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Authorized for Distribution by Shailendra J. Anjaria

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Working Paper Summaries

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"Alternative Forms of Mineral Taxation, Market Failure,
and the Environment" by Timothy R. Muzondo

In recent years, a number of authors have examined the effects of mineral taxation on resource allocation, revenue yield and stability, conservation, and depletion dates. These studies have, however, assumed that mineral extraction involves no external effects (or environmental externalities) on other economic agents. As a result, they have not examined the nature of appropriate corrective taxes that may be required to ensure that mining firms take into account the social costs that they impose on others. Nor have they investigated the environmental effects that may be caused by various forms of taxes.

A notable exception is the paper by Schulze (1974), which explicitly incorporates the effects of cumulative environmental externalities in the firm's decisions and derives an appropriate corrective tax. Equally important, but not considered in the paper, are environmental externalities that depend on the current rate of mineral extraction. In addition, the paper does not examine the environmental effects of various taxes noted above within a framework that incorporates the cumulative environmental externalities that he develops.

This paper explores the environmental effects of various mineral taxes in a framework that assumes that extraction of minerals involves environmental externalities that depend on rates as well as cumulative amounts of extraction. It proposes an appropriate corrective tax for an extractive firm that generates such externalities. The results of the paper indicate that neutral taxes, such as the resource rent tax, need to be combined with appropriate corrective taxes, such as the one proposed in this paper, to ensure efficient resource allocation. In the absence of such corrective taxes, neutral taxes may perform worse (especially from an environmental point of view) than nonneutral taxes, such as specific taxes, because the latter partially offset the impact of environmental externalities on resource allocation. Finally, the paper finds that while changes in nondistortionary taxes have no impact on amounts of environmental externalities, changes in distortionary taxes do.

JEL Classification Numbers
E52, E59

Summary of
WP/92/50

"Independent Currency Authorities: An Analytic Primer"
by Kent Osband and Delano Villanueva

This paper describes the functions of an independent currency authority (ICA). An ICA issues and redeems notes and coins in exchange for a standardized commodity like gold or a foreign currency. Typically, the exchange rate schedule is preannounced, and new issues of currency are covered 100 percent by reserves. The difference between the yields on assets denominated in the reserve currency and the generally small administrative costs of the ICA accrues as profit to the government owner. For a country interested in having its own currency, an ICA offers a shortcut to monetary stability and convertibility.

An orthodox currency board establishes a fixed exchange rate with a foreign currency and fully backs the entire currency stock with reserves. In a sense, the domestic currency serves as a proxy for the foreign currency, but the currency board intercepts the seigniorage that would otherwise go to the foreign country. A crawling peg currency board allows the exchange rate to change gradually over time. In any case, an ICA retains monetary flexibility in terms of the option to change the reserve currency to which it pegs or to expand into a full-fledged central bank.

An ICA forbids the discretionary printing of money, which eliminates some potentially desirable options for financing the budget. At the same time, it encourages more responsible budget planning. To restore budgetary flexibility under an ICA, the government needs to build up its own financial reserves and demonstrate a determination to repay its debts fully.

The smooth operation of an ICA also requires that the banking system hold sufficient reserves of domestic currency or of assets that can be converted into domestic currency at the ICA. To help achieve this goal, international branch banking should be encouraged, or a separate monetary agency with substantial foreign reserves and credit lines abroad should be established that can offer emergency liquidity to commercial banks.

A crawling peg currency board would appear to have little long-term merit, unless the peg is used to keep domestic inflation below inflation in the reserve currency country. Nevertheless, for a country that is attempting to stabilize an initially high domestic inflation rate, an ICA that operates a crawling peg arrangement involving a preannounced, decelerating rate of depreciation might prove useful as a transitional mechanism to slow inflation gradually.

Historical experiences suggest that, provided supporting fiscal and monetary arrangements are put in place, ICAs do indeed facilitate monetary stabilization and convertibility. In the process, they have helped to encourage saving, investment, and efficient growth.

JEL Classification Number
F31

Summary of
WP/92/51

"Exchange Rates, Country Preferences, and Gold"
by Michael P. Dooley, Peter Isard, and Mark P. Taylor

This paper tests indirectly the hypothesis that exchange rate movements may largely reflect changes in preferences for holding claims on different countries. It is argued that changes in country preferences will be reflected systematically in the price of gold and, hence, that gold price movements should have power to explain exchange rate movements over and above the predicted effects of monetary shocks. The argument is based on the concept of gold as "an asset without a country," which suggests that shocks that change relative preferences for holding claims on different countries will also change preferences for holding gold relative to holding claims on any particular country.

The paper applies multivariate vector autoregression and cointegration modeling techniques to test for the short- and long-run influence of gold prices on exchange rates conditional on other monetary and real macro-economic variables, and applies the resulting error-correction exchange rate equation in out-of-sample forecasting exercises. It also compares the apparent explanatory power of movements in the price of gold with that of movements in the price of wheat, which is not generally held as an asset. The paper's investigations yield quite strong support for the hypothesis.

JEL Classification Numbers
F40, P52

Summary of
WP/92/52

"The Sub-Saharan African Debt Problem:
An Update" by Joshua Greene

This paper updates information on the external debt problem of sub-Saharan Africa reported in an article in *Staff Papers*, December 1989. More recent data confirm that the countries of sub-Saharan Africa remain severely indebted, both in absolute and in relative terms. At the end of 1990, external debt for the region totaled an estimated \$171 billion, more than three times the level of 1980, while debt-service payments and rescheduling rose by more than 150 percent to \$20 billion. Since the late 1980s, two key measures of distress for the region--the ratios of external debt to exports and external debt to GDP--have exceeded those for countries with recent debt-servicing problems and for the 15 heavily indebted countries singled out for attention by the U.S. Government's Baker initiative. At the same time, the region has suffered from weak export performance, leading to arrears or repeated debt rescheduling for many countries and a fall in per capita income that averaged about 1 percent a year during the 1980s.

