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To: Members of the Executive Board

From: The Secretary

Subject: Summaries of Working Papers (WPs) Issued During January-June 1988

Attached for the convenience of Executive Directors is a collection of summaries of Working Papers issued during January-June 1989. It is hoped that the collection will provide easy access to the research work done by the staff and will serve as a record of such work.

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July 7, 1989

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ATTACHMENT
Summary of
WP/89/1

"Dynamics of Devaluation and 'Equivalent' Fiscal Policies for a Small Open Economy"
by J. Saul Lizondo and Peter J. Montiel

Although devaluations are integral features of macroeconomic adjustment programs in developing countries, their effects on the economies of these countries continue to be controversial. This paper examines the nature of these effects in a model designed to analyze both the short-run impact of an exchange rate change and the dynamics of adjustment to long-run equilibrium. Since devaluation in this model alters the government's long-run stock of foreign assets, the dynamic effects are compared with those of alternative policies that achieve the same goal--specifically, a temporary reduction of government spending on nontraded goods and a temporary tax increase.

The government's choice of how to accumulate foreign assets is critical because embarking on devaluation or embarking on temporary fiscal restraint set economic variables on quite different paths. The private sector will experience a loss in welfare under either alternative. Nevertheless, the paths induced by temporary changes in fiscal policy differ from those associated with devaluation since these tend to be discontinuous, and in the case of a temporary tax increase, may lead to macroeconomic variables overshooting their long-run values. Moreover, when foreign assets earn interest, the dynamic effects of devaluation depend on the fiscal policy regime in effect. The usual monetary dynamics, in which devaluation leads to a temporary current account surplus, followed by a return to the original long-run equilibrium, are observed only when the additional interest received from a larger stock of foreign assets is spent on traded goods. If these receipts are used to cut taxes, the economy moves immediately to its new steady state with no intervening dynamics, a consequence of the assumption of Ricardian equivalence that is maintained in the model. Finally, if the higher interest receipts are used to purchase nontraded goods, the nominal devaluation will have long-run real effects.

"Is Inflation Effective for Liquidating Short-Term Nominal Debt?"
by Guillermo A. Calvo

The paper studies the possibility of using inflation to reduce the real value of domestic non-indexed government debt. The analysis focuses on debt with short-term maturity, since previous work has suggested that, under those circumstances, inflation will be an effective debt-liquidation device only in the unlikely case that the price level jumps overnight. The paper shows that the conventional wisdom is wrong. This point is made be examining a small open economy under perfect capital mobility. The analysis shows, for example, that a devaluation not expected to be followed by further devaluation can reduce the real value of the debt through both inflation and lower nominal interest rates (because no future devaluation is expected). In other words, inflation effectively reduces the real value of debt because it leads to lower real interest rates. What distinguishes this result from results in the previous literature is that the paper arrives at the result without appealing to Mundell-Tobin or to irrational-expectations assumptions.

Short-maturity nominal debt may not necessarily remove the temptation to devalue in order to lessen the debt-servicing tax burden. Thus, to the extent that the private sector is aware of the temptation to provoke a surprise devaluation, the temptation will be taken into account by a rise in nominal interest rates. This will increase the fiscal deficit and may actually be a primary force behind a currency devaluation. Therefore, the existence of nominal debt obligations may give rise to a devaluation-inflation cycle fueled by expectations.

The conclusion of the paper is that shortening the maturity of government debt will not necessarily extricate the economy from this self-fulfilling expectations cycle.

"Issues of Openness and Flexibility for Foreign Exchange Systems"
by Peter J. Quirk

This paper surveys issues relating to the official management of foreign exchange, including the choice of an exchange rate regime and of systems to restrict exchange and trade. It considers the interaction of policies to encourage flexibility in exchange rate regimes and of policies to liberalize restrictions, noting that the one set of policies is the obverse of the other.

Issues of the practicality of the various arrangements, as well as of their political economy, are emphasized. Currency pegs do not avoid exchange rate variability, first, because they must be adjusted from time to time and, second, because pegged currencies float against currencies outside the peg. Pegging does, however, lead to incentives for arbitrage against the parallel or black market exchange rate. Exchange and trade controls have proven increasingly ineffectual in preventing this arbitrage. Most of the countries experiencing massive capital flight in this decade have had in place exchange controls on capital outflows. Similarly, import restrictions have not prevented smuggling. Moreover, end-users often pay for imported goods not at the official rate, but at the parallel or black market rate, so that the closed and inflexible systems are ineffective in achieving their declared objectives of distributing income more equitably or of reducing inflation. The paper offers evidence that countries with single currency pegs in particular have had a higher incidence of external payments arrears.

These difficulties have induced an increasing number of developing countries to opt in recent years for flexible exchange rate regimes and open exchange and trade systems. In 1986-87, developing countries made twice as many liberalizing changes to their systems as restrictive changes, and this has applied also to capital controls. A growing number of developing countries have adopted exchange rates determined by floating auction and interbank markets, including free forward markets, although the arrangements had not previously been considered practicable for this group of countries. Auctions for import licenses have been introduced in a few cases. Open general licensing of imports and tariff reforms have been stepped up in recent years. Liberalization of capital controls has also contributed to confidence--paradoxically, improving prospects for a return of capital flight when exchange rate and interest rate incentives have been restored. The paper outlines the arrangements and main issues for such reforms.

"Distressed Financial Institutions in Thailand: Structural Weaknesses, Support Operations, and Economic Consequences"
by R. Barry Johnston

Beginning in 1983, a crisis in the financial system in Thailand induced the authorities to intervene in about a third of the local banks and finance and security companies, accounting for one quarter of financial institutions' total assets. This paper examines the background to the deterioration, the remedial actions taken, and their economic consequences.

The financial instititions' difficulties can be traced to the structure of their ownership and management and to an inadequate legal, regulatory, and supervisory framework. These problems were brought to the fore by a slowdown in economic activity that resulted in the failure of some finance companies and a loss of confidence in other financial institutions, leading to deposit withdrawals.

Since then the Bank of Thailand has closed 24 troubled financial institutions and intervened in another 30. Liquidity support for these insititutions includes loans from commerical banks and funds provided directly by the Central Bank. The provision of this support was conditional on the implementation of restructuring programs. The cost of the support operations to the authorities through subsidies to insolvent institutions has been substantial, equivalent annually to about 1 percent of budget revenue.

Following the crisis there was a shift by depositors and borrowers out of finance companies into commercial banks. This reintermediation may have led to more contractionary monetary conditions during 1984-85. The subsequent expansion in central bank liquidity to support distressed financial institutions added to the easing in monetary conditions in 1986-87.

The Thai experience suggests the following conclusions. Strong legal, regulatory, and supervisory systems are needed when normal "self-regulatory" checks and balances on financial institutions' managements are inadequate. A policy of closing failed institutions is preferable, for reasons of economic efficiency, to trying to keep open insolvent institutions. A financial crisis can distort financial aggregates and have real macroeconomic effects even if overall financial sector stability is not threatened. The possible impact of economic policies on confidence in financial institutions should be taken into account in formulating macroeconomic policy.

"Tax Incentives and International Capital Flows: The Case of the United States and Japan" by A. Lans Bovenberg, Krister Andersson, Kenji Aramaki, and Sheetal K. Chand

In recent years, world financial markets have become more integrated as barriers to international capital movements have been removed. This raises important issues for the international transmission and coordination of tax policy. Tax rules, especially those regarding the taxation of capital income, can have powerful effects on the demand for capital and on savings-investment balances. Accordingly, in an integrated world financial market, they can set in motion large capital flows. These tax rules can, therefore, interact to affect worldwide resource allocation and welfare, with the strength of the effects depending on how other non-tax factors intervene.

This paper examines how tax treatments of investment and savings affect international capital flows as well as national and global welfare. It adopts the concepts of the tax wedge and cost of capital and extends them to measure the incentive effects of capital income taxation on cross-border investments. The study then uses these concepts to examine how reforms of capital income taxes in the United States and Japan and their interaction with the macroeconomic environment may have contributed to bilateral capital flows during the 1980s.

The results reveal that the tax burden on assets located in Japan exceeded the tax burden on assets located in the United States during the 1980s. Taxes may therefore have encouraged capital flows to the United States during this period. Investment incentives in the United States, owing to a more favorable corporate tax treatment, rose between 1980 and 1984, but fell in 1987. The repeal of investment credits, less-favorable depreciation rules, and lower inflation rates contributed to the reduced incentives to invest in the United States in 1987.

As regards the taxation of savings, for assets located in both countries a U.S. saver faced a heavier tax burden than a Japanese saver. If higher after-tax returns lead to increased savings, the relative savings performance of the United States may therefore have suffered. Accordingly, large U.S. capital inflows may have been encouraged not only by investment incentives but also by disincentives to savings.

"The Relevance of Fiscal Conditions for the
Success of European Monetary Integration"
by Peter Isard

Discussions of the prerequisites for European monetary integration have emphasized the need to avoid disruptive flows of financial capital. By contrast, this paper argues that physical capital movements, in response to fiscal policies that influence the attractiveness of locating production facilities in different countries, could prove a troublesome source of instability for the European economies. A simple analytic framework is used to illustrate the hypothesis that even though physical capital moves slowly, changes in the relative attractiveness of accumulating physical capital in different countries can quickly exert pressures on relative prices and exchange rates. Moreover, the monetary policy reactions to these pressures in a fixed exchange rate regime may affect real wage rates and employment levels.

The paper goes on to discuss what these macroeconomic interactions imply for tax harmonization and budget discipline if economic stability is to be achieved. The experience of the United States, while not probed in depth, provides an important example of how state and local competition for industry appears to have proceeded without many major dislocations and how mechanisms appear to have been found for exerting reasonably effective discipline, in most cases, over state and local budget imbalances.

The paper emphasizes the importance of addressing fiscal issues in Europe by suggesting that effective budget discipline cannot be brought about by monetary integration alone. It also argues that the emergence of national debt-servicing problems in an integrated system of credit markets raises difficult lender-of-last-resort issues for the European Communities.

"Seigniorage in the EC: The Implications of the EMS and Financial Market Integration"
by Daniel Gros

Seigniorage is the revenue the government obtains because the public holds zero-interest-bearing debt in the form of cash and because the government can force commercial banks to hold reserves at zero interest or below market interest rates. The savings in interest payments on the stock of currency in circulation and required reserves can, from an economic point of view, be considered the implicit revenue from seigniorage. Another way to look at seigniorage is to consider the common over real resources the government obtains by issuing additional currency or by being able to impose higher reserve requirements. According to this flow concept, the revenue from siegniorage is equal to the change in the monetary base (non-interest-bearing component).

This paper calculates both measures of seigniorage for all EC member countries in order to analyze the implications for public finance of the EMS and of financial market integration in the EC. It is assumed that the EMS will lead to a general convergence of inflation rates in the EC to around 1-2 percent by 1992 and that financial market integration will lead to a general convergence in required reserved rations to the current EMS average.

