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To: Members of the Executive Board
From: The Secretary
Subject: Summaries of Working Papers (WPs) Issued
During January-June 1988

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Summaries of Working Papers

Compiled by the Editorial Division

Approved by Azizali F. Mohammed

July 5, 1988

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"The Impact of Agricultural Support Policies in the United States and Other Major Countries: A Survey" by Owen Evans

The U.S. agricultural sector has experienced severe difficulties in the 1980s, with the causes including the weakness of commodity prices, high rates of interest, and the appreciation of the U.S. dollar from mid-1980 to early 1985. Seen in the wider context of the process of disinflation in the early 1980s--which invalidated the expectations on the basis of which earlier economic decisions had been made--the debt servicing difficulties of segments of the U.S. farm sector resemble those experienced by some heavily indebted developing countries.

This paper examines the recent difficulties experienced in U.S. agriculture and discusses the role played by government policies. Studies of the extent and costs of agricultural protection in the United States and other major countries are surveyed and possible effects of multilateral reform of agricultural policies are discussed.

The slowdown in the growth of world demand for agricultural products in the 1980s has not been matched by a comparably reduced rate of growth of production in some major countries. Instead, government policies in major industrial countries, pre-eminently the European Community (EC), Japan, and the United States, have sought to shield domestic producers, thereby continuing incentives for growth in production at a time when market signals would have dictated retrenchment. The result of these policies has been a huge accumulation of stocks of agricultural products and associated declines in commodity prices. Available studies of the extent of assistance for agriculture, based on the producer subsidy equivalent framework developed at the OECD, indicate very high levels of protection for agriculture in the EC, Japan, and the United States, with the level somewhat higher on average in Japan than in the EC, and in turn higher in the EC than in the United States.

The global nature of the difficulties in agriculture and the magnitude of protection for agriculture in many countries have led to a multilateral approach to reform of agricultural policies. Available research indicates that current agricultural policies in major countries impose substantial welfare costs and suggests that the costs of adjustment to a more market-oriented system might be mitigated if several countries would liberalize simultaneously.

"The Balance of Trade, the Terms of Trade, and the Real Exchange Rate:
An Intertemporal Optimizing Framework" by Jonathan Ostry

This paper uses an intertemporal optimizing general equilibrium model of a small open economy to address two related questions in international macroeconomics. First, how do terms of trade shocks affect the real exchange rate? Second, in a model with nontraded goods, how do terms of trade changes affect the current account? We consider explicitly (and draw clear distinctions among) temporary current, anticipated future, and permanent changes in the terms of trade. The analysis deals with the effects of exogenous changes in the world terms of trade as well as with the effects of commercial policies (e.g., tariffs) which alter the internal terms of trade faced by domestic agents. We develop our results both in terms of simple, familiar diagrams, as well as analytically.

The main results of the paper suggest that the response of the trade balance to a given disturbance in the terms of trade--the so-called Harberger-Laursen-Metzler effect--may be quite sensitive to whether or not the model incorporates nontraded goods. The paper shows that if the negative welfare effect is sufficiently large relative to the intertemporal substitution effect, a temporary current deterioration in the terms of trade worsens the trade balance, holding constant the path of the real exchange rate. Similarly, if the negative welfare effect is sufficiently large, an anticipated future deterioration in the terms of trade improves the trade balance, holding constant the path of the real exchange rate. Once the adjustment in the equilibrium real exchange rate is taken into account, however, both of these results may be reversed. In other words, a temporary current (anticipated future) deterioration in the terms of trade may actually improve (worsen) the initial trade balance position.

Further, the paper shows that the imposition of a (small) temporary current tariff (from an initial undistorted equilibrium) necessarily improves the current period trade balance, holding constant the real exchange rate. Similarly, if the real exchange rate is held constant, an anticipated future tariff always worsens the current period trade balance. However, both of these results may be reversed once the adjustment in the equilibrium real exchange rate is taken into account. The fundamental reason for the reversal is that the path of the real exchange rate is a key determinant of the real (consumption-based) rate of interest, and hence of real spending and the current account balance.

Finally, a permanent deterioration in the terms of trade always improves the trade balance if initially there is a deficit and the real exchange rate is assumed to be fixed. However, if the permanent deterioration in the terms of trade causes a real depreciation, a further worsening of the initial trade deficit position may result. As a consequence, the real exchange rate is an important variable through which terms of trade shocks are transmitted to the current account.

"Fiscal-Monetary Mix and Exchange Rate Movements:
The Case of Major Industrial Countries" by Ahsan Mansur

In view of the consensus that policy-induced fluctuations in the exchange rate may be reduced through coordination of financial policies, this paper reviews the extent to which policy coordination has been achieved in monetary and fiscal policy; the liberalization of capital markets, and the monetary-fiscal policy mix. After taking into account such structural realities as the differences in the savings rate among major industrial countries, the paper links developments in financial policies and their mixes to exchange rate movements and the appreciation of the U.S. dollar during 1980-84.

The paper finds that in the major industrial countries monetary policy and capital market liberalization have tended to converge, while fiscal policies have tended to diverge. Indicators based on monetary expansion, operation of monetary policies, inflation, and interest rates show in these countries an increased convergence of monetary policy. This convergence was achieved in a rapidly changing economic and financial environment through the adoption of a medium-term approach to targeting monetary growth. On the other hand, notwithstanding their stated objective of reducing the fiscal deficit and the tax burden, the combined deficit of the major industrial countries increased rapidly because of the growth of the U.S. fiscal deficit. Expansionary fiscal policy in the United States stood in sharp contrast to the contractionary stance adopted by the Federal Republic of Germany and Japan; this fiscal misalignment and the consequent divergence in monetary-fiscal policy mix altered real interest rate differentials among major countries and contributed to sharp exchange rate movements.

The paper also notes that the combined effect on the exchange rate of fiscal expansion and of the type of policy mix described above was amplified by continued liberalization of capital movements and the marked differences in savings behavior among countries. The "pull" effect for foreign capital in the United States that resulted from expansionary fiscal policy and a lower private savings rate was combined with a "push" effect in high-saving countries, such as the Federal Republic of Germany and Japan. This combination contributed to sharply higher capital inflows into the United States and to the rapid appreciation of the dollar during 1980-84.

"Financial Reform and Monetary Control in Indonesia"
by V. Sundararajan and Lazaros Molho

This paper analyzes the evolution and effectiveness of Indonesia's monetary control system following the financial reforms implemented since 1983. The reforms were initiated as part of a comprehensive adjustment effort aimed at improving Indonesia's external accounts. They were intended to complement the adjustment program by correcting some of the shortcomings of the monetary control system, which had hitherto relied mainly on direct restrictions such as credit ceilings and interest rate controls. These restrictions had distorted the pattern of financial intermediation, encouraged private capital outflows, and tended to become ineffective. The first stage of the reform entailed the removal of credit ceilings, the abolition of controls on state banks' interest rates, and a change in the central bank's funding role. The second stage included the introduction of new instruments of indirect monetary control and the adoption of measures to strengthen the money market.

The new monetary control system and the concurrent fiscal and exchange rate adjustments contributed to a substantial improvement in Indonesia's external accounts. The relaxation of interest rate and credit controls stimulated competition among domestic financial institutions and helped reverse the previous pattern of private capital outflows by increasing the attractiveness of domestic-currency financial assets. In addition, the new monetary instruments served to widen participation in the domestic money market and to reduce segmentation in the loan market, thus improving the overall efficiency of financial intermediation.

"The Effects of Currency Substitution on the Response of the
Current Account to Supply Shocks" by Carlos Vegh

The response of the current account to supply shocks in the context of models that incorporate saving-investment behavior has received considerable attention in the literature. These real models predict that a permanent negative supply shock from an increase in oil prices would result in a current account surplus since the terms of trade deterioration does not affect saving--consumption and wealth decrease by the same amount--while investment falls. The evidence, however, suggests that the current account usually worsens in response to a terms of trade deterioration.

This paper shows that in the context of a monetary model with flexible exchange rates and currency substitution, a current account deficit could arise following a permanent worsening of the terms of trade brought about by higher oil prices. With foreign money available, the public can absorb part of the loss in wealth by holding lower foreign money balances so consumption does not fall by the full amount that wealth does. The terms of trade deterioration leads, therefore, to a decrease in saving. Furthermore, the higher the dependence of the economy on oil, the larger the fall in saving, and the more likely it is that this effect will more than offset the decline in investment, thus generating a current account deficit.

It is also argued that, in the presence of fixed exchange rates, identical results would be obtained even if there were no currency substitution. This is because the constancy of the exchange rate allows domestic money to perform the same shock-absorber role that foreign money plays in the currency substitution model.

"Change of Ownership and Time of Recording in the National Accounts"
by Robert A. McColl

Accounting systems can be and have been designed to monitor a vast array of activities. Each accounting system has its own purpose, such as personnel management, cost control, and work performance reporting. National accounts are designed to monitor the economic performance of economies (and subsets of economies) through analysis of both the real and financial stocks held by the economies and of the flows of these resources.

Any consideration of accounting regimes for the external accounts and the balance of payments in isolation may involve a system of commitment or contingency recordings to provide plausible forecasting scenarios, cash-based recording to monitor not financial but cash flows, or a transactions-based system designed to record real and financial resource flows. The choice of any such system is obviously at the discretion of the authorities.

The choice of a balance of payments accounting system harmonized with the goals and objectives of national accounting implies correlation between the balance of payments and the external accounts of the United Nations' A System of National Accounts. To achieve such harmonization, the time of recording transactions within the system must be consistently applied so that ownership (however approximated) is the measure of economic wealth, ownership is uniquely determined for any occurrence, and the real and financial aspects of any transaction are consistently recorded.

If ownership is not the measure of economic wealth, the usefulness of the accounts for their stated purpose is diminished or lost. If ownership is not uniquely determined for any occurrence, asymmetry may result, with transactors disparately recognizing transactions. Lack of consistent recording of the real and financial aspects of any transaction leads to asymmetry, as the articulated nature of the accounts breaks down. All three factors must consequently be harmonized in the national accounts.

"The Role of the Public Sector in the Market Economies of Developing Asia: General Lessons for the Current Debt Strategy" by Vito Tanzi

The paper starts by sketching a positive theory of public-sector intervention. In this theory it is argued that there is a role that the public sector should play in a hypothetical world and a role that it should play in the real world, and that these two roles are likely to diverge. The hypothetical, or normative, role is likely to justify a larger public-sector intervention than the positive, or real world, role. The reason for this divergence is that in the hypothetical world policymakers and government employees in general are assumed to pursue only the public interest. In reality, however, the individuals who make policy or administrative decisions are likely to reflect various biases.

