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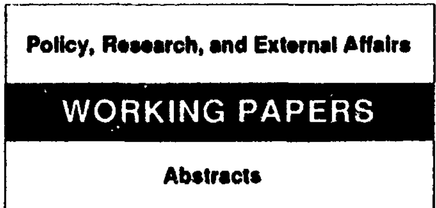

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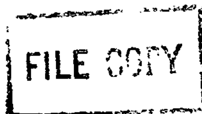

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Policy, Research, and External Affairs

WORKING PAPERS

Abstracts

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723. Improving Women's and Children's Nutrition in Sub-Saharan Africa: An Issues Paper

Olayinka Abosede and Judith S. McGuire

Nutrition is the number one health concern in Africa — and nutrition programs can be a magnet for attracting community support to the health system, especially maternal-child health programs. But nutrition is often a secondary concern of health policy, often ignored in food policy, and too often left out of training programs and work plans.

The main sources of malnutrition in Africa, as elsewhere, are inadequate food intake, excessive disease, maternal malnutrition, and deleterious food and health behavior (such as abrupt weaning, the early or late introduction of nonbreastmilk foods and liquids, the intrahousehold allocation of nutrients away from nutritionally vulnerable members of the family, the withdrawal of food during diarrhea, and poor food and sanitation practices).

Abosede and McGuire review several successful innovative approaches to addressing nutrition problems in Africa: the Iringa Nutrition Program in Tanzania, the Zimbabwe Children's Supplementary Feeding Program, the Zaire Weaning Foods Processing Program, and the Senegal Growth Promotion Program.

They identify the lessons from these programs, including the need:

- To involve the community actively in program development.
- For training in nutrition at all levels, from doctor to village health worker.
- For strong growth monitoring and nutrition education components.
- For close supervision, including regular supervisory visits to villages and health huts, discussions with clients, and observations.
- For a variety of institutional and financing mechanisms.

Africa's nutrition problems require many of the same services as problems elsewhere — growth monitoring, nutrition education, targeted feeding, and food fortification. Africa shares the universal need for good training, management, communications, and information systems.

But new and innovative institutional mechanisms are needed to address Africa's nutrition problems. Each country must look for its own institutional strengths and weaknesses in developing nutrition programs.

This paper — a product of the Population, Health, and Nutrition Division, Population and Human Resources Department — is part of a larger study undertaken by PRE of African health policy. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Otilia Nadora, room S6-065, extension 31091 (30 pages).

724. Fiscal Issues in Adjustment: An Introduction

Riccardo Faini and Jaime de Melo

This summary of the fiscal issues in adjustment in developing countries focuses on the macroeconomics of adjustment (the size of fiscal adjustment, the impact of deficit reductions, and methods for reducing the deficit), fiscal system reforms (spending cuts and tax reform), and new directions for research (the growth effects and the political economy of fiscal policy).

Adjustment to the macroeconomic crises of the eighties was least successful on the fiscal front. Faini and de Melo, in this introduction to a symposium on fiscal issues in adjustment, summarize the issues raised by papers in the symposium.

Those papers deal with various aspects of the fiscal crisis that many developing countries faced in the eighties. After a brief introduction on the magnitude of the crisis, Faini and de Melo summarize issues discussed in three areas.

On the macroeconomics of adjustment, they discuss the size of fiscal adjustment, the impact of deficit reductions, and the methods of reducing the deficit. On fiscal system reform, they survey reforms occasioned by the fiscal crisis: choice of spending cuts and reform of the tax system. They close with a discussion of new directions for research: the growth effects of fiscal policy and the political economy of fiscal policy.

This paper — a product of the Trade Policy Division, Country Economics Department — is part of a larger effort in PRE to study the sustainability of adjustment (RPO 675-32). This paper appeared in a symposium, *Fiscal Issues in Adjustment in Developing Countries*, published by *Richerche Economiche*, vol. 14, 1990. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Dawn Ballantyne, room N10-019, extension 37947 (26 pages).

725. How Structure of Production Determines the Demand for Human Capital

Indermit S. Gill and Shahidur R. Khandker

To promote gender equity, expansion of the services sector should be encouraged. But this runs counter to the World Bank and IMF policy of encouraging the production of tradable goods (produced mainly in agriculture and less so in industry) to service debt. So direct government intervention is needed to promote investment in women's human capital.

Explanations of lower investments in female schooling and health than in male assume that demand for these components of human capital somehow exists — and they concentrate on the supply of human capital by the household.

Gill and Khandker try to remedy the neglect of demand-side factors by examining exogenous dimensions of development. They include the structure of production — represented by the shares of agriculture, services, and industry in national employment or income — as an identifying variable for the demand for human capital.

Their reasoning is that the production functions of these three sectors differ in their requirements for skills. Industry and services require more educated workers than agriculture does — and industry requires more full-time educated workers than services does.

The authors assume that women have a comparative advantage over men in the home sector, so women spend more time at home. But industry favors males over females more than the services sector does. If the importance of industry increases at the expense of agriculture, the demand for schooling will increase for both men and women, but especially for men. Increases in the importance of services will similarly increase the demand for schooling more for women than for men.

If health is equally valued by all sectors, but health and schooling are complementary inputs to production, changes in production that encourage more school-

ing for men (or women) will also encourage more investments in health for men (or women).

Gill and Khandker test these propositions using primary and secondary school enrollment ratios and life expectancy levels (as proxies for investments and schooling and health) for about 90 countries in 1965 and 1987. The data for 1965 appear to be broadly supportive of the propositions; data for 1987 support them only weakly.

The empirical analysis cannot determine whether changes in the economic structure cause increases in the demand for education, or whether improved education facilitates a largely exogenous transition from an agrarian to an industrial/service economy. If issues of causality are resolved in favor of the views Gill and Khandker express in this paper, interesting policy implications emerge.

Most important, expansion of the services sector would greatly help reduce gender inequity at the same time as fostering growth.

This finding highlights the problem with relying purely on economic growth to reduce the gender gap in human capital. If income growth is accompanied by structural transformation of an economy from agrarian to industrial and then to domination by the services sector, there is no assurance that the economic status of women will improve in the early stages of this transformation.

Because the human capital of women has significant externalities — that is, because social returns to women's education and health are higher than private returns — the case is strong for direct government intervention in investments in women's human capital.

This paper — a product of the Women in Development Division, Population and Human Resources Department — is part of a larger effort in PRE to determine if and how women's productivity (and thus family welfare) are improved when women are given more access to education, training, credit, health care, and other public resources. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Audrey Sloan, room S9-121, extension 35108 (43 pages, with tables).

726. Perspectives on the Design of Intergovernmental Fiscal Relations

Anwar Shah

Practical guidelines on fine-tuning the structure of transfers between federal, state, and local governments — without reassigning spending and taxing responsibilities.

The literature on fiscal federalism provides much useful guidance in the design of intergovernmental fiscal relations. But few developing countries have paid serious attention to this guidance in designing their transfers.

Shah provides a framework for assessing intergovernmental fiscal arrangements and develops some blueprints for helping developing nations chart a course for reform. Except for centrally planned economies in transition to market economies, most of these arrangements do not require fully restructuring the economy so much as fine-tuning the existing structure of transfers (without reassigning spending and taxing responsibilities).

Shah observes that assignment problems go from one extreme to the other. In Yugoslavia, for example, decentralization went too far and circumvented the federal government's role of stabilization and redistribution. A conscious effort is needed to restore that federal role. But in most countries the national government's role is too pervasive and intrusive — reaching beyond the important roles of national defense and security to such purely local functions as pothole repair and rat control.

Usually these problems arise not because constitutional assignment conflicts with theory but because de facto assignment conflicts with de jure responsibilities. Often, major reform is possible with administrative orders, so constitutional amendments are not needed.

Problems often arise, for example, from overlapping and uncoordinated administration of certain taxes, especially sales and excise taxes. The solution is often to fine-tune existing assignments rather than redesign the system. One alternative often ignored is for the higher-level government to determine the tax base and for the lower-level government to levy supplementary (piggyback) rates on the uniform tax base.

Most countries, says Shah, ignore the basic rule of intergovernmental transfers, that grant programs be designed to meet grant objectives.

Almost invariably, developing countries have excessive specific-purpose programs — often the result of pork-barrel politics — for many of which program objectives are vague or unspecified or are decided after funds are released. This increases flexibility and discretionary spending at the cost of transparency, objectivity, and accountability. Some have a perverse economic effect — for example, covering lower-level deficits or salaries, thus discouraging tax efforts at the lower level. Reviewing these programs must be high on agendas for public sector reform

Federal-local and state-local transfers in most developing countries need restructuring. National governments are not equipped to monitor local use of national funds. Moreover, local jurisdictions are better suited than national to administering to local needs and should be encouraged to raise local taxes to finance them.

Also, local governments are not generally allowed to borrow in credit markets. Autonomous bodies should be set up to supervise and help local borrowing for capital projects.

This paper — a product of the Public Economics Division, Country Economics Department — is part of a larger effort in PRE to reform public sector management in developing countries. It is one of a series of discussion papers prepared for the Intergovernmental Fiscal Relations Project of the Division. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Ann Bhalla, room N10-059, extension 37699 (107 pages).

727. The Effects of Debt Subsidies on Corporate Investment Behavior

Mansoor Dailami and E. Han Kim

Credit subsidies are ineffective in stimulating business investment in productive assets. Instead, they lead to an increase in corporate holdings of financial assets and real estate.

Dailami and Kim argue that credit subsidies are ineffective in stimulating business investment in productive assets. Instead, they lead to an increase in corporate holdings of financial assets and real estate.

For empirical verification, Dailami and Kim examined investment patterns in a sample of 241 Korean corporations listed on the Korea Stock Exchange between 1984 and 1988. They found a significant positive relation between corporate speculative asset holdings and access to subsidized loans.

Their estimates indicate that without interest rate controls and other forms of subsidy, corporate holdings of speculative assets would have been one-seventh of observed levels. Moreover, most corporate real estate holdings appear to be unrelated to production activities.

They find little evidence that the Korean government's interest rate controls and credit allocation policy have accelerated expansion of corporate investment. If anything, they are partly to blame for the overheated Korean stock market during 1986-88.

