

BULLETIN

March–April 1993

Volume 4, Number 2

Information technology's potential and performance

The amount of information packed into economic activity worldwide is rising, but the use of information technology is not catching on as fast in developing countries as it has in industrial countries. Nor is this technology a panacea—it is a tool for efficiency. And to make it work requires planning, organizational capabilities, managerial skills, and entrepreneurship.

In a special issue of *World Development* devoted to information technology, World Bank policy researchers Ashoka Mody and Carl Dahlman examine the potential and the constraints of the information revolution.

As the unit costs of computers and modern communications have come down, their use has rapidly grown, vastly improving the capability of users to store, process, and retrieve a variety of data, ranging from simple numbers to video images.

Information technology, which includes computers, communications technology, and the associated software, is being applied to fields as diverse as science, manufacturing, finance, and marketing. In each area, the technology creates the potential for greater operational efficiency and often leads to a

change in the way business is done.

Information technology provides a striking example of benefits that developing countries can gain by tapping international sources of knowledge. While industrial economies have spent large sums on the development of information

*The aggregate
impact of
information
technology has
been disappointing*

technologies, many products and services are now available at prices that continue to decline in international markets. Information technology has additional relevance in developing countries because it is applicable in small modules. The personal computer and associated storage technologies have brought the technology within the range of small users, offering them an opportunity to leapfrog over generations of equipment. The economically efficient size of

telecommunications networks has also declined, although not as much as for computers.

Despite these advantages, however, the aggregate impact of information technology on productivity in developing countries has been disappointing. Studies of industrial countries suggest that productivity gains from computer use have thus far been limited. And Nobel Prize winner Robert Solow is reputed to have said that one sees computers everywhere except in productivity statistics.

The information economy

To explore the link between information technology use and per capita income, it is necessary to assess the role of information in modern economies. Why have information services become a larger part of economic activity? Is it because the value of these services has increased relative to other economic activity? Or is greater information intensity merely a reflection of lower unit costs of information technology services? The first influence can be thought of as shifting the demand curve for information technology services outward. The second is a shift in the supply curve down the demand

FILE COPY

In This Issue

1

Information technology's potential and performance

Informational value of import license auctions: An empirical study

Global Economic Prospects and the Developing Countries 1993

7

New Research

Econometric analysis of pollution abatement costs

Public-private interactions in the health sector in developing countries

13

Discussion, Technical, and Related Papers

Poverty in India, 1950-90

The role and magnitude of the private safety net during transition: Private interhousehold transfers in Poland, 1986-91

14

Working Papers

Issues of stabilization in transitional economies

Market structure and market outcomes: The Mexican stock exchange

16

Calendar

Understanding bilateral trade flows in East Asia

12

Books

Spontaneous institutions and sustainable rural development in Africa

Managing the World's Forests: Looking for Balance between Conservation and Development

Survey of service firms in St. Petersburg

Structural Adjustment in a Newly Industrialized Country: The Korean Experience

The World Bank Policy Research Bulletin is published five times a year by the Research Advisory Staff. Subscriptions to the Bulletin are complimentary and may be ordered by contacting Evelyn Alfaro at the Bank's main address, room S3-127. The Bulletin's purpose is to inform the development community of the Bank's policy and research output. It includes descriptions of Bank publications, research summaries, and updates of events in and outside the Bank. The views and interpretations in articles published are those of the authors and do not necessarily represent the views and policies of the World Bank or of its Executive Directors or the countries they represent. The Bulletin is not copyrighted, and it may be reproduced with the appropriate source attribution. For more information, contact Evelyn Alfaro, the production manager. Alison Strong is the editor.

Continued from page 1

curve. This difference between shifting the demand curve and shifting the supply curve highlights the potential and the limits of information technology diffusion in developing countries. Unless the demand curve begins to shift outward or the demand for information is highly price elastic, the technology will continue to play a limited role in developing countries.

Over the past four decades, the share of information services in

national and international economic activity has increased steadily. The proportion of "information" workers in the working population, even in the early 1980s, was as high as 45 percent in the United States. Other industrial countries, while behind in this, were quickly catching up.

An information worker is one engaged in knowledge creation, in knowledge and information transfer, and in economic coordination, including the operators of "low-end" information processing

infrastructure. Economic coordination—which includes certain banking and financial services, movements of goods and services, and legal services—has traditionally accounted for the bulk of information workers. But the number of workers who create and transfer knowledge is growing much faster.

According to another classification, growth has been especially rapid in business services (advertising, consulting, accounting, electronic information services, credit

Box 1 Phones, televisions, and computers

A country's use of telephones, televisions, and computers is strongly correlated—the higher the number of telephones, the greater the number of televisions and computers. And in general, the relationship is close between per capita income and information technology diffusion (see the figure). The numbers of telephones and televisions in any country are generally close together, being about equal in the United States, Japan, and worldwide. In the East Asian economies, however, telephone diffusion has far exceeded the diffusion of televisions, indicating a strong government priority in the development of telephone networks. In contrast, Brazil and the new republics of the former Soviet Union have much lower phone density than television density, suggesting that telecommunications network development has lagged behind.

In the United States, there is about one computer for every four phone lines—a ratio much higher than in any other country. The closest in this is Singapore, which has one computer for every five phone lines. In Japan and Germany, there are seven to eight phone lines per computer. If the U.S. ratio of computers to telephones is the norm, the other countries can be expected, under certain conditions, to experience rapid growth of computer use to catch up to that norm.

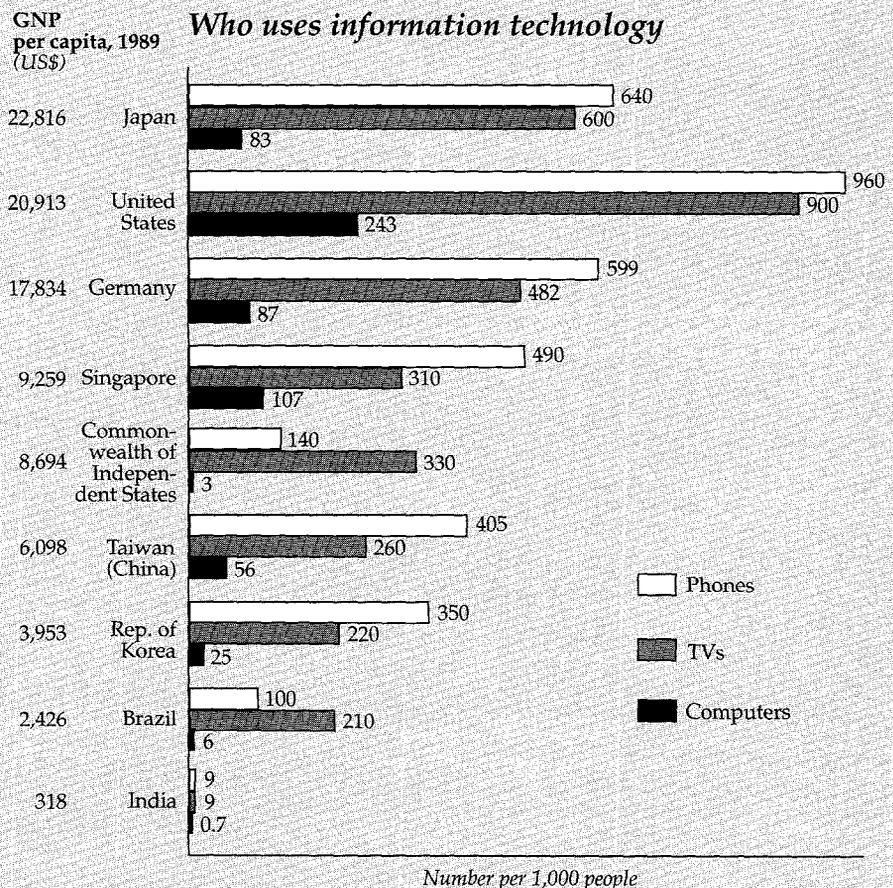
There are three possible reasons for the United States to have a higher ratio of computers to telephones than other countries.

