countries, and for other long-standing programs which are defended not only on economic but also on political grounds.

The last part of the essay deals with the subject of recent protectionism in the industrial countries. While there has been a marked proliferation of import restrictions in these countries since the onset of recession in 1974, it is rightly argued that protectionist pressures would persist even after a general recovery because of difficulties of a secular nature in certain sectors.

An internal source of such difficulties has been the virtual maintenance of relative wage patterns despite wide disparities in the rates of productivity growth among sectors. The essay cites evidence to the effect that since the late 1960s, real wages had been rising faster than labor productivity in most industrialized countries, sharply cutting the rates of profit. Instead of permitting the least profitable industries to contract, there have been pressures to restore their profitability through higher prices which, to a varying extent, could be achieved through relief from import competition. Such pressures have been particularly strong in cases where the economies of certain regions are highly dependent on the industries involved.

An external source of the difficulties mentioned above has been increased trade competition from the developed countries themselves (particularly Japan) and from the developing countries. The essay points out that, as expected, the greater growth of population in the developing countries has led them to become increasingly competitive in products capable of being manufactured by intensive use of nonskilled or low-skilled labor; such products include clothing, textiles, footwear, and electronic consumer goods. What has not been expected is the speed at which they have been able to increase their shares in the domestic markets in the developed countries, often outrunning the latter's capacity to absorb the economic and political costs of adjustment.

The essay rightly emphasizes that the growth of export capacity in the developing countries has also meant the growth of their import capacity and, with the exception of some oil-producing developing countries, the latter has normally exceeded the former. While increased import competition from the developing countries has caused difficulty for certain sectors in the industrialized countries, it has also enabled other sectors to expand. Therefore, the shift in comparative advantage in certain activities to developing countries could also be viewed as a factor enabling a more effective exploitation of the developed countries' own comparative advantages.

As a concise examination of the current problem of protectionism, the essay deserves to be widely read. One hopes that there will be a sequel on possible solutions.

Roy C. Baban

## Environment North and South: An Economic Interpretation

John Wiley and Sons, New York, N.Y., U.S.A., 1978, xxi + 355 pp., \$19.95.

The authors claim this book to be the first comprehensive analysis of the relations between economic development and the environment and environmental relations between the industrial countries of the North and the developing countries of the South. Since the topics treated are of such paramount significance to the future well-being of our world, the book is to be highly commended.

Following the initial chapter on concepts and issues, encyclopedic Chapter 2 scans the "environmental landscape"—rainfall, soil, demography, urbanization—bolstered by 50 detailed, often lengthy and useful, tables—many covering over 100 countries. The more theoretical economics of Chapter 3 addresses the impacts of trade and investment. The environmental dimension of development projects is narrowly appraised in Chapter 4, and transnational pollution in Chapter 5. Possibly the most satisfactory, final Chapter 6 limns the pivotal relations between agriculture and environmental integrity in developing countries.

Readers expecting to find clear position statements may be disappointed: "... environmental deterioration ... a possible consequence of and constraint on economic growth. ..." The truth is that nothing environmentally unsound can ever be economically healthy in the long term.

Pragmatic readers expecting guidance concerning how development can be improved and environmental problems avoided will be dissatisfied. The book may be largely correct in what it says, but some fundamental issues are not addressed. The authors note environmental problems arising from development—such as depletion of the resource base—but fail to recommend improved courses of action. The folly of adapting the environment to suit the crop is perpetuated, and "externality" is not exposed for what it is—a euphemism for larceny.

Economists unaware of the environmental costs of their schemes will greatly benefit from the book. Environmentalists will regret the almost total exclusion of bionomics, quality of life, resource management (vis-à-vis exploitation), conservation, and the transfer of nuclear technology (Canada to India, the Federal Republic of Germany to Brazil) from north to south. The next edition of this important study should try to reduce the large number of what may charitably be called "typos." (Trypanosomiasis is not a waterborne disease (p. 94); pesticides

should indeed be managed, even eschewed, but it is preferable to manage the pests (p. 98); how does solar energy leach nutrients (p. 99)?)

Robert Goodland

A. S. Oberai

## Changes in the Structure of Employment with Economic Development

International Labour Office, Geneva, Switzerland, 1978, 42 pp., Sw F 7.50.

Guy Standing

## Labour Force Participation and Development

International Labour Office, Geneva, Switzerland, 1978, xiii + 267 pp., Sw F 30.

Guy Standing and Glen Sheehan (editors)

## Labour Force Participation in Low Income Countries

International Labour Office, Geneva, Switzerland, 1978, vii + 338 pp., Sw F 22.50.