This paper — a product of the Country Operations Division, Country Department IV (India), Asia Regional Office — is the second in a planned series of research on the performance of capital markets and their role in providing risk capital to the corporate sector in India and the Republic of Korea. The research is funded by the Bank's Research Committee (RPO 675-84). Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Adala Bruce-Konuah, room D10-079, extension 80356 (22 pages, with figures and tables).

728. Does Better Access to Contraceptives Increase their Use? Key Policy and Methodological Issues

Susan Cochrane and Laura Gibney

The only consistently significant results available on whether access to contraceptives increases their use relate to the density of access: the more sources users have access to, the more they seem to use contraceptives. Better data are needed on other measures of access.

Conclusions vary about whether people use contraceptives more when they are more accessible — partly because of differences in case studies and partly because of differences in methodologies and measures of access. Generally analysts conclude that access is important, which is important for policy, since increasing access to contraception is the most direct intervention available for increasing the use of contraceptives.

In Africa, in particular — where fertility began to be reduced only in the last five years — it is important to study the effect on contraceptive use of targeting family planning services to motivated families.

Cochrane and Gibney, in their review of 49 case studies in the literature, found highly inconclusive results on the question of whether a particular measure of access — or methods of estimating those measures — influence findings on the relationship between access to and use of contraception.

Perceived and actual measures of access did not show different effects, and evidence was also inconclusive on whether the choice of independent variables — travel time, distance to source, access to personnel, density of sources, and costs — influences the results.

All the findings about density of outlets were significant. This suggests that access measures that focus on the nearest outlet are less useful than those that measure distance or travel time to a number of outlets.

Cochrane and Gibney emphasize that differences in travel time or distance to an outlet may not be as important an influence on contraceptive use once a population has reached a threshold level of access.

But generally the quality of the data available is poor, partly because data collectors were poorly trained. Moreover, the relationship between measures of access and use may be different from what researchers expect. Rather than the location of family planning outlets influencing the demand for and use of contraceptives, it may be that demand for contraceptives determines the location of outlets.

Analysis of the effects of access must first be based on a coherent theoretical framework. It must also include a richer measurement of the quality of services.

This paper — a product of the Population, Health, and Nutrition Division, Population and Human Resources Department — is part of a larger effort in PRE to examine the impediments to contraceptive use and fertility decline in different environments. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Otilia Nadora, room S6-065, extension 31091 (30 pages).

729. Is Export Diversification the Best Way to Achieve Export Growth and Stability? A Look at Three African Countries

Ridwan Ali, Jeffrey Alwang, and Paul B. Siegel

Policymakers — concerned with the instability and downward trend in export earnings for Malawi, Tanzania, and Zimbabwe between 1961 and 1987 — tend to propose the remedy of export diversification. But horizontal diversification would have produced lower export earnings and more instability.

Malawi, Tanzania, and Zimbabwe depend heavily on export earnings from a narrow base of agricultural commodities. This dependence increased between 1961-73 and 1974-87, when international prices for those commodities were declining and unstable.

Policymakers — concerned with the instability and downward trend in export earnings for the three countries — tend to equate these trends with the countries' narrow export commodity base. They often propose export diversification as an expedient remedy.

But Ali, Alwang, and Siegel found that horizontal diversification would have produced lower export earnings and more instability. Policymakers introducing horizontal diversification must first consider price forecasts, comparative advantage, the economy's changing structure, and the costs of adjustment. Reactions to historical price movements can produce unexpected, undesirable results.

A shift during this period from favorable to unfavorable price tends, and shifts in the covariances of deviations from price trends, complicate the design of export diversification policies — especially policies aimed at stabilizing export earnings. Generally, although international commodity prices have fallen and instability has increased, the most effective way to achieve growth and stability in export earnings is to increase and stabilize agricultural production and the volume of exports.

Using several measures for horizontal export diversification of commodities in the existing export mix, Ali, Alwang, and Siegel found no clear relationship between the degree of export diversification and export performance in Malawi, Tanzania, and Zimbabwe. Their analysis shows that different export diversifica-

tion policies can help fulfill different policy goals.

This paper is a product of the Agriculture Operations Division, Southern Africa Department, Africa Regional Office. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Manel Gunasekara, room H5-055, extension 32260 (44 pages).

730. Wage and Employment Policies in Czechoslovakia

Luis A. Riveros

The key short-term measures for reform of the labor market in Czechoslovakia are wage indexation, deregulation of the wage structure, and the facilitation of labor mobility. In the long term, it is important to reform the institutions responsible for setting wages and unemployment compensation plans.

Riveros discusses the short-term and long-term labor market policies Czechoslovakia needs for the economic reform envisaged in the current economic program. The policy implications of his analysis can be extended to other Eastern European countries.

Riveros emphasizes that wage indexation, deregulation of the wage structure, and facilitation of labor mobility are key short-term measures. They increase the prospects for success not only of structural reform but of other macroeconomic policies aimed at controlling inflation.

In the long term, reforming labor market institutions — especially those responsible for setting wages and unemployment compensation plans — must take priority, to ensure that the labor market functions in harmony with the overall market environment.

Riveros further concludes that:

- Unemployment will not cause significant fiscal strain if dismissals of retired employees are made a priority, but there will be more open unemployment that the government expects.
- Unemployment will be a feature of the economy for structural reasons and because of short-term mismatches of skills and the normal fallout from the economic cycle. A scheme integrating government subsidies and an insurance system with participation of both employee and employer could be developed initially.
- The wage indexation system is adequate to drive down inflationary expectations and to stimulate employment adjustments. But there will be practical problems enforcing the wage policy.
- Adequate mechanisms must be established for managing the minimum wage. The price must be used as a signal of economic developments and of the basic price for unskilled labor — and not as an instrument of income distribution.
- As for labor mobility, breaking the link between providing benefits and jobs is fundamental to ensuring more rapid adjustment in job opportunities and encouraging the supply response.

This paper — a product of the Education and Employment Division, Population and Human Resources Department — is part of a larger effort in PRE to assess the role of labor markets in the process of economic adjustment. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Valerie Charles, room S6-228, extension 33651 (24 pages).

731. Efficiency Wage Theory, Labor Markets, and Adjustment

Luis A. Riveros and Lawrence Bouton

Efficiency wage theory suggests that wages (and hence labor markets) may be unresponsive to typical macroeconomic policies that seek to lower real wages, change resource allocation, and reduce open unemployment. Under this theory, firms will react to macroeconomic shocks by altering employment (laying workers off), not wages.

Conventional labor theory argues that wages are determined by the interaction of labor supply and demand — the firm takes the market wage as an exogenous parameter. Under conventional theory, policy analysis on wage rigidity has emphasized distortions arising from exogenous (union and government) intervention. Thus, one emphasis in adjustment lending has been deregulation of labor markets.

Efficiency wage models of unemployment try to explain persistent real wage rigidities when unemployment persists. Their central assumption is that higher real wages can improve labor productivity. A major implication of these theories is that wages (and hence labor markets) may be unresponsive to typical macroeconomic policies that seek to lower real wages, change resource allocation, and reduce open unemployment. Under this theory, firms will react to macroeconomic shocks by cutting back on jobs, not wages.

The three central macroeconomic implications of efficiency wage theory are these:

- There is an equilibrium "natural" level of open unemployment, which differs among groups in the labor force and cannot be affected by demand management policies. Workers offering services at a lower wage rate are unable to drive the wage down and to expand employment.
- When reducing the level of production — and to the extent that other firms' wages are perceived as given — the typical firm will resort to laying off labor instead of reducing wages, thereby introducing a significant wage inertia and an overshooting of open unemployment. The firm's profit-maximizing wage may exceed the opportunity cost of redundant labor, but lower wages would entail a greater loss associated with the reduction of productivity and the "average quality" of workers than would be gained from reducing per-worker costs.
- Wages do not respond to clear the labor market and are not responsive to macroeconomic policies and microeconomic deregulation.

Riveros and Bouton conclude that applying the theory in developing countries requires suitably defining labor costs and tackling the problem of segmentation of the labor market (into formal and informal markets).

This paper — a joint effort of the Education and Employment Division, Population and Human Resource Department, and the Macroeconomic Adjustment and Growth Division, Country Economics Department — is part of a larger effort in PRE to identify the role of alternative wage policies in achieving a better supply response to adjustment policies. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Valerie Charles, room S6-228, extension 33651 (34 pages).

732. Stabilization Programs in Eastern Europe: A Comparative Analysis of the Polish and Yugoslav Programs of 1990

Fabrizio Coricelli and Roberto de Rezende Rocha

Two apparently similar programs launched at roughly the same time by Yugoslavia and Poland yielded significantly different initial results (output fell much more while inflation declined more slowly in Poland than in Yugoslavia).

Coricelli and Rocha compare the implementation of two apparently similar stabilization programs by two reforming socialist countries, launched two weeks apart (December 1989 in Yugoslavia and January 1990 in Poland).

They investigate possible differences underlying the apparently similar programs that may account for the better initial performance of Yugoslavia's program (a sharper reduction of inflation with smaller losses in output).

The authors identify significant differences in initial conditions in the two countries as well as the sequence and degree of some policy measures. These differences may explain the difference in the early results.

They also identify the most important issues the two countries must address in the second stage of reform. These include the unfreezing of nominal variables and resolving the critical structural problems affecting both economies.

Coricelli and Rocha conclude that the microfoundations of socialist and market economies are clearly different. These differences imply that in socialist economies the case for including incomes policy in stabilization programs may be stronger. Different microfoundations also imply that the model of sequencing traditionally applied to Latin American countries — where structural issues are relegated to later stages of the adjustment programs — does not seem to apply to reforming socialist countries, where stabilization and structural reforms are much more closely intertwined.

This paper — a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department — is part of a larger effort in PRE to analyze the design and the effects of stabilization programs in Central and Eastern Europe. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Rebecca Martin, room N11-077, extension 39065 (67 pages).

733. The Consulting Profession in Developing Countries: A Strategy for Development

Syed S. Kirmani and Warren C. Baum

Governments should emphasize quality over price in evaluating bids, stop favoring public sector firms, and establish better contracting and compensation procedures. There should also be more joint ventures between developed and developing country consulting firms.

The quality of domestic consulting firms in developing countries has not kept pace with their growth in number. Kirmani and Baum recommend a strategy for strengthening domestic consulting.