The paper goes on to a detailed discussion of the actual role of the public sector in nine developing Asian economies. Such issues as the level of public spending (broken down between capital and current), the efficiency of public enterprises, the relationship between public spending and the growth of foreign debt, the level of public expenditure for operation and maintenance, and the role of the tax system in distorting the allocation of private investment are discussed. The basic conclusions of this section are the following. First, these countries have been more successful in accumulating capital than in using that capital efficiently. Second, there has been a worrisome increase in the level of foreign borrowing in several of these countries. This borrowing has resulted from the policy of capital accumulation. The divergence between the cost of borrowing and the rate of return to the investments carried out with the borrowed funds will create progressively more serious difficulties for these countries if they continue with the same policies. The paper emphasizes that some of these countries have started to make changes.

Finally, the paper draws some general lessons for the current debt strategy. The first lesson is that the emphasis on investment is perhaps misplaced. It might not be a bad thing if, for a while, the level of investment was to be reduced in developing countries. In this strategy only clearly productive investment would survive. Second, the paper argues that the savings that would be achieved by reducing the level of investment could be used more productively to upgrade the existing capital stock of the countries. In this way the countries could squeeze a larger output out of the existing capital stock. Third, the paper argues that various structural reforms will have to accompany these two changes. It warns, however, that these reforms are likely to be resisted by powerful vested interests.

"The Debt-Equity Composition of International Investment"
by S. Ramachandran

Capital flows to the nonindustrial countries share three striking characteristics. First, the bulk of these flows is in the form of debt, not equity. Second, the loans are mostly to, or guaranteed by, debtor governments. Third, these debts are largely bank loans, not bonds. This paper examines the economic factors that may be responsible for capital flows assuming these characteristics.

The Modigliani-Miller proposition sets out conditions under which the debt-equity ratio is "irrelevant" to the cost of funds. Extending the analysis to take account of international differences in tax structures shows that under certain circumstances capital would flow from one country to another as debt, not equity. Furthermore, the costs of employing an agent to secure private funding provide an incentive for governments to issue debt. The guarantee by creditor governments of bank deposits may have enabled commercial banks to undercut bonds and so become the primary intermediaries.

One of the proposed solutions to the debt problem involves converting existing foreign debt into equity. Even if sufficient tradable equity is available (which is not the case), the analysis suggests that debt-to-equity conversions can be undone by private market participants. Some conversions could even induce perverse capital flows. The merit of debt-to-equity conversions may lie not in the benefits of equity per se, but because foreign debt is exchanged at less than its contractual value.

"The Residents of an Economy"
by Arie C. Bouter

For the purpose of making policy decisions, the authorities of a given economy need data that reflect the transactions of the residents of that economy, that is, of the entities subject to the laws and regulations of that economy. This paper defines the residents of a given economy as the entities that may be expected to consume goods and services, participate in production, or engage in other economic activities in the territory of an economy on other than a temporary basis, including entities that leave the territory of that economy but do not establish residence elsewhere. The concept underlying this definition of residents is virtually the same as that underlying the definition of residents in the United Nations' A System of National Accounts.

The attraction of maintaining unchanged the concept underlying the definition of the residents of an economy did not, however, play a role in drafting the definition offered in this paper. The main focus of attention was at all times on the factors that determine an entity's residence. Nevertheless, throughout the course of defining the residents of an economy it was clear that the definition of the residents of an economy determines the size of GDP and GNP and that that definition should not be determined by considerations of how this definition might affect the size of GDP and GNP.

"Dependency Rates and Private Savings Behavior
in Developing Countries" by Nicola Rossi

The empirical importance of the relationship between the proportion of a population under 15 and over 65 years of age (the dependency rate) and savings behavior in developing countries is still an open issue. It was suggested by Leff in 1969 that rapid population growth, by increasing dependency rates, can hinder economic development by limiting an economy's ability to mobilize domestic savings. The evidence so far, however, lacks a firm theoretical basis and could be seriously affected by methodological shortcomings related to the basic data.

This paper presents two simple demographic extensions to the basic model in order to clarify the relationship between households' dependency and savings rates. A relationship between expected dependency rates and consumption growth is derived, whose magnitude and direction depend on the consumers' willingness to smooth consumption over time. Therefore, in cases where appropriate rates of return are not observable, the expected path of demographic variables can provide valuable information on the savings responsiveness to changes in the real interest rate. For example, in developing countries, where the capital market is small and usually confined to one central city and wealth is held in the form of consumer durables, rates of return on financial instruments are likely to be largely irrelevant. In such a case, data on future family composition can be of substantial help in estimating savings patterns.

The model is estimated from a sample of 49 developing countries over the period 1973-83. The evidence suggests that expected dependency rates affect consumption growth in the direction predicted by the model.

"On the Statistical Properties of Floating Exchange Rates:
A Reassessment of Recent Experience and Literature" by Shinji Takagi

This paper reviews the statistical properties of the behavior of major currency exchange rates during 1975-86, using daily and monthly data. With regard to time-series properties, the paper shows that efficiency of foreign exchange markets can be consistent with many types of exchange rate behavior, including serially correlated exchange rate changes. The data show that in most cases a random walk characterized the behavior of exchange rates fairly well, but that there was some serial dependence in exchange rate changes, particularly in the monthly data. This may reflect serial correlation in data influencing exchange rates that appear on a monthly or less frequent basis, such as data for most macroeconomic variables.

The paper also examines the properties of the probability distribution of exchange rate changes. It finds that monthly exchange rate changes can be characterized approximately by the normal distribution. For daily exchange rate changes, however, as compared with the normal distribution, there is a larger proportion of extremely large and extremely small deviations from the mean, and a correspondingly smaller proportion of medium-size deviations. One possible explanation for these findings is that exchange rate changes are distributed normally but that their variability changes over time. This hypothesis is consistent with the observation of successive periods of volatility and stability in exchange rates.

The results in this paper imply that the empirical analysis of daily (and other high-frequency) exchange rate data may be especially problematical. If exchange rate movements are subject to a complex determination process that changes over time, it is important to model such changes and to relate them to other changes in the economic environment.

"Financial, Exchange Rate, and Wage Policies in Singapore, 1979-86"
by Ichiro Otani and Cyrus Sassanpour

The paper discusses the unique aspects of Singapore's financial, exchange rate, and wage policies in recent years and attempts to quantify the importance of these policies in influencing macroeconomic variables, including output, prices, exchange rate, and foreign reserves. For this purpose, a simple short-term macroeconomic model was formulated. This model features, inter alia, reserve movements, as suggested by the monetary approach to the balance of payments, the authorities' reaction function that forms a basis for exchange rate policy, an output function that takes into account both supply and demand factors, and a price equation that is essentially derived from stock disequilibrium in the money market. The model was estimated by the two-stage least squares method, using quarterly data during the 1979-86 period, and various dynamic simulations were conducted.

The behavioral relationships were generally well specified, and the estimated model as a whole captured the essential features of the Singapore economy. The major findings of this study are the following:

First, Singapore's exchange rate policy has been largely influenced by the liquidity implications of the authorities' contractionary financial operations and by the external competitiveness of the economy. As a result, the authorities have to strike an appropriate balance between the exchange rate and foreign reserve levels.

Second, the authorities' high-wage policy pursued in the early 1980s to promote a structural shift in favor of capital-intensive industries contributed to a significant loss of external competitiveness and a severe recession in 1985. By extension, moderate wage policies pursued since 1986, together with the sharp depreciation of the exchange rate, are expected to have a significant impact on external competitiveness and on sustaining the growth momentum.

"Macroeconomic Adjustment in Developing Countries"
by W. Max Corden

This paper deals in broad terms with the two parts of the short-run adjustment problem in developing countries: the improvement of the current account and the reduction of inflation. In particular, it seeks to show how the two parts are related. The paper distinguishes between the primary adjustment cost, which is inevitable, and the secondary cost, which results from unemployment and output losses caused by failure to devalue sufficiently, by real wage resistance, by inappropriate use of import restrictions, or by disorderly adjustment. Structural rigidities (i.e., low price elasticities) raise adjustment costs. Present and future costs have also been distinguished.

Adjustment is difficult because, inevitably, there are losers. While no simple conclusion emerges from an analytical paper of this kind, this is one of the main themes. Factoral income redistribution effects of devaluation are important in determining who loses from a combination of expenditure reduction and devaluation. The paper gives examples of sectoral effects of adjustment and suggests that there is a need for sectoral cost-benefit analysis to understand and anticipate the obstacles to adjustment.

The paper also discusses the relation between capital flight and adjustment, in which interest rate and exchange rate policies are crucial.

A fiscal deficit can be monetized and so give rise to inflation. The problem of reducing inflation has been decomposed into two parts, namely, the inflation-tax replacement problem and the price adjustment problem, the latter resulting from various nominal rigidities. Policies of predetermining the nominal exchange rate according to a scale ("tablita") or "heterodox" policies that regulate many prices as well as wages are meant to overcome the latter problem and are analyzed.

The nominal fiscal deficit has various components, notably the money-financed deficit, which is likely to create inflation, and the part financed by foreign borrowing. If real government expenditure and taxes are kept unchanged, raising the proportion financed by the first will reduce the current account deficit at the cost of increasing inflation, while raising the proportion of the second will reduce inflation at the cost of worsening the current account. Reducing real government expenditure or increasing non-inflation taxes can help solve both problems. Domestic borrowing is also likely to worsen the current account and may, in addition, crowd out private investment.

"Exchange Rate Arrangements and Monetary Policy"
by Donald J. Mathieson

This paper examines the relationship between monetary and exchange rate policies by considering the factors that have led the authorities in developed and developing countries in Asia to alter their use of monetary policy instruments and exchange rate arrangements since the mid-1970s.

For these countries, this period has encompassed increased flexibility in exchange rate arrangements, the substitution of monetary for credit policy instruments, major reforms of domestic financial systems, and a growing integration of domestic and external financial markets.

The analysis first examines the extent to which real and monetary shocks, country size, and the degree of goods-market and capital-market integration can explain the evolution of exchange rate arrangements.

It then considers the factors influencing the choice of money and credit policy instruments in order to explain why some developing countries have continued to rely on credit instruments, while many other countries have increasingly relied on monetary instruments. Finally, there is an examination of issues involved in integrating monetary and exchange policies into programs designed to bring about extensive trade and financial market reforms.

"Debt/Equity Swaps"
by Michael Blackwell and Simon Nocera

This paper describes the development of debt/equity swaps in the years following the emergence of the international debt crisis in 1982 and discusses some of the possible advantages and disadvantages offered by such swaps to commercial banks, investing companies, and indebted countries.