The three books under review are part of the output for the world employment program of the International Labour Office (ILO). A.S. Oberai uses the labor force data from the censuses for 1960 and 1970 from 51 countries (as summarized in the *ILO Yearbook of Labour Statistics*) to study "the nature and determinants of structural changes in wage employment in the course of economic development." Simple regression models are used to "test" various hypotheses.

This reader, however, found that in spite of the relatively sophisticated methodology used, most of the conclusions were rather banal, or else could be derived from simple arithmetic deductions. An example of a not particularly original conclusion is the following—"wage-earners as a proportion of total employment in each occupation tend to rise with economic development." Nevertheless, the conclusion that "irrespective of the level of economic development attained, tertiary employment accounts for the largest proportion of wage employment" does seem surprising.

The author presents his results clearly, and, given his modest aims, this slim volume does fulfill them. So even though the book does not significantly extend the frontiers of our knowledge, it may be useful simply to lend our commonplace assumptions further empirical support.

The other two books under review are companion pieces. The Guy Standing-Glen Sheehan volume presents 19 case studies of the determinants of participation rates (primarily those for females) in a number of developing countries. Whilst these are likely to be of interest mainly to specialists, the

companion volume by Standing—which attempts to survey the demographic, economic, and sociological literature on the determinants of labor force and labor supply—should be of much wider interest. The author has done a very commendable job of synthesizing and summarizing a vast literature, and this part of the book—the bulk of it—can be highly recommended. The initial and concluding sections, where the author seeks to set out the welfare and policy implications of differences in labor participation rates, are, however, much weaker.

As the author shows clearly, the major sources of divergence between activity rates between countries, and during different stages of economic development, are due to differences in the participation rates for females and young and aged males (there is little significant variation in the participation rates of males aged between 25 and 55 years). The essential problem, therefore, is to explain variations in female participation rates. The author uses the framework provided by the conventional economics of household economics to see whether the model's predictions are borne out by the empirical evidence, which aims to cover both developed and developing countries, even though most of the evidence comes from the United States. The evidence broadly tends to confirm the model's predictions, despite the authors' penchant for saying a more dynamic model determining "tastes" would do even better. The assembled evidence supports several findings. Female labor force participation "responds to employment opportunities, that wives in higher-income families are relatively likely to be outside the labor force, and that female labor supply is more responsive to changes in female wages than changes in family income" (p.81). There is no "clear universal association between education and labour force participation; either at any particular stage of the life cycle or over the whole life cycle" (p.161). Despite the questionable nature of much of the evidence on the relationship of fertility to female activity rates "the general conclusion is that the demand for childcare time acts as less of a constraint on female participation in rural areas and where domestic employment predominates. In urban-industrial areas an inverse relationship is more likely, though it is still unclear whether or not the effect is greater for women with relatively low opportunity wages" (p. 190).

However, when the author seeks to provide a rationale for maximizing participation rates, he is on much shakier ground. Despite these reservations the book can be recommended to those interested in both demography and economic development.

Deepak Lal

# Other books received

Brian Abel-Smith with Alcira Leiserson

## Poverty, Development, and Health Policy

Public Health Papers, No. 69, World Health Organization, Geneva, Switzerland, 1978, 109 pp., Sw F 10.

A survey of the role of health in the development process and of the application of economic analysis to health planning. It seeks to provide to senior health administrators and teachers of health personnel in developing countries a summary of the economic concepts and issues which are used to evaluate health policy.

Emiel A. Wegelin

## Urban Low-Income Housing and Development

Martinus Nijhoff, Leiden, the Netherlands, 1978, viii + 347 pp., Dfl. 48.

One of a series contributing to the debate on optimal investment options in low-income housing for the developing world. This case study uses quantitative analysis to evaluate several squatter rehousing schemes in Peninsular Malaysia in the context of the country's economic and social background and development priorities. It is intended to aid in the formulation of policies on the allocation of resources and on financing arrangements in the housing sector in Malaysia.

W. B. Morgan

## Agriculture in the Third World—A Spatial Analysis

Westview Press, Boulder, Colorado, U.S.A., 1978, xiii + 290 pp., \$25.

On the principle that agriculture in developing economies frequently follows a pattern that depends on geographical location, this book examines Third World agriculture, first at a global level, then at national, regional, and farm and village levels. With a broad range of practical and theoretical illustration.

T. W. Hutchinson

## On Revolutions and Progress in Economic Knowledge

Cambridge University Press, New York, N.Y., U.S.A., 1978, xiv + 349 pp., \$29.50.