For developing countries:

- Joint ventures of foreign and local consulting firms should be encouraged to foster technology transfer and training.
- Local consulting should be confined as much as possible to the private sector; public sector consulting firms should be privatized or at least should get no preferential treatment.
- In the award of local contracts, procedures should be changed to give priority to quality in all but simple or routine assignments. Unless governments expect and demand quality performance, and create the environment to make it possible, they will not get it.
- Consultants should be paid on the basis of "man-month contracts," except where the work can be precisely defined in advance and payment methods of "lump sum" or "percentage of construction costs" are acceptable.
- National development banks should provide financial and technical assistance to local firms for training, working capital, and physical facilities and equipment.

For the World Bank and other donors:

- The Bank should encourage joint ventures, giving them preference in the selection of firms to be short-listed and in the acceptance of the developing country partner as the sponsor or cosponsor in suitable cases.
- Technical assistance loans or credits (usually in small amounts — separately or as part of a larger loan or credit for a related purpose) should be extended to support government programs for developing the profession.
- The Bank should develop a method for quantifying the financial and economic costs of quality defects in projects, particularly at the feasibility and design stages, and reinforce it by selected case studies — to promote an understanding of the importance of the quality of professional work.
- The IFC should play a more active role in financial participation in local consulting firms, and EDI should give the subject more prominence in its curriculum.
- The most important contribution of bilateral donors would be to waive or modify the requirement of tying technical or financial assistance to the use of consultants solely from the donor country.

This paper — a product of the Infrastructure and Urban Development Department — is part of a larger effort in PRE to improve the quality of the consulting profession in developing countries. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact INUDR, room S10-045, extension 33758 (52 pages).

734. Curricular Content, Educational Expansion, and Economic Growth

Aaron Benavot

Many academicians, politicians, and educators strongly believe that knowledge, organized in school curricula and transmitted through school systems, contributes to the economic strength of nations. How valid is this claim?

Benavot examines whether national variations in curricular content and subject area — as distinct from growth in enrollment or qualitative provisions — have a significant impact on economic development.

The study focuses on primary education in 60 nations and assesses the economic impact of an emphasis on eight different primary level subject areas, with special attention to mathematics and science.

Benavot found that the curricular content of mass education is directly related to national economic growth. This relationship, however, is not consistent

across all subject areas and all types of countries.

Countries requiring more hours of elementary science education, for example, generally experienced more rapid increases in their standards of living during the periods from 1960 to 1985. Whether science education at the primary level is the key causal factor and whether the explicit content of the subject area is the key mechanism remain unclear.

The design, reform, and study of national school curricula are increasingly visible in political and scholarly agendas. Conventional wisdom on these matters, however, may cloud rather than clarify a vision of the potential economic benefits of different choices of subjects for curricula.

The economic consequences of emphasizing different subject areas should not be the sole criterion for decisionmaking in designing curricula. However, these consequences can provide one useful element for promoting more informed discussion among such interested parties as parents, school administrators, national and international planners, and educational researchers.

This paper — a product of the Education and Employment Division, Population and Human Resources Department — is part of a larger effort in PRE to examine the effects of primary education on development. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Cynthia Cristobal, room S6-214, extension 33640 (27 pages, with tables).

35. Traditional Medicine in Sub-aharan Africa: Its Importance and Potential Policy Options

Jocelyn DeJong

Traditional health practitioners in Africa are an important human resource in health care, and there are reasons why ministries of health might want to formulate an overt policy toward traditional medicine. Here are some policy options to consider.

A wide range of traditional healers is active in Africa, but information about their number and activities is scarce. There is growing recognition, however, that traditional practitioners provide accessible care, especially in rural Africa, and that they are a valuable resource which often should be incorporated into a country's health care system.

Survey data indicate that about 20 percent of Africans who seek medical care first consult traditional healers. Patients tend to consult modern health care services for infectious or acute diseases, or those for which modern health care has been shown to be highly effective. But patients tend to consult traditional practitioners for chronic diseases, for diseases related to psychological or social disruption or to reproductive systems, for diseases that are s[illegible] respond to treatment or are c[illegible] by organisms that have become re[illegible]tant to drugs, and for diseases deemed to be "magical" in origin. The prestige and credibility of traditional healers have been waning in the face of modernization and an increasingly educated public, but even so many highly educated people consult traditional practitioners. A survey in Ibadan of two groups — one educated elite, the other a traditional, less privileged group — found that roughly 70 percent of *both* groups used traditional health care, particularly traditional drugs.

Governments have many policy options for traditional medicine. One would be simply to leave traditional health care alone, but that would mean not taking full advantage of the positive contributions traditional health care providers can make and not being able to regulate their activities in the interests of their clients. More active policy options open to governments include encouraging further professionalization through such means as licensing and establishing professional associations, providing them with drugs and training them in better techniques. In Tanzania, for example, the government has developed a program to train local midwives in the delivery of some maternal and child health services in areas with no modern health care. In some instances training programs have reduced the incidence of neonatal tetanus.

There are several potential areas of cooperation and complementarity between traditional and modern health care workers. The most obvious is working with traditional birth attendants trained as referral agents to provide safe prenatal and postnatal care and to manage uncomplicated deliveries. Another is in the treatment of psychosomatic and psychological illnesses. Traditional practitioners may also have a comparative advantage in counselling patients with terminal illnesses, such as AIDS. Traditional practitioners might be employed as community health workers.

DeJong shows that traditional medicine is an important source of health care for significant numbers of Africans and that traditional healers, particularly those who wield authority within their communities, are an important human resource for health care. Traditional health care is unlikely to disappear, particularly if the quality of and access to modern health care service do not improve significantly. The boundaries between traditional and modern health care practitioners are beginning to blur, with the former adopting many of the practices of the latter. The consequent competition between the two groups will likely necessitate health policies that address the entire spectrum of health care, traditional and modern, and the relationship between them.

This paper — a product of the Population, Health, and Nutrition Division, Population and Human Resources Department — is part of a larger study undertaken by PRE on African health policy. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Otilia Nadora, room S6-063, extension 31091.

736. Wages and Employment in the Transition to a Market Economy

Simon Commander, Fabrizio Coricelli, and Karsten Staehr

Because of the inherited ownership structure and the uncertainties associated with reform, market regimes in reforming socialist economies will continue to need centralized controls over wages in worker-controlled firms (the socialized sector). Unemployment and an expanding private sector alone are unlikely to provide a sufficient restraining mechanism for wages.

Certain inherited features of the socialist economies — socialized ownership, full employment, restricted job mobility, and de facto wage indexation — mean that drastic reform of the labor market must figure prominently in overall economic reform.

The question is how to implement that range of reforms to ensure compatibility. One such tension relates to the fact that governments must demonstrate

their commitment to a more passive role in the economy while maintaining direct controls over wages and possibly job decisions.

Commander, Coricelli, and Staehr focus on the implications for wage bargaining and policy of inherited ownership arrangements and rules about wage setting during the transition.

In imposing unemployment on the system, by repudiating the soft budget constraint, the reforming government tries to teach workers and managers that behind it all lies a Phillips curve. But fiscal and political constraints limit the government's tolerance (if not stimulation) of unemployment — so agents may be skeptical about government adherence to announced policy.

Commander, Coricelli, and Staehr discuss the strong tendency toward overemployment and wage drift in socialist systems. They focus on the market-based transitional economy, exemplified by Poland since 1990, setting up a series of models capturing the behavior of worker-controlled firms.

They develop a simple policy game in which government policy is conditioned on output, through a subsidy instrument. This reflects the problem typically faced by reforming governments of whether to enforce a hard budget constraint (and hence tolerate higher unemployment) or whether to resort to subsidies and associated departures from fiscal targets.

Given the commitment to privatization and the consequent uncertainty about future claims on capital, they also develop — in a two-period model — the conditions under which the worker-controlled firms will deplete capital stock, possibly through excessive wage growth. They indicate how an appropriate tax rule — in this case, a wage-per-worker rule — can restrain decapitalization. They also discuss the possible utility of contingent claims on capital — such as vouchers — in offsetting capital depletion promoted by uncertainty about property rights.

Finally, they emphasize the way wage tax rules can affect employment and wages and how critical is their design. A wage bill tax, as used in Poland through 1990, not only reduces employment but will probably raise wages. By contrast, a wage-per-worker tax will tend to raise employment and lower wages. These effects are likely to be reinforced in a two-sector context, where worker-controlled firms and private firms coexist and where relative wage considerations are important.

They conclude that because of the inherited ownership structure and the uncertainty associated with reform, market-based regimes will continue to need centralized controls over wages in worker-controlled firms (the socialized sector). Unemployment and an expanding private sector alone are unlikely to provide a sufficient restraining mechanism for wages.

This paper — a joint product of the National Economic Management Division, Economic Development Institute and the Macroeconomic Adjustment and Growth Division, Country Economics Department — was prepared for a seminar on Central and Eastern Europe: Roads to Growth, sponsored by the Austrian National Bank and the International Monetary Fund, and held in Baden, Austria, April 15-18, 1991. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Olga Del Cid, room M7-047, extension 39050 (38 pages).

737. External Shocks, Adjustment Policies, and Investment: Illustrations from a Forward-looking CGE Model of the Philippines

Delfin S. Go

The rapid increase in investment and external debt of middle-income countries like the Philippines during the 1970s was perfectly "rational" behavior, given existing policies. However, these countries could have done better with an appropriate mix of adjustment policies. The paper highlights the intertemporal tradeoffs of tariff reform, emphasizing the need for complementary measures to ease macro imbalances and short-term dislocations of the protected sector.

Go developed a model that integrates intertemporal and forward-looking behavior in investment and consumption decisions in a multisectoral general equilibrium framework applicable to developing countries. It formulates and uses an infinite-horizon growth model to examine the adjustment, growth, and debt problems of a middle-income country, which Go illustrates using data for the Philippines.

The simulations illustrate the importance of dynamic, forward-looking behavior in consumption and investment. They show how an import price shock could lead to an investment boom and rapid expansion of foreign debt, as happened in the mid-seventies to many developing countries.