- First, the value of computers increases when they can be networked through telephone lines, and the United States has a higher density of telephones and wider range of telecom services than other countries.

- Second, the United States has a much deeper and richer collection of computer professionals than any other country. These professionals are not necessarily better "educated" than in other countries, but they have much greater experience and hence have a greater capability in developing new

applications.

- Third, the United States benefits from agglomeration effects. Experienced professionals are extremely mobile and carry with them embodied knowledge to new and competing firms.



Source: Egil Juliussen and Karen Juliussen, "Phones vs TVs vs Computers," *The 1992 Computer Industry Almanac*, 5th Annual (Computer Industry Almanac, Inc., Incline Village, Nevada).

reporting, and airline computer reservations). Some of these business services were conceived and implemented wholly on the basis of a modern information technology infrastructure. Business services grew at almost 50 percent a year in the United States during 1975–87—from about \$3 billion to \$130 billion.

Not surprisingly, developing and newly industrializing economies have a smaller fraction of workers in the information industry than industrial countries do. Interestingly, Hungary had more than 30 percent of its workers in the information business in the early 1980s, while the Republic of Korea had only about 15 percent. The Indian share of information workers was even lower, at less than 15 percent in the late 1980s. Studies show, however, that the trends are very similar to those in industrial economies. Countries as varied as Hungary and Korea show a sharply increasing share of information workers over time. Moreover, business services, though accounting for a small proportion of information services, are growing very rapidly.

These national trends are reflected in international commerce. Trade in services grew significantly faster than merchandise trade during the 1980s. Moreover, the growth in service trade has been faster than trade in manufactured

The diffusion of information technology will be slower in developing countries

products, the most dynamic element of merchandise trade. And knowledge-intensive services seem to have been growing faster than other services.

Anecdotal evidence abounds on the increasing value of information

services relative to other activity. In apparel industries, it is now common for international producers and distributors to be connected through telecommunications links to shorten delivery time and reduce losses due to excess stocks or undersupply. The potential value of such losses (in relation to, say, costs of production) has increased in recent years as competition has focused on high-quality fashion and time-sensitive products rather than products that have a long shelf life. Producers and distributors in these businesses have thus been active in adopting various information technology-based systems to lower their transaction costs and inventories.

Overall, developing economies have less need for such time-sensitive information and hence are likely to place less value on information technology. But, since many developing countries have very deficient information recording and dissemination systems, the marginal returns from simple information technology are likely to be higher in these countries than in industrial economies where information systems are already quite sophisticated. A further complicating factor is that even the use of simple information technology requires certain organizational skills and incentives that may be absent in particular developing country contexts.

On the whole, therefore, the diffusion of information technology can be expected to proceed at a slower rate in developing economies than in industrial economies because the value of information is lower and the complementary skills to absorb information technology are lacking.

In newly industrializing economies

In Korea and Taiwan (China), the use of information technology by a

Box 2 Information technology in Africa

Information technology is used in a wide range of government and parastatal activities in Africa. And when used effectively, such technology has brought substantial benefits to African countries. A World Bank-supported project in Nigeria is using computers to improve financial controls of key transport parastatals. Another in Kenya is using computerized information systems to process and analyze education and financial data and to reform the scholastic testing system. Other examples of productivity-enhancing information technology range from sophisticated use of data networks by the Barclays Bank in Ghana to the use of desktop publishing and small electronic mail networks.

In Africa, as elsewhere, the most common pitfall in adopting information technology is the tendency to underesti-

mate the importance of organizational management skills. Obtaining those skills requires training, preparing feasibility reports, developing business plans, and procuring hardware and software.

It is easy to read into this conclusion that weak management skills in Africa are to blame. Foreign advisers, however, are as much at fault. The World Bank has often accepted incomplete tender documents that have not detailed the state of borrowers' existing information capabilities. Program designs for information systems were sometimes overly complex for local needs. Other quick-fix efforts (such as the purchase of urgently needed computers) did not consider capacity planning, sizing, future growth, and compatibility issues.

few large companies is extremely advanced. But both economies lag behind Singapore in information technology diffusion. Use of the technology in corporate operations is just beginning in Korea, and there is considerable variation by size of firm. In 1990, all Korean firms with annual sales of more than \$20 million had used computer systems; half of them had at least three years of experience with such technology, and nearly 23 percent had more than five years of experience. In contrast, about half of all small firms (with annual sales of less than \$6.7 million) had no experience in computerized operations and none of the firms had more than three years of experience.

Overall, corporate commitment to investment in information technology is low. Most Korean firms invest less than 0.1 percent of their total sales in information technology. Only 14 percent of the firms surveyed allocated more than 0.5 percent of total sales to developing information technology. In contrast, spending on research and development in Korea's corporate sector runs at just over 2 percent of sales.

The immaturity of information technology applications by Korean firms can be further illustrated by software use. Less than half of a sample of firms surveyed had used software programs for corporate operations other than for such basic functions as personnel management, wage calculation, and accounting. Only a quarter used software in production. Thus, while management information system software has been widely adopted, material requirements planning and material stock management software packages are rarely used.

The most important constraint on adapting information technology to corporate operations in Korea is the lack of long-term planning and

standardization of business operations. In contrast, functional or technical difficulties as well as limited capital are relatively subordinate constraints. Such adaptation may also be constrained by a corporation's entrenched

Today, new microcomputers are diffused worldwide in months

information structure, which can be very slow to change. Issues such as these usually require a steady, long-term effort before they can be resolved.

Operational productivity at the Port of Singapore has increased significantly through the use of information technology. There, the effective use of information technology required substantial investments in equipment. The port had no option but to steadily adopt such technology since customers demanded quick turnaround of their vessels, which is not feasible without it. Moreover, customers also demand that the port be able to connect them electronically to other links in the distribution chain. These imperatives aside, the adoption of information technology must be slow, with each successive stage being mastered before moving ahead.

Singapore's National Computer Board has noted the problems faced by the smaller companies in exploiting information technology. These include a lack of understanding of the technology, a lack of trust

in vendors, and the lack of affordable software.

The newly industrializing economies have been experimenting with manufacturing automation in several industries. For the most part, the experimentation has involved adapting available technologies to their specific needs. But the more advanced firms in these economies are also researching ways of improving machinery and processing techniques.