Since the late 1980s, several major initiatives regarding the external debt of sub-Saharan Africa have emerged. Between 1988 and 1990, for example, bilateral creditors agreed to cancel more than \$6 billion in ODA debt for 26 countries in the region, some three times the amount of cancellation granted during the previous ten years. In addition, the so-called Toronto terms for providing debt relief to low-income countries have become the norm for most rescheduling of sub-Saharan African debt. There have also been several proposals to liberalize existing terms for debt relief, most notably the Trinidad terms for rescheduling proposed by U.K. Prime Minister John Major. Several other proposals have been offered to accelerate debt cancellation for sub-Saharan African countries and to ease the process of debt rescheduling by combining Paris Club rescheduling, consultative group meetings, and development roundtables into a single review body for each country. Although none of these other proposals has yet been adopted, the debt forgiveness granted to Poland and Egypt during 1991 may ultimately offer a precedent for providing debt forgiveness to other severely indebted countries in return for implementing serious economic adjustment programs.

JEL Classification Numbers
E10, E60, O11

Summary of
WP/92/53

"Multicountry Evidence on the Effects of Macroeconomic,
Financial, and Trade Policies on Efficiency of Resource
Utilization in the Developing Countries" by Matthew Odedokun

This study examines the effects of various macroeconomic policy variables on economic efficiency, using the annual panel data for 81 developing countries from 1961 to 1990. Using the incremental output-capital ratio as a measure of efficiency, the study draws the following conclusions:

- (a) The export-GDP ratio and, particularly, the growth of this ratio enhance economic efficiency, suggesting that export-oriented policies *promote efficiency*.
- (b) The government expenditure-GDP ratio and the growth of this ratio reduce economic efficiency, suggesting that the size of the public sector is inversely related to efficiency.
- (c) The size of development banking in relation to GDP and its growth decrease efficiency, suggesting that directed credit policies hinder economic efficiency.
- (d) A measure of financial deepening has a positive effect on economic efficiency.
- (e) A high inflation rate reduces economic efficiency, even apart from the negative effect it may have through such financial variables as the real exchange rate and the real interest rate.
- (f) The real interest rate improves economic efficiency.
- (g) Economic efficiency is hampered by "inappropriate" exchange rate policies, namely, policies that fail to depreciate the real value of domestic currency in response to a current account deficit or to appreciate it following a current account surplus.

JEL Classification Number
F40

Summary of
WP/91/54

"Current Account Deficits, External Liabilities,
and Economic Policy" by John Pitchford

Although there is now greater acceptance that macroeconomic policy should not target the current account, some economists still argue for it and some governments still practice it. The paper assesses the policy significance of foreign liabilities and the current account deficits that give rise to them from the starting point of an ideal world in which unrestricted private foreign investment would be optimal. Relaxing these ideal conditions provides a way of evaluating the argument that the size and flow of private indebtedness could signify policy problems.

The paper concludes that while deficits and debt may have some capacity to suggest the existence of difficulties elsewhere in the economy, at best, they are imperfect indicators and, at worst, they may be very misleading if wrongly interpreted. The paper points out that the successful pursuit of internal balance could be crucial to the stabilization of current account balances. Apart from this, there seems to be no good reason for using macro policy to target the current account, although there may be grounds for microeconomic action to remedy problems that can be clearly identified. It would then seem preferable to concentrate analysis not on current account balances but on the problems, if any, that appear to be at their source.

JEL Classification Numbers
F14, O13, O55

Summary of
WP/92/55

"The Export Performance of Sub-Saharan Africa, 1970-90: A Survey"
by Roy C. Baban and Joshua E. Greene

The economies of sub-Saharan Africa have lagged significantly behind those of most other developing countries, and the region's poor export performance is a major reason. Total export earnings in 1990 were nearly 20 percent below their nominal level in 1980. Moreover, the "real" value of sub-Saharan African export earnings, measured relative to import unit costs, fell by more than 35 percent between 1980 and 1990. Whereas nominal exports and export volumes from other developing countries rose significantly over this period, the share of developing country exports coming from sub-Saharan Africa fell from 8.5 percent in 1980 to 5.0 percent in 1990.

Although the region has experienced a considerable fall in its terms of trade since 1980, sluggish growth in export volumes attributable to poor domestic policies appears to have been particularly responsible for its weak export performance. Overvalued exchange rates, declining real producer prices, and the failure to maintain and modernize infrastructure have discouraged the maintenance and expansion of existing production facilities. These factors, poor investment codes, and difficult regulatory environments have also discouraged investment from abroad and the transfer of new technology. As a result, sub-Saharan Africa has lagged behind other regions in diversifying its exports and penetrating new markets. Because of preferential trade agreements and the region's concentration in exporting primary, non-fuel commodities, it does not appear to have been significantly hurt by protectionism. At the same time, international responses to the region's export problems have been limited, reflecting the ineffectiveness of international commodity agreements and the limited support available from multilateral facilities, such as the IMF's compensatory and contingency financing facility and the European Community's STABEX and SYSMIN arrangements.