This rapid expansion is hard to explain without investigating the dynamic competitive conditions between domestic and foreign goods over time in response to this shock. The increase in current account deficits and foreign debt after an import price shock, for example, is certainly greater than would be implied by just the increase in foreign prices. Go concludes, among other things, that:

- Expectation is a key factor. Contrary to the common suggestion that an economy should adjust and contract in response to a permanent import price shock, the behavior suggested in a model with rational expectations in investment decisions is that the opposite can be true.

The expectations prevailing in the mid-seventies were that the energy crisis was permanent, the days of cheap oil were over, and petrodollars would continue to be available. But conditions soon changed. The actions of the high-debt developing countries appear "imprudent" viewed from the perspective of the interest rate shock of 1979. The expectation that debts could be stacked indefinitely was clearly wrong and the interest rate shock after 1979 came as a surprise to many.

- The results demonstrate both the promise and danger of liberalization, an adjustment policy often recommended in the 1980s. Tariff reform shows the expected benefits in the primary sector and to some degree in exports. But it may easily lead to a contraction in the protected sector like manufacturing, a decline in tax revenues, more current account deficits, and more debt. Other measures are needed.

- In general, Go finds that a combination of policies is effective in maintaining growth and exports without a rapid accumulation of debts — even during a permanent import price shock. In fact, an import price shock is an attractive occasion for tariff reform, as it eases pressures on domestic prices, prevents exports from declining too much, and does not lead to an expansion of import demand that normally accompanies a tariff reduction.

Combined with other policies, tariff reform could rechannel investment and resources toward the more tradable sectors and exports can be emphasized and

increased. If domestic resources are also mobilized through increased tax collection, the combined effect will be to reduce or slow the accumulation of foreign debt.

In other words, middle-income countries like the Philippines missed a golden opportunity for policy reform in the 1970s and found it harder to implement adjustment policies under less favorable circumstances in the 1980s.

This paper — a product of the Public Economics Division, Country Economics Department — is part of a larger effort in PRE to examine open-economy tax reform and adjustment policies in developing countries. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Ann Bhalla, room N10-059, extension 37699 (48 pages).

738. Tax Competition and Tax Coordination: When Countries Differ in Size

Ravi Kanbur and Michael Keen

Differences in country size exacerbate the inefficiency of tax competition, harming both a smaller country and a larger one. But different forms of tax cooperation can have very different effects. The smaller country would lose from harmonizing tax rates, but both would gain from imposing a minimum tax. The optimal joint response to freer cross-border trade, however, may be to do absolutely nothing.

Which kinds of countries choose to become tax havens? What is the likely pattern of taxation in a border-free "Europe 1992" if there is no central coordination of tax rates? Are there simple forms of coordination from which all member states could expect to benefit? Is harmonizing tax rates desirable? Would the United States be wise to insist on a minimum tax requirement on key economic activities in moving to free trade with Mexico? Or is it Mexico that should seek such a condition? If two countries make it easier for goods to move between them, how should they adjust their domestic tax structures?

These and other policy questions reflect the increasing strain that the internationalization of economic activity is placing on existing national tax structures designed for a less integrated world.

Kanbur and Keen use a simple two-country model to address a range of policy concerns that arise as a result, focusing on the role of national size. Disparity in size between countries is a source of inefficiency in itself, exacerbating the loss that each country suffers as a consequence of noncooperative tax behavior.

The impact of alternative forms of tax cooperation is analyzed. The smaller country would lose from harmonizing tax rates but both countries would gain from imposing a minimum tax.

The optimal joint response to freer cross-border trade, however, may be to do absolutely nothing.

This paper — a product of the Research Advisory Staff, Office of the Vice President, Development Economics — is part of a larger effort in PRE to understand the policy implications of economic integration. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jane Sweeney, room S3-026, extension 31021 (38 pages, with figures).

739. Managing Financial Risks in Papua New Guinea: An Optimal External Debt Portfolio

Jonathan R. Coleman and Ying Qian

Commodity-linked bonds issued with payments linked to the prices of oil and cocoa could significantly improve Papua New Guinea's risk management.

Papua New Guinea is vulnerable to instability and uncertainty associated with fluctuating commodity prices. This is because its GDP, export earnings, and government revenues depend largely on sales of a small set of primary commodities whose prices fluctuate substantially on the international market. Papua New Guinea is also exposed to fluctuating exchange rates. The degree of exposure depends heavily on (1) how the currency composition of net export earnings match the currency composition of net liabilities and (2) how changes in commodity prices affect exchange rates.

Based on these criteria, Coleman and Qian show that Papua New Guinea's assets and liabilities may be poorly balanced for debt servicing. Thus, it could benefit substantially from active risk management, especially through better selection of the financial instruments in its debt portfolio.

Coleman and Qian present a model and estimate of an optimal debt portfolio that allows for the use of commodity-linked bonds and conventional debt denominated in different currencies. They judge the hedging effectiveness of this portfolio by how much the variance of expected real imports is reduced.

The results indicate that commodity-linked bonds could play an important role in Papua New Guinea's risk management strategy. The proportion of commodity-linked bonds in the optimal debt portfolio ranges from 20 percent to 45 percent for real interest rates of 8 percent to 1 percent. They show that commodity bonds issued with payments linked to the prices of oil and cocoa could substantially lower the variability of expected future imports.

Their results also show that Papua New Guinea's external debt structure is not well balanced to hedge the foreign exchange risk from the existing composition of non-U.S. dollar-denominated liabilities. The debt portfolio contains an excess of Japanese yen- and Deutsche-mark-denominated liabilities, while liabilities denominated in British pounds are substantially underrepresented.

This paper — a product of the International Trade Division, International Economics Department — is part of PRE's research on the use by developing countries of financial instruments linked to commodity prices. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Julie Carroll, room S7-069, extension 33715 (30 pages, with tables).

740. The Onchocerciasis Control Program in West Africa: A Long-term Commitment to Success

Bernard H. Liese, John Wilson, Bruce Benton, and Douglas Marr

Among African health programs, this program to control "riverblindness" is an exceptional recent success story. Here are some lessons from it.

Onchocerciasis is a devastating African parasitical disease that causes severe debilitation and intense itching. By the

time its victims are in their late twenties, they experience impaired vision, often blindness. River villages are particularly afflicted because the blackflies which transmit the worm parasite that causes the disease breed in rivers — hence the colloquial "riverblindness."

The connection between life by the river and blinding onchocerciasis led to the virtual abandonment of many fertile river valleys, so potentially productive lands lay idle for many years. Yet millions continued to succumb to the disease until the onchocerciasis control program, a large multidonor-supported effort initiated in 1973 at the instigation of Robert McNamara, then head of the World Bank.

Today, 95 percent of the original seven-country area is virtually free of the disease, and previously deserted lands are being resettled and cultivated, increasing agricultural production.

From the beginning, the program maintained a limited, specific objective: to control onchocerciasis in a clearly delineated area in the savannah zones of West Africa. The operational focus was to interrupt transmission of the disease and eventually eliminate the parasite in all the human population. The only acceptable approach was effective control of the disease-transmitting blackfly. The strategy was to focus on destroying blackfly larvae located in fast-flowing rivers, which could easily be targeted with aerial spraying.

The main challenges of the program have been to combat the reinvasion of controlled areas by blackflies, to manage multiple resistance to the larvicides that were used, avoiding any negative impact on the environment, to develop a drug that would kill the parasites, and to hand control of residual responsibilities over to the beneficiary countries once the program ends.

Liese and his colleagues identify the main reasons for the program's success as:

- Limited, achievable, clearly defined objectives and a realistic 20-year timeframe. The request for a 20-year commitment did not meet with potential donors' immediate approval, but the proponents of the program remained firm in their assessment that this much time was necessary to eliminate the parasite reservoir in the human population.
- Use of the best technology available for any task.
- Contracting out highly specialized tasks such as aerial spraying.
- Operational research (considered an equal partner in program implementation).
- Program autonomy, which allowed flexibility in responding to strategic and technological issues.
- Delegation of authority to those most closely involved in the program, thus assuring a clear focus and flexibility.
- Long-range planning to sustain donor commitment.
- Transparency, made possible by a comprehensive flow of information and the program's openness to evaluation and review.

This paper — a joint product of the Population, Health, and Nutrition Division, Population, Health, and Human Resources Department and the Health Services Department — is part of a larger study undertaken in PRE of African Health Policy. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Otilia Nadora, room S6-065, extension 31091 (14 pages).

741. When Does Rent-Seeking Augment the Benefits of Price and Trade Reform on Rationed Commodities? Estimates for Automobiles and Color Televisions in Poland

David Tarr

Price controls result in rents and in rent-seeking. Where the rent-seeking dissipates the rents, the costs of the price controls are magnified enormously above the traditional resource misallocation costs. But there are cases where rent-seeking does not dissipate the rents.

In January 1990, Poland embarked on a "Big Bang" approach to economic reform that in addition to macroeconomic reform decontrolled virtually all prices and devalued the Polish zloty. These two reforms eliminated virtually overnight massive excess demand for many Polish commodities and allowed the authorities to make the zloty internally convertible.

To assess the impact of these reforms on the Polish market for autos and color televisions, Tarr develops a differentiated product model, in which consumers maximize utility and firms maximize profits subject to rationing constraints and price controls.

Color televisions were rationed by queueing. Tarr finds that wasteful rent dissipation in color televisions exactly offset the rents because queues formed that dissipated the rents. Rent dissipation was roughly 10 times the traditional triangle of Harberger resource misallocation costs — so the benefit of price decontrol which eliminated both rent dissipation and resource misallocation was a substantial 0.46 percent of gross domestic product.

With autos, however, rationing was by two methods, which Tarr assesses as not significantly increasing the social costs of the price controls above the Harberger costs. One method was waiting lists. The other, allocation to preferred individuals, wasted some resources through classically rent-seeking or directly unproductive profit-seeking (DUP) activities. But it also had the socially beneficial effects of improving efficiency in other state-owned firms. (In some firms, the autos were awarded to the most productive coal miners or factory workers — which improved productivity in government factories where lack of effort had been a problem.)

Tarr also shows that import liberalization produces greater benefits when there are domestic price controls with rent dissipation, because import liberalization reduces the rent.

All things being equal, the elimination of price controls for both autos and televisions had the effect of decreasing imports, as more domestic autos were produced and sold. The implication is that — contrary to the Polish government's intention — price controls were a trade distortion that increased imports: that is, they implicitly subsidized imports. Tarr estimates the rate of subsidy of imports (the ad valorem rate of subsidy to imports that would increase imports to the level before price controls were eliminated) to be 43 percent for autos and 22 percent for color TVs.