For the banks the most important advantage of the sale or conversion of their debt paper is the opportunity it provides for clearing their books of problematic loans or diversifying their credit exposure. The most important disadvantage for the banks is the potential loss incurred on their balance sheets, which may not always be offset against tax.

For investors the main advantage of debt/equity swaps is the possibility of obtaining the currency of a debtor country at a rate that is effectively lower than the official foreign exchange rate. This advantage, however, may be offset to varying extents by restrictions on the type of investments that can be made and on profit and capital repatriation.

Those countries permitting the swap of their external debt obligations for domestic equity have done so because they perceive a number of advantages. These advantages include: the replacement of fixed external payment obligations with a repayment stream that depends on the profitability of the equity investment, the stimulation of growth in export-oriented or import-substituting industries and the concomitant improvement in the country's trade performance, its balance of payments, and, ultimately, its overall external position, and the possible stimulus to the development of local equity markets, which subsequently can provide attractive uses for domestic savings and reduce the motivation for capital flight.

Nevertheless, the financing of debt/equity swaps presents a number of potential problems for participating countries. Probably the most important of these is the fact that as no additional foreign capital is provided directly by these swaps, the resources for any increase in gross investment must come from the domestic economy. In countries in which the economy is operating close to capacity, such investment spending associated with debt/equity swaps can crowd out other domestic expenditure as a result of higher prices or higher interest rates.

"An International Debt Facility?"
by W. Max Corden

A common proposal designed to deal with the developing countries' debt problem is to set up an "international debt facility" that would buy debt at a discount and, by writing down its contractual value, provide debt relief. There are three main parties to the proposed transaction, namely, the debtor governments, the creditor banks, and the owners of the facility. The paper analyzes the central question of how each of the parties would be affected and specifically how costs and benefits would accrue to various parties. Is there an element of foreign aid or of a bank bailout? Might there be some net gain for the world system as a whole?

The paper analyzes the basic case in which the expected capacity to pay of the debtors and the probability distribution around it remain unchanged and in which there is no subordination of debt unsold to the facility to debt acquired by it.

The banks will then gain at the expense of the facility because of the "market price effect": the discount on unsold debt will fall (the market price will rise) as a result of the buyback; this will require the purchase price to be higher than if the discount remained unchanged. The debtor countries will gain at the expense of the facility because of the "ceiling effect": the reduction in the contractual value of the debt lowers the ceiling on what the debtor pays to the facility.

If debt unsold to the facility is subordinated to the written-down debt acquired by it, there might be no gain to the banks at the expense of the facility. If the operation of the facility is combined with conditionality or other arrangements that reduce the risk of a low payout, a loss to the facility to the benefit of the debtors would also be reduced or even avoided.

There is a problem of moral hazard. Debtors have an interest in reducing as much as possible the price at which the facility purchases debt (and hence the extent to which the contractual value is written down). This problem can be overcome by fixing the purchase price above the market price, at a price at some cutoff date before the facility is implemented.

The paper analyzes several reasons why a new institution might be appropriate. It notes that there would be no compulsion for banks or debtor countries to join the scheme. The establishment of such a facility is conceivable if it is on a modest scale, but seems hardly conceivable at present if it would involve the purchase of a significant part of the commercial debt of all the developing countries that currently have problems. A vast international transfer of risk from private banks to governments or multilateral institutions would then take place.

"The Growth of Government Expenditure: A Review of
Quantitative Analysis" by Jack Diamond and Alan A. Tait

This paper reviews the extensive empirical literature on the growth and determinants of government expenditure. The authors identify two major conceptual themes that have been the focus of empirical research on the growth of government expenditure: "Wagner's Law" and the "displacement effect." An overview of the proliferating empirical research based on these speculations reveals that this research has followed two main directions. First, there has been a "vertical" movement manifested in a more rigorous questioning of the data. Second, there has been a "horizontal" movement indicated by a widening of the scope of research.

In the former approach, research has developed from hypothesis formulation to hypothesis testing, and most recently to that of estimation. This latter stage is characterized by an important change of emphasis: instead of asking whether a relationship is verified by the data, the existence of a particular causal relationship is taken to be established and the primary problem is that of assigning values to its parameters. While quantitative research in advanced countries has shown this vertical progression, it has done so on the basis of only a few narrow hypotheses, primarily those emphasizing the strategic importance of per capita income.

In complete contrast, cross-country research, and particularly interstate studies in the United States, has moved away from this narrow formulation following the discovery of income's relatively meager explanatory power. Indeed, the latter research has given rise to two distinct and important developments: emphasis on noneconomic expenditure determinants and the recognition of the importance of disaggregating public expenditure into more homogeneous categories.

Although many of the problems faced in testing hypotheses about the growth in public expenditures have already been mentioned in the literature, the authors doubt that there has been a full appreciation of the magnitude of the difficulties to be overcome. They argue that these problems stem from three main sources: First, underestimation of the data problems; second, the inability of current theory to provide the basis for identifying relevant relationships; and third, the failure to appreciate this limitation. Coupled with the nature of the problem, this failure has meant that most empirical methods inevitably prove inadequate. As a result, the move to the stage of empirical research characterized by the estimation of a rigorously specified model appears ambitious. Rather, it is contended that in the absence of an adequate theory of the decision process involved in public spending, attempts to specify models borrowed from other areas of economics tend to be oversimplifications and rest on dubious behavioral assumptions. Given the grave conceptual and technical problems faced by any rigorous quantitative formulation in this field, the case is advanced for a return to first principles, to the primary stage of hypothesis formulation, and the search for laws of association.

"The Case for Earmarked Taxes: Theory and an Example"
by Ranjit Teja

Earmarking revenues for specific uses is frequently criticized as an unnecessary constraint in the efficient provision of publicly supplied goods and services. Detractors of earmarking portray such provisions as a cause of budget inflexibility and ultimately not amounting to much more than a bald attempt by special interest groups to protect favored expenditures. This paper attempts to redress the balance, emphasizing the welfare-enhancing aspects of earmarking and drawing attention to the possibility that earmarking may be more a mechanism for escaping (rather than a cause of) economic and budgetary inefficiencies.

Although one can think of a number of positive arguments explaining the existence of earmarking, the normative case for earmarked taxes rests fundamentally on the assumption that individuals and groups in society have differing preferences for public and private goods and services. Earmarking allows individuals to express their preferences for public goods with tax dollars--in much the same way they express their preferences for potatoes with outlays earmarked to the production of potatoes--and to resolve their differences in socially desirable ways. The analysis also emphasizes the rule-enforcing aspects of earmarking clauses when there is conflict of interest between bureaucracies and legislatures or when moral hazard forces legislatures to forego socially beneficial expenditures. Where exclusion in public consumption is feasible, earmarking can be seen as an application of the "benefits principle of taxation," with taxes paid by beneficiaries earmarked to the provision of that public good. In this case, an earmarked tax is much like a user charge and differs only in its mode of collection.

The paper also describes the experience of Colombia and argues that, despite shortcomings, the system has not carried earmarking to the point that it imposes significant constraints on efficient budgeting and budget flexibility. In fact, it is suggested that earmarking was set up as a defense against poor budgeting and expenditure control practices.

"Distributional Implications of Government Tax and Expenditure Policies: Issues, Problems, and Methodology" by Thanos Catsambas

This paper examines the conceptual and empirical problems arising in the estimation of the impact of government tax and expenditure policies on income distribution within the framework of adjustment programs. Special emphasis is placed on issues related to the measurement of the impact of adjustment programs on the economic position of poverty groups.

The paper discusses the conceptual issues related to the time frame, the difference between primary and secondary income distribution, the distinction between nominal and real income, the choice of the appropriate unit of observation, and the measurement of the informal sector. The counterfactual argument is also discussed, and it is argued that its usefulness is limited by empirical constraints, especially within the short term. After a discussion of the pros and cons of using a general equilibrium methodology, the paper concludes that general equilibrium models, which use a stylistic split of income between factors of production, may not serve well the requirements of a comprehensive distributional investigation, especially one encompassing poverty groups.

The measurement of net fiscal incidence is discussed in greater detail, and emphasis is placed on the expenditure side, which is shown to be a more effective tool for income redistribution than the tax side. It is argued that the functional classification of expenditures is more relevant for the evaluation of distributional considerations than the economic classification, and a grouping is proposed that arguably best reflects the differential impact of public spending on real incomes.

The paper concludes that more research is needed on expenditure incidence, which is currently supported by only a limited theoretical framework.

"The Strategy of Debt Buy-Backs:
A Theoretical Analysis of the Competitive Case"
by Carlos Alfredo Rodriguez

This paper analyzes the strategy of a debtor country repurchasing its debt at market prices. It is assumed that the debtor country has a fixed trade surplus that it devotes fully to the service of the outstanding debt. Excess debt is defined as the difference between total outstanding debt and that amount that can be fully serviced by the trade surplus. The country also has an amount of additional cash per unit of time (probably coming from a donation or from sales of domestic assets) that it uses to repurchase outstanding debt at the going market price. The creditors are competitive, have full information about the debtor country strategy, and are willing to sell debt at the going market price. Since the market price at which transactions are carried depends on actual and expected future developments, those expectations are assumed to be rationally formed.

The main result, for the case in which unpaid interest is rolled over, is that a strategy of announced debt repurchases at market prices, under competitive conditions and rational expectations, will allow the country to recover its excess debt only at par value. When debt holders are myopic with respect to future debt repurchases, a strategy can be devised by which all excess debt is repurchased at a price equal, in present value, to that prevailing before the policy was announced.

In the absence of interest rollover, a case that may happen if an agreement is reached by which debtor countries pay only a stipulated fixed amount for each unit of time (e.g., a fraction of the trade surplus or exports), any constant rate of debt repurchases will succeed in bringing debt down to the sustainable level where the fixed payment equals the service at competitive interest. The paper shows that the present value of the required purchases falls as the rate of purchase for each unit of time decreases.

"Social Security Issues in Developing Countries:
The Latin American Experience" by G.A. Mackenzie

This paper surveys the major economic, financial, and administrative issues facing social security systems in Latin America. In recent years, the finances of the larger systems, which are an important component of general government operations, have come under serious strain as a result of the generous level of their benefits, broad coverage, the maturation of the pensions component of the system, the decapitalization of reserves, and the erosion of the revenue base. The systems' financial difficulties have contributed to public sector financial disequilibria. Measures to improve their finances have included the less than full and timely indexation of benefits and delays in benefit processing, as well as significant increases in the rates of payroll and other taxes earmarked for the systems.