In developing economies

Microcomputers have spread the promise of information technology to the developing world. The gap between industrial and developing countries has narrowed considerably: a decade ago, a typical developing country would begin to use a generation of computers only many years after its introduction. Now, new microcomputers are diffused worldwide in months. But that adoption is tentative, exploratory, and mostly confined to large firms.

The use of information technology in developing countries is predominantly in service sectors. Government use often accounts for over half the application in the early phases of a country's computerization, with the banking sector following close behind.

A report on Indonesian banks concludes that automation has had almost no impact on their financial performance. In automating, banks have tended to underestimate the importance of changing process routines. In the next several years, however, the productivity gains from automation are bound to increase, even in Indonesia, as the current learning phase is completed. An international consulting company advised a major Indonesian bank on its information technology strategy—with very poor results, due in part to inadequate

organizational skills. And the spread of further banking automation in Indonesia and other developing countries, such as automatic teller machines, is being held back by unreliable telecommunications—one of the biggest impediments to the general use of information technology in developing countries.

In Poland, where retail banking is also becoming computerized, telecommunications are a major constraint to further automation. And in China, despite poor telecommunications, Barclays Bank has obtained dedicated leased lines to link some of its branches, allowing account verification at any one of the connected branches. Brazilian banks, which have operated in an inflationary environment and have traditionally had geographically dispersed branches, have benefited from the use of computer systems. Distributed data processing was an innovation tailor-made to their needs. Even so, the productivity gains have not been uniform.

To compete with newly industrializing economies in the manufacturing sector, low-wage economies are being pushed into examining the potential for automation. In booming Southern China, computerized sewing machines for selective operations are common; sophisticated surface-mount machines for printed circuit board assembly are also used.

In sum

The effective use of information technology has several requirements. Knowledge must flow worldwide with the greatest possible freedom. The incentives to adopt new technologies must be in place. The national infrastructure to

Box 3 Can East Asia's model be easily copied? No

By investing simultaneously in telecommunications infrastructure, education and training, and diffusion of specific techniques, processes, and standards, governments in East Asia's newly industrializing economies (NIEs) have tried to create an environment conducive to private information technology investment.

As a result, the number of trained information technology professionals has been growing rapidly—East Asia's telecommunications infrastructure compares favorably with the best in the world. And demonstrable productivity gains have occurred through many government programs to diffuse information technology, such as Singapore's TradeNet, Civil Service Computerization, and Garment Automation programs. The impact on economic performance is difficult to assess, however. The best that can be said is that the rapid transformation of these economies to more knowledge-based products and services is surely being aided by their vast physical, human, and

institutional infrastructure.

It will not be easy to transfer the NIE's experience to less-developed economies. The NIEs determined that their comparative advantage was shifting to higher-value-added and more skill-intensive activities. In such activities, the support of information technology is more critical than in the slower-paced activities that dominate the economies of less-developed countries. In addition, the heavy involvement of governments in NIEs, especially in telecommunications development, reflected the state of technology and organizational evolution about a decade ago. Telecommunications were then viewed as a natural monopoly requiring either state ownership or heavy state regulation.

The NIE experience with technology diffusion institutions may also have limited relevance for many developing countries since the success of these institutions depended considerably on heavy demand for their services, reflecting optimistic growth prospects.

support the adoption of those technologies must exist. And the organizations (such as a firm or a government entity) must have the capacity and structure to absorb the technology.

Although much of the underlying knowledge is available "free," in the sense that much of the cost to develop technologies does not have to be paid for by developing countries, potential users must be open to the technology flows. They must also be open to the flows of services and investment in which the technology is often embodied. This requires the full liberalization of international information flows.

In addition, complementary investments to apply the information technologies are typically needed. Telecommunications infrastructure is central to the

effective use of information technology, and large investments in telecommunications have been integral to the successful strategy of information technology in East Asia (see box 3).

Organizational innovation should focus on the decentralization of decisionmaking, which in turn requires better trained and more experienced decisionmakers. Information technology is used best when small decisionmaking units are part of a network that facilitates the flow of new and complementary information, which can in turn be tailored to local needs.

Drawn from Ashoka Mody and Carl Dahlman, "Performance and Potential of Information Technology: An International Perspective," *World Development*, Special Issue, vol. 20, no. 12 (December 1992).

New Research

The research projects described here have been approved by the Research Committee and are funded by the Bank's Research Support Budget (RSB). Bank units contribute their staff time to these projects, and RSB funding complements this by providing for such expenses as consultants, data collection, and travel. For information on funding to prepare research proposals approved, see page 11.

For information about research projects listed here, contact the researchers at the Bank's main address.

Research Starts

**Econometric Analysis
of Pollution Abatement Costs**
David Wheeler
Policy Research Department,
Poverty and Human Resources
Division
Ref. no. 677-81

As developing countries establish environmental protection agencies and develop environmental regulations, a priority that often emerges is to control emissions in large urban and industrial areas. Because the financial resources for such efforts are limited, policymakers in developing countries need a method for weighing the costs and benefits of alternative strategies for reducing pollution. This project is intended to fill that need.

In structuring a cost-benefit analysis of strategies for controlling industrial pollution, a sectoral focus makes sense. Different industrial activities emit different types and volumes of pollutants into different media (air, water, landfills). These pollutants pose different levels of risk. And the cost of pollution abatement may vary among sectors and pollutants. Thus, identifying optimum industrial pollution

control policies for resource-constrained economies requires knowing the sector of origin, the type of pollutant, the risks associated with that pollutant, and the costs of abatement.

The capability to project much of that information is now available, through the Industrial Pollution Projection System. This system has been developed by a World Bank research team working in collaboration with the U.S. Environmental Protection Agency and the Center for Economic Studies of the U.S. Census Bureau. The system is based on Census Bureau survey data from tens of thousands of U.S. manufacturing facilities, and EPA data on plant emissions.

The system can provide estimates of emissions intensity (pollutant per unit of output) at a highly disaggregated sectoral level for hundreds of pollutants. And it includes an EPA risk factors data base that enables users to analyze the relative exposure risk for these pollutants. By incorporating manufacturing survey data from a developing country, the system can produce detailed sectoral and regional estimates of pollution loads to help the country gauge its industrial pollution problems.

This research project will add to the system information on abatement costs based on U.S. plants' recurrent and capital expenditures for pollution abatement by medium of discharge. This information, combined with the data already in the system, will make it possible to estimate pollution abatement cost functions at a high level of sectoral disaggregation.

RSB support: \$39,900
Staff weeks: 4

Poverty in India, 1950-90

Martin Ravallion
Policy Research Department,
Poverty and Human Resources
Division
Ref. no. 677-82

About 40 percent of those who subsist on less than a dollar a day live in just one country—India. Crisis and adjustment in that country have made this a critical time for its poor, and policy decisions made in India over the next few years will have an important bearing on their future welfare.

Unlike many developing countries, India has relatively good data for informing those decisions. The data on consumption collected through India's main survey instrument, the National Sample Survey, will allow the compilation of a time series of consumption distribution and poverty measures spanning four decades.

Using data collected from 30 National Sample Surveys, this study will perform a descriptive analysis of the changes in consumption distribution in India over the period 1950-90. It will also perform basic analysis of the observed changes in poverty measures.