The outlook for sub-Saharan African exports is uncertain. Because of low income elasticities, global demand for the primary, non-fuel commodities that comprise the bulk of the region's exports is expected to rise slowly, on the order of only 1-2 percent a year. For similar reasons, real export prices of these commodities are not expected to show much improvement over the next decade. Although the region could augment growth by diversifying exports toward more rapidly expanding markets in Asia, high cost levels may make it hard to compete effectively with nearby producers of primary commodities. Thus, sub-Saharan Africa's best chance for export growth may lie in augmenting its so-called nontraditional exports, such as floriculture, off-season fruits and vegetables, and light manufactures. Studies indicate considerable untapped demand for these products in the region's traditional markets in Western Europe, which a few countries, notably Kenya and Mauritius, have begun to fill. However, the success of diversification will depend on the region's ability to penetrate marketing networks and supply consistently high-quality and competitively priced items. This is likely to require further structural reforms in many sub-Saharan African countries to create a more attractive investment climate.

JEL Classification Numbers
E42, E52, P36

Summary of
WP/92/56

"Using an EC-Wide Monetary Aggregate in Stage Two of EMU"
by Tamim A. Bayoumi and Peter B. Kenen

The agreement on economic and monetary union (EMU) adopted at the Maastricht summit in December 1991 calls upon the central banks of the European Community (EC) to coordinate their monetary policies more closely. The agreement, however, says nothing about the way in which this policy coordination should be carried out, apart from stressing the importance of maintaining stable exchange rates within the exchange rate mechanism (ERM) of the European Monetary System.

This paper assesses how useful the aggregate ERM money supply might be as an intermediate monetary target in stage two of EMU. First, Granger causality tests are used to investigate the degree to which both the domestic and the ERM-wide money supply are useful in predicting real growth and inflation in the different countries within the ERM. The ERM-wide money supply is found to be a generally useful predictor of future inflation--indeed, a better predictor than the national money supply in several cases. In particular, it is significant for the three largest economies in the ERM, namely, Germany, France, and Italy. Next, the paper examines the ERM money supply to determine whether it is a useful predictor of trends in the price level. Here, again, the ERM money supply appears to be an important influence on the price level trends of member countries.

The results reported in this paper are not decisive and more work should be carried out. However, they do suggest that it may be useful to use an EC-wide monetary aggregate when coordinating national money supplies in stage two of EMU. An EC-wide monetary aggregate promises to provide more information than national monetary aggregates about the impact of monetary policies on national inflation rates.

JEL Classification Numbers
E62, F34

Summary of
WP/92/57

"Endogenous Creditor Seniority and External Debt Values"
by Michael Dooley and Mark R. Stone

It is now conventional to treat the external debt of a developing country as an integral part of the fiscal problem faced by the debtor government. This paper provides an empirical analysis of both the internal and external debt of developing countries under the assumption that the government utilizes these two markets to minimize its borrowing costs.

A simple accounting framework is used to measure the "flow" contribution of different creditors to the financing of the primary fiscal deficits of 17 developing countries. The data suggest that, in the years following the debt crisis, debtor governments relied on domestic credit markets to finance primary deficits and, in many cases, net payments to external creditors. This pattern of implicit seniority for external creditors appears to have been reversed after 1987 as residents of debtor countries became less willing to finance their governments on relatively favorable terms.

The apparent change in the pattern of payments of debtor governments helps explain market prices for external debt but does not account fully for the decline in market prices during 1985-89. The rise in market interest rates, which exerted a negative influence on debt prices over the sample period, also appears to be important. This finding is significant in that it is consistent with the increases in debt prices and the corresponding fall in international interest rates observed after the time period studied.

JEL Classification Numbers
E2, O5, P5

Summary of
WP/92/59

"The Output Decline in the Aftermath of Reform: The Cases
of Bulgaria, Czechoslovakia, and Romania"
by E.R. Borensztein, D.G. Demekas, and J.D. Ostry

This paper analyzes a number of issues surrounding the declines in economic activity experienced by three Eastern European countries--Bulgaria, the Czech and Slovak Federal Republic, and Romania--in the period since market-oriented reforms were initiated in these countries. As the review of developments in these three countries indicates, price and trade liberalization--including the dismantling of CMEA trade practices--should set in motion a series of changes that, over time, would be responsible for a radical transformation of their productive structures. This process of resource reallocation could easily generate a decline in aggregate output initially, especially if an expansion of activities that were profitable under the new relative price structure was delayed by significant adjustment costs and uncertainty.

Apart from these long-term, "structural" factors, output in the three countries under review has also been affected by more conventional macro-economic forces. The combination of large increases in domestic energy prices (as subsidies for energy use were reduced) and policies necessary to contain inflation in response to price liberalization created a contractionary situation for output owing to both supply-side and demand-side factors. This raises two empirical questions that may help to explain the declines in output in these three countries. First, to what extent did the fall in output for each country reflect structural change (a reallocation of resources across sectors) rather than a conventional recession? Second, to what extent have demand-side versus supply-side forces been dominant in generating the output decline? The paper uses simple econometric techniques to investigate these two questions. Regarding the first, the empirical findings are remarkably strong in pointing toward conventional macroeconomic factors as the main explanation for the output declines. Regarding the second, the findings are more mixed.

JEL Classification Numbers
E31, E51, F31

Summary of
WP/92/60

"Inflation and Monetary Reform"
by Pierre-Richard Agénor and Anna Lennblad

The introduction of a new currency has often occurred as part of a comprehensive program aimed at fighting hyperinflation by curtailing the money stock. While a pure change in numeraire is neutral, governments can use nonuniform conversion rates for various categories of assets and liabilities to "force" a redistribution of wealth or eliminate a perceived "excess" of liquidity. Given these considerations, the introduction of a new currency is likely to exert a variety of real and financial effects on the economy depending, in particular, on the state of expectations.