The smaller systems, whose coverage is generally confined to the salaried work force of the larger cities, have not yet had to confront these difficulties. Nonetheless, their expenditure could increase dramatically as the pensions component matures and pressures to increase coverage intensify. Because benefits for each insured person are relatively generous and the revenue base is narrow, broader coverage will require that benefits be scaled back.

The majority of Latin American public pension systems are financed on a pay-as-you-go (PAYG) basis. There are some advantages to funding, but in the Latin American context the case against PAYG is not compelling. To realize the advantages of funding, the systems' reserves must not be used to finance an increased public sector deficit.

Demographic trends do not portend a substantial increase in the dependency ratio in the next ten-to-fifteen years, but in subsequent years the ratio could rise sharply. In the countries with young systems, this will reinforce the effects of pension-plan maturation to intensify upward pressures on expenditures.

High and variable rates of inflation have caused substantial variation in real benefit levels and have created strong incentives to delay remittances of payroll taxes. Social security systems are shown to remain vulnerable to inflation even under full and frequent indexation of benefits. In respect of administrative issues, administrative costs are found to be generally high, in part because of bureaucratic incentives that militate against rationalization of benefits expenditure.

"Stabilization and Growth in an Open Islamic Economy"
by Abbas Mirakhor and Iqbal Zaidi

A number of studies have shown that monetary policy can be used to stabilize an economy that adopts an Islamic financial system. Until now this conclusion has been based on a closed economy model. This paper expands and extends the consideration of stabilization and growth questions to an open economy whose banking system operates on the basis of risk and profit sharing.

A simple general equilibrium model is developed to illustrate how and through what channels monetary policy alters rates of return on financial and real assets, thereby affecting investment, output, and the balance of payments. This exercise shows that although the authorities lose the ability to set directly financial rates of return, and monetary policy is constrained both by substitution possibilities among domestic assets and by offsetting international capital flows, the authorities can alter the rate of return on physical capital, thereby affecting investment and output.

The paper also investigates the long-run implications of the adoption of Islamic banking for international capital flows and sheds some light on the capacity of an Islamic economy to adjust to certain macroeconomic disturbances. It concludes that, to the extent that borrowed external resources (through risk- and profit-sharing modes) are channeled into productive investments, such investments can be expected to generate a stream of returns at least sufficient to repay the foreign loans. Furthermore, an Islamic financial system has the capacity for better adjustment to macroeconomic disturbances that require the shifting of resources from the traded to the nontraded sector than does the conventional interest-based system.

"MULTIMOD: A Multi-Region Econometric Model"
by Paul Masson, Steven Symansky, Richard Haas, and Michael Dooley

MULTIMOD is an econometric model designed to assist in the analysis of how industrial country policies affect macroeconomic variables in both industrial and developing countries. It is a continuation of work undertaken by the Fund staff in recent years on models of world trade and of macroeconomic interactions.

The model focuses on the transmission of policy effects and in this respect accords well with the Fund's surveillance role over the policies of its members. More generally the model can be used to trace the effects of changes in the external environment influencing industrial and developing countries.

The model at present includes individually three industrial countries--the United States, Japan, and the Federal Republic of Germany--and two blocks of the remaining industrial economies, one comprising the other Group of Seven countries (France, the United Kingdom, Italy, and Canada), and the other the smaller industrial countries. It divides the rest of the world into high-income oil exporters and developing countries. The model gives quantitative estimates of how changes in economic variables affect the prices and volumes of international trade, exchange rates, interest rates, and the flows of financing to developing countries.

These interactions depend on a number of parameters, including the behavior of prices and activity in individual countries, the responsiveness of expenditure to changes in financial conditions, the degree of openness to trade, and the reaction of trade to changes in relative prices. These parameters are estimated through the use of historical data extending back in most cases to the 1960s. The paper discusses how the estimates were obtained and presents some illustrative simulations of monetary and fiscal policy changes in industrial countries, of increased financing flows to developing countries, and of a decline in the world price of oil.

"The Relative Impact of Income and Consumption Taxes"
by Hirofumi Shibata and Aiko Shibata

This paper attempts to ascertain what categories of people will be affected, and how, when a consumption tax replaces an equal-yield income tax. This question has been neglected in the past. Most theorists casually presume that such a change in taxes will make savers better off and consumers worse off and then proceed to examine which tax ought to be used to satisfy the usual normative criteria.

On the basis of the life-cycle model, the paper finds that the answer is more complex. A consumption tax instead of an income tax will clearly benefit those whose saving/income ratios under the income tax are greater than the social saving/income ratio, while those whose saving/income ratios are smaller than the social ratios under the consumption tax will surely be worse off. The authors also determine that these conditions are in each case sufficient to determine the direction of change, but are not necessary. Some people can be better off and others worse off without these conditions holding, since differing net-of-tax interest rates mean that each individual's saving/income ratio changes according to the tax regime. The greater the interest elasticity of saving, the larger is this "substitution effect."

In addition, the shift in the tax regime generates different "income effects" among taxpayers because differing earning patterns relative to intertemporal consumption preferences mean that lifetime tax burdens vary under the income tax. The greater the tax revenue collected, the larger the income effect for each taxpayer, given tastes and income earning patterns. This income effect alters the saving/income ratio even if the net-of-tax interest rate remains unchanged.

Consequently, when their interest elasticities of savings as well as the amount of tax being collected are large, there exists a potentially large group of people whose saving/income ratios are smaller than the social ratio under the income tax and greater than the social ratio under the consumption tax. The study concludes that this difficulty is essentially the same as that encountered in constructing the "correct" cost of living indices when relative prices change over the periods being compared.

"Urban and Rural Household Savings in China"
by Yingyi Qian

This paper investigates both theoretically and empirically household savings behavior in China. Starting with a critical review of previous studies of the subject, it analyzes factors shaping the contemporary Chinese economy and influencing Chinese household savings behavior. Different motives are presented for saving in the rural sector and in the urban sector, and a separate investigation of the two sectors is carried out.

Unlike previous studies, models using urban time-series data in this paper explicitly incorporate possible regime shifts within the 30-year period under consideration. Theoretical justifications for the regime shifts are provided, and empirical results are robust, showing strong evidence to support the specification.

Panel data on rural income and savings are used to estimate the rural savings functions, which consistently show much larger responses of savings to changes in current income, most of which reflect a high marginal propensity to save out of transitory income. Though very rough and tentative, international comparisons show that China's household-savings propensity has increased from the lower end to the higher end of the international spectrum since the start of economic reforms in the late 1970s.

The results in this paper indicate that one cannot reject through econometrics the hypothesis that recent increases in household savings have been voluntary rather than forced by shortages of consumer goods. A more sophisticated model incorporating both regime shifts and repressed inflation is needed to test these hypotheses--which have potentially different implications for future savings behavior--directly against each other.

"The Fiscal Role of Price Stabilization Funds:
The Case of Cote d'Ivoire" by Christian Schiller

The instability of world market prices of primary commodities is well known. Many countries have attempted through marketing boards and stabilization funds to insulate domestic producer prices from fluctuations in world market prices. Frequently these agencies have played an important role in the country's public finances by generating from their stabilization operations sizable surpluses that were used to finance government expenditure. The paper illustrates the important fiscal aspects of a price stabilization fund by examining the operations and experience of the Caisse de stabilisation et de soutien des productions agricoles (CSSPPA) in Cote d'Ivoire during 1975-85. The stabilization surpluses of the CSSPPA average 7 percent of GDP during this period, and the bulk of these surpluses was transferred to various government agencies or spent by the CSSPPA on behalf of the Government.

The paper discusses some of the issues that determine whether a price stabilization fund should be in the private or in the public sector. It argues that shifting the ownership, control, and management of a price stabilization fund from the government to producers and exporters would separate domestic stabilization of export goods from their implicit taxation, but would not necessarily lead to a decreased share for the government in the country's export receipts. In investigating the resource mobilization role of the fund, the paper reviews the arguments put forward to justify export taxation in developing countries, but concludes that there are good reasons to believe that Cote d'Ivoire's cocoa and coffee exports were overtaxed in the period under review. In analyzing Cote d'Ivoire's producer price policy, the paper argues that while the fund has achieved some degree of producer price stability, it has not as yet successfully stabilized producers' income. From a macroeconomic point of view, by stabilizing producer and export prices, the fund shelters private demand only from external shocks that originate in price changes. This explains why the fund's price stabilization efforts have tended to sharpen rather than blunt export stimuli in recent years. Finally, the paper argues that, in general, reliance on price stabilization surpluses, which are inherently unstable and temporary, for fiscal adjustment tends to divert attention from the need for durable adjustment measures.

"A Model of the U.S. Current Account"
by Steven V. Dunaway

Within a relatively short span of time during the 1980s, the U.S. current account balance shifted from a small surplus to deficits of unprecedented magnitudes. This paper presents an econometric model of U.S. current account transactions. The model is used to analyze the major factors contributing to the deterioration of the U.S. external position and to examine the sensitivity of the U.S. current account balance to changes in its major determinants.

Results from the model's analysis of sources of changes in the U.S. trade balance suggest that roughly two thirds of the \$87 billion increase in the merchandise trade deficit during 1981-84 reflected changes in the price competitiveness of U.S. producers and changes in the terms of trade, both of which were related to the rise in the value of the dollar. The remaining portion is largely explained by faster economic growth in the United States relative to other countries. A further deterioration in the trade balance of \$32 billion in 1985-86 was largely attributable to relatively stronger U.S. economic growth. Declining price competitiveness, reflecting the lagged impact of the dollar's previous appreciation, was a negative factor in 1985; however, the competitive position of U.S. producers improved in 1986, limiting the rise in the deficit.

An analysis of the sensitivity of the current account model to changes in some of its key exogenous determinants indicates that, in response to a real exchange rate change, improvement in the current account balance largely stems from an improvement in the trade balance. Over time, however, a larger share of the change in the current account is accounted for by an improvement in the services balance, as a less rapid buildup of external debt results in lower portfolio investment income payments. Alternative exchange rate scenarios are used to illustrate the importance of the magnitude and timing of changes in exogenous determinants on the path of the current account balance, largely owing to their influence on the accumulation of foreign debt. The results also suggest that a reduction in the level of U.S. economic activity would produce a somewhat larger improvement in the U.S. current account than a similar increase in the level of activity in the rest of the world.

Finally, the model is used to illustrate the possible impact on the U.S. current account deficit of the real depreciation of the dollar since early 1985. The results suggest that the decline in the real value of the dollar contributed to a significant improvement in the current account balance, on the order of \$10 billion in 1985, \$50 billion in 1986, and around \$130 billion in 1987 relative to what it otherwise might have been.