The study will first estimate a model of consumer demand on the time-series data and use it to construct cost-of-living indices for deflating nominal consumption expenditures over the 40-year period. It will construct different indices for different groups and sectors (urban and rural). Thus, distributions of real consumption will be constructed that reflect the different effects of relative price shifts on the poor and the nonpoor. Poverty measures based on those distributions will then be estimated over time and across sectors.

The study will then ask how much of any observed change in

poverty can be attributed to changes in the *distribution* of living standards, as distinct from *growth* in average living standards. It will test the hypothesis that distributional changes are of relatively minor importance to the longer-term evolution of the incidence of absolute poverty—that they are instead swamped by the effects of growth in mean consumption.

Finally, the study will examine the proximate causes of the changes over time in the distribution of real consumption in India. It will distinguish the effects on the poor of macroeconomic fluctuations from the effects of changes in the sectoral composition of output (particularly agriculture versus manufacturing), and the effects of shifts in relative prices. And it will distinguish the effects on rural poverty from those on urban poverty, and look at the cross-effects between sectors (such as the effect of agricultural output on urban poverty, and of manufacturing output on rural poverty).

The research will allow simulations of the effects on India's poverty measures of projected macroeconomic changes and shifts in relative prices associated with the current adjustment efforts.
RSB support: \$72,000
Staff weeks: 29

**Issues of Stabilization
in Transitional Economies**

Marcelo Selowsky
Europe and Central Asia Regional
Office, Office of the Regional Vice
President
Ref. no. 677-83

As a result of the dramatic reduction in Russia's short-term output, government revenues have declined sharply. Monetary expansion to finance money-losing enterprises and to maintain wages is resulting in near-hyperinflation. This study

will examine two sets of issues that this situation raises.

The first set of issues, taking as a given that Russia's government should finance income maintenance during the economy's transition, concerns how such a support system should be designed. There are two main possibilities. Income maintenance could be provided to workers through the enterprise that employs them. Support given to workers in place might help in the restructuring of enterprises and the reabsorption of workers if those enterprises have some future—that is, the income transfers might act as a transfer of working capital. The research will explore whether an income maintenance program could be designed so as to encourage restructuring and privatization.

An alternative system could give support to workers only after they leave the enterprise—as an unemployment benefit. This could encourage labor mobility, and the income maintenance program could be designed in conjunction with a retraining program.

The second set of issues concerns the macroeconomic tradeoffs that income maintenance would entail. For example, what is the maximum amount of support that can be provided without putting at risk efforts to reduce the inflation rate?
RSB support: \$37,250
Staff weeks: 60

**Understanding Bilateral Trade
Flows in East Asia**

Aroind Panagariya and Sumana Dhar
Policy Research Department, Trade
Policy Division
Ref. no. 677-86

With regional trade schemes apparently here to stay, knowing what kinds of scheme are likely to expand trade has become important. This study will add to the understanding

of regional trade flows by looking at the determinants of bilateral trade relationships.

For a country whose trade liberalization is to take a preferential course, it is necessary to identify trading partners with which that country exhibits most complementarity. There are different hypotheses about what determines complementarity in trade. Building on the work done with the gravity model in analyzing trade flows, the study will test empirically the validity of these hypotheses and systematically assess the relative importance of the different determinants of complementarity.

One hypothesis is that distance determines complementarity: countries trade more intensively with their neighbors than with more distant economies. Another is that complementarity depends on relative per capita GDP: the richer an economy, the more intensively another country will trade with it. For a pair of rich countries, the more similar their per capita incomes, the more intensive the trade between them; for poor countries, the opposite could be true.

A third hypothesis is that distance and per capita income together may matter: the effect of an increase in the per capita income of a partner country may itself depend on distance. The closer a pair of trading partners, the greater the effect of an increase in the income of one on the other's exports.

The research will also assess what effects the economic slowdown in North America and Europe will have on East Asian exports, both within and outside the region. Will East Asia's intraregional trade intensify, and if so, how much? And would increased intraregional trade be sufficient to sustain the region's high levels of growth?

In addressing these two sets of questions, the study will assemble a

model and data set that can be used to assess the effect of changes in incomes worldwide on the bilateral trade flows of a country. The model and data set will be constructed to permit annual updating and to incorporate country-specific effects. RSB support: \$30,000
Staff weeks: 7

***Spontaneous Institutions
and Sustainable Rural
Development in Africa***

*Pierre Landell-Mills and Robert
Klitgaard*
Environmentally Sustainable
Development, Office of the Vice
President
Ref. no. 677-88

Experience with rural development efforts in Africa suggests that the most successful efforts center on local organizations—and that the most successful local organizations are spontaneous institutions. These institutions are understood to be voluntary, cooperative activities aimed at development and initiated by the participants without outside intervention. Examples are savings and credit groups and producers' cooperatives.

This research is designed to shed light on how spontaneous institutions work. How do they make decisions? What rural development problems do they consider most important, and what obstacles—including in the policy environment—do they face in addressing these problems? And how do the local sociocultural and other conditions affect each of these variables? The answers to these questions will help in understanding how to create an environment in which these institutions can flourish.

In this pilot phase of the project, researchers will identify three spontaneous institutions in Lesotho (a sample to be expanded

in the full study to 40 institutions in six countries). Each institution will be given a grant large enough to undertake a significant activity but small enough not to dwarf its current scale. The grants will be made under two conditions—that they be used for a development purpose, and that researchers be allowed to interview the institution's members to determine how they made the decision on the use of the funds.

Researchers will rapidly document the setting of each participating institution, including the policy environment, using a set of sociocultural variables developed for that purpose. The interviews on the decisionmaking process, and an assessment of the results of each institution's undertaking, will be conducted about six months after the grants are made.

The findings of these case studies and the findings on sociocultural settings will be used to analyze the relations among the policy and sociocultural environments, the behavior of spontaneous institutions, the obstacles they encounter, and the outcomes they achieve. RSB support: \$20,000
Staff weeks: 3

***Survey of Service Firms
in St. Petersburg***

Martha de Melo and Gur Ofer
Policy Research Department,
Transition and Macro-Adjustment
Division
Ref. no. 677-89

The services sector is expected to be of central importance in transitional economies because of its role in generating employment, in promoting private sector development, and in improving the efficiency of distribution and production. Yet there has been little empirical analysis of the growth of this sector

in transitional economies, or of how that growth is affected by the policy environment.

This project will survey 75 to 100 privately owned service firms in St. Petersburg, Russia, to develop an understanding of their characteristics and performance, the policy issues that affect them, and changes that could be made to improve their policy environment.

The survey will collect information on each firm's previous ownership and legal status, its initial financing, and the background of its owners and managers. It will obtain information on the firm's general characteristics, the services it provides, its size, its technology, and its performance. The survey will look at each firm's market—the clients for its services, its orientation toward exports and toward services for foreign trade, its competitors, and its pricing policy. It will also look at the firm's inputs, including financing sources and labor.

Finally, the survey will obtain information on the environment in which service firms operate. It will look at what is helping and what is hurting each firm in the general environment—for example, inflation, physical security risks, and informal transactions. And it will look at the effects of policies introduced by different levels of government, such as tax and pricing policies and regulations on entry and exit.

The results of the research are expected to show, among other things, how individual firms are contributing to the economy. These findings will complement research being conducted concurrently, at an aggregate level, on the potential contribution of the sector as a whole to economic growth in the former Soviet states.