This paper examines the anticipatory dynamics associated with nonuniform monetary reforms in a small open economy with optimizing and forward-looking agents. After a description of the model, the analysis focuses on the effect of alternative reform strategies on the path of inflation and the behavior of foreign currency holdings. A nonuniform conversion rate is shown to be equivalent to a permanent fall in the domestic money stock. The model suggests that a monetary reform that incorporates a confiscatory element has a deflationary effect upon announcement as well as during the transition period, leading ultimately to a "de-dollarization" of the economy. When the monetary reform occurs "overnight," the fall in prices is more pronounced, but there is no change in foreign currency holdings.

The analytical framework also examines the case in which the monetary reform is assumed to take place at an unknown date in the future. Under uncertainty about the date of reform, a monetary reform leads to a downward jump in the price level at the time the reform is implemented, even if the behavior of prices in the post-reform regime is perfectly known by agents. Upon announcement, a monetary reform also leads to a jump in prices, the direction of which depends on the initial position of the economy.

The last part of the paper summarizes the main results and examines their implications for the choice between a preannounced and an overnight monetary reform. The former approach is preferable if there is no cost in delaying the reform and if cross-border speculative capital inflows can be prevented, because it allows agents gradually to work off excess balances in foreign currency. Once a preannouncement strategy is chosen, however, uncertainty about the actual reform date should be avoided. Keeping agents guessing about the date may have an adverse effect on prices and distort portfolio decisions.

JEL Classification Number
G14

Summary of
WP/92/61

"Stock Market Response to Unexpected Macroeconomic News:
The Australian Evidence" by Mehdi Sadeghi

The common cause of variations in Australian share prices has been empirically tested for the market as a whole and separately for industrial and resource sectors. According to the rational expectations theory and efficient market hypothesis, currently available information is totally embodied in share prices. Expected news has no effect, and share prices move only in response to "real" news, which has not been anticipated by the market.

The revisions in expected changes and unexpected changes in macroeconomic variables have been identified as two main sources of surprise news. In this paper, data on expected changes in macroeconomic variables are both collected from survey forecasts and estimated through ARIMA procedures. Unexpected changes in macroeconomic variables from survey forecast data are the difference between actual and expected figures. Unexpected changes in macroeconomic variables from ARIMA procedures data are the residual errors of the regression. The results suggest that revisions in expected changes and unexpected changes in the current account deficit, the exchange rate, and the GDP growth rate, as well as unexpected changes in the unemployment rate, are positively correlated with share prices. Revisions in expected changes and unexpected changes in inflation and interest rates, and revisions in the expected unemployment rate, are negatively correlated with share prices. The empirical results also suggest that the market portfolio captures the impact of common economic shocks better than industrial and resource sectors, which have been influenced by industry-specific events.

JEL Classification Numbers
G1, F41

Summary of
WP/92/62

"Capital Inflows and Real Exchange Rate Appreciation in
Latin America: The Role of External Factors"
by Guillermo A. Calvo, Leonardo Leiderman, and Carmen M. Reinhart

During the past two years, Latin America has received sizable international capital flows, amounting to \$24 billion in 1990 and \$40 billion in 1991. In most cases, they have been accompanied by a marked accumulation in international reserves, significant appreciations in real exchange rates, booming stock markets, faster economic growth, and wider current account deficits. Although the restoration of voluntary access to international capital markets after nearly a decade has been heralded as a positive development, the resurgence in capital inflows has also been a source of concern to policymakers in the region, who fear, in particular, that the accompanying real exchange rate appreciation will adversely affect the export sector. In addition, given that the previous capital inflow episode was followed by the debt crisis of the 1980s, there are fears that some of the capital inflows are of the "hot money" variety. These highly speculative flows could be reversed on short notice and, possibly, spark a domestic financial crisis.

This paper focuses on two aspects of the present capital inflow phenomenon. First, in an effort to determine how vulnerable these economies are to an unexpected reversal in capital flows, it assesses quantitatively to what extent the recent increase is due to external forces. Second, it discusses the form and timing of the appropriate policy response, examining the pros and cons of a menu of policy measures, including taxes on capital imports, trade policy, fiscal tightening, central bank sterilized and nonsterilized intervention, and banking regulations.

The empirical analysis indicates that capital is returning to most Latin American countries despite considerable differences in domestic policies and macroeconomic conditions. External forces, particularly developments in the United States, have played an important role in inducing capital flows into Latin America. The sharp decline in U.S. interest rates, the continuing recession, and capital account developments in the United States have encouraged a portfolio shift toward Latin American assets. The policy analysis suggests that, although external factors may be reversed in the future, it is difficult to advocate sterilized intervention, given the fiscal burdens it entails, unless countries adopt a strong fiscal stance and capital inflows are expected to be short-lived. A more comprehensive policy intervention mix--including raising marginal reserve requirements on short-term bank deposit, imposing taxes on short-term capital imports, or a combination of these measures--is a viable policy alternative to deal with the possible detrimental effects of substantial capital inflows.