"Statistical Issues of Debt Conversions"
by Padej Sukachevin

This paper examines two aspects of debt conversions. First, it discusses general aspects of secondary market activities for transactions involving developing countries' bank debt. Second, it analyzes the monetary, balance of payments, and fiscal impact of debt conversions. The paper uses a simple debt conversion scenario in which resident or nonresident non-bank investors are assumed to purchase a country's bank debt from banks in a secondary market and to exchange the debt claims with the debtor country's central bank for local currency, which is then used to acquire equity or financial instruments.

If the debtor country's central bank allows debt to be exchanged for local currency at full face value, the country's outstanding debt is reduced by its full face value, while foreign equity investment increases by the same amount in local currency. If, however, the central bank allows debt to be exchanged for local-currency funds at less than the full value of the debt, it earns an amount equal to the differential between its claim on the debtor entity and its liability to foreign investors. In both cases debt conversions have reduced the country's external debt by its full face value, but in the second foreign equity investment has increased by less than the full face value of the debt.

The paper also shows that, if debt conversions involve resident investors, the capital account of the balance of payments will record a decrease in foreign assets equal to the value of debt claims. This amount corresponds to a decrease in the country's foreign-currency-denominated liabilities. Because the recording of a country's balance of payments is based on a transaction value concept, however, the difference between the central bank's claim on the country's debtor entity and its liability to nonresident investors is recorded as a valuation adjustment to the increase in stock of direct investment liabilities.

Finally, the paper analyzes the impact of debt conversions for the government's fiscal deficit and its related financing requirements. It concludes with a discussion of the implications of debt conversion for reports on debt statistics.

"Controlling Inflation: The Problem of Non-Indexed Debt"
by Guillermo A. Calvo

The paper studies models in which the monetary and fiscal authorities attempt to maximize the welfare of the "representative" individual. The paper focuses on solutions in which the government is unable to pre-commit its future policy (or actions).

The paper shows that a policy aimed at controlling inflation may encounter serious difficulties if credit contracts are not fully indexed to the price level. It focuses on the case in which the government issues non-indexed public debt and demonstrates that such a case may lead to more than one equilibrium solution. Since inflation and welfare differ across equilibria, where there are two equilibria, one with relatively low expected inflation and, hence, a low nominal interest rate and the other with relatively high expected inflation and a high nominal interest rate, the one displaying the highest inflation yields the lowest welfare. The paper considers these issues in terms of both ad hoc models and models with firmer microeconomic foundations. Particular attention is given to debt indexation, because it has been tried out in practice and is one of the possible solutions to the above problem.

In the context of the models, the paper is able to show that the equilibrium solution with debt indexation dominates any of the equilibrium solutions attained without indexation. This result has potentially important implications for stabilization programs, given that there seems to be the generalized presumption among economists and policymakers that, contrary to the results of this study, indexation may stand in the way of a successful stabilization program.

"The Simple Analytics of Debt-Equity Swaps and
Debt Forgiveness" by Elhanan Helpman

Debt conversion schemes are one of the most widely implemented solutions to the debt crisis. These typically specify the conditions for the exchange of debt for domestic assets, the participants in such an exchange, and any longer-term rights and obligations.

A central idea behind such schemes is to take advantage of secondary market discounts on existing debt. This paper develops a simple analytical framework that can help clarify some of the important implications of such schemes.

The paper concludes that the costs and benefits of these schemes are not clear cut. Assuming that the parties concerned are the residents of the debtor country and foreign (not domestic) residents, some of the conclusions suggested by the framework are the following:

While small amounts of debt can be swapped for equity on terms that benefit both parties to the transaction, both do not benefit in all cases. The benefits depend upon the alternative investments available to residents and nonresidents and their attitudes toward risk-taking.

If many creditors are acting independently, there is a unique price at which the swap can be carried out. The larger the swap, the higher this price will be.

In some cases with many creditors, swaps that could benefit both parties will not take place without official assistance.

A buy-back with debt forgiveness may be very costly to the debtor, with the major part of the benefits going to the creditors.

Debt-equity swaps can either increase or decrease investment in debtor countries.

In general, the benefits of debt conversion schemes to either party in the transaction are an empirical issue.

"Stock Prices, Real Exchange Rates, and Optimal
Capital Accumulation" by Robert G. Murphy

The 1980s have been characterized by large swings in real exchange rates and equity prices in many countries. These movements have been described as excessively volatile and have been interpreted by some analysts as evidence that exchange rates and equity prices have diverged from market fundamentals. This paper takes another view, interpreting such movements as reflecting the outcome of optimal economic decisions by households and firms in response to changes in fiscal policies or world interest rates. In particular, the paper develops a simple model of an open economy in order to analyze the dynamics of the real exchange rate, the price of equity, and investment.

The analysis demonstrates how changes in fiscal policies or world interest rates can generate sustained movements in real exchange rates and equity prices simply because investment requires scarce resources. Interpreting such movements as evidence of market inefficiencies would be incorrect since adjustment in the model is driven entirely by equilibrium in asset and goods markets. The results, however, do indicate that a stable and consistent set of fiscal policies can play an important role in preventing unnecessary volatility in real exchange rates and equity prices.

One general feature of the analysis emerges from the comparison of the effects of temporary changes in fiscal policies with the effects of permanent changes in these policies. While a temporary policy change is in place, the real exchange rate (defined as the price of nontraded goods in terms of traded goods) and the price of equity will adjust in the same direction. Alternatively, changes in policy that are expected to be permanent will lead to opposite movements in the real exchange rate and the price of equity as the economy adjusts toward long-run equilibrium. This suggests that historical episodes of real appreciation accompanied by surging equity markets may be associated with fiscal policies that are expected to be short-lived.

The results also suggest important qualitative differences in adjustment for a given change in the government's budgetary stance depending on how the change is brought about. For example, a reduction in the government's budget deficit will have quite different effects on the price of equity and the real exchange rate depending on whether the reduction is achieved through cutting spending or raising taxes. In addition, a given cut in government spending will have different effects depending on the breakdown in spending between traded and nontraded goods.

"The Incidence and Efficiency Costs of Corporate Taxation When
Corporate and Noncorporate Firms Produce the Same Good"
by Jane G. Gravelle and Laurence J. Kotlikoff

This year marks the twenty-fifth anniversary of Arnold Harberger's celebrated model of the corporation income tax. While the model has been enormously useful as an analytical device for studying two-sector economies, its usefulness for understanding the incidence and excess burden of the corporate income tax remains in question.

This paper presents a two-good (sector) model with corporate and noncorporate production of both goods. This mutual production model has three productive factors: capital, labor, and managerial input (entrepreneurial input in the case of noncorporate firms). Those agents who are most productive as entrepreneurs will establish their own firms. Entrepreneurs manage their firms solely by themselves, and their firms may be quite small. In contrast, corporations must operate at greater than a minimum scale. This minimum scale requirement insures that the corporate sector will not disappear in the presence of a corporate income tax.

The incidence of the corporate tax in the mutual production model can differ markedly from that in the Harberger Model. A hallmark of Harberger's corporate tax incidence formula is its dependence on differences across sectors in elasticities of substitution between capital and labor. In contrast, the incidence of the corporate tax in the mutual production model may fall entirely on capital, regardless of sectoral differences in substitution elasticities.

The difference between the two models in the deadweight loss from corporate taxation is even more striking. In one version of the mutual production model, the deadweight loss is over ten times larger than in the Harberger Model. In the Harberger analysis, only the difference in the average corporate tax in the two sectors is distortionary, while the entire tax is distortionary in the mutual production model.

The much greater substitution elasticity in demand for corporate and noncorporate products in the mutual production model appears to explain much of the difference in excess burden between the two models.

"Does the SDR System Generate Permanent Resource Transfers"
by Warren L. Coats, Jr., Reinhard W. Furstenberg, and Peter Isard

The paper presents an analytic framework for evaluating the resource transfers that take place in the SDR system. The analysis focuses on the exchanges of real resources (goods and services) and financial resources (financial assets) that may result from the allocation or use of SDRs. The implications of an exchange of one type of resource for another depend on whether the present discounted values of the two types are equivalent. Permanent resource transfers are defined as occurring when exchanges do not involve equivalent quid pro quos. Typically, the occurrence of permanent resource transfers is associated with grants or loans at concessional interest rates.

Many countries have maintained holdings of SDRs at levels considerably lower than their cumulative allocations. Such prolonged net use of SDRs raises the issue of whether the SDR system has generated permanent resource transfers. In addressing this issue, permanent resource transfers that may result from the prolonged net use of SDRs must be distinguished from permanent resource transfers that may arise from the allocation of SDRs.

The paper argues that the net use of SDRs does not involve permanent resource transfers unless the SDR interest rate is uncompetitive with yields on other reserve assets--that is, unless the SDR interest rate differs from yields on other reserve assets by amounts that do not compensate for differences in the characteristics of the assets. Moreover, insofar as the SDR interest rate is competitive, the allocation of SDRs does not give rise to permanent resource transfers unless holding SDRs is perceived as risky.

These conclusions must be reconciled with the fact that, for many countries, SDR allocation provides resources at terms more favorable than the costs of borrowing or earning reserves. Insofar as the SDR interest rate is competitive and holding SDRs is not risky, the resource gain or savings for a country from its own individual allocation of SDRs does not impose losses on other countries. Instead it represents either a welfare gain for the international economy as a whole or a resource savings offset by losses arising from the country's transactions outside the SDR system. The extent to which the SDR system can provide welfare gains for the international economy as a whole requires further analysis.

"Tax Policy and Business Investment in the United
States: Evidence from the 1980s"
by Robert Corker, Owen Evans, and Lloyd Kenward

The behavior of fixed investment in U.S. business in the current economic expansion has differed from its behavior during similar phases of earlier upswings. Investment surged in the early part of the expansion before declining in the later stages. This took place against a background of sweeping changes in tax legislation, beginning with the measures introduced in the Economic Recovery and Tax Act of 1981, which expanded tax incentives for investment. Subsequent tax policy became progressively less generous in its treatment of investment. By the time of the Tax Reform Act of 1986, public policy had shifted from encouraging investment through tax concessions to a less interventionist approach, under which the tax code was to be as neutral as possible.

This paper develops a model to explain the behavior of business fixed investment--disaggregated into plant and equipment investment and investment in nonresidential structures--during the present economic expansion. The explanatory variables are output, the cost of capital, and the capital stock. In turn, the cost of capital is defined in terms of interest rates, the cost of equity financing, expected inflation, and tax factors; it is through the tax variables that the direct impact of changes in tax policy on investment is examined.