This paper is a joint product of the Trade Policy Division, Country Economics Department and the Trade, Finance, and Public Sector Division, Technical Department, Europe, Middle East, and North Africa Regional Office. It is part of a larger Bank effort to assess the impact

of price and trade reform on the reforming socialist economies of Eastern and Central Europe. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Dawn Ballantyne, room N10-033, extension 37947 (52 pages).

742. Forthcoming

743. Antidumping Enforcement in the European Community

Angelika Eymann and Ludger Schuknecht

Antidumping measures affecting developing countries are concentrated in industries with shifting comparative advantage — in sectors with strong, politically influential interest groups. So in following an export-oriented trade strategy, developing countries should probably concentrate on sectors that have weak political influence in developed countries.

In the European Community (EC), as in the United States, "injury" is what antidumping is all about. Antidumping laws are a flexible tool for preventing imports from displacing domestic production in politically influential industries.

The vehicle for achieving that goal in the EC, however, is not protectionist rules, as in the United States, but protectionist discretion.

The empirical results of Eymann's and Schuknecht's study have implications for EC trade policy after 1992. If protectionist interests demand compensation for the abolition of national protectionist barriers after 1992, EC antidumping measures offer them considerable scope for achieving their goals since measures are largely determined by political discretion. Antidumping measures could therefore become a pinnacle of "Fortress Europe."

The results also suggest certain strategic considerations for the trade policy of developing countries. Eymann and Schuknecht argue that antidumping measures affecting developing countries are concentrated in industries with shifting comparative advantage, such as steel products, basic chemicals, and synthetic fibers. (Among the newly industrialized countries, high-tech firms are a frequent target of dumping investigations.) And such protection is more likely in sectors with strong, politically influential interest groups.

If that is indeed the case, it is not sufficient that developing countries simply follow an export-oriented trade strategy. They also need to concentrate on sectors that have weak political influence in developed countries.

This paper — a product of the Trade Policy Division, Country Economics Department — is part of a larger effort in PRE to understand the economics of the emergence of "fairness" as a standard for regulating international trade, its implications for the continued openness of the international trading system, and its continued function as an important vehicle for development. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Nellie Artis, room N10-013, extension 37947 (27 pages, with tables).

744. Stainless Steel in Sweden: Antidumping Attacks Good International Citizenship

Gunnar Fors

Swedish stainless steel has played by the rules — private ownership, competitive pricing, government support strictly within the GATT rules, and the OECD guidelines. But when Sweden refused to "voluntarily" restrict its exports, it was severely set upon through antidumping actions.

Fors argues that good economics, international competitiveness, private ownership, and limited support from a government demonstrating good international citizenship are not enough to defend an industry against the application of antidumping or other import-restricting policy.

The Swedish stainless steel industry responded to the world crisis in the steel market in the 1970s with major industrial restructuring. By wholeheartedly applying the principle of profitability to decisionmaking, the industry transformed itself into a healthy, internationally competitive industry. Today the two remaining stainless steel firms in Sweden are among the world leaders in their fields and are the world's largest producers of some stainless steel products.

During this transformation, stainless steel firms also learned to get along without government intervention. After 1982, the government's policy toward the industry changed. The government ended all direct support to the industry in 1982 and by the end of 1987 stainless steel firms had paid back all of their structural delegation loans dating from the late 1970s. In addition, the Swedish government — in complying with OECD criteria guiding national steel policy — demonstrated better international citizenship than either the United states or the European Community. The negative findings of the U.S. countervailing duty and section 301 cases against Sweden offered further support that the Swedish government's role in the stainless steel industry was clearly within the bounds of the international understanding of what that role should be.

Producers in the United States, meanwhile, were shopping around for ways to restrict imports of Swedish stainless steel products. They actively sought protection under every available provision of U.S. trade laws. Efforts under section 301 and countervailing duty laws failed, but their claims under section 201 resulted in the imposition of quotas and additional tariffs covering most stainless steel products for over ten years. Those under antidumping provisions resulted in the imposition of duties that are still in effect for stainless steel plate (Avesta), welded tubes (Avesta-Sandvik Tube), and seamless tubes (Sandvik Steel). This extensive use of trade remedy cases against Swedish stainless steel is not an aberration but rather an illustration of how the system generally works.

On the Sandvik steel antidumping case, Sweden complained to the GATT, which established an antidumping panel to investigate the case. The panel's recommendation that the antidumping order be lifted was based not on a consideration of the broad issue of whose position was right from a rational economic or business perspective, but on a procedural detail. Just as "dumping" is whatever a domestic industry can get its government to act against under antidumping law, concludes Fors, so "not dumping" is whatever a GATT panel cites as grounds to discredit an antidumping order.

This paper — a product of the Trade Policy Division, Country Economics Department — is part of a larger effort in PRE to understand the economics of the emergence of "fairness" as a standard for regulating international trade, its implications for the continued openness of the international trading system, and its con-

tinued functioning as an important vehicle for development. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Nellie Artis, room N10-013, extension 37947 (43 pages, including tables).

745. The Meaning of "Unfair" in U.S. Import Policy

J. Michael Finger

Protection for U.S. production beset by import competition is what the antidumping and countervailing duty laws are all about. All the emphasis on doing things the right way distracts the United States from seeing that it is doing the wrong thing. The focus of trade regulation should be the following question: Who in the domestic economy will benefit from the proposed restriction and who in the domestic economy will lose, and by how much?

Protection for U.S. production beset by import competition is what the antidumping and countervailing duty laws are all about, contends Finger. Only in rhetoric are the unfair trade procedures about what foreign sellers are doing and about whether what they are doing is fair or unfair. The legal definitions of what is unfair offer so many possibilities that any U.S. producer who would be better off if imports were restricted can find a way to qualify — if not now, then after the next trade bill.

This does not mean that *any* briefcase full of information from a U.S. industry will be sufficient to win an affirmative determination, Finger argues. But a domestic interest stopped by a detail of the law need only wait (or pay) for preparation of a new petition, or revision of the administrative regulation, or amendment of the law — as did the Louisiana sulfur company whose problem was fixed by adding constructed value to the law.

In the long run, a winning portfolio *can* be pulled together by any industry that experiences substantive competition from imports. The cost of putting that portfolio together and the tedium of negotiating a voluntary export restraint that will give the exporters enough extra profits to buy off their sovereign right to retaliate are the major limits on how much protection the system will provide. Domestic politics imposes only the necessity of explaining that foreigners are unfair, while the trade laws themselves provide the podium from which to do so.

Almost all the procedural changes (not the substantive changes) that have been made are commendable. Standards are stated with increased precision, objective application is guarded by court review, and interested parties have a right to review the evidence and to comment on its interpretation as well as its accuracy. Transparency, openness, and objectivity are important parts of the American ideal of rule of law. Yet these procedural refinements seem to contribute more to the problem than to a solution. All the emphasis on doing things the right way distracts us from seeing that we are doing the wrong thing. The unfair trade laws (with their broad definitions of what is unfair) provide traditional American justice: we give every horse thief a fair trial, and then we hang him, writes Finger.

The focus of trade regulation should be the following question: Who in the domestic economy will benefit from the proposed restriction and who in the domestic economy will lose, and by how much? Then, get the economics right. The domestic economic costs of a trade-restricting action are as substantive as the gains. These costs have never been given legal substance because the legal profession has never been charged to do so, not because it cannot be done.

A domestic loss and a domestic loser from an impediment to imports should have the same standing in law and in administrative procedures as a gain or a gainer — including the administrative mechanics to petition for removal of an impediment to imports when that impediment compromises his or her economic interests. This is hardly a new notion. The idea that there are gains from trade, usually greater than the costs, has been around since Adam Smith, Finger concludes. It is just that they have never been made legal in the United States.

This paper — a product of the Trade Policy Division, Country Economics Department — is part of a larger effort in PRE to understand the economics of the emergence of "fairness" as a standard for regulating international trade, its implications for the continued openness of the international trading system, and its continued function as an important vehicle for development. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Nellie Artis, room N10-013, extension 37947 (29 pages).

746. The Impact of Regulation on Financial Intermediation

Dimitri Vittas

Financial systems are subject to extensive regulation in both developed and developing countries. The challenge for policymakers is to create a robust regulatory framework that promotes stability and efficiency and avoids the need for costly interventions.

Financial regulation has a pervasive impact on the structure and efficiency of financial intermediation. It is perhaps the most important determinant of differences exhibited by countries at a similar level of economic development and with access to common technologies.

The 1980s witnessed extensive deregulation and reregulation. Understanding the rationale for removing some regulations and introducing others is essential for designing and implementing effective regulatory reform.

Vittas classifies financial regulations by their primary objective into six types: macroeconomic, allocative, structural, prudential, organizational, and protective. He notes that most regulations have effects that cut across different objectives.

Historical experience suggests that macroeconomic and allocative controls tend to be ineffective and inefficient. It also shows that prudential, organizational, and protective controls are necessary because financial systems (1) suffer from moral hazard, adverse selection, and the free rider problem; (2) are susceptible to imprudent and fraudulent behavior; and (3) are prone to instability and crisis.

Vittas argues that structural controls are the most controversial types of financial regulation. Such controls are often motivated by political considerations, such as preserving the monopoly position of domestic banks or protecting the turfs of different types of financial institutions.

He maintains that many of the problems facing the U.S. financial system, such as the fragmented and fragile banking system, the financial crisis of the thrift industry, and the segmented banking an' nonbanking parts of the financial syst' can be attributed to the adverse eff'

structural regulations.

Historical experience also suggests that regulatory reform can take place more easily if it can be accomplished without cumbersome legislative changes. In fact, the threat of regulation, if prompt action is feasible, may be as effective as actual regulation.

Vittas argues that the most important task facing policymakers is creating a sound and robust financial constitution that governs what financial institutions are permitted to do and what basic conditions they have to meet. But, he adds, the financial constitution needs to be, as far as possible, neutral between different types of financial intermediaries and markets. Such a framework would contribute to higher efficiency and stability in the first place and would thus avoid the cost of later interventions.