These two assumptions imply that the revenue from seigniorage will decline substantially for Greece, Portugal, and Spain, which have had considerably higher revenues from seigniorage than other EC countries because of a combination of higher inflation rates and higher required reserve ratios. For Italy and Spain, whose inflation rates are only about 3-4 percentage points above those of the more stable EMS countries, most of the required adjustment will come from a reduction in reserve requirements, which might lead to a negative cash flow of seigniorage for the years up to 1992. Since these two countries pay substantial interest on reserves, however, the loss in terms of interest payments on public debt, arising when required reserves have to be substituted by other securities bearing a full market interest rate, is more limited. Most of the loss appears only toward 1992.

For Portugal and Greece, which now have double-digit inflation rates, the loss of seigniorage will reach about 2 percentage points of GDP, but since the cash flow from seigniorage is currently high, seigniorage will remain positive. Moreover, seigniorage will decline only gradually as inflation is reduced.

The EMS and finanical market integration can be expected to lead to a loss of seigniorage in some countries. From an economic point of view, the loss should be minor for Italy and Spain, but could become substantial for Portugal and Greece.

"Monetary Policy Interaction Within the EMS"
by Daniel Gros and Timothy Lane

The European Monetary System (EMS) was established in 1979, a time of high and variable inflation rates, in order to create a "zone of monetary stability" in Europe. A noteworthy feature of the system is its asymmetry; it is widely agreed that the Federal Republic of Germany plays a pivotal role in the system. The monetary policy of the Bundesbank provides the anchor for the system by maintaining a stable medium-term path for the German money supply; the other members in turn take responsibility for maintaining their bilateral exchange rates vis-a-vis the deutsche mark within the agreed bands.

In this paper, a simple theoretical model is used to explore this asymmetry as it pertains to the ability of the member countries' monetary authorities to offset shocks impinging on their national incomes. The model is a two-country variant of the Mundell-Fleming model, incorporating rational expectations. Capital is assumed to be highly mobile, reflecting the increasing integration of European financial markets associated with Project 1992.

The model is developed in three different directions. First, it is used to trace the implications of alternative simple monetary arrangements--symmetric or asymmetric--for the transmission of shocks to national incomes. The analysis reveals that, if the variance of shocks in one of the countries is relatively large, both countries may benefit from an asymmetric arrangement in which this country stabilizes the exchange rate while the other controls its own money supply.

Second, the paper examines the interaction of two countries' choice of monetary policy and shows how this interaction may be influenced by a pre-existing bilateral commitment to maintain the exchange rate within specified bands. An example is constructed in which such a commitment creates an incentive, rather than satisfies a need, for policy coordination. Such coordination is not generally beneficial, as it results in greater stability of exchange rates at the expense of greater variability of real income. A narrowing of the exchange rate bands in this context would lead to more intervention by both countries, even if formal responsibility for maintaining the currency within the bands lies only with one country.

Third, the paper examines the loss of monetary autonomy as exchange rate bands become arbitrarily narrow. In this case, given perfect capital mobility, shocks in one country are transmitted to both countries' incomes and require similar policy responses; for this reason, the need, as well as the scope, for autonomous policy vanishes as the bands become arbitrarily narrow.

"Credibility, Capital Controls, and the EMS"
by Timothy Lane and Liliana Rojas-Suarez

The European Monetary System (EMS) entails agreement on a set of exchange rate bands that act as a constraint on member central banks' policies. A common rationale for a government's agreeing to such a constraint is that it enhances the credibility of the central bank's commitment to maintaining a low and stable rate of money growth. The importance of central bank credibility is that, without it, the public expects a high inflation rate, and this will increase the cost of any attempt to reduce inflation. Establishing credibility means convincing the public that the central bank will not deviate from its money-supply targets in order to attain the short-term expansionary effects associated with surprise inflation. This therefore requires that the public be convinced that the authorities have some incentive to refrain from introducing monetary surprises.

Accordingly, this paper considers the effects of EMS membership on credibility, defined as the authorities' incentive to refrain from introducing monetary surprises. It considers this issue in the light of two prominent features of the system. One is the existence of exchange rate bands that are wide enough to allow member central banks some degree of flexibility in their short-term monetary policy and that can be realigned by mutual agreement. The other is the capital controls adopted by some member countries; these capital controls are generally thought to limit, but not to eliminate, movements of capital in response to interest rate differentials.

The paper finds that capital controls affect credibility because they alter the relative effect of unanticiapted expansionary monetary policy on output and on inflation. This affects both the gains from deviating from money-supply 6 targets and the costs associated with lost reputation. The direction of this effect depends on the exchange rate bands. In the absence of bands (or if the bands are so wide that they do not constrain monetary policy), liberalization of capital controls enhances credibility. If the bands are narrow enough to act as a constraint on monetary policy, liberalization of capital controls reduces credibility.

The analysis also finds that credibility depends on the width of the bands. In the model, there is generally a point beyond which further narrowing the band increases credibility. The model suggests that, if EMS membership is needed to establish credibility, this can only be achieved with bands of zero width. In this light, it is difficult to reconcile the credibility-based rationale for EMS membership with the existence of exchange rate bands of non-zero width.

"A Delicate Equilibrium: Debt Relief and Default Penalties in an International Context"
by Guillermo A. Calvo

The paper discusses two central elements in the theory of sovereign-country debt, namely, default penalties and debt relief. The analysis is carried out under the assumption that debt contracts maximize the welfare of the borrower, that the lender receives a competitive rate of return, and that both are motivated by appropriate incentives.

In an equilibrium contract, default penalties are likely for two reasons to be too low to ensure Pareto efficiency (a condition in which the terms of the contract cannot be modified without reducing the welfare of at least one of the contracting parties). First, to the extent that penalties are costly to the lender, he may have proportionally less incentive to seek to punish a borrower who defaults. Second, imperfect information keeps penalties low. If the lender does not know exactly what events will befall the borrower, a high penalty may be imposed on a borrower who has a justifiable reason to default. At the time of writing the debt contract, the more severe the penalty for default, the more onerous will be the expected cost of borrowing. An optimal contract offers the best combination of costs, which, following the previous observation, involve not only interest rates but also penalties. The paper gives examples in which the equilibrium penalty is not high enough for the achievement of a Pareto optimum.

Such optimal penalties-cum-interest contracts are bound to be time inconsistent (that is, at least one of the contracting parties may be tempted sometime in the future to change the conditions of the contract). If he can, the lender will seek to increase the penalty after the debt contract has been signed, because it is to his advantage to maximize the probability of repayment. This insight suggests that a third party should exercise extreme caution when called on to arbitrate between lender and borrower, especially when arbitration involves no debt relief and not all repayment conditions are fully specified. Otherwise, the arbiter may tilt the scales in favor of one of the parties.

The paper argues that debt relief could very well be a characteristic of optimal contracts and proceeds to develop a framework for establishing the conditions for debt relief. In essence, this methodology suggests estimating the implicit probability of default based on actual debt contracts and calculating the probability distribution of current key macroeconomic variables from the perspective of the time at which the loans were granted. If, according to these estimates, current macroeconomic variables are sufficiently unfavorable to the borrower, the paper argues that a prima facie case could be made for debt relief.

"Devaluation Crises and the Macroeconomic Consequences of Postponed Adjustment in Developing Countries"
by Sebastian Edwards and Peter Montiel

Adjustment programs in developing countries are usually implemented in the context of severe macroeconomic crises. These crises have tended to share a number of common features, such as an acceleration in the rate of inflation, continuous appreciation of the official real exchange rate, an increase in the current account deficit, the sustained depletion of foreign exchange reserves, and a continuously increasing premium in the black market for foreign exchange. When adjustment is undertaken it usually includes a substantial devaluation of the official rate, following which the parallel market premium shrinks appreciably. This paper derives a dynamic model designed to capture these common features of balance of payments crises and to examine the consequences of different timings of adjustment.

A central result of this analysis refers to the consequences of postponing the adjustment when the Central Bank has a well-defined target for international reserves. The analysis shows that the effects of postponement will depend on the type of shock. If the disturbance is a fiscal expansion, postponing the adjustment will require a larger official devaluation. However, this relationship between the timing of the devaluation and its magnitude is not linear. If the postponement period is doubled, the required magnitude of the devaluation will not double. Delaying the adjustment will affect the path followed by macroeconomic variables. In particular, the longer adjustment is postponed, the larger will be the deviations of the macroeconomic variables from their long-run values. When adjustment is finally implemented, the macroeconomic variables will tend to overshoot their long-run values. The extent of overshooting will depend on the period of postponement; a delayed adjustment magnifies the extent of the overshooting.

For the case of a negative terms of trade disturbance, the size of the official devaluation will be unaffected by the timing of the adjustment. Furthermore, the longer the adjustment is postponed, the smaller will be the peak deviation of most of the macroeconomic variables from their long-run values. As in the case of fiscal shock, however, the required degree of overshooting of the macroeconomic variables following adjustment will be magnified by postponement.

An important conclusion of the analysis on the effects of the timing of adjustment is that the observed pattern of continuously rising black market premia, rising inflation, and increasing current account deficits can be unambiguously inferred only in the context of sufficiently postponed adjustment. The suggestion is that "devaluation crisis" episodes in developing countries have resulted not so much from the occurrence of domestic or external shocks, but from a failure to adjust promptly in response to such shocks.

"Islamic Banking: Experiences in the Islamic Republic of Iran and Pakistan"
by Mohsin S. Khan and Abbas Mirakhor

Islam prohibits financial transactions based on interest and requires that they be conducted solely on the basis of risk and profit sharing. The Islamic Republic of Iran and Pakistan are the only two countries in the Muslim world that in modern times have attempted to restructure their financial system to accord with Islamic concepts. While the two share the common objective of the Islamization of their economies, there are significant differences in the approaches they have followed in adopting and implementing Islamic banking. In Pakistan, Islamic banking was introduced in a phased manner so as to leave the intermediation role of the banking system undisturbed. For example, although Islamization of the banking system was announced in 1981, the Government permitted interest-bearing deposits to coexist along with profit and loss sharing deposits until 1985. In Iran, on the other hand, the whole of the banking system converted its modes of operations to a noninterest basis all at once. The experiences of Iran and Pakistan, with regard both to how the system was introduced and to how it has been functioning since its inception, have a bearing on the feasibility of Islamic banking in these and other countries.

This paper describes the progress of Islamic banking in these two countries (Iran 1979-87 and Pakistan 1979-85) and concludes that, although there have been problems, the change has not led to the collapse of the financial system as some had feared. Moreover, there has been a rapid growth of private sector deposits in the two countries subsequent to the adoption of Islamic banking. Both these developments confirm the propositions derived from the theory of Islamic banking, particularly regarding the effectiveness of the system in mobilizing financial resources. Because government policies in Iran and Pakistan strongly influence the asset acquisition behavior of the banking system, however, it is far more difficult to judge the efficiency of Islamic banking in allocating the mobilized resources based on the performance thus far of the systems operating in these two countries. How the system would work in the absence of government intervention is still an open question, and it could be argued that as yet a fair demonstration of Islamic banking has not been observed.