This collection of papers presents an historical review and assessment of the major intellectual events in the history of economics. The studies proceed from an examination of Adam Smith's notions about the competitive market through the analytical developments of Ricardo and Mill to the emergence of marginalist economics in the hands of Stanley Jevons and others. Three papers are devoted to the place of Keynes in economic thinking. The author concludes with an appreciation of the contributions of these thinkers to the main currents of economic thought.

F. Gerard Adams and Sonia A. Klein

## Stabilizing World Commodity Markets

Lexington Books, D.C. Heath and Company, Lexington, Massachusetts, U.S.A., 1978, xvii + 335 pp., \$24.95.

A selection of papers prepared by well-known economists for a conference on "Stabilizing World Commodity Markets: Analysis, Practice, and Policy" held in 1977 in Virginia. The papers are grouped under these main topics: (i) modeling world commodity markets, (ii) theoretical considerations of commodity market stabilization, (iii) economic, political, and institutional considerations in commodity policy, and (iv) integrated commodity stabilization programs.

Reserve Bank of India

## Recent Developments in Monetary Theory and Policy

Reserve Bank of India, Economic Department, Bombay, 1978, 198 pp., \$2.50.

This collection of papers presented at a seminar organized by the Reserve Bank of India. Can be divided into two parts. The first covers the monetarist-Keynesian approaches to the theory of money. The second group of papers tests a number of monetary hypotheses. Several of the authors, on the basis of Indian data, conclude that the effectiveness of traditional monetary instruments is rather limited because of exogenous factors such as the existence of quasi-money.

Steven W. Kohlhaugen

## The Behavior of Foreign Exchange Markets—A Critical Survey of The Empirical Literature

Monograph Series in Finance and Economics, Salomon Brothers Center for the Study of Financial Institutions, Graduate School of Business Administration, New York University, New York, N.Y., U.S.A., Monograph 1978-3, 54 pp., \$3.00 (paperback).

A survey of the recent empirical academic research on the foreign exchange market. The primary emphasis is upon models which attempt to explain the behavior of the foreign exchange markets under contemporary conditions.

Klaus-Walter Riechel

## Economic Effects of Exchange-Rate Changes

Lexington Books, D.C. Heath and Company, Lexington, Massachusetts, U.S.A., 1978, x + 155 pp., \$15.95.

This study addresses itself to a rather comprehensive application of the monetary "approach to balance-of-payments adjustment" to exchange rate changes. It extends a simple aggregate model to analyses of commodity market and markets for financial assets, and considers the effects of money illusion and price expectations on the success of exchange-rate changes. Of advanced theoretical interest.

OECD

## A Medium-Term Strategy for Employment and Manpower Policies

OECD, Paris, France, 1978, 130 pp., \$10.

The purpose of this study is "to clarify the proper role of selective employment and manpower policies within a medium-term strategy aimed at regaining full employment." The report first describes the changes in the structure and functioning of labor markets and in manpower policies over the past two decades. This is followed by a discussion of the types of policies required to, first, raise the general demand for labor in the short run, and second, counteract medium-term structural imbalances in the labor market. Estimates of the relative importance of cyclical, "capital-shortage," and frictional influences on recent unemployment rates in eight industrial countries are included in an annex.

Lloyd G. Reynolds

## Image and Reality in Economic Development

Yale University Press, New Haven, Connecticut, U.S.A., 1977, xiii + 497 pp., \$25.

This book distills the wide experience of the author over a 20-year period of research and teaching. Part 1 contains a general discussion of development theory with a detailed look at agriculture. This is followed by a model of a closed economy in which the agricultural sector plays an important role and a discussion of the open economy, which deals with trade and transfers of capital and technology.

Part 2 examines the development experience of various countries, starting with Japan. A comparative analysis of the economic growth of 15 nonsocialist developing countries follows. A chapter on growth acceleration under socialism and reflections on development policy round off this volume.

William Glaser

## The Brain Drain—Emigration and Return

A UNITAR study, Pergamon Press, Oxford, U.K., 1978, xlvii + 324 pp., \$30 (cloth), \$15 (paperback).

This book presents the combined findings of 13 international surveys which attempted to identify not only the economic factors but also the social and psychological motivations of students and professionals from developing countries who remained in developed countries. Some popular notions about the causes of emigration are contradicted by this evidence. For example, the level of income is found not to be the strongest determinant of a choice between staying or returning home; furthermore, a higher level of economic development in a country does not necessarily reduce the outward flow of trained personnel. A 41-page bibliography and detailed presentation of the survey results make this book a useful guide for researchers and policymakers.



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150 pages; index. Cloth \$12.50 (£9.25); paperback \$5.95 (£4.50).