This paper — a product of the Financial Policy and Systems Division, Country Economics Department — is part of a larger effort in PRE to study the impact of regulation in the financial sector. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Wilai Pitayatonakarn, room N9-003, extension 37666 (25 pages).

7. Credit Policies in Japan and rea: A Review of the Literature

Dimitri Vittas and Bo Wang

Well-functioning bureaucracies, effective monitoring, and a high degree of financial discipline have contributed to the effectiveness of credit polities in Japan and Korea. But the two countries' credit policies are not without their critics.

pan and Korea have long been associated with extensive, generally successful overnment intervention in the financial system. But their credit policies have not one uncriticized. Vittas and Wang survey the literature available in English on e operation and effectiveness of credit olicies in these two countries. They divide the literature on the Japanese experience into three groups.

Papers in the first group argue that overnment intervention facilitated the inancing of industry and promoted rapid industrialization during the period of reonstruction and high growth. These papers emphasize the role of indirect finance, the "overloan" position of the large city banks (their reliance on credits from the Bank of Japan for funding their loans to industrial corporations); the "overborrowing" or high leverage of industrial companies; and the artificially low level of interest rates.

The second group includes papers that accept that government intervention influenced financial flows, but maintain that its impact was not as great as the first group implied. Some papers deny that government maintained artificially low interest rates. Others argue that access to funds and the cowbell effect were far more important than credit subsidies. Most papers in this group also argue that private financial institutions played a leading part in financing the growing or modern sectors of industry and that most government support was directed toward declining and stagnant industries.

The third group of papers attributes a negative effect to government policy and maintains that economic growth would have been even higher if the financial markets were not subject to extensive regulation. Several papers argue that Japan's industrial adjustment process was slower and probably much costlier in social terms as a result of the Ministry of International Trade and Industry's (MITI) intervention; they challenge the view that Japan's high growth and successful industrialization were masterminded by MITI.

In the literature on the effectiveness of credit and industrial policy in Korea, very few authors, if any, challenge the view that government intervention was extensive in Korea. Indeed, many authors argue that government intervention may have retarded growth by distorting incentives and resource allocation.

An important feature of credit policy in Korea was the coercive nature of government intervention. Firms that failed to meet performance standards and expand exports were denied additional credit or had their loans recalled, while successful firms were given further access to credit on preferential terms. Interest rate subsidies in Korea, unlike Japan, were sometimes quite large.

Criticism of Korean credit policy focuses on the experience in the late 1970s when the drive for heavy industrialization was under way. Several papers argue that the drive was overambitious and costly and resulted in a serious misallocation of resources, although many of the targets were in fact achieved.

In general the relative success of credit policies in Japan and Korea is attributed to their well-functioning bureaucracies, effective monitoring, and financial discipline. These have limited the diversion of subsidized credit funds into speculative assets and have ensured that credit policies in these two countries have not suffered from the problems of adverse selection and moral hazard that have bedeviled directed credit programs and credit subsidies in other countries.

This paper — a product of the Financial Policy and Systems Division, Country Economics Department — is part of a larger effort in PRE to study the impact of regulation in the financial sector. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Wilai Pitayatonakarn, room N9-003, extension 37666 (25 pages).

748. European Trade Patterns After the Transition

Oleh Havrylyshyn and Lant Pritchett

A gravity model of trade predicts that trade with Northern Europe will increase from less than 25 percent to more than 70 percent of Eastern Europe's trade.

Eastern Europe's shift away from socialism and an orientation toward the USSR is likely to cause large changes in its bilateral pattern of trade — away from the Eastern bloc toward the Western.

Havrylyshyn and Pritchett quantify the expected magnitude of this shift by estimating a traditional gravity model of trade and using it to simulate post-transition patterns of trade.

In the base case — in which the total value of Eastern European trade is held constant at US$113 billion — Eastern European trade with Northern Europe increases by $53 billion.

Northern Europe's share in Eastern Europe's trade increases to more than 70 percent, from the current level of less than one quarter.

The basic tenor of these results is robust to changes in the model's estimated coefficients and the measurement

of income in Eastern Europe and the USSR.

This paper — a product of the Trade Policy Division, Country Economics Department — is part of a larger effort in PRE to examine questions relating to the transition from a socialist to a market economy. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Nen Castillo, room N10-033, extension 37947 (29 pages, with tables).

749. Hedging Commodity Price Risks in Papua New Guinea

Stijn Claessens and Jonathan Coleman

With increasing awareness of commodity price risks and with technical assistance – – strategic advice and assistance in institution building and skills training — developing countries such as Papua New Guinea can learn to use market-based commodity-linked financial instruments to improve their economic management.

Papua New Guinea faces substantial exposure to price fluctuations for its major primary commodity exports: gold, copper, coffee, cocoa, logs, and palm oil. Its existing commodity risk management schemes — its mineral stabilization fund and agricultural commodity funds — are costly, provide only limited protection against the impact of fluctuations in commodity prices, and are unable to provide protection for long periods.

Claessens and Coleman show that market-based financial instruments are better suited to manage external price risk for a country that is a price taker in world commodity markets. This is especially the case for mineral and energy price risks where financial instruments (such as commodity swaps) exist for hedging export earnings over long periods. For agricultural export earnings, short-term hedging tools, such as options and futures, could be used effectively. Claessens and Coleman design specific financial strategies that Papua New Guinea could use, and demonstrate the gains to be made from active risk management.

The lessons learned are not unique. Many developing countries are heavily dependent on primary commodities for foreign exchange, and their economic development has suffered from the resulting risks and instabilities. With increasing awareness of these risks and with technical assistance — strategic advice and assistance in institution building and skills training — developing countries can learn to use financial instruments to improve their economic management.

This paper — a joint product of the Debt and International Finance and International Trade Divisions, International Economics Department — is part of a larger effort in PRE to study the use of financial instruments to manage the external exposures of developing countries. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sarah Lipscomb, room S7-062, extension 33718 (31 pages, with figures and tables).

750. Reforming and Privatizing Poland's Road Freight Industry

Esra Bennathan, Jeffrey Gutman, and Louis Thompson

Options for restructuring and privatizing PKS, Poland's main state-owned enterprise for road transport of passengers and general freight.

The Polish economy uses four to six times as much freight transport per dollar of GDP as the European market economies. The trucking share of this transport, however, appears far too low. Bennathan, Gutman, and Thompson focus on options important to the privatization of road haulage in Poland. They recommend that in restructuring Poland's road haulage industry the following options be considered in connection with privatization, regulation, financing, and taxation:

• The business of passenger transport (buses) should be completely separated from the business of freight haulage (trucks). Combining freight haulage with subsidized passenger transport in one enterprise, the common practice now, creates the possibility that passenger atrocities could subsidize freight (or vice versa). And combining activities with such different markets, operating techniques, and management style is inefficient.

• Road haulage is a large enough industry and occupation in Poland to justify a separate privatization program — but one that covers the entire industry.

• Poland's program of small- and medium-scale privatization has earmarked a number of road haulage enterprises for privatization. To these, the road haulage sector privatization program should add at least 10 (or 8 percent of all) state-owned haulage entities for assisted privatization in the first year of the program. Assistance should be in the form of guidance on accounting, auditing, valuation, and legal steps toward commercialization.

• To guard against the dissipation of state assets and to rationalize and reform accounting and information management systems industrywide, all enterprises should be commercialized under central guidance and with expert assistance, according to a preannounced timetable.

• To encourage the infusion of new resources from outside, uncertainty about the ownership, assets, liabilities, and cash flow of enterprises should be reduced — partly by creating new, self-contained subsidiaries (daughter companies) of state-owned enterprises. This typically creates incentives for improved management and staff efficiency and productivity. To limit potential abuse, strict rules and mechanisms for inspection should be set up.

• Small-scale haulage enterprises should be encouraged, as trucking firms do not benefit significantly from economies of scale, middle-class entrepreneurship is socially desirable, and, through subcontracting, large-scale firms can vary their capacity without committing capital.

• The trend should be toward economic deregulation. Regulations should set quality standards (issuing operator licenses on the basis of personal and technical competence, for example) rather than restricting quantity (limiting entry of new haulage enterprises). No organization should be given preference in the distribution of international permits, which might be issued by auction or by spot basis to applicants upon proof of a genuine order for transport.

• Private liquidity in Poland is low and commercial banks cannot yet grant credit widely. There is a case for exploring sources of technical assistance and leasing finance from West European leasing associations and European banks.

• Enterprise taxation and taxation of road use need reform. Road user taxes should be based on the relative cost of damage to roads by different equipment –

– with heavy vehicles paying a higher tax than light vehicles, for example — and on the cost of congestion.

This paper — a product of the Transport Division, Infrastructure and Urban Development Department — is part of a larger effort in PRE to develop improved approaches to enterprise reform in transport. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Barbara Gregory, room S10-045, extension 33744 (41 pages, with figures and tables).

751. A Consumption-Based Direct Tax for Countries in Transition from Socialism

Charles E. McLure, Jr.

Countries emerging from socialism lack the accounting practices, the tax administration, and the experience with tax compliance to make an income tax work. A consumption-based direct tax — the simplified alternative tax proposed here — might be more effective.

Countries emerging from socialism must move quickly to implement tax systems that will allow them to finance the proper functions of government in a noninflationary way. Yet they are ill-prepared to cope with the intricacies of a standard income tax. They lack the accounting practices, the tax administration, and the experience with tax compliance to make an income tax work well. It is important to design tax policy with these limitations in mind, rather than simply ignoring them during the (possibly long) period when they remain significant impediments.

Indeed, administrative considerations should weigh almost as heavily as economic effects in the choice of a tax system for a country emerging from socialism.

McLure suggests an alternative to the income tax: the simplified alternative tax, a consumption-based direct tax. The simplified alternative tax encourages savings and investment in a way that is economically neutral and avoids many of the administrative problems of an income tax — especially those stemming from timing issues and the need to adjust for inflation.

The simplified alternative tax is not a panacea, but McLure suggests that it deserves serious consideration.

This paper — a product of the Socialist Economies Reform Unit, Country Economics Department — is part of a larger effort in PRE to study the processes of reform in countries emerging from socialism. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact CECSE, room N6-035, extension 37188 (44 pages).