"Aging, Savings, and Pensions
in the Group of Seven Countries: 1980-2025"
by Peter S. Heller

The demographic structure of the major industrial countries is changing significantly. Persistent low fertility rates and lengthening life spans will lead to a major shift in the balance among the young, the working, and the elderly, a shift that will affect the dynamics of these countries and of the world economy. This paper evaluates the implications of this shift for the savings rate, the distribution of consumption across age groups, and levels of intergenerational support for each country of the Group of Seven. Inferences are drawn on the aggregate savings rate of the Group of Seven.

The paper uses two methodologies. The first applies to the analysis the results of earlier econometric studies linking the aggregate private savings rate to demographic variables. The second applies age-specific consumption parameters to examine the aggregate impact on consumption (and potentially on saving) of a change in the population's age structure. The empirical analysis relies on demographic and economic projections of an earlier Fund study by Heller, Hemming, and Kohnert (1986).

The present study suggests the following conclusions. First, the aging of the populations of the seven major industrial countries could lead to a significant reduction in aggregate private savings rates, particularly after 2000. Larger government deficits resulting from increased social expenditures could put further pressure on the overall savings rate.

Second, initial pressure on saving will be felt at different times in the various members of the Group of Seven, earlier in Japan and perhaps the Federal Republic of Germany, and later in the United States and Canada. By 2025, however, the savings rate could decline substantially in all Group of Seven countries. A world economy in which the major industrial countries are all saving limited amounts, or dissaving, would have major implications for global economic growth and international balances.

Third, the window of opportunity for increased saving will remain open through the year 2000, when the group of children under the age of twenty will decline sharply as a proportion of the working population.

Fourth, under present policies, the fiscal burden on the government of supporting the elderly could increase significantly between 1980 and 2025. The reduced burden of child support would not be sufficient to free up the financial capacity to offset this increased burden of societal support for the elderly.

Fifth, in some countries (Canada, France, the Federal Republic of Germany, and the United States), public pensions may decline as a share of the consumption needs of the elderly. Such declines may lead to financial pressure on the elderly to reduce their consumption.

"Some Microeconomics of Fiscal Deficit Reductions:
The Case of Tax Expenditures"
by Liam Ebrill

This paper considers the merits of reducing or eliminating some specific tax expenditures, which, in the process, could help reduce the U.S. federal budget deficit.

The paper begins by pointing out that a strong case can be made on efficiency grounds for financing even a temporary increase in expenditures by tax increases rather than by bond issues. This conclusion is based on the observation that savings decisions in the United States are already influenced by various taxes and other impediments, and that any further borrowing by the Government to finance current expenditures will therefore exacerbate these pre-existing influences, resulting in significant welfare losses.

Following a discussion of recent tax expenditure developments, in which it is noted that the Tax Reform Act of 1986 has reversed the tendency for tax expenditures to grow in importance, and in which a comparison with the practice in other Group of Seven countries is made, the paper evaluates the case for eliminating seven specific tax expenditures that are still in place. Two general conclusions emerge from this evaluation. The first is that tax expenditures are heterogeneous and should therefore be individually evaluated. The second is that it should be possible, by reducing or eliminating individual tax expenditures, to produce further significant reductions in the U.S. federal deficit while at the same time enhancing economic efficiency.

In particular, analysis indicates that the following are examples of the type of tax expenditures that could be either reduced or eliminated: the exclusion of employer contributions to medical insurance and health care; the deduction of mortgage interest on owner-occupied housing; the deductions for both property taxes and state and local income taxes; the carryover basis of capital gains at death; and the current exclusion of some social security benefits. An example of a tax expenditure that, it could be argued, should be retained is the exclusion of employer plan pension contributions and earnings because this exclusion may contribute to an increase in national savings.

"International Reserve Currencies"
by Harris Dellas

Central banks hold foreign exchange reserves to facilitate trade (a consideration more relevant for developing than for industrial countries) and to influence exchange rates through intervention in the foreign exchange markets (a concern more pertinent to industrial countries). While these two objectives imply that the demand for foreign reserves depends on the level of real income, the pattern of trade, and the exchange rate regime, they do not preclude considerations of return, liquidity, and risk from influencing the allocation of international reserves among assets denominated in different currencies. On the contrary, the development of world financial markets and an increase in exchange rate volatility during the last few years have required a more efficient (that is, profitable) management of official foreign reserve holdings.

This paper has two objectives. First, it analyzes the supply side, an aspect of international vehicle currencies (that is, currencies widely used in international transactions) that other studies have overlooked, by relating the return and risk of reserve currencies to the structure of the economy and to the preferences of the policymakers in the countries that issue these reserve currencies. This approach allows for the endogenous determination of risks and returns and hence provides a direct way of evaluating the effects of actual and expected changes in economic structure and policy priorities on the composition of international reserve portfolios. The analysis shows that a currency will possess desirable characteristics if a country faces small output disturbances and a trade-off between inflation and output that limits the effectiveness of stabilization policy. A currency is undesirable if policymakers are less concerned about inflation than about short-run changes in economic activity.

Second, the paper evaluates the hypothesis that central banks use a criterion that relies on returns and the volatility of returns in forming portfolios of international assets. The examination of the behavior of the industrial and developing country groups during 1977-84 offers support to the suggested criterion.

"Foreign Borrowing and Export Promotion Policies"
by Eduardo Borensztein and Atish Ghosh

Under general conditions, a debtor country faces a ceiling on the amount of foreign debt it can accumulate. Creditors impose this ceiling to prevent default; it is the highest level of foreign debt compatible with the debtor country's preferring to repay its obligations rather than default and suffer the ensuing economic sanctions. The paper shows, in a two-period framework, that it is optimal for the debtor country to create a more open economy by favoring investment in the export sector over investment in the import-competing sector because a more open economy, being more sensitive to trade sanctions, is less likely to default on its foreign debt. Rational creditors recognize this fact and raise the credit ceiling for the country, providing an additional return to the reallocation of investment into export-producing activities.

The basic result is extended to a model in which the time horizon of agents is infinite and to a model with uncertainty (about productivity and the ability to repay). The extension to the infinite-time-horizon case does not alter the results significantly. In the case of uncertainty, the debtor country does not face a single credit ceiling but instead a variable supply of credit. In this case it is shown that a more open economy generates an outward shift in the credit-supply function, providing for more favorable borrowing terms.

The above result provides some fairly direct policy implications. Given that international creditworthiness is basically an externality, individual investors would not benefit from contributing to a more open economy. Therefore, they would invest in such a way as to equalize marginal returns in both the export and the import-competing sectors. Doing so, however, sets too stringent credit constraints on the country. Policy initiatives should therefore seek to expand the export sector because lower returns to it are compensated by a larger credit availability. This could be achieved either by subsidizing capital in the export sector or by taxing capital in the import-competing sector, and providing the corresponding lump-sum compensations.

"Simulating the Effects of Some Simple Coordinated versus Uncoordinated Policy Rules" by Jacob A. Frenkel, Morris Goldstein, and Paul R. Masson

The paper uses the Research Department's MULTIMOD to analyze the effects of different policy rules including uncoordinated targeting of the money supply or nominal income, use of monetary policy to achieve mutually agreed-upon targets for either nominal or real effective exchange rates, and the use of both monetary and fiscal policies to hit targets for internal and external balance. The latter set of rules comprises both the "blueprint" proposal of Williamson and Miller and a "reversed assignment" that would use monetary policy to achieve domestic demand targets and government spending to hit a current account target.

The model is simulated, on the assumption of rational expectations, for the different policy rules. Several conclusions emerge from the simulations. First, the rules that performed best for some shocks performed poorly for other shocks, so that an evaluation of the rules requires knowledge of the relative importance of the different shocks. In this connection, stochastic simulations of multiple shocks, drawn from a distribution that reflected their relative importance and degree of co-movement over the period 1974-85, were also performed. Second, in both sets of simulations, monetary policy was relatively ineffective in systematically limiting movements in real exchange rates. Third, fiscal policy, if assumed to be free of other constraints, seemed to be quite powerful in influencing output, real exchange rates, and current accounts. Fiscal policy may in practice, however, be constrained by other objectives, such as limiting budget deficits or the size of the government, and changes may require a lengthy political process. When simulated subject to a year's lag in its implementation, fiscal policy was substantially less effective. Fourth, dynamic instability was a potentially serious problem, especially for monetary policy: the attempt to achieve too close control over target variables could produce large swings in the values of policy instruments or other macroeconomic variables. Fifth, the assignment of fiscal policy to domestic demand and monetary policy to exchange rates seemed to do better than the reverse assignment.

The simulation results were also seen to be quite sensitive to minor changes in specification of the rules. This and the fact that they may also depend importantly on the structure of the model suggest that considerably more experimentation with a range of models is necessary before strong conclusions about the relative desirability of different rules is possible.

"Savings, Investment, and Growth in Mexico: Five Years After the Crisis" by Alain Ize

After three decades of fast growth, Mexico's economic expansion seems to have come to a halt after 1982. Yet, with a labor force increasing at close to 4 percent a year, the need for economic growth is clearly pressing. In the last five years Mexico has made remarkable progress in reducing its fiscal deficit, depreciating its exchange rate, liberalizing its foreign trade, and privatizing public enterprises. It is not yet clear, however, whether these efforts are sufficient to allow growth to resume at satisfactory levels.

To address this issue, the paper starts by reviewing some aspects of Mexico's recent economic performance. In particular, it examines critically the view that identifies the lack of savings as the main culprit behind the recent record of stagnation, high inflation, and balance of payments difficulties. From a review of the savings-investment identity, it suggests that the direction of causality between savings and investment has been ambiguous. To illustrate this point, a simple, three-gap growth model is presented. An investment gap is added to the usual savings and external gaps, and the paper shows that, while the recession periods of 1982-83 and 1986-87 seem to fit the investment-gap classification, the aborted recovery of 1984-85 appears to be a reflection of a binding external gap.

Among the factors that would engender a suitable environment for investment, price stabilization and the need for both debt and trade negotiations are underlined. The paper argues, however, that Mexico should not let debt negotiations get in the way of comprehensive trade agreements. The need for a recovery of financial intermediation is also emphasized, and, in that context, the relevance of indexed financial instruments and the issue of capital controls and financial openness are briefly discussed.

On the basis of a simple growth model, which incorporates both internal and external transfer requirements, the paper finally concludes that as investment recovers, savings will again become the binding constraint on growth. A satisfactory growth recovery will require, in particular, that public-sector savings outside the petroleum sector rise by at least 3 to 4 additional percentage points of GDP beyond their 1986-87 average. Additional resources, of about 2 percentage points of GDP, should come simultaneously from the external sector, entailing a moderate current account deficit that can be compatible with a reduction over time of the foreign debt burden, provided that the corresponding resources are invested productively.

The paper scrutinizes the sensitivity of the above conclusions to changes in underlying parameters. It shows in particular that in the absence of fiscal adjustment, a moderate reduction in the price of oil or a rise in external interest rates could lead to public sector insolvency.