According to the simulations conducted with the model, the most important factor behind the rapid rise in business fixed investment in the first phase (1983-85) of the current economic expansion was the robust growth of output, which accounted for roughly three fourths of the total rise in business fixed investment. Among the other factors, the steep decline in the cost of funds was the most important, while changes in tax policy made an appreciable but relatively small contribution. The main reason behind the stagnation of investment in producers' durable equipment from late 1985 to mid-1987 was the sluggish growth of output over that period, although the withdrawal of tax concessions under the Tax Reform Act had important secondary effects. The decline in investment in nonresidential structures during the same period is partially attributable to sluggish output growth and the impact of the plunge in world oil prices on petroleum drilling and mining. A significant portion of that decline remains unexplained, however, raising the possibility that the withdrawal of tax concessions under tax reform may be having a more pronounced effect on investment in nonresidential structures than the simulations indicate.

"Multilateral Developing Country Debt Rescheduling Negotiations:
A Bargaining-Theoretic Framework" by Jeremy Bulow and Kenneth Rogoff

In sovereign debt contracts, borrowers are unable to offer collateral in the traditional sense. A country repudiating its foreign debts mainly risks losing its future access to world capital markets and its ability to conduct trade efficiently. On the other hand, as lenders gain no direct benefit by cutting a debtor off from world markets, their bargaining power is severely limited. Moreover, in punishing a debtor who repudiates his debt, lenders may also be harming their compatriots. When a debtor is cut off from world goods markets, consumers and exporters in creditor countries also suffer. This "trading externality" gives creditor-country governments a vested economic interest in rescheduling negotiations and can give rise to a conflict of interest among creditor-country citizens, pitting investors who want to enforce repayment against consumers and exporters who want to maintain normal trade relations.

Though it is probably impossible to develop a formal model that captures all the complex elements of rescheduling developing-country debt, simple bargaining models may nevertheless yield some useful insights. This paper develops a simple framework for analyzing multilateral debt rescheduling negotiations. The analysis illustrates how various factors affect the relative bargaining power of bank lenders and debtor-country and creditor country governments. For example, during periods in which the debtor country enjoys large gains from international trade, it is willing to make larger debt repayments. Conversely, a rise in world interest rates diminishes creditor banks' bargaining power, since lenders become impatient to reach an agreement when their opportunity costs of funds are high.

If creditor-country taxpayers have sufficient interest in maintaining normal levels of trade with debtor countries, they may be induced to make contributions to facilitate agreements. These contributions benefit both the debtor countries and bank lenders. If lenders and borrowers both substantially anticipate creditor-country contributions, however, debtor countries will be the main beneficiaries.

"Debt Relief and Adjustment Incentives:
A Theoretical Exploration" by W. Max Corden

This paper analyzes the argument that creditors may benefit by granting debt relief since it increases the incentive of a debtor country to make an adjustment effort (to invest). The paper presents a model in which, when the debt service obligations become due, the country has a minimum consumption level and a level of output determined by the amount of investment in the past. "Capacity to pay" is the excess of output over the minimum consumption level. If capacity to pay is below the debt service obligations, endogenous debt relief will be granted. If investment in the earlier period had been higher, capacity to pay later would be higher and less endogenous debt relief would be needed.

In this model, the gains from extra output go wholly to paying debt service until endogenous relief becomes unnecessary. At this point, the gains go to the country itself. Thus, in certain circumstances the country may have less incentive to adjust in the earlier period if there is no possibility of endogenous relief later.

It may thus be in the interest of creditors to grant some exogenous relief (i.e., reduce the contractual value of the debt) to give the country more incentive to adjust and so avoid further endogenous relief. For the creditors, half a loaf is better than none. This is the pro-incentive argument for debt relief. The paper shows in detail that the argument depends on various conditions and, above all, on the capacity to pay concept. It is also shown, however, that debt relief could have a disincentive effect, essentially because it reduces the need to generate resource transfers. Hence there are opposing incentive effects at work.

"Trade and Investment Performance Under Floating Exchange Rates:
The U.S. Experience" by Martin J. Bailey and George S. Tavlas

This paper assesses the causes of exchange rate variability and examines its consequences for trade and investment. Contrary to the arguments of several scholars, the paper fails to find either conclusive theoretical proof or clear empirical evidence that exchange rate variability (as measured by either short-term volatility or long-run misalignment) has an effect, harmful or otherwise, on overall levels of international trade.

After reviewing the theories and evidence on this issue, the paper goes on to consider the impact of exchange rate variability on direct foreign investment. It summarizes and amplifies the scant theoretical literature on this issue and proceeds to test U.S. data for the presence of such an impact. The results indicate that, for the U.S. economy, exchange rate variations have not had significant effects on trade and investment. Of course, it is doubtful whether a fixed exchange rate regime would have been able to survive during a period that has included such disturbances to the world economy as the two oil price shocks.

The results on investment are exploratory and may be revised if progress is made on the difficult problems of specification involved. The issue is empirical and must eventually be resolved by testing the various claims against the data.

"Debt and Conditionality Under Endogenous Terms of
Trade Adjustment" by Joshua Aizenman and Eduardo Borensztein

This study identifies conditions under which renewed lending may benefit both industrial and developing countries. It evaluates how endogenous terms of trade movements affect conditions for beneficial lending. This aspect of the problem has special relevance because a competitive international banking system does not internalize terms of trade effects and may not revitalize lending for investment purposes, even when renewed lending is socially desirable.

The relevance of terms of trade effects to the debt situation depends mainly on the existence of a less than perfectly elastic demand for developing countries' exports. This condition appears to be broadly confirmed by available econometric studies. In addition, developments in recent years in the non-oil commodity markets in debtor countries' manufactured exports demonstrate the connections between changes in terms of trade and the debt situation.

The paper specifies a model of the international credit market characterized by insolvency on the part of debtor countries. It is assumed that debtors and creditors negotiate contracts that offer increased lending, provided the debtor country accepts some conditions for the use of the resources and for the attachment of output to repayment. In the absence of terms of trade effects, if the marginal productivity of capital in the developing countries exceeds that in the industrial countries, there exists a region of Pareto-improving contracts.

With endogenous terms of trade adjustment resulting from limited goods substitutability, the Pareto region is enlarged for strict conditionality contracts (contracts that require high marginal propensity to invest in the debtor country) and is reduced for contracts requiring low marginal propensity to invest on the part of the debtor country. The paper also investigates an alternative contracting framework in which investment is carried out optimally by the debtor country and contrasts its results with the former case.

"Analysis of Self-Financed Buy-Backs and Asset Exchanges"
by Michael P. Dooley

Self-financed buy-backs of external debt generate two changes in a country's external position. The contractual value of its external debt is reduced, and the country's ability to service remaining debt is also reduced. The net result of such buy-backs can be summarized as follows.

First, the market price of remaining debt either remains unchanged or falls following the auction. This occurrence is in contrast to the more familiar result that the market price of debt rises following buy-backs financed by third parties.

Second, the contractual value of the country's external debt is reduced by some multiple of the value of assets sold to finance the buy-back. In this sense the debtor benefits.

Third, the same results generally hold if assets are pledged as collateral for a new security that is exchanged for old debt. If the new debt is identical to the old debt except for the collateral, the results are identical to a buy-back financed by the sale of assets. The apparent leveraging of assets by using them as collateral is of no value to the debtor because the share of new debt not backed by collateral is simply exchanged "one for one" for old debt.

"Policy Assignment Strategies with Somewhat Flexible Exchange Rates"
by James M. Boughton

This paper considers how financial policies in large countries might be directed if those countries care about both exchange rates and current account balances and choose not to adopt explicit exchange rate targets. The paper argues that policies would be more effective in the medium term by focusing directly on the current account than by using the exchange rate as an intermediate target, and that fiscal policy is more effective than monetary policy for this purpose. The problem with aiming monetary policy at an intermediate exchange rate target is that such policies have little effect on current account balances. Monetary expansion may strengthen a country's current account by depreciating the exchange rate, but this effect is likely to be largely offset by the stimulus that monetary growth imparts to the demand for imports.

The theoretical models examined in the paper suggest that these limitations might be overcome in the following way. First, countries could try to reach agreement on an appropriate range for real interest rates and on an aggregate medium-term fiscal stance consistent with that level. Second, they could seek agreement on general objectives for current account balances and on the relative stances of fiscal policy that would be consistent those positions. Third, each country could use monetary policy independently to pursue domestic objectives, such as inflation control. Because of the short-run inflexibility of fiscal policies, this outline for cooperation would be impractical for fine-tuning but might be appropriate over the medium term.

"Modeling Buffer Stock Money - An Appraisal"
by P.A.V.B. Swamy and George S. Tavlas

In recent years, a large number of theoretical and empirical studies have analyzed the role of money as a buffer asset. Money has been assigned the buffer stock role of absorbing temporary discrepancies between purchases and sales because, being the most liquid of all assets, it performs the buffer function best. Unforeseen changes in the money supply are initially absorbed in money balances and, over time, are used to purchase a wide spectrum of assets and goods as real balance effects are set in motion. Nevertheless, as this paper shows, the attempts to model the buffer stock role have led to certain incoherencies.

The paper shows that published econometric models of buffer stock money are incompatible with the theory of buffer stock money. In some instances the empirical application has been logically inconsistent. Moreover, empirical models of the buffer stock notion are likely to magnify certain problematic attributes of conventional money demand models that the buffer stock concept is designed to remedy. The paper also points out problems of statistical inference associated with the inversion of conventional money demand models.

"Asset Prices and Time-Varying Risk"
by Robert P. Flood

Assets are claims to income streams that vary in size, in correlation with each other, and in relative desirability. The price an individual will pay for an asset depends on his beliefs about the properties of the income stream during the period he plans to hold it. In pricing an asset, the typical model takes into account constant and time-invariant distributions of shocks to an asset's income stream. The crash of stock prices in the last quarter of 1987 has demonstrated dramatically that asset markets are not subject only to time-invariant shock distributions, but in fact experience periods of turbulence interspersed with periods of quiescence. This paper analyzes the modeling of asset prices in an environment in which risk varies over time and individuals who price assets understand this fact.

Once variations of risk over time are allowed for, individual decisions about asset pricing involve both the expected income stream on the asset and expected future variations in the riskiness of the asset. Analysts have long understood that risk is undesirable, but have only recently developed tools that allow formal and useful statements of precisely how undesirable it is and how the current asset price "ought to" respond to changing perceptions of future risk.