752. Inflation and Stabilization in Yugoslavia

Roberto de Rezende Rocha

A successful stabilization program in Yugoslavia requires more political resolve about wage indiscipline and loss-making enterprises than was observed in 1990. But the ultimate question is whether stabilization can succeed without a comprehensive privatization program.

Rocha examines the main reasons inflation accelerated in Yugoslavia in the 1980s and reviews past and current attempts at stabilization.

He shows that inflation in Yugoslavia shares common elements with inflation in other highly indebted countries, despite appearances otherwise. These common elements include a large transfer of resources abroad unmatched by an internal adjustment, resulting in a large internal redistribution of real resources through inflation.

Yugoslavia differs from other countries in that these internal conditions are not transparent. Instead of an open fiscal deficit, there were complex interactions among enterprises, commercial banks, and the central bank, involving, among other things, the absorption and servicing of a large stock of foreign exchange liabilities by the central bank.

Other factors contributed to the sharp acceleration of inflation at the end of the eighties — especially a large real devaluation in mid-1988, when an indexed economy drove inflation to a much higher level. In 1989, a preemptive explosion of real wages added fuel to inflation's fire.

Rocha argues that the failure to correct hidden losses in the economy was the main reason various stabilization attempts failed in the 1980s. The 1990 program was the first to recognize the existence of those hidden losses and the need for fiscal correction — although it also introduced other elements to cope with inflationary inertia. The program succeeded in eliminating the central bank's own deficit and was initially successful in fighting inflation. But it became clear in the course of the program that other losses had not been removed. Pressures to finance enterprises and avoid a liquidity crisis in the financial system resulted in a relaxation of monetary policy in mid-1990 and a revival of inflationary pressures. Attempts to reimpose monetary control met considerable difficulty at the end of the year, including a bizarre episode of expansion of central bank credits without the board of governors' approval.

It also became clear that the fiscal component was not consistent with other elements of the program. It was clearly not enough to finance a social program of the magnitude required had loss-making enterprises really been forced into bankruptcy and also to cover the needs of the bank restructuring program. Seen from this angle, the Yugoslav program of 1990 resembles other heterodox programs that had initial success in reducing inflation but later faltered because of the insufficiency of the fiscal adjustment.

At the same time, the events in the second half of 1990 also indicate that, for a stabilization program to succeed in Yugoslavia, there must be much greater political resolve to cope with wage indiscipline and loss-making enterprises than was observed in 1990. And the question remains whether financial discipline can be imposed in the system only at the macroeconomic level and without introducing private ownership of capital. The ultimate question may be whether stabilization can succeed without a comprehensive privatization program.

This paper — a product of the Macroeconomic Adjustment and Growth Division, Country Economics Department — is part of a larger effort in PRE to examine the problems of transition faced by reforming socialist countries and to contribute to the Bank's policy dialogue with these countries. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Lanha Ly, room N9-083, extension 37352 (35 pages).

753. The CMEA System of Trade and Payments: The Legacy and the Aftermath of Its Termination

Martin Schrenk

A brief history and critique of the Council for Mutual Economic Assistance and conjectures about the consequences of its demise.

The Council for Mutual Economic Assistance (CMEA, sometimes referred to as COMECON) was founded in 1949. Its European members were Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, and the USSR. Mongolia, Cuba, and Vietnam were non-European members. Albania was a member but left after its break with the USSR. Yugoslavia was an associate member.

Past analyses of the economics of the socialist member countries tended to downplay trade and payment relations through the CMEA. The key concern of analysts was with Western external debt, borrowing requirements, and creditworthiness in convertible currencies. In that context, relations within the CMEA were peripheral. Moreover, the paradigm of multilateral trade and currency convertibility was not suited for analysis of CMEA's system of trade and payments.

Schrenk describes the CMEA system of trade and payment (the "CMEA regime") and considers how the transition from traditional socialism to a market economy is linked to changes in the mechanism for international transactions.

The author gives a brief history of the CMEA, describing its organizational structure, institutional principles, and reform efforts, and provides a brief statistical overview of the relative importance of CMEA trade for its members. The paper sets out the traditional "institutional model" of the CMEA regime, discusses its defects, and briefly evaluates the CMEA regime.

After describing the events surrounding the CMEA's demise in 1990, Schrenk conjectures about the consequences of that demise. He explains that because there is so little hard evidence and statistical data — and because the implicit political assumptions are so uncertain — many conclusions in this final section must be conjectural.

This paper — a product of the Socialist Economies Reform Unit, Country Economics Department — is part of a larger effort in PRE to analyze the systemic legacy which militates against the structural adjustment and economic recovery of Eastern Europe's socialist economies in transition. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact CECSE, room N6-043, extension 37188 (27 pages).

754. Estimating Returns to Scale with Large Imperfect Panels

James R. Tybout and M. Daniel Westbrook

Do policies that promote "bigness" in manufacturing plants also promote greater productivity? Does correlation between size and profitability constitute a case for antitrust activity?

Tybout and Westbrook provide systematic panel-based econometric estimates of plant-level returns to scale for various 3-digit and 4-digit manufacturing industries, using panel data for Chilean plants. Their findings shed light on several issues of interest to policymakers.

First, do policies that promote "bigness" in manufacturing plants also promote greater productivity? As plants grow, do they become more efficient?

They find that although several 4-digit sectors show increasing returns, general expansion of the manufacturing sector cannot be expected to yield strong economies of scale at the plant level. Taking their "best" estimates at face value, the returns to scale in manufacturing are scattered across the range of 0.8 to 1.2 at the 3-digit level and 0.7 to 1.6 at the 4-digit level. None of the 3-digit returns-to-scale (RTS) estimates is significantly different from unity, and only two of the 4-digit estimates are.

Second, it appears that plants that are inherently more efficient tend to grow larger, as Demsetz and others have argued. This inference is based on a comparison of RTS estimates that control for unobservable efficiency effects with estimates that do not. It implies, among other things, that positive correlations between size and profitability need not constitute a case for antitrust activity.

A corollary to this finding is that most RTS estimates based on cross-sectional data tend to overstate plant-level returns to scale.

As a byproduct, their analysis appears to have reopened the possibility of using Stigler's survival test to gauge the importance of returns to scale. But unlike earlier applications of this test based directly on the distribution of plant size, their results suggest using Probit estimates of the elasticity of failure probabilities with respect to plant size as crude proxies for RTS.

This paper — a product of the Trade Policy Division, Country Economics Department — is part of a PRE research project on Industrial Competition, Productive Efficiency, and their Relation to Trade Regimes (RPO 674-46). Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Sheila Fallon, room N10-021, extension 37947 (47 pages).

755. Hedging Crude Oil Imports in Developing Countries

Stijn Claessens and Panos Varangis

How a state oil-importing company can use risk management instruments to insure against price fluctuations for crude oil.

Crude oil prices have become more and more volatile since the 1973 oil crisis. Particularly since the recent Gulf crisis (crude oil prices rose and fell sharply between August 1990 and March 1991), producers, refiners, and consumers have been interested in acquiring more assurances about the prices they would pay or receive over future periods. Increasingly they have used such risk management instruments as futures, options, and swaps to protect themselves against adverse oil price movements.

Claessens and Varangis show how risk management instruments can be used by a state oil-importing company to insure against price fluctuations for crude oil. The main benefit of risk management is reduced uncertainty about the oil prices consumers and the state oil-importing company will pay rather than lower average crude oil import prices.

Claessens and Varangis simulate two scenarios: the short-term hedge, in which the state oil-importing company locks in a price for its imports for one month ahead, and the long-term hedge, in which it locks in the price for six months ahead. The short-term hedge reduces oil price volatility a potential 72 percent to 85 percent;

the long-term hedge, a potential 65 percent to 81 percent. For these reductions to be realized, the prices of the crude oils hedged must move together with the futures prices. Tests are carried out to see if this is so.

Apparently oil-importing developing countries could gain considerably from using financial risk management instruments. But several constraints — particularly negative publicity and legal obstacles — can impede a state oil-importing company's use of risk management instruments. Educating government policymakers and state enterprise officials about the proper use, limits, and benefits of risk management instruments will make them more acceptable.

This paper — a product of the International Trade Division, International Economics Department — is part of a larger effort in PRE to study the benefits of using financial instruments to hedge the external exposures of developing countries. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Dawn Gustafson, room S7-044, extension 33714 (46 pages).

756. Taxes Versus Quotas: The Case of Cocoa Exports

Arvind Panagariya and Maurice Schiff

What are the implications of optimal Nash quotas and taxes when two or more countries compete against each other in the world market for primary commodities — this case, cocoa?

Panagariya and Schiff are particularly interested in evaluating the concern that efficiency or policy-induced changes in the supply of exports of primary commodities — including cocoa, coffee, and tea — may lead to such a large decline in the prices of those commodities that export revenues and incomes of the exporting countries actually decline. In this paper, they focus on the implications of quantitative restrictions.

They compare the implications of optimal Nash quotas and taxes when two or more countries compete against each other in the world market.

They find that the outcome under taxes is less restrictive than under quotas —but that the countries' profits are higher under quotas than under taxes.

In simulations undertaken for the world cocoa market, they find that for most countries optimal Nash taxes yield lower profits than the initial taxes or quotas. If one of the countries becomes a Stackelberg leader, its profits rise and those of the others fall. But the rise in the Stackelberg leader's profit is lower than the decline in the other countries' profits, so total profits decline.

They also find that even if countries choose taxes or quotas optimally, growth in a country can lead to a decline in the combined real income of the exporting countries.

Their simulations cast doubt on the hypothesis analysts often advance that a market with five or more players can be regarded as roughly perfectly competitive. If this hypothesis were valid for policy formulation in the cocoa market, the optimal export taxes would be about zero. But Panagariya's and Schiff's results indicate that the outcome of the nine-country game is far from the zero-tax solution. So the optimal taxes exceed 10 percent for the largest producers (Côte d'Ivoire, Ghana, and Brazil) in the Nash-tax game and in all countries except Indonesia and Oceania in the Nash and Stackelberg quantity games.

This paper — a product of the Trade Policy Division, Country Economics Department — is part of the World Bank research project on Commodity Exports and Real Incomes in Africa (RPO 676-70), an effort aimed at analyzing the interactions of commodity exports, real incomes, and trade policies. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Sheila Fallon, room N10-021, extension 37947 (25 pages).