"Dual Exchange Markets Under Incomplete Separation: An Optimizing Model"
by Jagdeep S. Bhandari and Carlos A. Vegh

This paper constructs and analyzes a model of dual exchange markets that are incompletely separated owing to the presence of fraudulent transactions. Such transactions are known to be widespread in the countries that adopt such an exchange rate system. While illicit cross-transactions between exchange markets have been incorporated in previous theoretical analyses, the study treats the phenomenon of fraudulent transactions somewhat more realistically. At the same time, the analysis also treats the costs of engaging in illicit activity more comprehensively by recognizing and taking account of the possibility of both indirect transactions costs (such as bribing of officials) and compulsory forfeiture of illicitly acquired foreign assets.

The effects of devaluation and changes in real government expenditure are examined within the framework of the model. It is seen that in the stationary state the spread between the financial and commmercial exchange rates is zero. In this sense, the viability of dual exchange rate regimes is clearly limited. Upon devaluation of the official rate, however, a spread does emerge, in which the (floating) financial rate is relatively appreciated vis-a-vis the commercial rate. Thus, foreign currency is available at first at a discount in the financial market, but with the passage of time the discount diminishes progressively and eventually turns into a premium. The final phase of adjustment sees the premium declining until the steady state with a zero spread is ultimately restored. This oscillatory response is directly attributable to the presence of intermarket leakage. Other optimizing models that ignore leakage are incapable of generating this type of response involving, first, a financial discount and, susbsequently, a premium in the market. This type of adjustment is more than a theoretical curiosity. An examination of several actual country experiences reveals a pattern that conforms to these theoretical predictions.

"Fiscal Policy and External Performance:
The Turkish Experience" by George Kopits and David Robinson

Facing a severe balance of payments crisis, high inflation, and economic stagnation, Turkey embarked in 1980 on a far-reaching stabilization and liberalization program. At first, structural reform measures were accompanied by a restrictive fiscal policy stance, which contributed to export-led economic growth and a significant movement toward both domestic and external equilibrium. Since 1984, however, along with further structural adjustment, fiscal policy has been partly reoriented to high growth objectives, as well as to social and regional development. Notwithstanding the acceleration of economic growth to increasingly less sustainable rates (averaging nearly 8 percent in 1986-87) and a surge in inflation (to an annual rate of more than 70 percent by mid-1988, from about 25 percent at end-1986), the external current account continued to improve (with a deficit equivalent to 1 1/2 percent of GNP in 1987, as against almost 6 percent of GNP in 1980). Consistent with the implications of the Mundell-Fleming model, this outcome is attributable to the combination of a largely monetized fiscal expansion (the public sector borrowing requirement averaging 7 percent of GNP in 1984-87) and a flexible exchange rate policy.

Policy simulations suggest that an unchanged public sector borrowing requirement during 1981-87 (equivalent to over 5 1/2 percent of GNP), assisted by a reduced rate of real depreciation, would have contributed, on balance, to an improvement in economic performance. During 1984-87, Turkey would have experienced a significantly lower inflation rate (averaging about 6 1/2 percentage points less a year) and an unchanged reduction in the external imbalance, at a relatively small cost in terms of forgone output (less than 1 percentage point reduction in real GNP growth), compared with the actual outcome.

"Terms of Trade Disturbances, Real Exchange Rates, and Welfare: The Role of Capital Controls and Labor Market Distortions"
by Sebastian Edwards and Jonathan D. Ostry

Many arguments advanced in favor of maintaining restrictions on international asset trade within the European Community (EC) have not paid insufficient attention to the welfare consequences of this type of market intervention. This paper develops a simple, fully optimizing, intertemporal real model in which the welfare consequences of capital controls can be assessed.

Two main issues are considered. First, how do capital controls affect the adjustment of macroeconomic variables to real disturbances (specifically, shifts in the terms of trade)? Second, how do capital controls--which distort intertemporal trade--interact with other distortions (such as labor market rigidities) that prevail in many EC countries and that are unlikely to be removed as a result of the creation of the European single market? Put differently, what kind of second-best arguments can be made for maintaining capital controls within Europe, given that certain distortions will remain after the European single market comes into being in 1992?

The paper finds that changes in the terms of trade may generate "perverse" welfare movements when capital controls are present, and that these movements affect the response of other macroeconomic variables (such as the real exchange rate and current account) to real disturbances. For example, an improvement in the terms of trade, which unambiguously raises potential welfare under free trade, may actually be immiserizing when capital controls are present. Second, the paper finds that the optimal (second best) response to labor market rigidities may not involve capital controls at all, but may actually require subsidizing capital movements. The conditions under which capital controls are (second-best) optimal are presented and are shown to depend on the resulting movements in real exchange rates and relative factor intensities in the tradable and nontradable sectors.

"Net Foreign Assets and International Adjustment in the United States, Japan, and the Federal Republic of Germany"

by Jocelyn Horne, Jeroen Kremers, and Paul Masson

The current international environment is characterized by larger current account imbalances in the United States, Japan, and the Federal Republic of Germany than at any point since the early postwar period. Moreover, the persistence of these imbalances from 1982-83 to the present has led to massive changes in net foreign assets and liabilities in these countries. The United States, which was the largest net creditor country between World War II and the early 1980s, is now estimated to be the world's largest net debtor. An important issue is whether forces exist that will smoothly adjust net foreign assets to equilibrium levels, or whether, instead, asset and liability positions will continue to build and will be associated with instability in international credit and foreign exchange markets.

In considering the question two conceptually different but interrelated issues may usefully be considered: first, whether a long-run relationship exists between net foreign assets and other variables, and second, what short-run or medium-run adjustment mechanisms exist to bring about the long-run relationship. This paper specifies a general model that allows for feedbacks consistent with various transmission mechanisms. In order to assess whether a long-run relationship exists, the model tests whether deviations from alternative long-run relationships seem to reverse themselves and examines whether some of the key short-run feedback mechanisms can be identified within a dynamic-model framework.

The tests suggest that a long-run relationship exists between the net foreign asset/GNP ratio, the public debt/GNP ratio, and demographic factors. Moreover, in each of the three countries, deviations from the long-run equilibrium ratio for net foreign assets appear to exercise significant and stabilizing feedback on current account imbalances through domestic absorption and other channels. Dynamic equations for net foreign assets of the United States, Japan, and Germany, as well as equations for absorption in Japan and Germany, satisfy a broad set of diagnostic criteria.

Developments in the 1980s seem to have differed in two respects between the United States on the one hand and Japan and Germany on the other. First, the long-run net foreign asset equilibrium of the United States swung very sharply negative, reflecting an accumulation of public debt at a pace so rapid that it represented a break with the policies of previous decades. In contrast, as Japanese and German authorities implemented policies to consolidate public finances, the net foreign assets of these countries grew dramatically. Second, the dynamic behavior of U.S. absorption that prevailed during most of the postwar period changed significantly in the 1980s, giving rise to a historically high level of absorption relative to income.

"The External Debt Problem of Sub-Saharan Africa"
by Joshua Greene

The external debt problem of sub-Saharan Africa has been increasingly recognized as a serious policy issue during the past few years. Between 1980 and 1987 the region's aggregate external debt (excluding arrears) rose from US$54 billion to US$126 billion, while debt-service ratios increased from 11 to 26 percent of exports of goods and services. By 1987 average ratios of debt to exports and debt to GDP for the region exceeded those for the heavily indebted countries and for countries with recent debt-servicing problems.

After reviewing the various factors responsible for the rise in sub-Saharan Africa's debt burdens and measures already taken to alleviate them, this paper explores three additional debt strategies that have been proposed: assisting low-income countries in meeting their obligations due to international organizations; providing more extensive bilateral debt forgiveness; and eliminating all official sub-Saharan debt and providing all future aid in the form of grants. Because of the costs associated with the first and third strategies and the budgetary stringency facing the bilateral donors that must inevitably cover the costs for such assistance, the paper concludes that only the second has much chance of success. Even for this proposal there is a danger that some donors might view debt forgiveness as tantamount to new aid and reduce other disbursements in proportion to the debt they forgive. In addition to these proposals, the paper analyzes several measures that sub-Saharan African nations themselves can take to reduce their debt-related problems, including increasing domestic savings through reductions in fiscal deficits and measures to increase private savings, and limiting new external borrowing to concessional loans for projects likely to generate the foreign exchange needed to meet the associated debt-service obligations.

"A Simulation Model for Financial Programming"
by Richard C. Barth and Bankim Chadha

This paper presents a simulation model that can serve as a basis for a developing country growth-oriented adjustment program. To illustrate its use, the model is applied to and solved for the case of Turkey, and a medium-term scenario is computed. The model is designed to be both simple and flexible so that it can be applied to a wide range of developing countries.

The model integrates demand-determined output with a supply side responsive to policies affecting investment and it allows relative prices of domestic and foreign factors of production to determine their relative shares. It also explicitly links fiscal, monetary, and exchange rate policies to major macroeconomic variables. Moreover, in deference to the requirements of its potential users, the model is written and solved for use on a microcomputer that employs software familiar to Fund economists. It allows the user to evaluate quickly alternative assumptions and policies as well as behavioral relationships. The format of the model also allows the user to add and substitute alternative behavioral equations depending on the particular country to which it is being applied. Since the model is designed for medium-term analysis, a flexible external debt segment is an important component. The model permits external financing of the public sector deficit to vary according to maturity, grace period, and the time path of interest rates.

The properties of the model are determined by carrying out simulation exercises. The paper reports the effects on GDP, prices, and external and fiscal deficits of changes in both exogenous and policy variables; the relative effectiveness of alternative policy instruments is examined in the context of the model's linkages.

The paper includes a practical section for the user, explaining the computer spreadsheet and the steps that must be followed in order to compute alternative medium-term scenarios. It concludes with some suggestions about how the model can be strengthened.

"Macroeconomics and Famine"
by Bankim Chadha and Ranjit S. Teja

An important contribution to the theory of famines is the argument that the great famines of the twentieth century were not caused by a decline in per capita food output but rather by a decline in individuals' ability to purchase food. This paper utilizes such an "entitlements approach" to develop a model that explains how loose monetary and fiscal policies may cause famines even when there is no decline in food output. The basic idea is that expansionary macroeconomic policies can lead to sharp increases in the relative price of food--which reduce people's ability to purchase food both directly through the standard price effect and indirectly by generating greater unemployment.

The paper models a typical underdeveloped economy susceptible to famines by using efficiency wage theory, an analytical device that yields chronic unemployment. The chronically unemployed form a group of destitutes that survive mainly by begging, scavenging, or performing menial tasks. They obviously have the smallest food entitlement and are most vulnerable to any increase in the relative price of food. Further, such a price increase is shown to lead to greater unemployment arising from the contraction of the nonfood sector.

The transmission mechanism from macroeconomic policy to higher relative food prices, and thence to famine, is now easily traced. For example, in a situation where available hedges against inflation are limited, higher monetary growth results in a portfolio shift away from real money balances toward the holding of physical assets, such as food grains, a process that results in a sharp, but temporary, increase in the relative price of food (because food consumption must be squeezed in order to make room for greater stock holding). If the ensuing loss in food entitlement is sufficiently severe, the result is famine.