In 1987 Andrew Able developed a method for formally resolving the problem of how to treat an asset's riskiness as a risky variable itself. This paper presents results similar to his in a simple and familiar setting. It develops an asset-pricing model based on a simple assumption concerning individual preference for consumption versus saving. Two illustrative examples are presented demonstrating how to use the model in an environment of time-varying risk. If the model is applied to asset pricing during a fiscal reform period, it concludes that the beginning of a period of weak coordination between government spending and taxing policy is likely to be good for the stock market.

"Fiscal Dimensions of Trade Policy"
by Ziba Farhadian-Lorie and Menachem Katz

This paper reviews the fiscal dimensions of trade taxes, a major instrument of trade policy. It shows that developing countries rely heavily on trade taxes because of low per capita income reflecting a narrow domestic tax base and a rudimentary tax administration and because of trade deficits and overvalued exchange rates.

The paper demonstrates why trade taxes would generally not be part of an optimal tax package. The origin or destination of commodities should not be a taxation criterion. Optimally, trade taxes should be harmonized with domestic taxes, and for production efficiency, inputs and intermediate goods should not be taxed. Only to the extent that domestic taxes are not available should imported inputs and intermediate goods be considered as taxable together with imports of final goods, which should be taxed at differential rates to minimize the welfare loss.

Given the distortions created by trade taxes, this paper discusses their effectiveness as an instrument for correcting macroeconomic imbalances. Unlike other fiscal policy measures that affect the external balance indirectly through the saving-investment mechanism, trade taxes affect the external balance directly through their effect on relative prices and indirectly through changes in government saving.

While trade taxes may be an appealing instrument of trade and fiscal policies, the distortions that they create for resource allocation and the welfare loss they involve put them at a disadvantage compared with other fiscal and exchange rate policies. If the fiscal imbalance is to be reduced through higher revenue, this revenue should be raised in such a way as to minimize distortions. Trade taxes would normally not be part of such revenue measures. To correct external imbalances, the use of the least distortive and most effective instrument would again exclude trade taxes.

The paper concludes that, considering the heavy reliance of developing countries on trade taxes, trade liberalization would have to be preceded by a tax reform to replace trade taxes with domestic taxes.

"Balance of Payments Stabilization Policies in the Dependent Economy
and Their Short-Run Impact on Economic Activity" by Henri Lorie

This paper reviews the macroeconomics of financial programming in "dependent economies." It focuses on the case in which unemployed resources exist, financial intermediation operates entirely through the banking system, and nonmarket conditions may prevail for clearing domestic bank credit to the nongovernment sector. A standard demand-management policy aimed at reducing an external disequilibrium exerts a contractionary effect on the production of nontraded goods and on the level of domestic credit to the nongovernment sector.

The above result contrasts with the short-run potential of a devaluation to accelerate domestic activity even if the immediate supply response of the export sector is limited and monetary savings increase. The paper stresses the role of an accommodating domestic credit policy in supporting growth. When domestic credit markets are rationed, interest rate policy has nonstandard implications. Raising interest rates is potentially expansionary, but in this case expansion of economic activity turns out to be necessary to prevent further external disequilibrium.

The remainder of the paper focuses on devising fiscal and monetary policy mixes aimed at stabilizing the balance of payments without inducing a domestic contraction. Regarding fiscal policies, it emphasizes the need to devise appropriate expenditure/revenue policy mixes that take into account the relative nontraded goods content of government and nongovernment expenditures, as well as parameters characterizing monetary demand and supply. Similar considerations apply to a mix of fiscal and monetary policies.

The analysis also illustrates the extent to which there may be room to accommodate the domestic counterpart of additional external project financing, as long as those aspects of additional foreign financing that promote short-run domestic growth take precedence and sufficient resources in the economy are idle.

"The International Monetary System: Developments and Prospects"
by Jacob A. Frenkel and Morris Goldstein

This paper addresses several fundamental issues raised by recent developments in the world economy and considers their implications for the design and functioning of the international monetary system. It makes no proposals but instead identifies factors that merit attention in any serious examination of the system.

Four questions are examined in the paper.

First, to what extent is the exchange rate regime capable of disciplining fiscal policy?

Second, what are the extent and costs of reduced monetary independence under greater fixity of exchange rates?

Third, what are the characteristics of the equilibrium exchange rate and how can it best be calculated?

Fourth, to what degree does a well-functioning international monetary system require a clearly defined set of rules, an acknowledged leader, and an explicit anchor?

The authors do not view reform of the international monetary system as an instrument of crisis management. Rather, it is akin to a constitutional change that should be governed by a long-term perspective. In keeping with this orientation, proposals for modifying the system should be subject to careful scrutiny and evaluation.

"Transmission of Effects of Fiscal Deficit in Industrial Countries
to Fiscal Deficit of Developing Countries"
by Ahsan H. Mansur and David Robinson

This paper shows that, for developing countries burdened with external debt obligations and facing an external current account constraint, an increase in the global interest rate resulting from the expansionary fiscal policy in industrial countries may cause an increase in interest payments by developing countries, leading to the worsening of the latter's balance of payments, economic growth, and fiscal balance. The analysis is based on an analytical discussion of the main transmission mechanisms involved and on simulation exercises showing the short- and medium-term effects of fiscal expansion in industrial countries on the economic growth and fiscal balance of developing countries that face an external current account constraint.

The paper finds that, for developing countries facing rigid current account constraints, higher debt-service payments may more than offset the boost to exports caused by higher demand in industrial countries resulting from expansionary fiscal policy and may result in import compression, a deterioration in the terms of trade, and slower output growth. The fiscal deficit of developing countries tends to increase owing, inter alia, to lower revenue from import duties and domestic-based taxes and to higher outlays on account of interest payments. The quantitative effects vary considerably among economies depending on the degree of external indebtedness, the import intensity of domestic output, and the structure of the tax system. The simulations also indicate that policy reactions of the government, in the form of allowing the exchange rate to adjust in line with external developments, may significantly reduce the medium-term costs of external shocks.

The simulations are broadly consistent with the stylized facts characterizing economic developments in the early 1980s and indicate that if the industrial countries, as a group, had held their fiscal deficits at the level of 1977, the fiscal deficit in developing countries by 1984 would have been significantly lower in relation to GDP. Nevertheless, the higher fiscal deficit in the industrial countries can explain only around one fifth of the fiscal deterioration in the developing countries in recent years.

"Floating Exchange Rates in Africa"
by S. Kimaro

The paper examines the experiences of nine African countries that introduced floating exchange regimes in the 1980s. The various market arrangements are described in detail, and particular attention is focused on the roles of market participants. The description indicates that all types of market arrangements have been susceptible to official interference and to underlying pressures, resulting in a relatively heavy mortality rate for the regimes.

Following sharp depreciations at the inception of the floating regimes, nominal effective exchange rates continued to depreciate, reflecting high rates of domestic inflation. The real effective exchange rates also depreciated owing, inter alia, to fundamental imbalances prevailing in the exchange markets. The resulting depreciations have apparently contributed to substantial erosion of urban incomes and employment. Given the social and political importance of these developments, the paper argues that the countries' perseverance with floating regimes must be strengthened by protecting the poorest segments of the population and promoting a more equitable sharing of the burden of adjustment. Concern has also been expressed that the floating regimes distort the structure of final demand and compound imperfections in the financial and goods markets. Corrective action in this regard has tended, unfortunately, to involve the reintroduction of administrative controls in the exchange markets rather than measures aimed at correcting specific distortions.

Government attempts to moderate short-term instability in exchange rates have been circumscribed by practical difficulties in forecasting exchange rate trends and by inherent limitations in the range of available policy instruments. In view of this experience and of the evidence that short-term instability under the floating regimes has tended to abate, the paper suggests that interventions to influence short-term movements in the exchange rates should be abandoned. Such noninterventionism might be fostered through international contingency mechanisms aimed at minimizing reversible shortfalls in the budgeted availability of resources for the exchange markets.

The experience of the African countries suggests that, despite initial problems, floating exchange rates could work reasonably well in developing countries experiencing large economic imbalances. This does, however, require that the countries be firmly committed to supporting appropriate macroeconomic policies and that programmed balance of payments support be obtained on schedule.

"How Resilient Are Military Expenditures
in the Context of Fund-Supported Programs?"
by Paula De Masi and Henri Lorie

This paper examines, from the limited data available, how Fund-supported programs affect military spending and assesses how military expenditures have been, or can be expected to be, resilient to adjustments in overall expenditure.

The paper begins with a review of trends in military spending in the developing countries over the last two decades and highlights the uneven distribution of this spending across regions and even across countries within regions. It then discusses data problems inherent in estimating military outlays that render research in this area particularly difficult.

Next the paper develops a conceptual framework that will serve as a blue print for the subsequent empirical study. It emphasizes the choices faced by the authorities both in the absence and in the presence of a Fund-supported program, as well as the importance of determining whether expenditure restraint is the essence of the Fund-supported adjustment programs being considered, that is, whether the programs constrain or accommodate expenditure. Objective variables may affect the productivity of military spending and the subsequent level of outlays. The paper proposes an empirical methodology that consists in looking at the changes, before and during Fund-supported programs, in military expenditure as a share of gross domestic product and as a share of total expenditure for an overall sample and then for two subsamples, broadly divided into fiscal-tightening and fiscal-accommodating Fund-supported programs.

The evidence suggests that, under fiscal tightening, the ratio of military expenditure to GDP decreases during Fund-supported programs, but that military expenditure's share in overall expenditure increases, revealing resilience to necessary budgetary adjustments. For countries engaged in fiscal accommodation, as total government expenditure tends to increase during Fund-supported programs, the evidence indicates that military expenditure also increases. The data show conclusively, however, that, in this case, most countries show declines in the ratio of military to total expenditures. Hence, in an environment of fiscal accommodation, a smaller proportion of additional resources is allocated to the military than to other sectors, in contrast to the results under fiscal tightening.

The final section of the paper focuses on fiscal tightening and tries to establish links between specific characteristics of countries and their observed military spending, including the resiliency of this spending. The main, albeit weak, conclusion is that if a country's ratio of military expenditure to total expenditure or to GDP is below average during the pre-program period, its military spending is likely to exhibit resilience.

"Dynamics of Asian Savings: The Role of Growth and Age Structure"
by Ashok K. Lahiri

This paper examines savings behavior in eight Asian countries--India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Sri Lanka, and Thailand--during 1960-85. While the domestic savings rate in these countries has been high, on average, by international standards, it has varied considerably over time as well as across countries. Though these variations are, in part, explained by the role of government savings, the major explanation is found in the behavior of private savings and its determinants.

According to the findings of this paper, growth in per capita income and the changing age structure of a population are important determinants of the private savings rate in the Asian countries. In the life-cycle approach to private savings, these two factors can increase aggregate savings by making young savers more affluent and more numerous than elderly dissavers. The paper tests and rejects the use of the rational expectations version of the permanent income hypothesis to explain variations in private savings.