JEL Classification Numbers
E52, E65, E47

Summary of
WP/92/63

"Discretionary Monetary Policy Versus Rules:
The Japanese Experience During 1986-91" by Guy Meredith

The desirability of using rules as opposed to discretion in the conduct of monetary policy has been widely debated in both academic and applied circles. In achieving short-run stabilization objectives, rules limit the flexibility of policymakers to respond to shocks which, depending on the information policymakers have and how effectively they use it, may be beneficial or harmful. In addition, in countries where the credibility of policies is in question, rules may help to convey the longer-term objectives of policy to the private sector and thus favorably influence expectations.

This paper looks at rules versus discretion from the point of view of the Japanese experience during 1986-91. It focuses on the short-run stabilization properties of alternative policies, examining rules based on targets for growth in either the money supply, nominal income, or prices. A small macroeconomic model of the Japanese economy is simulated to generate a counterfactual outcome for each rule. When the simulation results are compared with the historical outcome, it appears that none of the rules would have been superior to the discretionary policies that Japan followed during this period. Of the rules considered, those based on targets for nominal income growth performed best. The usefulness of money targets would have been reduced by large shifts in money demand, while inflation targeting would not have caused policy instruments to respond quickly enough to shocks that affected future inflation. Finally, although simple rules would not have outperformed discretion, an indicator of monetary conditions that incorporates movements in the real exchange rate and the real interest rate would have been useful in assessing the effect of current policies on future activity and prices.

JEL Classification Number
P20

Summary of
WP/92/64

"Output Collapse in Eastern Europe: The Role of Credit"
by Guillermo A. Calvo and Fabrizio Coricelli

Output collapse in Eastern Europe after the implementation of the recent economic transformation programs has exceeded expectations by a wide margin. This paper argues that a large proportion of the fall could be explained by "trade implosion," that is, a situation in which trade--both domestic and international--is destroyed for lack of market institutions, not just as a consequence of textbook changes in relative prices or movements along transformation frontiers.

We single out the credit market as one of the key underdeveloped institutions in Eastern European economies and advance the hypothesis that negative output effects associated with monetary contraction may be significant when credit markets are underdeveloped, as evidenced in the cases of Bulgaria, Czechoslovakia, Hungary, Romania, and especially Poland.

There are different ways to ensure that firms have access to the necessary liquidity to operate at full capacity. An obvious one is to adjust bank credit initially in order to ensure that "real" credit--in terms of input prices--stays unchanged. Afterwards, credit could be as tight as necessary to ensure the achievement of low-inflation targets. A common criticism of this approach is that the initially easy credit policy may impair the credibility of the program, making escalation from the initial price into persistent high inflation more likely. Another criticism is that credibility may be a function of credit tightness. Initially easy credit may thus end up being treated by firms as a substitute for previous subsidies. Since banks have no expertise in evaluating creditworthiness, they may be unable to detect "bad loans" until it is too late; and the central bank--to avoid financial panic--would be forced to monetize enterprises' liabilities, jeopardizing the effectiveness of the stabilization program.

Tight credit could, however, have a negative effect on credibility. A single firm may be induced quickly to "put its house in order," but if its managers realize that many other firms are in the same tight credit situation, they may decide to postpone adjustment in the expectation that the government will bail out everybody in trouble.

Another suggested solution to the credit-squeeze problem is a swap of government debt for enterprise debt. Through this operation firms receive government bonds, for example, in exchange for their own debt. However, this solution may not be effective for a PCPE because there usually is no well-developed market for government debt instruments.

Finally, a more gradualist policy, as in Hungary, may be followed, involving a gradual dismantling of subsidies and a consequent smoother increase in input prices. However, gradualism could detract from policy transparency and lead to speculative behavior and may invite future postponement of reforms.

JEL Classification Numbers
E4, E41

Summary of
WP/92/65

"Currency Substitution: The Recent Experience of Bolivia"
by Benedict Clements and Gerd Schwartz

One of the more puzzling aspects of Bolivia's economic performance since 1986 has been the persistent increase of currency substitution in the domestic banking system. Foreign currency deposits have been permitted since 1985, when the de-dollarization decree of 1982 was suspended. Despite low inflation rates and a high degree of external stability achieved as a result of the successful 1985 monetary reform and adjustment program, Bolivia has been experiencing a rapidly increasing share of foreign currency deposits in the domestic banking system. The share of such deposits in broad money increased from less than 15 percent in early 1986 to over 76 percent in September 1991, and quasi money is currently over 90 percent "dollarized." In view of the country's sustained macroeconomic stability, the surge in the degree of currency substitution raises the question of whether factors traditionally thought to drive this process, such as expected exchange rate depreciation and interest rate differentials between U.S. dollar and domestic currency deposits in the banking system, play a significant role in explaining the degree of currency substitution in Bolivia. If they do not, then little hope can be pinned on diminishing dollarization through traditional remedies, such as reducing inflation and increasing interest rates on boliviano bank deposits.

This paper analyzes the determinants of currency substitution in Bolivia during the period following the 1984-85 hyperinflation when--notwithstanding the success of the macroeconomic stabilization and adjustment program that began in August 1985--dollar deposits in the domestic banking system increased rapidly from 1986 through 1991. Consistent with previous research, the authors find that expected depreciation and interest rate differentials are statistically significant determinants of the degree of currency substitution. However, they note that the explanatory power of these variables is fairly low compared to that of variables measuring the degree of inertia in the currency substitution process. The results of the analysis suggest that reversing the process of currency substitution may be very difficult. Given the relatively low responsiveness of currency substitution to expected depreciation and interest rate differentials, and considering the fact that significant stabilization has already occurred, the authors conclude that there may be relatively little scope for reducing the current level of currency substitution in Bolivia in the near future.