RSB support: \$15,000
Staff weeks: 22

***Informational Value of Import License Auctions:
An Empirical Study***

David Tarr

Policy Research Department,
Trade Policy Division
Ref. no. 677-91

Import license auctions are potentially useful devices. They offer a market-oriented way of allocating licenses. They can provide revenue for governments. And—most important for this study—bids in license auctions can provide useful information on import demand and the degree of restrictiveness (tariff equivalent) of import regimes.

During the past decade, Australia, Colombia, and New Zealand all used such auctions as an intermediate step in their trade liberalization programs. Policymakers used the auction bids as a measure of the protection of the relevant industry, and as a guide for timing the removal of licensing requirements and for adjusting tariffs. And economists have suggested using license auctions to measure the tariff equivalent of quota restrictions and as an interim step in converting quantitative restrictions (such as the Multifibre Arrangement) to tariff systems.

This study will address two questions raised by license auctions: What auction design is best, given the objectives of transferring rents to the government and measuring import or export demand, tariff equivalents, or the restrictiveness of trade controls? And is there evidence from countries that have used license auctions that the bids reliably measured the tariff equivalents of their quantitative restrictions?

To address the first question, the study will apply auction theory to analyze the license auctions used in Australia, Colombia, and New Zealand. Drawing on the frame-

work that emerges, the study will then examine data on bids in the Australian and New Zealand auctions to address the second question. This exercise will identify the conditions under which bids closely parallel tariff equivalents and produce techniques for making inferences about the restrictiveness of a trade regime in which they do not. RSB support: \$99,565
Staff weeks: 5

Public-Private Interactions in the Health Sector in Developing Countries

Douglas Keare

Middle East and North Africa,
Country Department II, Population
and Human Resources Operations
Division

Ref. no. 677-95

In most developing countries the government is the main provider of health services. Rising incomes, aging populations, and urbanization are leading to increased demand for curative health services even as these governments continue striving to improve primary health care. These competing needs put tremendous pressure on public health systems at a time when public spending levels cannot be increased—perhaps not even maintained.

Because of the special characteristics of the health sector, the privatization of all health services is not seen as the solution, although private delivery of many services is certainly considered appropriate. There is evidence of ample scope for improvement in the efficiency of public health care systems, however.

One cause of inefficiency in many developing countries is the practice of permitting publicly employed doctors to maintain a private practice. This has often been associated with low levels of effort by doctors in their primary employment in public facilities.

This study will examine what motivates public doctors' performance in order to identify incentives that would induce optimal effort and could be incorporated into their employment contracts. For example, it will look at how an increase in salary or in hours worked in the primary job affect a physician's reservation wage for secondary employment. And it will look at how the reputation doctors enjoy because of their public employment affects their secondary employment, and how that link can be used to motivate greater effort by doctors in their primary employment. Public facilities could recognize superior performance through awards or announcements, for example.

Data for the study will be collected through questionnaires administered to public and private physicians, public and private health care facilities, and patients. The survey will be carried out in Egypt, where private practice by public physicians is widespread. RSB support: \$30,000
Staff weeks: 28

The Role and Magnitude of the Private Safety Net during Transition: Private Interhousehold Transfers in Poland, 1986-91

Emmanuel Jimenez

Policy Research Department,
Poverty and Human Resources
Division

Ref. no. 677-96

In formerly socialist countries moving toward market-oriented systems, the closing of unprofitable firms and the development of new businesses are leading to rising unemployment and a widening distribution of income. These effects threaten to derail popular support for the transition to capitalism. Because of this, some have advocated continuing public transfers to

alleviate both temporary and permanent poverty caused by the transition. But the hard-pressed governments of these countries are unlikely to be able to do so without substantial aid.

This study will look at the results of Poland's Household Budget Survey to assess whether the families most severely impoverished during the transition can rely on private family safety nets for support. This survey, conducted every year since 1957, covers 25,000 or more households each year. Two-thirds of those surveyed in any year are resurveyed in each of the next four years.

The study will first measure the size and prevalence of household transfers during a year that preceded Poland's economic transition. It will also examine patterns in the flow of private transfers. For example, do transfers flow primarily from the young to the old, or vice versa? Do they occur primarily within or between groups of households classed by their urban or rural location? Are female-headed households or those with children under 18 overrepresented in the sample of recipients? And what proportion of household income do transfer receipts comprise?

As a first step toward simulating the effects of economic transition on transfer behavior, the study will then estimate private transfers as a function of pre-private-transfer income, controlling for other important determinants of private transfers. Next, it will attempt to use additional data to see how transfers have changed over time, paying special attention to the transition period between 1989 and 1991. Will a more market-oriented economy bring with it changes in attitude and economic behavior reflecting lower priority for support networks among households?

Another issue is whether private

transfers will evolve toward exchange-type behavior as more market-oriented attitudes emerge. This would be reflected by an increase in the volume of transfers between households, rather than in their size or redistributive effects, indicating a tendency toward symmetry in those relations—that is, toward barter exchange.

RSB support: \$40,000
Staff weeks: 5

Market Structure and Market Outcomes: The Mexican Stock Exchange

Jack Glen
International Finance Corporation,
Finance Department
Ref. no. 677-97

The important role of markets in economic development has become increasingly recognized. Among them is the stock market, whose function is to allocate capital efficiently in the private sector. In theory, this allocation of capital is based on the risk each company represents and the reward to investors for bearing that risk—as reflected in stock prices. Most theories of stock price determination take the market as a black box that information enters and that then gives out an efficiently determined price.

Market microstructure theory suggests that the institutional features of stock markets are important determinants of price behavior—that policymakers, through their choice of trading system and other features, can influence trading and price behavior, and thus the efficiency with which prices are determined. Policymakers face a wide range of decisions on the institutional structure of a stock exchange, yet little information is available on the implications of those decisions. This is a particular problem for policymakers for smaller stock markets,

for whom such mature markets as the London, New York, and Tokyo exchanges are not necessarily appropriate models.

This study will examine trading activity on Mexico's stock exchange to shed light on whether the design of a trading system has important implications for trading and price behavior. It will also look at whether institutional features contribute to market volatility and liquidity, and thus inhibit investors' participation and limit the ease with which corporations can raise capital.

In addition, the study will provide policymakers with evidence on how particular features and policy changes have influenced trading behavior and price formation. For example, it will see whether the changes in Mexico's policy to allow more foreign investment and increase the access of Mexican corporations to international capital markets have had noticeable effects on trading behavior and price formation in Mexico's stock market. The results of this inquiry will be helpful to regulators and policymakers in other emerging stock markets who face decisions relating to the internationalization of their markets.

RSB support: \$34,100
Staff weeks: 6

Research Proposals under Preparation

Good Policy, Good Luck, or Good Location?

Ajay Chhibber and Chad Leechor
Western Africa Department, Office of the Director and Country Operations Division

Ref. no. 677-92
RSB support: \$15,000

Construction of an Integrated Data Base Software for Former Soviet Union Economic Accounts

David Tarr
Policy Research Department, Trade Policy Division

Ref. no. 677-99
RSB support: \$13,345

Publications

To order World Bank publications in the United States, send prepaid orders, plus \$3.50 for shipping and handling, to World Bank Publications, P.O. Box 7247-8619, Philadelphia, PA 19170-8619, USA.