757. Managing the Transition: Enhancing the Efficiency of Eastern European Governments

Eric Rice

The consensus of dozens of Bank and outside experts on issues and measures essential to government reform in six Eastern European economies changing to a market economy — and on how external agencies can best aid the reform process.

The transition to a market economy in Eastern Europe requires eliminating some institutions and practices and introducing new agencies with new goals, staffed by people with different attitudes and behavior. After interviewing 42 World Bank experts and other experts in the donor and academic communities, Rice synthesizes their views on World Bank member countries in Central and Eastern Europe (Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and Yugoslavia):

- Giving a broad-brush overview of what is known about capacity constraints in key public institutions involved in the transition.
- Identifying current and proposed actions of the World Bank and other donors.
- Indicating critical institutional issues on which future operational work and research might focus.

Rice finds that a consensus has emerged on five principles that establish the socially acceptable domain for government economic activity in Eastern Europe:

- Retreat from the discredited central government, as subnational governments and private enterprises assume many functions of central governments.
- Improved channels of communication between governments and their citizens, in response to increasing demand for more transparent policy and an institutionalized voice for the public in policymaking.
- A hospitable business environment, which means clarification of property rights; policy stability, consistency, and accountability; low-cost provision of government services and infrastructure; and the protection of agents from abuses in the marketplace.
- Concern for public welfare and social justice, as citizens of post-communist Eastern Europe hope to obtain both the familiar basic securities (job security, subsidized consumption, and universal access to basic health care and education) as well as new rights and freedoms.
- Efficient government administration at all levels, under the scrutiny of elected legislatures, citizens groups, and internal audit and review agencies.

Rice identifies five areas in which external institutional assistance is needed: (1) policy advice on a range of issues; (2) more in-depth technical assistance; (3) a large-scale training effort to help close Eastern Europe's massive "skills gap" in economics and business; (4) diagnostic research; and (5) the design of broad, medium-term action plans. For each of

these issues, he describes numerous measures to be pursued.

This paper — a product of the Public Sector Management and Private Sector Development Division, Country Economics Department — is part of a larger effort in PRE to evaluate the economic and institutional issues surrounding Eastern Europe's current transformation. Earlier versions of this paper were presented in seminars at Harvard's Russian Research Center and the World Bank, and at an economics conference sponsored by IREX in Bucharest in April 1991. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Priscilla Infante, room N9-059, extension 37642 (45 pages).

758. Is There Excess Co-Movement of Primary Commodity Prices? A Co-Integration Test

Theodosios B. Palaskas and Panos N. Varangis

Tests that cast doubt on the existence of excess co-movement in commodity prices.

Commodity analysts and traders have long held the perception that primary commodity prices tend to move together over time — even if they are unrelated commodities (with no cross-price elasticities).

In the case of unrelated commodities, common shocks should account for the comovement of commodity prices. At issue is whether there is co-movement beyond what can be explained by the common shocks, that is, macroeconomic shocks, as Pindyck and Rotemberg recently suggested.

As a first step, Palaskas and Varangis used the cointegration technique to examine whether there is a long-term stationary relationship between seven unrelated commodity prices. All tests accepted the hypothesis of co-movement between all commodity pairs.

In their second step, they used the results from the cointegration to build error correction models for each of the commodities. They used the error correction models to examine the hypothesis of short-run excess co-movement — that is, co-movement above and beyond what can be explained by shocks with common effects (macroeconomic variables).

With some exceptions, the tests cast doubt on the existence of excess co-movement in commodity prices. When they used monthly data for most of the commodities tested, neither the macroeconomic variables nor the other commodity prices explain much of the variation in a commodity price.

In monthly series, however, the tests applied may be inappropriate, given the existence of non-normality in the regression errors. In other words, the tests applied have the wrong size. Using annual data, the explanatory power of the macroeconomic variables increases significantly, but other commodity prices still do not contribute much in explaining the variations of a commodity price.

This paper — a product of the International Trade Division, International Economics Department — is part of a larger effort in PRE to explain commodity price behavior and model the global markets for primary commodities. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Dawn Gustafson, room S7-044, extension 33714 (41 pages).

759. The Profamilia Family Planning Program, Colombia: An Economic Perspective

Jesus Amadeo, Dov Chernichovsky, and Gabriel Ojeda

Profamilia, an affiliate of the International Planned Parenthood Federation, provides more than 60 percent of Colombia's family planning services. In 1986, Profamilia recovered more than half of its costs, which is rare for family planning services. But it could have provided more protection for the same amount of money.

Profamilia, an affiliate of the International Planned Parenthood Federation, provides more than 60 percent of Colombia's family planning services.

Profamilia's outreach effort (CBD) delivers mainly pills in rural and outlying urban areas, through 100 field workers. Its two clinic-based programs provide (1) voluntary sterilization and (2) clinical services: gynecological consultation, intrauterine device (IUD) services, and over-the-counter sales of contraceptives.

In 1986, these three programs delivered more than 1 million "couple years of protection" (CYP) at a cost of about US$6.43 million. The sterilization program provided the most protection. The clinical and CBD programs each provided about 43 percent of revenues. The outreach program accounted for 31 percent of costs, the clinical program 39 percent, and the voluntary sterilization program 30 percent.

Amadeo, Chernichovsky, and Ojeda address the question: Could Profamilia have provided more protection with the same resources? They found that:

- Operations tend to be constrained by limited personnel and supplies. With more of each, more protection could be delivered.
- The labor costs and unit costs of contraception are lower in the outreach and clinical programs, which can be expanded with available infrastructure. The marginal unit cost of voluntary sterilization is higher partly because surgeons are paid "by the piece." (But the effects of educating the people about sterilization may make sterilization more cost-effective in the long run than this study found to be true for the short term.)
- The clinical program (delivering mainly the IUD) and the outreach program (delivering mainly the pill) are the most cost-effective. The voluntary sterilization program is the least cost-effective because of the higher cost of sterilization, the heavy subsidy for sterilization, and the higher mean age of clients who are sterilized. It might be more efficient to shift emphasis from sterilization to the other two programs.
- Fees for service should be seriously considered, and more research done on the issue. More demand could be met with more workers, and higher prices — particularly for sterilization — might not reduce revenues.
- More resources should be targeted to areas where there are proportionately more mothers and where people are better educated (and hence more receptive to family planning).
- Experienced and married workers sell more in the outreach program than their junior, unmarried colleagues. Experienced workers tend to be paid more than inexperienced workers, but married workers tend to be paid less than unmarried workers. It would pay to retain experienced staff (who are more likely to be married).
- In both the clinical and surgical programs, output would increase if there were proportionately more nurses and

fewer doctors.

The underlying hypothesis of this study (which remains untested) is that there is sufficient demand for the various operations to expand.

This paper — a product of the Population, Health, and Nutrition Division, Population and Human Resources Department — is part of a larger effort in PRE to examine the relative importance of constraints of demand and supply on the use of contraception. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Otilia Nadora, room S6-065, extension 31091 (113 pages, with tables).

760. How Conflicting Definitions of "Manufactures" Distort Output and Trade Statistics

Alexander J. Yeats

Inconsistencies in definitions of "manufactures" used to compile output and trade statistics produce a discrepancy of $60 billion in estimates of developing country exports. Clearly, international organizations must resolve these discrepancies.

Economists often stress the importance of increasing the production and exports of manufactures in developing countries, but national and international agencies are inconsistent about how they define "manufactures."

The definition of "manufactures" used in compiling production data for industrial and developing countries is far broader than the definition used for trade statistics. This limits the analytical utility of output and trade data for studies using, say, apparent consumption or import penetration ratios.

International agencies also use different definitions of manufactures when compiling trade statistics. For some countries, these definitional changes produce major differences in the value and share of manufactures exports and imports.

Yeats assesses the analytical implications of six different definitions by comparing results when each is used to tabulate exports of the "manufactures" of 72 developing countries.

He shows that the different definitions produce a discrepancy of $60 billion in estimates of developing country exports.

Sensitivity tests show that five or six products — especially refined petroleum (SITC 332) and some processed food products — are responsible for the main discrepancies. These items are included in the UNIDO (trade) and most agencies' output definitions but are excluded from the trade definition used by UNCTAD, GATT, and the World Bank.

Clearly, international organizations must resolve these inconsistencies in definitions of output and trade statistics.

This paper — a product of the International Trade Division, International Economics Department — is part of a larger effort in PRE to improve the quality and consistency of statistics needed to analyze developing countries' trade performance, industrialization, and growth. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Jean Jacobson, room S7-037, extension 33710 (21 pages).

761. Uncertainty and the Discrepancy between Rate-of-Return Estimates at Project Appraisal and Project Completion

Gerhard Pohl and Dubravko Mihaljek

This statistical survey of more than 1,000 World Bank projects reveals a sharp divergence between estimated rates of return at appraisal and at project completion. Traditional methods of project evaluation and selection have been unable to reduce the high degree of uncertainty associated with project analysis.

Pohl and Mihaljek analyze the World Bank's experience with project analysis from a sample of 1,105 projects. They compare estimated rates of return at appraisal with re-estimated rates of return at project completion (that is, at the completion of construction works, usually five to ten years after appraisal).

Their findings confirm a high degree of uncertainty in project analysis. Only a small part of the discrepancy between estimated rates of return at appraisal and the re-estimated rates of return at project completion can be explained, even with the benefit of hindsight.

World Bank appraisal estimates of rates of return are too optimistic. But, explain Pohl and Mihaljek, factors usually associated with this optimistic bias (cost overruns, implementation delays) seem to explain only a small part of unexpected changes in project performance. Uncertainties seem to be higher in the directly productive sectors (agriculture and industry), where rates of return can be altered through external market forces or domestic policy shocks. Estimated rates of return seem more stable for infrastructure projects.

One alternative to correcting modal estimates of implementation variables for "bad surprises" might be to set different minimum rate-of-return criteria for different types of projects (10 percent for transport, for example, but 15 percent for agricultural and industrial projects), based on observed divergences in rate of return.

Project analysis simply has to cope with a large degree of uncertainty. Traditional methods of project evaluation and selection have been unable to reduce this large measure of uncertainty.

This paper is a product of the Economic Advisory Staff, Office of the Senior Vice President, Operations. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Lee, room E 3-087, extension 81950 (44 pages).