JEL Classification Numbers
E5, F3, N2

Summary of
WP/92/66

"The Dissolution of the Austro-Hungarian Empire: Lessons for
Currency Reform" by Michael G. Spencer and Peter M. Garber

The dissolution of the Austro-Hungarian Empire in 1918 provides a salient historical example of a currency union whose breakup was not forced by occupation authorities or civil war or orchestrated by a colonial power. This example is particularly instructive now, because the changes in the economic and political landscape 74 years ago closely parallel current developments in Eastern Europe.

Beginning in March 1919, the Kingdom of Serbs, Croats, and Slovenes, Czechoslovakia, Austria, Romania, and Hungary successively undertook currency reforms designed to create identifiable domestic currencies over which their own institutions had control. This episode provides the best historical example of the transition from a breakaway reform--that is, a currency reform undertaken unilaterally by one of a group of states in a currency union--to a successor state reform, in which all states in the currency union introduce reforms.

This paper investigates the currency reforms instituted by the Austro-Hungarian successor states. Of particular interest is the sequence of events and the consequent incentives and opportunities for individuals to choose where to convert their currency based on where the Austro-Hungarian crown notes that were being replaced had their highest real value. The paper also includes a discussion of the liquidation of the Austro-Hungarian Bank.

This historical episode suggests the following observations. First, currency separation can be accomplished relatively quickly. Second, if currency separation is not undertaken simultaneously in each region, differential tax-inclusive conversion rates will create incentives for individuals to spend or exchange their old notes in the region where they are most valuable. Third, states that are late in breaking away from the currency union may ultimately convert more than their previous shares of the old notes. An agreement among authorities to liquidate central bank assets prorated on the amount of currency collected, and to return these notes to the bank of issue, will only partially compensate for the lost goods. Fourth, the existence of such incentives, created by the withdrawal of one significant region from the currency union, will lead to defensive currency reforms in the remaining regions. Hence, a breakaway reform introduced by one region is likely to lead to reforms being introduced in all regions. Finally, currency reform will succeed in creating a stable medium of exchange only if it is accompanied by sound fiscal and monetary policies. It is not necessary, however, for fiscal restraint to precede currency reform if the new monetary authorities are constrained in their ability to extend credit to the state.

JEL Classification Numbers
E6, F41

Summary of
WP/92/67

"Wage and Public Debt Indexation" by Pablo E. Guidotti

This paper studies the relationship that may exist between indexation of the public debt and indexation of wages. The analysis combines Calvo and Guidotti's (1990) theory of public debt indexation with Gray's (1976) theory of optimal wage indexation. Blending and expanding these two approaches results in surprising richness. Decisions regarding the indexation of the public debt and those regarding wage indexation are interrelated. The Calvo-Guidotti framework is enriched by accounting for output and employment fluctuations in the government's objective function and by introducing the issue of imperfect controllability of inflation into the optimal taxation problem. The Fischer-Gray approach--in particular, Gray's (1976) model--is enriched by making monetary shocks endogenous. In particular, the monetary shock reflects the state-contingent response of the rate of monetary expansion to stochastic variations in government expenditure. The endogenous distribution of the rate of monetary expansion, in turn, is a function of the government's choice of debt indexation and the private sector's decision regarding wage indexation.

A number of insights emerge from the analysis. As far as the government's fiscal decisions are concerned, wage and debt indexation are positively related: higher wage indexation increases unwanted inflation volatility and induces the government to increase the degree of public debt indexation. Since higher public debt indexation reduces the policy-maker's incentive to resort to inflation, a higher degree of wage indexation induces the government to adopt a more anti-inflationary policy stance.

As far as the private sector is concerned, wage and debt indexation may be positively or negatively related. Whether higher debt indexation induces wage setters to choose a higher or lower degree of wage indexation depends on the effect that debt indexation has on the variability of the rate of money growth. If higher debt indexation leads to increased monetary volatility, then wage setters will choose higher wage indexation. If higher debt indexation leads to decreased monetary volatility, the optimal degree of wage indexation declines. The intuition behind these two alternative effects of debt indexation is discussed in detail.

Equilibrium wage and debt indexation represent a Nash equilibrium. The paper analyzes the responses of wage and debt indexation to exogenous changes--such as changes in the distribution of monetary and real shocks, variations in government expenditure, and changes in the level of public debt. Whether wage and debt indexation respond to exogenous developments by moving in the same or opposite directions depends on the initial equilibrium, the nature of the change, and the policy response. The analysis shows, however, that the presumption that one form of indexation leads to the other does not receive general support.

JEL Classification Numbers
E52, E61, E65

Summary of
WP/92/68

"Interest Rate Policy in Central and Eastern Europe:
The Influence of Monetary Overhangs and Weak Enterprise
Discipline" by Adam Bennett and Susan Schadler

The principal problem addressed in this paper is the effect of raising interest rates in previously centrally planned economies where a large portion of the state industrial sector is not viable but is to remain in operation for the immediate future. When nominal interest rates are raised, the government has no option but to finance the resulting increase in the debt service of these nonviable enterprises. This can be done explicitly through budget subsidies or, as is more common, through bank credit to enterprises. In these circumstances, higher interest rates carry the seeds of higher credit growth and ultimately higher inflation. Moreover, when such a link between interest rates, credit, and inflation is important, the scope for higher interest rates to support the exchange rate is also reduced; if higher interest rates do generate higher inflation, the value of the domestic currency will depreciate.