This framework is applied to re-examine the events leading up to the Bangladesh famine of 1974. In contrast to the view that the famine was caused by crop damage owing to floods, the paper shows that an explanation along the lines sketched above is, if not conclusive, at least plausible.

The main practical point emerging from this model is that an effective response to famine requires macroeconomic policies that reduce the relative price of food. If the famine has been preceded by rapid monetary expansion, the appropriate policy response may require some reduction in monetary growth rates. The best government intervention is the direct provision of food from buffer stocks. Alternatively, if foreign grants or concessional foreign borrowing are available, imported food could be distributed to the affected population. In contrast, fiscal operations to procure food grains domestically when a famine is already in place tend to drive up the relative price of food and exacerbate the problem of inadequate food entitlement.

"The Evolving Role of Fiscal Policy in Centrally Planned Economies Under Reform: The Case of China"
by Mario I. Blejer and Gyorgy Szapary

The principal elements of market-oriented reforms in centrally planned economies have been the enhancement of economic agents' freedom to make decisions and the strengthening of market forces by the gradual removal of administrative controls and the fostering of competition. The role of central planning has consequently diminished, and more emphasis is being given to the use of indirect levers of macroeconomic management to regulate the behavior of increasingly autonomous economic agents. These systemic changes have altered the functions and objectives of economic policy instruments, particularly fiscal instruments. This paper analyzes fiscal policy in the context of market-oriented reforms by examining the case of China.

In the emerging economic system in China, fiscal policy provides the Government with a policy tool to manage aggregate demand. The paper considers how effectively fiscal policy, as currently implemented, does so and whether certain aspects of reform tend to create fiscal imbalances. To evaluate these aspects, the ability of the emerging system to avoid a deterioration of public finances without resorting to policies that undermine reforms must be assessed.

One weakness in the implementation of fiscal policy in China arises from the current practices of determining tax liabilities within the framework of the enterprise-contract system. The contracts set the enterprises' tax liability in such a way that the long-term elasticity of tax revenue is reduced to below unity. Moreover, the case-by-case tax negotiation implied by the contract system introduces a high degree of discretion into the tax system. Furthermore, the weaknesses for macroeconomic management resulting from the current center-province revenue-sharing arrangements are also discussed. These weaknesses make China's fiscal policy a flawed macroeconomic instrument. The paper concludes by suggesting some measures to address this issue.

"Currency Switch and the Choice of an International Reserve Currency"
by Harris Dellas

Changes in the inflation rate can influence the allocation of resources and the distribution of wealth. In an open economy, a movement in the inflation rate (or the exchange rate) may affect the real value of nominal international assets, especially when hedging opportunities are not available. A country whose currency is used as an international "vehicle" may be tempted to use inflation to decrease the value of its outstanding liabilities (reserve money).

This paper explains how reserve currencies are chosen and why sovereign issuers of these currencies in fact refrain from using inflation to repudiate their foreign liabilities. Inspiring this restraint by monetary authorities is a fear that foreigners holding the reserve currency will switch to other currencies if the monetary authorities attempt to raise excessive revenue through inflation (which will deprive them of valuable seigniorage in the future). The paper shows that even in the absence of other concerns about inflation (such as stabilization), the availability of competing currencies can impose monetary discipline that leads to a finite, time-consistent inflation rate.

An additional implication of this analysis is that capital flight essentially constitutes a currency switch and hence potentially serves as a deterrent to excessive money creation.

"Government Purchases and Relative Prices in a Two-Country World"
by Jonathan D. Ostry

This paper develops a fully optimizing, intertemporal model of a two-country world in which agents consume three goods (importables, exportables, and nontradables). The model analyzes the effects of government spending policies on relative prices (rates of interest, real exchange rates, and the terms of trade) and quantities in the world economy. Previous models have employed a higher degree of commodity aggregation and hence have been unable to analyze the determinants of co-movements among the various relative prices (for example, the terms of trade and real exchange rates) induced by fiscal policies.

The main results suggest that the composition of government purchases, both within a period and across periods, is a crucial determinant of both the domestic effects and the international transmission of government purchases. In contrast to composite-tradable-commodity models, the paper finds that a temporary increase in government spending on either tradable or nontradable goods has an ambiguous effect on the world interest rate. "Perverse" cases--in which temporary spending shocks actually lower the world interest rate--tend to be associated with sharp fluctuations in other relative prices (terms of trade and real exchange rates) along the adjustment path. The paper argues that the behavior of these relative prices is potentially of some importance in determining the overall effect of fiscal policies on macroeconomic variables, such as consumption, investment, and employment.

The paper also considers the relationship between government purchases and the current account balance. While much theoretical work exists on the relationship between budget deficits and the current account (the "twin" deficits), the case considered in the paper involves the effects of balanced budget increases in spending. It is shown that because government spending policies have an ambiguous effect on the consumption rate of interest and terms of trade of the country undergoing fiscal expansion, temporary increases in government spending may actually be associated with improving current account positions. Moreover, and in contrast to previous findings, the paper demonstrates that this result may occur both in the case of government spending on home goods or in that of spending on tradable goods.

"The Recent Behavior of U.S. Trade Prices"
by Daniel Citrin

In spite of the substantial decline in the real effective value of the dollar since March 1985, the U.S. merchandise trade deficit continued to widen in nominal terms until late 1987. While the deficit has narrowed more recently, a widespread view remains that the adjustment to exchange rate changes has been slower than might have been expected. In this connection, attention has been drawn to the behavior of U.S. import and export prices, which have risen by less than might have been expected given the decline in the value of the dollar.

This paper examines the recent behavior of these prices on the basis of different indicators and concludes that the modest movement in the national accounts deflators for nonagricultural exports and non-oil imports is largely attributable to swings in commodity prices and to a decline in the price of computers, which now figure more prominantly in U.S. trade. To take account of the influences of these factors, the paper constructs fixed weighted price indices for manufactured exports and imports, excluding computers.

The paper then outlines a theoretical model of trade price determination and presents an empirical analysis of the movements in the fixed weighted price indices based on the model. Estimation results over the sample period 1974-84 suggest that changes in exchange rates and production costs are fully passed through to changes in U.S. export and import prices in the long run. With regard to import prices, the results suggest that foreign exporters initially absorb roughly one fifth of a loss in competitiveness by lowering profit margins. This behavior, combined with a lag with which changes in foreign export prices are reflected in changes in U.S. import prices, implies significantly less than full pass-through over a period of several quarters.

Results obtained by predicting the movements in trade prices during 1985-87 on the basis of the estimated equations suggest that, when allowance is made for the special factors referred to above, the recent behavior of U.S. trade prices is not out of line with historical experience.

"The Linkage Between Speculative Attack and Target Zone Models of Exchange Rates"
by Robert P. Flood and Peter M. Garber

Agents in the public or private sector often follow one set of actions when their environment lies within some prescribed boundaries and switch to another set of actions when the boundaries are reached. Their recognition of the presence of the boundaries ties the two sets of actions together.

This paper is concerned with describing the actions of agents operating inside a target exchange rate zone. The authors' previous work studied economic behavior in similar situations but did not come to closed-form solutions. Recent research, however, has shown how to derive closed-form solutions for a variety of problems in controlled Brownian motion (that is, random movement with occasional interaction by a regulator). This research makes it easy to implement the idea that the anticipation of "bumping into" the boundaries generates important nonlinearities that are poorly modeled by linear approximations.

This paper generalizes the model of the target zone exchange rate. Its main contributions are in linking recent developments in the theory of target zones to the mirror-image theory of speculative attacks on asset price fixing regimes and in using aspects of that linkage to interpret this literature. The paper aims to unify these two theories by showing that the solution concepts in both are identical. It can be shown that in the target zone context, interventions similar to the speculative attacks must generally occur as a result of a policy to defend the zone.

"Structural Determinants of the Natural Rate of Unemployment in Canada"
by David T. Coe

This paper attempts to assess empirically how policy variables and other structural aspects of the Canadian economy may have affected the natural rate of unemployment since the early 1970s. Such an assessment provides a basis for judging the extent to which economic policies can contribute to a reduction of the natural rate in the medium term.

The paper begins with a general discussion of the structural determinants of the natural rate. It argues that although supply shocks and demographic changes may increase unemployment if real wages do not adjust, the ultimate determinants of the natural rate are those features of the economy that impinge on the adjustment of real wages.

An important structural feature relevant to the natural rate is the unemployment insurance system. Changes in the Canadian unemployment insurance system over the last two decades have made qualifying and benefit periods dependent on the level of the regional and national unemployment rates. One of the innovative features of this paper is the calculations demonstrating the extent to which the "generosity" of the unemployment insurance system in Canada is related to past developments in unemployment rates.

A number of equations are estimated relating the unemployment rate to cyclical and structural variables. Given the hiring and firing practices of firms, few constraints are placed on the dynamic response of the unemployment rate to its determinants. Estimates of the natural rate of unemployment are then derived from one of the dynamic unemployment equations by solving for the long-run, steady-state relationship between the unemployment rate and its structural determinants. The results suggest that important determinants of the natural rate are the generosity of the unemployment insurance system, relative minimum wages, payroll taxes, and the degree of unionization of the labor force. Estimates of how each of these has contributed to changes in the natural rate since 1971 are presented. The estimated equations also incorporate a hysteresis-type mechanism whereby the natural rate is related to past levels of the unemployment rate through the working of the unemployment insurance system.

Since economic policies are largely responsible for past changes in the natural rate, they can contribute to reductions in the natural rate in the medium term. This would ease the constraints on macroeconomic policies by reducing inflationary pressures while at the same time tending to lower unemployment and increase output.

"A Model of Adjustment and Growth: An Empirical Analysis"
by Carmen M. Reinhart

The concept of "growth-oriented adjustment," or the notion that economic growth is essential for the achievement of a sustained reduction in inflation and a viable balance of payments, has recently received the attention of policymakers and academics alike. Indeed, growth-oriented adjustment is a key characteristic of the policy packages that make up a Fund-supported adjustment program.

This paper begins by outlining the model developed by Khan and Montiel (1988), which merges the monetary approach to the balance of payments and a neoclassical growth model into a unified framework in which inflation growth and the balance of payments are simultaneously determined. The usefulness of this model for policymaking is assessed by examining empirically the trade-off between the simplifying assumptions that characterize the model and its ability to fit reality. The theoretical framework is applied to a diverse sample of seven capital-importing developing countries. In doing so an attempt is made to answer the following questions: Are the key parameters of the model stable? How sensitive are the policy multipliers to these parameter estimates? Are some target variables more vulnerable to forecast errors than others?

The analysis proceeds to test the validity of a subset of the theoretical assumptions and to use the estimated model for a variety of comparative static exercises, including fiscal and monetary policy changes, as well as devaluation. In general, it is found that the two weak building blocks of the model are the assumptions that output expands at a rate determined solely by technology and capital formation and that the income velocity of money is a constant.