World Bank publications are available through a network of distributors outside the United States. For the name and address of the distributor in your country, write to the World Bank Publications Sales Unit, Department PR, 1818 H Street, NW, Washington, DC 20433.

Books

Managing the World's Forests: Looking for Balance between Conservation and Development

Nayendra P. Sharma, ed.

Published by Kendhall/Hunt Publishing Company

605 pages/\$34.95

(Available only at the World Bank bookstore or from Kendhall/Hunt Publishing Company, 2460 Kerper Boulevard, P.O. Box 539, Dubuque, IA 52004-0539, USA)

This collection of essays—based on a World Bank study of forest use across the globe—examines world forestry from many perspectives. Leading ecologists, economists, and scientific researchers review destructive exploitation of forests and the political economy of forest management. They offer management strategies to help speed the transition to sustainable use of forest resources.

Decisionmakers will get practical policy options for development that reflect local, national, and global needs. Lay readers will get a clear understanding of forestry issues.

The volume first analyzes the current world forest situation and describes global forest resources. It then addresses environmental concerns, including potential climate changes and diminished biodiversity associated with deforestation, and suggests ways in which the international community

can help protect natural forests.

It examines policy and institutional issues, such as fuelwood problems and government forestry policies. And it examines several critical areas of forest management: plantations, agroforestry, watersheds, and natural tropical forests. It outlines the important conditions for sustainable management, makes recommendations for donors, and develops a matrix for designing agroforestry systems to suit varying agroecological conditions.

Finally, the volume uses the critical concerns that it raises to develop a detailed policy for sustainable forestry that integrates conservation needs and development goals.

The volume contains a statistical appendix of hard-to-find data, compiled by region and country, on forestry and forest resources.

Structural Adjustment in a Newly Industrialized Country:

The Korean Experience

Vittorio Corbo and Sang-Mok Suh

Published for the World Bank by Johns Hopkins University Press

376 pages/Order Stock #44328/\$39.95

After a serious economic downturn in 1980, the Republic of Korea began an adjustment program that produced high growth with minimum inflation and little recession. Many countries struggling with economic reforms of their own could benefit from Korea's experience.

This study examines the economic program Korea used to cope successfully with low growth, high inflation, and unsustainable deficits. The adjustment program allowed Korea to control inflation, wages, and interest and exchange rates while avoiding import controls and developing new markets for exports.

The study looks at key economic sectors that affect long-term adjustment: finance, trade, industry,

agriculture, energy, and labor. And it shows how Korea actually improved its social welfare programs during the economic adjustment.

Global Economic Prospects and the Developing Countries 1993

93 pages/Order Stock #12415/\$10.95

Despite an uncertain start to the 1990s, developing countries face brighter prospects for growth than in the 1980s. The improved prospects can be attributed mainly to the widespread economic reforms these countries have adopted—notably, privatization, greater openness to trade, reduction of fiscal deficits, and elimination of commercial bank debt overhangs. These beneficial effects will be enhanced by a growing supply of external finance from private sources.

This third annual edition of *Global Economic Prospects* examines the long-term prospects for the global economy in the 1990s and their implications for developing countries. As in earlier editions, the report considers the economic links between industrial and developing countries. This year it emphasizes links through external finance—that is, the flow of funds into developing countries from abroad.

The report focuses on three key issues in external finance:

- Foreign direct investment—what benefits does it offer?
- Portfolio flows—what are the ways to sustain them and manage their volatility?
- Aid—is there enough and is the quality adequate in a post-cold war world?

Developing countries have now become more integrated with financial markets. The report analyzes both the degree of this financial integration and the implications for policymakers in developing and industrial countries alike.

Discussion, Technical, and Related Papers

Financial Sector Reform in Transitional Socialist Economies

Alan Roe

EDI Seminar Report 29

56 pages/Order Stock #12145/\$6.95

This report examines the financial sector reforms that confront transitional economies, especially those in Central and Eastern Europe. It analyzes how withdrawal of state control will transform the role of new and existing financial institutions in these countries.

The paper describes the financial structure needed to design effective reform programs. It explains how monetary policy can affect financial reform and what institutional preconditions encourage a healthy financial system. And it discusses the main issues involved in restructuring banks, financial institutions, and productive private enterprises, as well as longer-term issues in financial reform, including the possible role played by money, capital markets, and nonbank intermediaries.

A concluding chapter discusses the three areas of financial reform in transitional countries that shape any framework for national reform: national economic stabilization; politically motivated structural reforms, such as increased private ownership and more realistic price structures; and other structural changes that ensure the implementation of politically mandated reforms.

Women's Employment and Pay in Latin America: Overview and Methodology

A World Bank Regional and Sectoral Study

George Psacharopoulos and Zafiris Tzannatos

272 pages/Order Stock #12270/\$15.95

This study examines the economic role women play in the development of Latin American and

Caribbean countries. It reviews the ways in which women behave in the work force and the treatment they receive.

The study analyzes the work women do by their age, body size, and employment status and by the industrial and occupational composition of their jobs. Women's characteristics are compared with men's to take account of possible cross-country differences.

The authors investigate the conditions that determine women's participation in the work force and the disparate earning power of women and men. They evaluate the income gap between the sexes caused by discrimination. And they suggest policy options that can make the labor force more equitable and efficient.

The study draws together much of the research done on women and work in developing countries over the past several years and includes a substantial bibliography.

The authors have also written a companion volume: *Case Studies on Women's Employment and Pay in Latin America* (488 pages/Order Stock #12308/\$29.95).

Efficiency and Substitution in Pollution Abatements: Three Case Studies

Dennis Anderson and William Cavendish

World Bank Discussion Paper 186

135 pages/Order Stock #12309/\$9.95

The studies presented in this paper assess how policies favoring low-polluting technologies and changes in pricing practices can reduce environmental pollution even in the face of expected growth.

Based on current projections of population growth and economic expansion and their relationships to environmental pollution, the authors projected what could be done over the next few decades to reduce pollution. They also looked at the economic effects of pollution

abatement. Their results challenge what have been seen as inevitable links between growth and pollution and between pollution abatement and cost.

The authors studied three sectors—electric power generation, energy and urban transport, and water supply and sanitation—and discuss the possibilities of similar results for agriculture, industry, and indoor air pollution.

The authors demonstrate how good economic policies are often beneficial for the environment and, conversely, why good environmental policies are good for economic growth and development.

The State Holding Company: Issues and Options

Anjali Kumar

World Bank Discussion Paper 187

66 pages/Order Stock #12319/\$6.95

Countries moving from a centrally planned to a market-based economy often have difficulty reforming large, state-owned enterprises. A common interim solution is the state holding company—which can help governments separate their ownership responsibilities from their management functions and give enterprises more operational freedom.

This paper discusses the state holding company from a managerial perspective. It provides an analytical framework for measuring the effectiveness of such companies as interim organizations. It also explains why the transition process for state-owned enterprises can be lengthy and involve many stages.

The paper examines the organization and performance of holding companies in Algeria, Egypt, and Italy, and the similarities between these companies and new institutions emerging in Eastern Europe. And it points out lessons that the new institutions can learn from the more established ones.