These observations on interest rate policy are difficult to use operationally in any formulaic or mechanical way. Establishing positive real interest rates is clearly desirable. And to do so when inflation rises, nominal interest rates must be raised. This paper simply argues that this process should not be pursued without careful consideration of the possible side effects on inflation itself. To make a judgment about how far up nominal interest rates should be pushed requires some knowledge of the structure of the economy--specifically, the share of state enterprises that would require financial support if interest rates were raised and the interest sensitivity of the demand for money. The larger the burden of nonviable enterprises and the lower the interest elasticity of the demand for broad money, the greater is the potential for higher interest rates to fuel inflation. By contrast, to the extent that enterprises can be closed down or the government deficit reduced, the raising of interest rates can help reduce inflation through its conventionally recognized role. These considerations are essential to determining the appropriate balance between pushing up interest rates and the longer-term fight against inflation.

The paper spells out the relevant relationships among interest rates, enterprise debt, and inflation and illustrates the effects of raising interest rates by simulations based on plausible parameter values.

JEL Classification Numbers
D59, P22, P23

Summary of
WP/92/69

"A Simple Monetary Model of a Shortage Economy"
by Shoukang Lin

In the transition from centrally planned economies to market economies, many countries have experienced some degree of macroeconomic instability. This paper attempts to provide a theoretical explanation of the phenomenon.

The paper develops a simple monetary model and shows how macroeconomic stability can be achieved in a rigid centrally planned economy despite structural imbalances and an irrational price system. The study also shows, however, that structural imbalances and an irrational price system may frustrate structural reform efforts. For example, price decontrol may benefit some firms at the expense of others, and, in the presence of soft budget constraints on enterprises, these benefits may translate into wage pressures that could lead to persistent budget deficits and high inflation.

The paper also analyzes household savings and money demand in a shortage economy and suggests that the notion of "forced savings" or "monetary overhang" remains a concept in search of a rationale. The analysis shows that as long as some goods are in surplus or black markets exist, there are no involuntary money holdings. Households reserve money for official transactions, savings, or black market activities.

JEL Classification Numbers
H86, K42, L33

Summary of
WP/92/70

"Tax Farming--A Radical Solution for Developing
Country Tax Problems?" by Peter Stella

Despite serious problems with tax administration in developing countries, the search for and examination of alternative institutions for tax assessment and collection have been stunted, argue Tanzi and Casanegra de Jantscher (1987), by the assumption made in most theoretical tax models that administration is costless. Far from being costless, administration may be considered a primary concern for many developing countries. What is necessary is a theory of the second best in tax administration to complement that of the theory of the second best in tax policy.

This paper examines tax farming as an alternative tax collection mechanism. Tax farming is a practice whereby the right to collect certain taxes is auctioned off to private sector collectors. If, as conventional wisdom suggests, this technique minimizes government administrative costs and results in more efficient tax collection, it would have great appeal for developing countries where lack of administrative capability and resources makes tax administration difficult.

Some authors have suggested that tax farming might significantly improve tax collection. However, an examination of the historical record reveals that the administrative savings of tax farming are largely illusory and that the popularity of the system--in use for over three thousand years--can be explained by its ability to generate more gross revenue than the alternative, direct government collection. However, this very characteristic is the major drawback of tax farming. Because the system leads to overzealous tax collection, a government concerned with justice and equity in tax collection would be forced to expend considerable resources on monitoring private tax collectors. If taxpayer abuse is to be avoided, only those activities where there is little ambiguity and room for interpretation could be privatized. The scope for privatizing the core functions of tax administration appears limited.

JEL Classification Numbers
E41, F36, C43

Summary of
WP/92/71

"The Implications of Cross-Border Monetary Aggregation"
by Jeroen J. M. Kremers and Timothy D. Lane

Some recent studies suggest the possibility of estimating a stable aggregate demand-for-money relationship for the group of countries participating in the exchange rate mechanism of the European Monetary System (EMS), which would facilitate the setting of policy targets for a European Central Bank.

This paper examines, within a theoretical framework, the implications of using data aggregated across countries to study money demand. Two sources of bias in estimates are considered: aggregation bias occurs to the extent that different countries in the group have different money-demand relationships, while specification bias occurs to the extent that there are omitted variables, errors in measurement of the explanatory variables, or other specification errors.

In the EMS, the possibility of currency substitution--and of international portfolio substitution more generally--may lead to specification bias in single-country money-demand estimates. Currency substitution means that residents of each country hold more than one country's money, so that the demand for each country's money depends on the incomes and interest rates of other countries as well as its own. International portfolio substitution means that each country's residents consider foreign assets among the alternatives to holding money, so that a properly specified money-demand equation would include foreign as well as domestic asset yields as opportunity-cost variables.

The paper demonstrates how these specification errors may bias single-country money-demand estimates, especially by giving the impression of unduly slow adjustment of money balances toward their desired levels. The way in which cross-border aggregation may reduce specification bias at the cost of introducing some aggregation bias is also examined. While single-country money-demand estimates ignore the effects of currency substitution, cross-country aggregate estimates internalize this effect. Moreover, the analysis suggests that such estimates may support the view that currency substitution may be an important consideration in the stages leading up to economic and monetary union (EMU).

JEL Classification Numbers
C32, E21, F32

Summary of
WP/92/72

"Macroeconomic Uncertainty, Precautionary Savings, and the
Current Account" by Atish R. Ghosh and Jonathan D. Ostry

The relationship between external current account developments and changes in the macroeconomic environment remains a key issue in open-economy macroeconomics. Modern theories of current account determination have viewed the current account as a buffer to smooth consumption in the face of shocks to output, investment, and government expenditure. For the most part, models of the current account have assumed perfect foresight, implying that there is no ex ante uncertainty regarding the future values of various macroeconomic variables (income, government spending) that affect consumption and saving decisions today. Indeed, the term "shock" in these models merely refers to a onetime change in the exogenous variables--events to which agents are assumed to have assigned a zero probability.