*Available late spring 1979, volume two:*

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Armeane M. Choksi, Alexander Meeraus, and Ardy J. Stoutjesdijk

About 300 pages; index. Cloth \$16.95 (£12.75); paperback \$6.95 (£5.25).

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#### **World Atlas of the Child. 1979.**

This new Atlas was published in recognition of the International Year of the Child. Nine global maps visually present child-related indicators of GNP and population, number of children, crude birth rates and number of births, life expectancy, infant mortality, children in the labor force, primary and secondary education (female and total), and pupil-teacher ratios in primary education, for countries in seven income groups. The data are shown in a range of colors and patterns. Four statistical annexes provide data for 185 individual countries and territories by region, for 1960, 1970, 1975, and with projections for the year 2000. The preface and introduction are in English, French, and Spanish. (A Japanese edition is available from the World Bank Tokyo Office, Kokusai Building, 1-1, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100, Japan.)

#### **World Bank Atlas. Thirteenth edition. 1978.**

Statistics of population (mid-1976), GNP at market prices and per capita (1976), and average annual growth rates (1960-76 and 1970-76) for 185 countries and territories. Three global maps illustrate data by country income groups, two computerized maps show GNP per capita and population by major regions, and six regional maps provide data for individual countries. A statistical annex gives current US dollar estimates for 1975, 1976, and 1977 (provisional). A technical note explains the methodology used. (Introduction is in English, French, and Spanish.)

#### **World Bank Research Program: Abstracts of Current Studies. October 1978.**

Outlines 85 projects currently in the World Bank's central research program, grouped into eight functional categories. (In English.)

Single copies of the publications listed above are available free of charge and will be sent by surface mail. They can be ordered from: The World Bank, Publications Unit, 1818 H Street, N.W., Washington, D.C. 20433, U.S.A. In Europe they can be ordered from: The World Bank, European Office, 66 Avenue d'Iena, 75116 Paris, France.

#### **World Development Report. 1978.**

The first in a series of annual reports by World Bank staff on global development issues is available in English, through booksellers, distributors, and Oxford University Press offices in Europe and the Middle East, and in Australia, Canada, Hong Kong, Japan, New Zealand, Singapore, South Africa, and the United States.

Readers in other countries can order a copy in English from: The World Bank, Publications Unit, 1818 H Street, N.W., Washington, D.C. 20433, U.S.A.

Copies in Arabic, French, German, and Spanish can be ordered from: The World Bank, Publications Unit (see address above) or from: The World Bank European Office, 66 Avenue d'Iena, 75116 Paris, France.



# Publications from the Fund

## Volume 29 of Balance of Payments Yearbook

*Completed in December 1978*

The Fund's **Balance of Payments Yearbook** contains data reported by 110 countries, enabling the Fund to publish figures that are comparable for each country included. About 30 countries provide quarterly or half-yearly figures as well as annual data. The **Yearbook** is published in monthly parts with a comprehensive final issue.

Volume 29 was completed by publication in December 1978 of the annual issue, which contains definitive tables and notes for the 110 countries. For most countries the nine years through 1977 are covered, although some quarterly summaries continue into 1978. This annual book supersedes the 11 booklets issued monthly during 1978. A supplement to Volume 29 contains some 60 series of standard categories organized by topic instead of by country.

Volume 30 commenced publication in January 1979. Volume 29 was the last to be based on the Third Edition (1961) of the **Balance of Payments Manual**. Henceforward, figures will be published according to the concepts and definitions of the Fourth Edition (1977).

Subscription: \$20.00 a volume (\$8.00 to university libraries, faculty, and students).

## FORTHCOMING

### Legal and Institutional Aspects of the International Monetary System

a collection of fourteen essays written by Joseph Gold, the General Counsel and the Director of the Legal Department of the Fund. The essays, originally published outside the Fund, discuss or are related to certain broad themes that are relevant to the organization of the international monetary system. The author has written a comprehensive introduction to the collection, with special emphasis on aspects of the Second Amendment of the Articles of Agreement. Detailed indexes and a bibliography. Estimated at 750 pages. Price not yet set.

## Staff Papers

makes available to the public selected studies prepared by Fund staff members on monetary and financial problems. Studies published thus far have dealt with such subjects as balances of payments and exchange rates, monetary systems and analysis, inflation in relation to economic development, national monetary and fiscal policies, methods of taxation, and international liquidity. Papers on the Fund's Articles of Agreement and bibliographies of publications about the Fund are also published. Summaries of each article in English, French, and Spanish are included. Quarterly.

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- **National Economies** comprises articles on individual countries, stressing the continuing efforts of both industrial and developing countries to attain stable growth.

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