Policy Research Working Papers

Working Papers disseminate the findings of work in progress and encourage the exchange of ideas among Bank staff and all others interested in development issues.

Costs of Alternative Treatments for Incomplete Abortion

Brooke R. Johnson, Janie Benson, Janet Bradley, Aurora Rábago Ordoñez, Catia Zambrano, Leonard Okoko, Leticia Vásquez Chávez, Paulina Quiroz, and Khama Rogo
WPS1072 • Contact Otilia Nadora, room S6-065, tel. 202-473-1091.

Fiscal Aspects of Developing Country Debt Problems and Debt and Debt-Service Reduction Operations: A Conceptual Framework

Peter J. Montiel
WPS1073 • Contact Rose Vo, room S8-042, tel. 202-473-1047.

How Moving to World Prices Affects the Terms of Trade in 15 Countries of the Former Soviet Union

David G. Tarr
WPS1074 • Contact Nellie Artis, room N10-013, tel. 202-473-8010.

Many Paths to Skilled Employment: A Reverse Tracer Study of Eight Occupations in Colombia

Adrian Ziderman and Robin Horn
WPS1075 • Contact PHREE, room S6-214, tel. 202-473-3680.

A Presumptive Pigouvian Tax on Gasoline: Analysis of An Air Pollution Control Program for Mexico City

Gunnar Eskeland
WPS1076 • Contact Carlina Jones, room N10-063, tel. 202-473-7699.

Risk Management Prospects for Egyptian Cotton

Panos Varangis, Elton Thigpen, and Takamasa Akiyama
WPS1077 • Contact Dawn Gustafson, room S7-047, tel. 202-473-3714.

The Evolution of Welfare and Poverty Under Structural Change and Economic Recession in Côte d'Ivoire, 1985-88

Christiaan Grootaert
WPS1078 • Contact Elena Vitanov, room J2-241, tel. 202-473-8400.

How Useful Are Integrated Household Survey Data for Policy-Oriented Analyses of Poverty? Lessons from the Côte d'Ivoire Living Standards Survey

Christiaan Grootaert
WPS1079 • Contact Elena Vitanov, room J2-241, tel. 202-473-8400.

A New Regional Price Index for Côte d'Ivoire Using Data from the International Comparisons Project

Christiaan Grootaert and Ravi Kanbur
WPS1080 • Contact Elena Vitanov, room J2-241, tel. 202-473-8400.

Correcting for Sampling Bias in the Measurement of Welfare and Poverty: The Case of the Côte d'Ivoire Living Standards Survey

Lionel Demery and Christiaan Grootaert
WPS1081 • Contact Elena Vitanov, room J2-241, tel. 202-473-8400.

Working Papers are NOT available through the Publications Department. Please address requests for papers to the contact person indicated at the Bank's main address.

What Do Governments Buy? The Composition of Public Spending and Economic Performance

Shantayanan Devarajan, Vinaya Swaroop, and Heng-fu Zou
WPS1082 • Contact Carlina Jones, room N10-063, tel. 202-473-7699.

Finance and Growth: Schumpeter Might Be Right

Robert G. King and Ross Levine
WPS1083 • Contact Daniele Evans, room N9-057, tel. 202-473-8526.

Stock Market Development and Financial Deepening in Developing Countries: Some Correlation Patterns

Dong He and Robert Pardy
WPS1084 • Contact Priscilla Infante, room N9-005, tel. 202-473-7665.

Economic Approaches to Modeling Fertility Determinants: A Selective Review

Cristino R. Arroyo III
WPS1085 • Contact Otilia Nadora, room S6-065, tel. 202-473-1091.

Teachers' Salaries in Latin America: A Comparative Analysis

George Psacharopoulos, Jorge Valenzuela, and Mary Arends
WPS1086 • Contact George Psacharopoulos, room I4-187, tel. 202-473-9243.

Exchange-Rate-Based Stabilization: Tales from Europe and Latin America

Alberto F. Ades, Miguel A. Kiguel, and Nissan Liviatan
WPS1087 • Contact Raquel Luz, room N11-059, tel. 202-473-4303.

A Primer on the MFA Maze

Riccardo Faini, Jaime de Melo, and Wendy Takacs
WPS1088 • Contact Dawn Ballantyne, room N10-029, tel. 202-473-7947.

Equity Portfolio Investment in Developing Countries: A Literature Survey

Stijn Claessens
WPS1089 • Contact Rose Vo, room S8-043, tel. 202-473-1047.

Government Expenditures as a Citizens' Evaluation of Public Output: Public Choice and the Benefit Principle of Taxation

Thanos Catsambas
WPS1090 • Contact Anita Correa, room H11-107, tel. 202-473-8549.

Capital Market Imperfections Before and After Financial Liberalization: A Euler-Equation Approach to Panel Data for Ecuadorian Firms

Fidel Jaramillo, Fabio Schiantarelli, and Andrew Weiss
WPS1091 • Contact Wilai Pitayatonakarn, room N9-003, tel. 202-473-7658.

The Effect of Financial Liberalization on the Allocation of Credit: Panel Data Evidence for Ecuador

Fidel Jaramillo, Fabio Schiantarelli, and Andrew Weiss
WPS1092 • Contact Wilai Pitayatonakarn, room N9-003, tel. 202-473-7664.

Swiss Chilanpore: The Way Forward for Pension Reform?

Dimitri Vittas
WPS1093 • Contact Wilai Pitayatonakarn, room N9-003, tel. 202-473-7664.

**The New Regionalism:
A Country Perspective**

Jaime de Melo, Arvind Panagariya,
and Dani Rodrik
WPS1094 • Contact Dawn Ballantyne,
room N10-029, tel. 202-473-7947.

**Are Failproof Banking Systems
Feasible? Desirable?**

Samuel H. Talley
WPS1095 • Contact Bobo Lu, room
N9-005, tel. 202-473-7664.

**How Trade Liberalization Affected
Productivity in Morocco**

Mona Haddad
WPS1096 • Contact Dawn Ballantyne,
room N10-023, tel. 202-473-7947.

**A Production Function-Based
Policy Simulation Model
of Perennial Commodity Markets**

Takamasa Akiyama
and Jonathan R. Coleman
WPS1097 • Contact Grace Ilogon, room
S7-033, tel. 202-473-3732.

**Fortress Europe and Other Myths
Concerning Trade**

Jean Baneth
WPS1098 • Contact Mona St. Leger,
room R8-063, tel. 202-473-7148.

**Trade Unions and Collective
Bargaining**

Harry C. Katz, Sarosh Kuruwilla,
and Lowell Turner
WPS1099 • Contact ESP, room S6-035,
tel. 202-473-3680.

**Indigenous Territories and Tropical
Forest Management in Latin
America**

Shelton H. Davis and Alaka Wali
WPS1100 • Contact Shelton Davis,
room S5-109, tel. 202-473-3413.

**Transforming State Enterprises
in Poland: Microeconomic Evidence
on Adjustment**

Brian Pinto, Marek Belka,
and Stefan Krajewski
WPS1101 • Contact Marylou Kam
Cheong, room K6-115, tel. 202-473-9618.