Inflation and movements in the terms of trade are, however, also found to be determinants of private savings. Inflation, whether anticipated or not, has an adverse impact on savings, and countries with price stability tend to be high savers as well. There is consistent evidence in a majority of the sample countries that the savings rate declines with adverse movements in the terms of trade.

The adjustment of savings to an economic stimulus is far from instantaneous and differs in the short and the long run. In the model used in this paper, the savings ratio is constant in the long run, and any short-term divergence of this ratio from its long-run value is corrected over time. The paper also finds that, even under identical conditions, perhaps owing to differences in time preference, countries can be divided into three distinct categories according to their long-run private savings behavior: first, Malaysia and Singapore with a long-run private savings rate of 0.4 percent of private income; second, India with a rate of 0.3 percent; and third, Indonesia, Korea, the Philippines, Sri Lanka, and Thailand with a rate of 0.2 percent.

"The World Trade Model: Revised Estimates"
by Richard D. Haas and Anthony G. Turner

The paper presents updated and revised estimates for the Research Department's World Trade Model. This model has been used in the World Economic Outlook exercise as well as in several research projects in which its structure has aided in gauging such outcomes as the likely effects of past real exchange rate changes on future trade flows. In addition, the model has been a convenient source of price and activity elasticities generated in a standardized manner by a common data set across countries.

This partial equilibrium model statistically explains import and export unit values and the volume of merchandise trade for manufactured goods, agricultural commodities, and raw materials for 14 large industrial countries. The enlarged data set used in estimating the econometric relationships has generally resulted in equations that fit the data better than did those in the previous version of the model. In addition, the simulation properties of the model have been improved by ensuring that equiproportionate changes in actual and potential output lead to the same equiproportionate changes in demand for imported manufactures.

"Contractionary Devaluation in Developing Countries:
An Analytical Overview"
by Saul Lizondo and Peter Montiel

Nominal exchange rate devaluations are often a key feature of macro-economic adjustment programs in developing countries, including those supported by the Fund. Over the past decade, however, the effect of devaluation on the path of real economic activity in such countries has become a contentious issue, with a number of arguments produced in support of the proposition that devaluation will have a contractionary impact on real economic activity.

This paper presents a critical overview of this literature from an analytical perspective. It explores the links between the exchange rate and real output in a fairly general, coherent analytical model of a developing country, a model that embodies many of the features cited in the contractionary devaluation debate. It finds that many arguments on both sides of the debate require modification and that the links between the nominal exchange rate and real output are more complex than is generally recognized in this literature.

Overall, the impact of devaluation on real economic activity in a typical developing country cannot be assessed on analytical grounds. A nominal devaluation reduces supply in both the traded- and nontraded-goods sectors by increasing the costs of labor, of imported inputs, and possibly of working capital. On the demand side, there is an upward shift in the demand for traded goods, while the demand for nontraded goods will be affected by a nominal devaluation in ways that are complex and invariably specific to particular countries. The issue of whether devaluation will be contractionary or not necessarily remains an empirical matter.

"The Implications of Fiscal Conditions and Growing Internationalization
for Monetary Policies and Financial Market Conditions" by Peter Isard

The paper argues that the endogenous behavior of monetary authorities provides an important channel through which fiscal policy influences financial variables, and that growing internationalization has increased the sensitivity of financial conditions to fiscal policy. The core of the argument is that changes in fiscal policy instruments influence exchange rates, particularly to the extent that the policy changes affect the expected after-tax returns on capital located in different countries, and that the sensitivity of exchange rates to fiscal policy increases with growing internationalization. In turn, exchange rate developments affect the expected and actual behavior of the monetary authorities, which causes financial market conditions to change.

The arguments suggest that the increasing integration and globalization of financial markets are not the only "cause"--and may not even be the primary cause--of the increasing volatility of financial market conditions. The growing internationalization of decisions about real economic variables may imply an increasing need to harmonize or coordinate policies if financial stability is to be maintained and a deterioration in macroeconomic performance is to be avoided. Moreover, any form of harmonization or coordination of monetary policies among the major industrial countries may lack credibility and viability unless fiscal conditions are also harmonized or disciplined.

The endogenous nature of monetary policy and the role of fiscal policy in conditioning the environment in which monetary policy must operate raise issues for the design and application of macroeconomic models. Just as the credibility and viability of any particular strategy for monetary policy in reality may depend on fiscal conditions, the performance of a given rule for monetary policy in a macroeconometric model cannot generally be evaluated without specifying which tax or spending parameters the fiscal authorities adjust, and how quickly, in response to the emergence of budget imbalances that threaten to persist.

"The International Coordination of Economic
Policies: Scope, Methods, and Effects"
by Jacob A. Frenkel, Morris Goldstein, and Paul Masson

This paper discusses the scope, methods, and effects of international coordination of economic policies. In addressing the scope for and of coordination, the analysis covers the rationale for coordination, barriers to coordination, the range and specificity of policies to be coordinated, the frequency of coordination, and the size of the coordinating group. Turning to the methods of coordination, the paper addresses the broad issues of rules versus discretion, single-indicator versus multi-indicator approaches, and hegemonic versus more symmetric systems.

In an attempt to shed some light on the effects of alternative rule-based proposals for coordination, the paper presents some simulations of a global macroeconomic model (MULTIMOD) developed in the International Monetary Fund. The simulations considered range from "smoothing" rules for monetary and fiscal policy that imply only minimal international coordination, to more activist "target-zone" proposals that place greater restrictions on national authorities in the conduct of monetary or fiscal policies. The simulation results are compared with the actual evolution of the world economy over the period 1974-87. The findings of the paper suggest that simple mechanistic rule-based proposals are unlikely to lead to improved performance.

"Theoretical Aspects of Growth in Developing Countries:
External Debt Dynamics and the Role of Human Capital"
by Ichiro Otani and Delano Villanueva

Growth-oriented adjustment in developing countries, particularly those with structural rigidities and heavy external obligations, typically involve policy measures that take time to put in place and have their impact on growth only after a long lag. Accordingly, such adjustment policies need to be formulated from a medium- and long-term perspective. The experiences of developing countries over the past decade and a half suggest that economic growth, expenditures on human resources, investment, saving, exports, external debt, and the cost of capital are all intimately related.

This paper investigates the interrelations among these macroeconomic aggregates in the context of a simple theoretical growth model of a developing country. Since existing models have not adequately integrated the dynamics of external debt and human resource development in the growth process, these critical elements are highlighted by the model developed in this paper. Key variables representing the unique characteristics of developing economies are also featured. Thus, the model underscores the importance of domestic savings generated by the private and public sectors, as investment activity in many developing countries is often constrained by the availability of domestic savings.

To motivate the theoretical analysis, the paper first summarizes the growth performance and related developments in developing countries during 1970-85. Neoclassical growth theory is then briefly reviewed, and an open-economy growth model incorporating both real and financial sectors is developed.

The model's stability and equilibrium properties are analyzed and the dynamics of adjustment in output growth and external debt to long-term equilibrium are discussed. Comparative dynamic exercises are then performed to determine how the equilibrium capital-labor ratio, the ratio of external debt to the capital stock, and the growth rate of per capita output respond to changes in domestic policies and in the external environment. The analysis indicates, inter alia, that the long-term growth rate of per capita real income is a positive function of the budgetary share of expenditures devoted to the improvement of human capital and of the rate of domestic savings, and a negative function of the cost of capital and of the rate of population growth. Similarly, the sustainable ratio of external debt to the capital stock depends on the same variables that have the same signs, except for the rate of population growth, to which the debt ratio is positively related by virtue of the improvement in the marginal productivity of capital that encourages external borrowing.

Finally, the paper concludes with some general principles that are expected to be useful in designing growth-oriented adjustment programs and suggests some extensions of the model.

"Real Exchange Rates and Commodity Prices
in a Neoclassical Model"

by Carmen M. Reinhart

This paper presents a simple, neoclassical, open-economy model that explains the observed empirical relationship between government spending and world commodity supplies, on the one hand, and the real exchange rate and real commodity prices, on the other. The analysis postulates a setting in which two large industrial economies import an internationally mobile commodity, which, in addition to labor, is used as an input in the production process. The supply of the traded input--the commodity--can be thought of as the net exports of developing countries and is predetermined for a given period.

The paper shows that fiscal expansion in the home country (subsequently associated in the empirical section with the United States) leads the real exchange rate to appreciate and commodity prices to decline relative to the price of the home good. This change in relative prices raises domestic output in the home country but crowds the second country out of the international commodity market, lowering its production.

An expansion of world commodity supplies (such as the one that has characterized the 1980s) will lower commodity costs and stimulate output in both the commodity-importing countries, while it unambiguously worsens the terms of trade of the commodity supplier.

This structural model is estimated, and the estimated coefficients are shown to have the signs predicted by the theoretical priors. In addition, the validity of the structural model is assessed by comparing its forecasting performance with a variety of naive, ad hoc, and partial equilibrium models. Theory and structure help to predict commodity prices, but not the exchange rate. Moreover, predictions become more accurate as the forecast horizon is lengthened. Further, the model in this paper outperforms alternative specifications in predicting commodity prices.

"Oil Wealth and Economic Behavior: The Case of Venezuela, 1966-81"
by R. Vaez-Zadeh

This paper examines the short-run macroeconomic implications of oil resources for Venezuela. The analysis takes into account two characteristics of these resources that have been ignored in economic studies of oil-producing countries. These characteristics are the exhaustibility of oil resources and the impact of their availability on the expectations of economic agents. Economic agents may view the stock of oil as accumulated savings or a source of wealth that can be drawn upon in the future. This view generates confidence in the prospects for future income, thereby influencing savings behavior, patterns of expenditure, and the composition of asset portfolios.

An empirical analysis confirms the existence of such a "confidence effect" in the case of Venezuela. It is manifest in private expenditures and in the demand for real balances. The results of the analysis indicate that this confidence dampens the inflationary consequences of expansionary shocks, but adversely affects private savings and investment. The analysis highlights the significance of the pattern--not just the level--of government expenditure. The paper also finds that an increase in oil prices has a more pronounced impact on the economy when such confidence is a factor. In particular, failure to take this confidence into account could lead to serious underestimation of the initial positive impact as well as the subsequent adverse influence of oil price hikes on the balance of payments.

The paper also shows that following exogenous disturbances, a larger monetary intervention is required to stabilize the economy in the presence of the confidence factor associated with resource availability. This factor also affects significantly the timing of needed monetary interventions.