The second part of the evaluation process shows that the robustness of the model's implications depends heavily on two factors. First, "robustness" depends on which target variables are being considered--for output growth and the balance of payments, the variation in the effects of policies is small, despite sizable variation in the parameter values. By contrast, the effects of policy changes on inflation are far more uncertain. Second, the reliability of the policy implications depends also on the instrument being utilized. From the multipliers calculated in the paper, it is evident that the effects of a devaluation (on all target variables) are less sensitive to parameter changes than are the effects of changes in credit or fiscal policies.

"Financial Crisis in Developing Countries and Structural Weaknesses of the Financial System" by Guillermo R. Le Fort

This paper studies from a theoretical point of view the generation of financial crises in developing economies. Financial crises, which involve the failure of banks, the reduction of asset values, widespread over-indebtedness, and international capital flight, are a leading cause of recessions and of disruptions in financial intermediation.

This paper shows that deficiencies in the microeconomic structure of the financial system create the conditions for excessive risk-taking by banks. These structural deficiencies are aggravated by the liberalization of the financial system, even when the liberalization consists only of the simple elimination of interest rate ceilings and credit controls, because several other distortions come out into the open as the market repression mechanisms are lifted. These other distortions, including explicit or implicit insurance on bank liabilities, encourage banks to carry riskier loan portfolios and thus increase the probability of a financial crisis.

The paper concludes that structural reforms can increase the efficiency of the system in performing intertemporal transactions and in sharing risk. These reforms should consider the institution of a regulatory system to avoid excessive risk-taking by banks. A system of bank supervision needs to be used to penalize the banks in direct relation to the riskiness of their loan portfolio. According to the model presented, the optimal credit allocation under full insurance of bank liabilities can be obtained by imposing effective bankruptcy penalties or by implementing a system of actuarially fair insurance premiums on bank liabilities.

"Deregulation and Consumption--Saving Dynamics in Nordic Countries" by Olli-Pekka Lehmussaari

The institutional characteristics of financial markets have to some extent differed among Nordic countries. Until recently, Finland, Norway, and Sweden had broad-based credit controls, while Denmark had a relatively liberal credit system. For many years real after-tax interest rates were negative for the large majority of households as a result of a combination of tax deductible interest payments and high personal tax rates.

By the end of 1985, the liberalization of financial markets was largely completed in all Nordic countries. This opened new opportunities for household borrowing, giving rise to a surge in household demand for credit. As a result, saving rates dropped sharply. This paper attempts to determine whether the structural changes brought about by financial reform were so large that consumption models estimated, using data from the period prior to the liberalization, cannot be used to predict accurately the developments in the post-sample period. Common factors that contributed to the decline in the saving rate are also analyzed and compared on a cross-country basis.

The analytical framework of the study is based on the life-cycle hypothesis, which implies that individuals save more during their years of high earnings and dissave during their years of low earnings. Moreover, the error correction model, which reproduces long-run properties of the life-cycle model, is used. The empirical results suggest that the financial reforms have contributed to structural changes in the economic relationships in Finland and Norway. The evidence regarding structural change is less clear cut in Denmark, while the findings do not reveal changes in Sweden. Furthermore, the results suggest that the wealth effect has played an increasing role in saving decisions on household consumption in recent years.

These findings should be assessed in the light of the high personal tax rates and the favorable tax deductibility rules regarding interest payments for both mortgage and consumer loans. Prior to deregulation, low after-tax interest rates were mitigated by credit rationing. After deregulation, however, the surge in household credit demand was not necessarily countered by an increase in nominal interest rates, since fixed exchange rates implied that nominal domestic interest rates were largely determined by foreign interest rates. Because increases in nominal interest rates were limited, the logical alternative to depressing credit demand would have been to reduce the tax value of interest payments. Since the present tax rules are still biased against saving, cuts in marginal tax rates and reductions in the tax value of interest payments would be expected to increase private savings.

"Real Exchange Rate and Output Variability:
The Role of Sticky Prices" by Bankim Chadha

This paper extends to an open economy with flexible exchange rates and perfect capital mobility the recent literature on the relationship between price stickiness and aggregate economic activity in a closed economy.

Despite the widespread incorporation of the assumption of sticky goods price adjustment in models of exchange rate determination, little effort has been devoted to examining the relationship between the degree of price stickiness, or the speed of goods price adjustment, and the variability of the real exchange rate and that of output. Such a link is important since a plausible inference often drawn is that the greater the degree of price stickiness, the more variable are the real exchange rate and output. Indeed, fluctuations in aggregate output are often attributed to the short-run rigidity of wages and prices, and various proposals and pleas to make wages and prices more flexible have often been advanced.

The paper shows that, in general, a critical degree of price inflexibility exists below which increased inflexibility of prices reduces the variability of output. It also shows that, as prices become more inflexible, the relationship between the variability of the real exchange rate and that of output will be "nonmonotonic;" that is, as the variability of the real exchange rate increases, the variability of output will decline up to a point, and only then increase. A nonmonotonic relationship between the variability of output and the degree of price stickiness does not require the dependence of aggregate demand on the real interest rate, as has been argued in the context of a closed economy.

"Gaining Policy Credibility in the EMS:
The Case of Ireland" by Jeroen J.M. Kremers

This paper presents empirical evidence that Ireland's disinflation policy during the 1980s has derived credibility from its participation in the exchange rate mechanism of the European Monetary System (EMS). Policy credibility is an important ingredient in a disinflation, since it may serve to moderate wage settlements and hence reduce the output cost associated with the disinflation.

The paper shows that before 1979 Irish inflation expectations followed mainly the expected movements of prices in the United Kingdom. Given the accommodating stance of exchange rate policy in the United Kingdom, the influence of changes in international price competitiveness on expected inflation in Ireland was minor.

In contrast, when Ireland joined the EMS, the inflationary expectations of the Irish soon moderated toward the price behavior expected of partners in the exchange rate mechanism (in which the United Kingdom does not participate). Competitiveness became an important influence on expected inflation in Ireland. The sharp loss of competitiveness in 1981-83 seems to have been instrumental in establishing the credibility of the disinflation.

"Balance of Payments Crises and the Structure of Adjustment Policies" by Michael Frenkel and Martin Klein

This paper integrates the theory of balance of payments crises into a model of macroeconomic adjustment in a small open economy. At the heart of the problem of this integration is the conflict between a high fiscal deficit and a fixed exchange rate system. The analysis focuses on the attempt by the government, facing an unsustainable fiscal deficit, to prevent the collapse of the fixed exchange rate system.

Using a model of intertemporal optimization, the paper shows that different fiscal measures exert different immediate and medium-term effects on the stock of official foreign exchange reserves and on the real sector of the economy. In addition, different measures require more or less stringent conditions for their successful implementation. The analysis also demonstrates that the effectiveness of adjustment measures depends on whether or not the government announces beforehand the measures to be implemented.

The analysis implies that the fiscal structure of adjustment policies crucially determines the success of adjustment. Moreover, adjustment packages have to be designed carefully in order to cut the primary deficit and, at the same time, to meet the constraint imposed by the limited stock of reserves.

"The Effects of Fund-Supported Adjustment Programs in African Countries, 1973-86"
by Joshua Greene

This paper examines the effects of Fund-supported adjustment programs in African countries during 1973-86 on four indicators of macroeconomic performance--the overall balance of payments, the external current account balance, the domestic inflation rate, and the rate of GDP growth--during the initial program year as well as during the initial and following years taken as a whole. To conduct the analysis, the paper applies the approach used in Khan's recent study of the effects of Fund-supported adjustment problems to control for differences in initial economic conditions in the countries, in country policy responses, and in changes in the external environment, which might otherwise bias the results. The paper also examines the effect on the four macroeconomic indicators of program implementation, as measured by the percentage of authorized purchases made under a Fund arrangement, and of structural adjustment lending from the World Bank.

The results indicate that for the period as a whole, countries that satisfactorily implemented Fund arrangements achieved a statistically significant reduction in their inflation rates, by an average of about 11 percentage points during the initial program year and by 12 percentage points over the period of the initial and following year. The effects of Fund arrangements on most other variables were statistically insignificant, although there was some indication that arrangements were associated with an improved current account balance and, in the case of highly implemented programs, a slightly higher growth rate. World Bank structural adjustment lending had no statistically significant effects on any of the macroeconomic indicators. For the 1980-86 subperiod the results were broadly similar, although there was some indication that Fund arrangements were more successful in improving domestic economic performance and somewhat less successful in improving external performance than during the entire 1973-86 period.

"Currency Substitution and Financial Innovation"
by P.E. Guidotti

To analyze the macroeconomic effects of structural changes in the financial system, this paper presents a cash-in-advance framework in which the velocity of income varies. The financial innovation discussed in this paper encompasses changes in the technological environment affecting how individuals carry out financial transactions. The analysis deals with the transmission of financial innovation and the role played by currency substitution.

The analysis leads to several conclusions. First, cash-in-advance constraints influence the effective relative prices of consumption. Therefore, benefits from the transmission of financial innovation depend on how the innovation alters the relative cost of using different currencies and how it affects equilibrium terms of trade.

Second, financial innovation may lead the nominal and the real exchange rate's to move in opposite directions. In particular, a country in which the relative cost of using foreign currency declines may face a nominal appreciation and a real depreciation of its currency.

Third, not only changes in relative prices, but also cross-border transfers of seigniorage, which occur because of currency substitution, assist the international transmission of the effects of financial innovation. Under suitable symmetry assumptions, these considerations in an analysis of country-specific financial innovation do not alter qualitatively the price effects that are obtained by an analysis of the effects of global changes.

"Optimal Taxation Policies in the EMS: A Two-Country Model of Public Finance" by Carlos A. Vegh and Pablo E. Guidotti

This paper investigates how the type of constraints likely to develop in the context of the European Monetary System (EMS) by 1992 impacts upon the optimal taxation structure that would prevail in the absence of those constraints. The analysis is carried out in a public finance context where seigniorage is an important source of revenue because high government spending coupled with inefficient tax administration systems makes relying on conventional consumption or income taxes relatively more costly.

Two main questions are addressed. First, the paper explores how the constraint of having to share a common inflation tax in order to preserve fixed exchange rates in the context of perfect capital mobility influences the optimal policy decisions concerning the inflation tax. The analysis suggests that the common inflation tax is closer to that of the country that originally had the highest inflation. The inefficiency of the tax administration system plays a more crucial role than does spending by the different levels of government. Depending on the initial tax structure of each country, the original consumption taxes may either converge or diverge. The effects on the revenues from money creation as a fraction of total revenues are also analyzed.

Second, the paper discusses how the harmonization of consumption taxes affects the spread between national inflation rates and hence the probability of having to resort to realignments. The analysis suggests that national nominal interest rates will be subjected to important changes as a result of the large changes in revenues produced by the equalization of the consumption tax rates owing to the relative unimportance of seigniorage as a source of revenue.