**Did the Debt Crisis or Declining
Oil Prices Cause Mexico's
Investment Collapse?**

Andrew M. Warner
WPS1102 • Contact Mila Divino, room
S8-013, tel. 202-473-3739.

**Capital Mobility in Developing
Countries: Some Measurement
Issues and Empirical Estimates**

Peter J. Montiel
WPS1103 • Contact Rose Vo, room
S8-042, tel. 202-473-1047.

**Trade Policy Reform in Latin
America and the Caribbean
in the 1980s**

Asad Alam and Sarath Rajapatirana
WPS1104 • Contact Joy Troncoso, room
I4-059, tel. 202-473-7826.

**Estimating Quasi-Fiscal Deficits
in a Consistency Framework:
The Case of Madagascar**

Philippe Le Houverou
and Hector Sierra
WPS1105 • Contact Nydia Velasco,
room J3-283, tel. 202-473-4346.

**Improving Women's Access
to Higher Education: A Review
of World Bank Project Experience**

Halil Dundar and Jennifer Haworth
WPS1106 • Contact Stella David, room
S2-270, tel. 202-473-3752.

**Financial Reform Lessons
and Strategies**

Gerard Caprio, Jr., Izak Atiyas,
and James Hanson
WPS1107 • Contact Wilai
Pitayatonakarn, room N9-003, tel.
202-473-7664.

**Public Output and Private
Decisions: Conceptual Issues
in the Evaluation of Government
Activities and Their Implications
for Fiscal Policy**

Thanos Catsambas
WPS1108 • Contact Anita Correa, room
H11-107, tel. 202-473-8549.

**Risk Management and Stable
Financial Structures**

Andrew Sheng and Yoon Je Cho
WPS1109 • Contact Maria Raggambi,
room N9-033, tel. 202-473-7664.

**What Would Happen If All
Developing Countries Expanded
Their Manufactured Exports?**

Will Martin
WPS1110 • Contact Dawn Gustafson,
room S7-044, tel. 202-473-3714.

**Foreign Investment Law in Central
and Eastern Europe**

Cheryl W. Gray and William Jarosz
WPS1111 • Contact Maxine Berg, room
N11-057, tel. 202-473-1450.

**Privatization, Concentration,
and Pressure for Protection:
A Steel Sector Study**

Ying Qian and Ronald C. Duncan
WPS1112 • Contact Sarah Lipscomb,
room S7-062, tel. 202-473-3718.

**The Lucky Few Amidst Economic
Decline: Distributional Change
in Côte d'Ivoire As Seen Through
Panel Data Sets, 1985–88**

Christiaan Grootaert and Ravi Kanbur
WPS1113 • Contact Elena Vitanov,
room J2-241, tel. 202-473-8400.

**Does Price Uncertainty Really
Reduce Private Investment?
A Small Model Applied to Chile**

Anita George and Jacques Morisset
WPS1114 • Contact Diane Bievenour,
room I6-011, tel. 202-473-7899.

**Looking at the Facts: What We
Know About Policy and Growth
from Cross-Country Analysis**

Ross Levine and Sara Zervos
WPS1115 • Contact Daniele Evans,
room N9-089, tel. 202-473-8526.

**Implications of Agricultural Trade
Liberalization for the Developing
Countries**

Antonio Salazar P. Brandão
and Will Martin
WPS1116 • Contact Dawn Gustafson,
room S7-044, tel. 202-473-3714.

**Portfolio Investment Flows
to Emerging Markets**

Sudarshan Gooptu
WPS1117 • Contact Rose Vo, room
S8-042, tel. 202-473-1047.

**Trends in Retirement Systems
and Lessons for Reform**

Olivia S. Mitchell
WPS1118 • Contact the Education and
Social Policy Department, room S6-035,
tel. 202-473-3680.

**The North American Free Trade
Agreement: Its Effect on South Asia**

Raed Safadi and Alexander Yeats
WPS1119 • Contact Jean Jacobson,
room S7-035, tel. 202-473-3710.

**Policies for Coping with Price
Uncertainty for Mexican Maize**

Donald F. Larson
WPS1120 • Contact Dawn Gustafson,
room S7-044, tel. 202-473-3714.

Calendar

May

3-4—Fifth World Bank Conference on Development Economics, Washington, DC, with sessions on financial policy, regulation, energy economics and the environment, and economic regress. A roundtable discussion on infrastructure is planned. Participation by non-World Bank staff by invitation only [Contact: Boris Pleskovic, Research Advisory Staff, World Bank, 1818 H Street NW, Room S3-031, Washington, DC 20433, tel. 202-473-1062]

June

6-7—Financial Aspects of the Transition from Stabilization to Growth, Tel Aviv—focusing on exchange rate regimes, financial mobility, international capital markets, and financial issues for reforming socialist economies. Organized by the World Bank and the David Horowitz Institute, Tel Aviv University [Contact: Mario Blejer, World Bank, 1818 H Street NW, Room H3-061, Washington, DC 20433, tel. 202-473-8544, fax 202-477-3274]

15-18—ENERLAC 93: Energy Conference of Latin America and the Caribbean, 10th Colombian Energy Symposium—Energy and Development in an

Interdependent World, Santafé de Bogotá, Colombia [Contact: OLADE Headquarters, Avenida Occidental, Edificio OLADE, Quito, Ecuador, tel. 593-2-538-122, fax 593-2-539-684]

July

27-29—Sixteenth Annual International Conference of the International Association for Energy Economics—Energy, Environment, and Sustainable Development: Challenges for the 21st Century, Bali, Indonesia [Contact: Artono Arismunandar, Chairman, Program Committee, REDECON, Gedung Patra Lt. 1, Jl. Gatot Subroto 32-34, Jakarta 12950, Indonesia, fax 62-21-515-133]

September

6-11—Fourth International Symposia on Industry and Environment in the Developing World, Alexandria, Cairo, and Luxor, Egypt [Contact: Ahmed Hamza, UN Economic and Social Commission for Western Asia, P.O. Box 927115, Amman, Jordan, tel. 9626-694-351 ext. 603, fax 9626-694-981 to 982; in North America, contact: William Lacy, 9114 Cherry Tree Drive, Alexandria, VA 22309, tel. 703-780-2181]

9-10—Conference on Portfolio Investment Flows to Developing Countries, World Bank, Washington, DC [Contact: Sudarshan Gooptu, International Economics Department, Debt and International Finance Division, World Bank, 1818 H Street NW, Room S8-044, Washington, DC 20433, tel. 202-473-3914, fax 202-477-0661]

20-23—Towards Education for All, Brunei Darussalam—international conference to discuss, monitor, and exchange ideas on progress made toward implementing the resolutions of the Jomtien Conference for providing education for all [Contact: Secretary, Organizing Committee, "Towards Education for All," Faculty of Education, University Brunei Darussalam, Gadong 3186 Brunei Darussalam, tel. 673-2-427001, fax 673-2-427-003]

October

29-30—Conference on New Directions in Trade Theory, University of Michigan, Ann Arbor [Contact: Robert M. Stern, Department of Economics, University of Michigan, Ann Arbor, MI 48109-1220, tel. 313-764-2373, fax 313-763-9181]

**The World Bank
1818 H Street, NW
Washington, DC 20433**