"European Financial Integration and Revenue from Seigniorage: The Case of Italy" by Lazaros Molho

This paper develops a framework for the computation of fiscal gains from seigniorage in Italy and uses it to illustrate how the public finances might be affected by European financial integration. The paper argues that, from the point of view of countries with a high stock of interest-bearing public debt, the issuance of base money is akin to a debt management operation, whose economic significance is best measured by the associated savings in the government's interest bill. In this light, the extraction of gains from seignorage is subordinate to the goal of minimizing net interest payments on the public debt.

Over the 1981-87 period, seigniorage is estimated to have produced annual average interest savings on Italy's public debt amounting to 1 1/3 percent of GDP. These savings peaked at the equivalent of 1.7 percent of GDP in 1982 and fell steadily thereafter to 1 percent of GDP by 1987, in line with the decline in the average interest rate on publicly held government debt. This latter decline, however, was not commensurate with the pace of disinflation, leading to a steady increase in the real rate of interest. As a result, by 1987, a substantial portion of measured seigniorage gains reflected Italy's high real interest rate, which exceeded the average real interest rate in other major European countries by about 1 3/4 percentage points. This differential remained largely unchanged in 1988.

In the period ahead, European financial integration can be expected to affect revenues from seigniorage not only by enforcing EEC-wide convergence in rates of inflation and bank reserve requirements, but also by reducing interest rate differentials among like instruments denominated in different EEC currencies. These differentials should disappear as remaining capital controls are lifted, if inflation convergence succeeds in enhancing the fixity of exchange rates. Provided that the credibility of the exchange rate regime is supported by action to place Italy's public debt on a sustainable path, Italian interest rates thus seem set to decline substantially. Such a decline could easily offset the fiscal losses resulting from any decline in seigniorage revenues.

Numerical simulations confirm that the potential effect of financial integration on the building of public debt in Italy is likely to be of second-order importance. If the annual rate of inflation declines from 5 percent to 3 percent beginning in 1989, and the average reserve ratio on bank deposits is concurrently reduced from 22.5 percent to 5 percent, the ratio of public debt to GDP in 1992 would remain almost unchanged, provided that the real rate of interest on publicly held debt declined by 1/2 of 1 percentage point. Such an interest rate effect is well within the realm of possibility.

"An Economic Analysis of Tax Amnesties"
by Peter Stella

Tax amnesties have frequently been justified as a politically popular way to increase government revenue. This paper examines the circumstances under which amnesties are likely to have a beneficial impact on revenue collection. It concludes that, while in general it may be correct to impose a reduced penalty on individuals who voluntarily disclose tax evasion, short-lived amnesties of the type most frequently employed are unlikely to generate significant revenue when judged against the potential danger of reducing future tax compliance.

The success of temporary amnesties depends on a quick, convincing change in the revenue authority's behavior. The analysis demonstrates that, owing to the very nature of the tax enforcement problem, such a quick change in the public's beliefs would be difficult to bring about. The preconditions for an improvement in tax enforcement that exist in a number of U.S. states--particularly the existence of an efficient tax authority at the Federal level--are not present in most cases, particularly in developing countries. Consequently, in the majority of cases, a temporary amnesty would appear to offer little and to risk undermining the credibility of the revenue authority and reducing tax compliance.

"International Spillovers of Taxation"
by Jacob A. Frenkel, Assaf Razin, and Steven Symansky

This paper deals with the international effects of taxation. Tax policies have profound effects on the temporal composition and on the intertemporal evolution of the macroeconomy. The analysis highlights issues pertinent for the understanding of international effects of domestic tax policies and of international tax harmonization. It adopts the saving-investment balance approach to analyze international economic interdependence and includes a detailed specification of public- and private-sector behavior focusing on the roles played by taxes on income, consumption, and international borrowing. The paper presents stylized facts on the average consumption and income tax rates for the seven major industrial countries. These facts reveal large international diversity of tax rates and tax structures.

The theoretical model is used to analyze the consequences of revenue-neutral conversions between income and consumption (VAT) tax systems. It demonstrates analytically that the effects of such changes in the structure of taxes depend critically on international differences in saving and investment propensities, which in turn govern the time profile of the current account of the balance of payments. The results are also illustrated by means of dynamic simulations.

The paper then examines the international effects of budget deficits and public-debt management and demonstrates analytically, as well as by means of dynamic simulations, that these effects depend critically on whether the government manages its deficit through alterations in income or consumption taxes. Finally, motivated by proposals for tax harmonization associated with the single market in Europe of 1992, the paper considers the effects of international tax harmonization.

The main results demonstrate that, in analogy with the effects of tax conversions, the effect of harmonization depends critically on intercountry differences in saving and investment propensities. These differences are shown to yield conflicts of interest in the tax harmonization program.

"Exchange Rate Movements and International Interdependence of Stock Markets"

by Jagdeep S. Bhandari and Hans Genberg

Using post-1974 data, this paper examines linkages between stock markets in seven industrial countries. The first part of the paper identifies empirical regularities. Nominal and real stock prices across these seven countries appear to be significantly correlated. At the same time, however, there appears to be no stable long-run relationship between nominal stock prices and nominal exchange rates. Causality tests are utilized to ascertain whether stock price changes in a particular country cause similar stock price movements elsewhere. In an overwhelming number of the cases examined, intercountry stock price relationships are found to be mainly contemporaneous, thus precluding any firm conclusion about the dominance of any one country.

The second half of the paper constructs and analyzes a two-country theoretical model capable of generating patterns of adjustment in real and nominal stock prices and exchange rates in response to various economic disturbances. The fact that short-run movements in stock prices are positively correlated across countries can be used either to place restrictions on the parameters of the theoretical model or to draw inferences about the nature of the underlying shocks. For example, in the model, shocks that are positively correlated across countries give rise to similar movements in endogenous variables, such as stock prices. In turn, positive correlation of shocks can be the result of either active coordination of policies or of common disturbances, such as worldwide productivity shocks. Common movements in stock prices could also come about in response to country-specific shocks, provided that the transmission mechanism is appropriately specified. Finally, the model can also accommodate the empirical finding of the lack of a stable relationship between stock prices and nominal exchange rates. The paper concludes with some observations relating to further research in this area.

"Government Expenditures and Economic Growth:
An Empirical Investigation" by Jack Diamond

In recent years it has been more clearly realized that greater efforts should be made to direct adjustment policies toward growth. This realization has been reinforced by the complaint that setting targets for aggregate government spending while ignoring its composition has rendered the level of expenditure even less likely to enhance growth. Using evidence from a sample of developing countries, this paper examines the contribution of government expenditure to economic growth.

The paper begins by describing empirical results suggesting that the overall level of government spending and aggregate growth are only marginally related. There is a suspicion, however, that the results obtained from aggregate relationships mask important differences in the impact of various types of spending on growth. The Denison growth-accounting framework is used to investigate this possibility.

Empirical testing of the Denison model showed little relationship between the share of aggregate government current expenditure in gross domestic product (GDP) and the growth rate. Government expenditure may be disaggregated into spending on directly productive economic sectors, spending for social purposes, and spending on infrastructure. The conclusions of the study are that social capital expenditure on health, housing, and welfare may have a significant impact on growth in the short term. However, capital infrastructure expenditure may have little influence on real growth, and directly productive capital expenditure may even exert a negative influence. At the same time, current expenditures on directly productive sectors appear to exert a positive influence on growth.

Further tests also suggest that different categories of capital spending have different impacts on the growth rates of the economy. Lastly, experiments with explanatory variables used in other studies confirm the importance of the growth of exports to the overall rate of growth in the economy.

"Indexation and Maturity of Government Bonds: A Simple Model"
by Guillermo A. Calvo and Pablo E. Guidotti

This paper focuses on an important but somewhat neglected character in the inflation drama, namely, government bonds. It investigates the degrees of price indexation and debt maturity structures that are best when markets are incomplete and policymakers face "credibility" problems.

The paper uses a two-period model, in which the interest rate on government debt is not contingent on government expenditure, to analyze optimal indexation. It uses a three-period model to analyze optimal debt maturity. If indexation is optimal, the analysis shows it is best for the government to choose long-term maturities to smooth out inflation over time. If indexation is nonexistent or less than optimal, shorter maturities are preferable.

The analysis shows that indexation and maturity of government bonds may be powerful tools for policymaking. Price indexation is useful because it affects the relevant inflation-tax base--which includes not only high-powered money but also all non-indexed government debt--and removes the incentive to "inflate away" the real value of government bonds. On the other hand, debt-maturity management matters because it allows governments to alter the time profile of the inflation-tax base and to influence, over time, inflation that is compatible with productive incentives.

Factors Affecting Saving, Policy Tools, and Tax Reform: A Review
by Roger S. Smith

A declining rate of saving from the 1960s into the 1980s has been an issue of concern in many industrial countries. Several factors affect the level of saving. Policymakers have little control, at least in the short run, over demographic factors and the existing stock of wealth. Nor do they have much influence over cultural factors, including attitudes toward bequests. Other factors, such as the rate of return and the level of social security wealth, may, however, be open to policy action. While there is some evidence that encouraging corporate-retained earnings, fully funded private and public pension plans, and other forms of sheltered saving enhance total saving, considerations of efficiency and equity limit the use of these tools.

Government deficits appear to have reduced national saving in a number of countries during the 1980s. Belgium, Canada, Italy, and the United States may be the most obvious examples, but Australia, the Netherlands, Sweden, and the United Kingdom have all had public-sector deficits. Many see a reduction in the government deficit as the best way to increase the level of saving. Mixed evidence from the effects of various policy tools on the level of private saving supports this view. Although many economists believe that interest policies can be designed to increase private saving, the evidence is not yet convincing.

Given the difficulty of altering the rate of private saving, tax reform has focused on allocating saving and investment more efficiently rather than on directly affecting the level of saving and investment. Although policymakers are aware of the imperfections of income taxation and the much-touted advantages of consumption taxation, they appear to have chosen to improve, rather than replace, the income tax. Reducing income tax rates and relying on sales taxes rather than shifting to a progressive personal expenditure tax has improved intertemporal allocation.

"Monetary Control Procedures and Financial Reform: Approaches, Issues, and Recent Experiences in Developing Countries"
by R. Barry Johnston and Odd Per Brekk

The reform of monetary control procedures is under way in an increasing number of developing countries. These reforms have been motivated by emerging problems with traditional procedures, which have relied heavily on administered interest rates and credit allocation. The effectiveness of these direct regulations has eroded over time, hence weakening monetary control, while the regulations have also discouraged financial saving and created distortions in investment allocation. A more indirect, market-based approach to monetary control is desirable as it can increase the scope for macroeconomic control while allowing for a deregulation of interest rates and the allocation of credit.

The implementation of a more market-based approach raises questions regarding the design of monetary control instruments, implementation techniques and procedures, the phasing of various measures, and the promotion of market forces in the financial system. In the absence of developed markets, the use of primary issues of government or central bank securities supplemented by reformed central bank rediscount facilities has become the major instrument of monetary control. However, the precise techniques used to sell securities and to manage the short-term liquidity of the financial system vary substantially among countries.

A phased approach to reform is often necessary to avoid loss of monetary control and to accommodate the essential complementary development of competitive market processes. On the one hand, the reform of monetary instruments has to be supported by more general institutional and economic reforms; on the other, the changed approach to monetary control can be a catalyst for broader economic and institutional liberalization.

The reforms undertaken in the nine developing countries surveyed show broad similarities in their approaches. All countries have substantially reduced or abolished the use of direct controls on interest rates and credit. Most of the countries have made use of regularly held sales of treasury bills or central bank paper for monetary control purposes and have developed instruments that would allow them to conduct effective control over money market interest rates or reserve money growth. However, the effectiveness of the instruments has been constrained in some countries by the inadequate development of markets and expertise, and in others by the government's continuing large domestic financing needs and the subservience of monetary policy to fiscal considerations. This underlines the importance of broader economic and institutional restructuring to complement financial reform.

"Fiscal Policy, Locational Decisions, and Exchange Rates"
by Michael P. Dooley and Peter Isard

This paper distinguishes three channels through which changes in fiscal policy may be transmitted to exchange rates. One channel involves changes in the intratemporal composition of the demands for and supplies of different goods, which may result from shifts in purchasing power between public and private sectors or from revenue-neutral tax reforms that change the incentives that motivate consumers and producers. A second channel involves changes in the intertemporal pattern of private spending, sometimes referred to as "crowding-out" or "crowding-in" effects, which may result from changes in fiscal budget imbalances and which are often accompanied by changes in interest rates. A third channel, which has received less attention in the literature, involves changes in the location of production facilities or other taxable forms of wealth.

The paper focuses on the role that asset location decisions play in determining trade balances and exchange rates and emphasizes the relevance of fiscal policy to these decisions. The importance of this focus for analysis is suggested both by the balance of payments identity and by empirical observation. As a conceptual identity, locational decisions that have effects on capital account balances must have equal and opposite effects on current account balances, which may well put pressures on exchange rates. And, as an empirical observation, the two most dramatic episodes of exchange rate movements during the 1980s--the sharp real depreciations of debtor country currencies circa 1982 and the rise and fall of the U.S. dollar--were each associated with major changes in the relative attractiveness of locating productive capital or storing other forms of wealth in different countries.

Recognition that fiscal policy has a major influence on asset location decisions may thus be very important for understanding the behavior of exchange rates. It should also be recognized, however, that fiscal policy and asset location decisions affect relative prices or real exchange rates, and that the consequent effects on nominal exchange rates depend crucially on the strategy pursued by the monetary authorities.

"From Deficit Delusion to the Fiscal Balance Rule: Looking for an Economically Meaningful Way to Assess Fiscal Policy"
by Laurence J. Kotlikoff

Although the deficit is useful in Keynesian analyses of fiscal policy, it appears to be a less useful measure of fiscal policy in many neoclassical models. Unlike Keynesian models, in which current consumption and aggregate demand depend on current cash flows, consumption and aggregate demand in the neoclassical models examined here depend on the present value of households' future income.

Since households in these models care only about the present value of their resources, they are indifferent between a "tax" now that is "transferred" (i.e., returned with interest) next year, and "lending" to the government now and receiving a return of principal plus interest next year; that is, the households are indifferent as to how the government labels its tax. The government's choice of taxes today or higher taxes tomorrow will, however, alter its reported deficit. It follows that the deficit can change with no real change in policy, and policy can change with no change in the reported deficit.

The paper suggests that the nature of deficits in a simple certainty model or in settings with uncertain policy and liquidity constraints is, to a large extent, arbitrary. It then posits a more useful description of fiscal policy for the class of models in question and proposes a "fiscal balance rule" as an alternative to the "balanced budget rule" as a means of assessing whether fiscal policy is tight or loose.

"Private Consumption and Saving: The Cases of Mexico and Chile"
by A. Gomez-Oliver

The paper examines the behavior of private consumption and saving in two Latin American countries, Mexico and Chile. Problems of external indebtedness and the consequent need for enhanced domestic saving have made this a subject of substantial importance for these countries. Previous studies on consumption behavior in Latin America, have, however, used variables that are only proxies for the relevant determinants of consumption behavior. The present study devotes considerable effort to constructing relatively long series of variables that are more appropriate for examining the behavior of private consumption. In particular, in defining private and public sectors, the central bank is consolidated with the rest of the government, and the real disposable income of the private sector includes the real returns on its financial assets received from the government sector.

From the empirical analysis several important conclusions can be derived.

First, private consumption appears to be determined by real disposable income (including perceived sustainable capital inflows) and the relative cost of present consumption, that is, the expected real interest rate. In Chile, it also appears to be influenced by the expectations of devaluation.

Second, once the real disposable income, net capital inflows, and the variables measuring the relative cost of present consumption are included in the regression, government consumption has no additional explanatory value. Thus, private sector behavior does not appear to offset changes in government saving.

Third, the empirical approximation to permanent income was found to be relevant for both countries, especially for Mexico, for which the sum of the current and the 1-period lagged income elasticities was very close to 1.0.

Fourth, the expected real rate of interest seems to have a positive effect on private saving. In both countries, an increase of 1 point in the real interest rate appears to reduce consumption between 0.1 and 0.2 percent, which implies a more sizable effect on private saving, because saving represents a small fraction of consumption.

Finally, it apears that private consumption is influenced by the level of foreign saving as measured by the net real capital inflows. This may occur through their influence upon the relative prices of nontradables, particularly upon the prices of factors of production in the country compared with international levels.

"The Purchasing Power Parity Criterion
for Stabilizing Exchange Rates"
by Kenichi Ohno

The use of purchasing power parity (PPP) as a basis for stabilizing and eventually fixing exchange rates among industrial countries has been proposed by Professor McKinnon. While the concept of PPP is frequently used today, McKinnon's interpretation is fundamentally different from other interpretations of the PPP doctrine. McKinnon's PPP is a normative criterion, independent of whether PPP actually holds in the long run under the current system. It constitutes part of a comprehensive reform proposal that emphasizes international monetary cooperation to achieve long-run price stability among highly integrated economies. The key ingredients of his proposal are: first, commitment to permanently fixed nominal exchange rates; second, use of the price of a broad basket of internationally tradable goods as the nominal anchor of the system; and third, a relative-price adjustment mechanism based on absorption change and divergent price movements of various nontradable goods.

McKinnon stresses the importance of internal price movements as opposed to changes in the external terms of trade when the exchange rate fluctuates. Deviation of the exchange rate from PPP exerts "price pressure" on the tradable sector of the economy, which partially offsets the initial deviation and initiates the process of differential inflation across countries to re-establish PPP over time. In contrast, the exchange rate affects nontradable prices more indirectly and with longer lags. As a consequence, the relative price between tradable and nontradable goods is systematically altered in proportion to the deviation from PPP.

One can exploit this fact statistically to estimate the PPP exchange rate, namely, the path of the hypothetical exchange rate that would have exerted no price pressure either on one economy or the other. The methodology consists of two basic price and cost equations (which are derived from a structural model) and offers a more satisfactory solution than existing methods to the so-called base-year problem in estimating PPP. Using this price pressure approach, the yen/dollar and mark/dollar PPP exchange rates are estimated and compared with those derived from other approaches. These estimates are all close to each other. This demonstrates that estimating PPP, while not a trivial exercise, can be performed with scientific accuracy, and hence agnosticism about PPP exchange rates is unwarranted.

"A Forward-Looking Macroeconomic Simulation Model
for a Developing Country"
by Nadeem Ul Haque, Peter Montiel and Steven Symansky

The continuing debt crisis in developing countries has underscored the need not only to develop policy approaches that foster adjustment in domestic and external imbalances and increase the growth of output, but also to understand the relationships between debt accumulation and growth. Consequently, the study of macroeconomic issues, especially those relating to adjustment and growth, has increasingly gained importance. Although a fair amount of work has accumulated that examines some of these questions analytically and empirically in a partial equilibrium setting, few attempts have been made to develop theoretically sound macroeconomic models that study the relevant policy issues in a general equilibrium setting. This paper presents one such model which, it is hoped, can be extensively used for studying these issues.

The specification of the model relies on familiar analytical tools, such as a Mundell-Flemming two-good commodity structure, a permanent-income specification for private consumption, and a neoclassical investment function. At the same time, the model deviates from previous work by assuming that agents' expectations are rational. Furthermore, several of the more important structural features of developing economies, such as the role of imported intermediate and capital goods, the absence of domestic equity or securities markets, and the presence of dual markets for foreign exchange, have also been incorporated explicitly into the model.

The model was simulated using representative developing-country parameters. The simulations included a domestic credit expansion, a fiscal expansion, central bank intervention in the free exchange market, an increase in the foreign interest rate, and a devaluation. Several useful insights are derived from the simulations about the economy's general-equilibrium interactions, as well as the dynamics of the effects of various policy choices. For example, the simulations show that the dynamic response to a shock is fundamentally affected by the way expectations are modeled. Moreover, the impact effects of many policy shocks turn out to be opposite to their medium-term effects. It is, however, reassuring to note that the simulations confirm certain familiar results, such as the expansionary effect of increases in government spending or in the supply of domestic credit to the private sector. Additionally, the results show that the current account is improved by an official devaluation, although there may be a temporary contractionary effect on output. Finally, foreign interest rate increases will be expansionary if the private sector is a net external creditor, and residents repatriate foreign interest receipts through the official exchange market.

"Growth, External Debt, and Sovereign Risk in a Small Open Economy"
by Jagdeep S. Bhandari, Nadeem Ul Haque, and Stephen J. Turnovsky

This paper specifies an analytical model of a small open economy that borrows abroad. It examines the dynamic interaction between external debt and growth, as well as the effects of various economic disturbances and policies on certain macroeconomic variables. An innovative and realistic feature of the model is its explicit incorporation of risk premia associated with lending to sovereign borrowers.

The paper considers the short-run, dynamic, and steady-state effects of shifts in the foreign interest rate, the risk premium, productivity, and government expenditure on variables, such as the stock of debt, the domestic capital stock, the domestic interest rate, the trade balance, and consumption. In the long run (and assuming that the government pursues a balanced-budget policy) an increase in international interest rates leads to a decline in the level of external debt. However, the effect upon domestic interest rates is a priori unclear, although under plausible conditions these rates are expected to increase less than international rates. Under the same conditions, the domestic capital stock also falls. The effects upon the domestic trade balance and consumption are indeterminate. An increase in the risk premium reduces the level of external debt when domestic consumers are net debtors and increases domestic interest rates while lowering the capital stock. A productivity disturbance has no effect upon the steady-state stock of external debt and the equilibrium trade balance. The effect on the capital stock depends upon whether or not the disturbance enhances productivity. If it does, the capital stock rises. Most of these results carry over to more general models.

The results of this paper have implications for growth and adjustment since they suggest that structural adjustment policies may involve trade-offs between growth and the stock of debt. For example, a productivity-enhancing policy will raise the growth rate but will also increase the stock of external debt. Similar trade-offs arise for changes in international interest rates, as well as for changes in government expenditure, when domestic employment is endogenous in the model.