This paper examines whether the insights afforded by existing intertemporal models of the current account remain valid once uncertainty is explicitly incorporated. The intertemporal model of the current account is extended to include the effects of precautionary savings and is tested empirically. It is shown that the greater the uncertainty in national cash flow--defined as output less investment less government expenditure--the greater is the precautionary demand for savings and, other things being equal, the larger will be the current account surplus. Empirical support for the model is found using quarterly data from four large industrial countries.

JEL Classification Number
F41

Summary of
WP/92/73

"Losing Credibility: The Stabilization Blues"
by Pablo E. Guidotti and Carlos E. Végh

Governments often resort to the exchange rate as the nominal anchor in inflation-stabilization programs. However, such programs have frequently ended in costly balance of payments crises, mainly because the convergence of domestic inflation to the rate of devaluation proved to be a long and tortuous process. The expectation of a devaluation to correct large real exchange rate appreciations has hung over the programs like a sword of Damocles, becoming, more often than not, a self-fulfilling prophecy.

More subtle is the pattern that "credibility" has followed in many exchange rate-based stabilizations. Even in programs that eventually fail, credibility seems to increase initially as the highly visible nominal anchor provides a sense of stability, inflation begins to fall, and an agreement among different pressure groups on how to close the fiscal gap permanently seems within reach. As time goes by, however, the continuing real appreciation of the domestic currency, together with the apparent inability of the political process to deal with the fiscal problems, begins to erode credibility, and speculation about a possible devaluation arises.

This paper attempts to formalize this dynamic pattern of credibility. A framework is developed in which a political economy game and a balance of payments crisis model interact to provide a natural definition of credibility; the paper shows how economic and political variables evolve in such a way that credibility increases at the beginning of an exchange rate-based stabilization and then falls rapidly.

The model incorporates two important characteristics of major stabilization plans. First, and somewhat neglected in the theoretical literature, exchange rate-based programs often follow a two-stage approach. In the first stage, a nominal anchor is established, and some partial measures toward reducing the fiscal deficit are adopted. In the second stage, which may take several years or may in fact never occur, the rest of the fiscal adjustment is carried out. The second feature is the sustained real appreciation of the domestic currency, which is caused by the sluggish adjustment of the inflation rate to the rate of devaluation.

The dynamics of the stabilization plan are thus characterized by an appreciating real exchange rate, an increasing nominal interest rate, and rising public debt. Interestingly, this scenario characterizes both successful and unsuccessful exchange rate-based stabilizations.

JEL Classification Numbers
E63, E64, P50

Summary of
WP/92/74

"Wage Claims, Incomes Policy, and the Path of Output and
Inflation in a Formerly Centrally Planned Economy"
by Gian Maria Milesi-Ferretti

The so-called corporate governance problem of state enterprises in formerly centrally planned economies--the possibility that the behavior of state-owned firms will not be in the state's best interest--can give rise to excess wage claims and/or capital decumulation if workers and managers try to appropriate a firm's assets before it is privatized. Insofar as state enterprises account for the highest percentage of total output, these problems can have serious macroeconomic consequences. For example, because the profit tax contributes significantly to government revenue, a redistribution of state enterprise revenues from profits to wages generally implies a worsening of the government's fiscal position, which, in the absence of a developed market for government bonds, implies higher money creation. Thus, monetary policy becomes endogenous with respect to wage claims. Moreover, if the claims of workers (in the form of wages) and government (in the form of taxes) exceed net output, capital will be run down--for example, when the government imposes an excess wage tax on state enterprises, but this tax does not provide sufficient discipline to hold wage increases below the limit.

This paper provides a simple dynamic framework within which to examine these issues and analyzes the impact of wage controls on the fiscal deficit, inflation, private consumption, and output in the presence of "excessive" wage claims. The latter can lead not only to high inflation, but also to suboptimally low levels of capital and output. Simple incomes policy measures, such as a reduction in the degree of wage indexation, can be effective in reducing inflation and the fiscal deficit if nominal wages do not provide, on average, full protection against inflation, and wage claims are only temporarily high. In the presence of structurally excessive wage claims and full inflation coverage, linking wages to the path of output can help to limit the overall output decline. The endogeneity of monetary policy with respect to wage claims implies that wage controls may be necessary to regain monetary autonomy.

JEL Classification Numbers
E52, E61, F31, F41

Summary of
WP/92/75

External Shocks and Inflation in Developing Countries
Under a Real Exchange Rate Rule
by Peter J. Montiel and Jonathan D. Ostry

This paper examines the response of a small open developing economy to external shocks when the authorities target the real exchange rate. It shows that, under these circumstances, real external shocks alter the economy's long-run inflation rate, unlike when a fixed exchange rate or preannounced crawling peg is in place. Under real exchange rate targeting, the "expenditure-switching" function of changes in the real exchange rate is replaced by an "expenditure-reducing" function of changes in the inflation rate and, hence, in the inflation tax. In addition, the paper argues that choosing an appropriate level at which to target the real exchange rate--that is, one that avoids destabilizing the price level in the face of shocks--is no easy matter because it requires detailed knowledge of a range of parameters and structural relationships, which the authorities are unlikely to possess.

The paper then asks whether or not monetary policy can mitigate the destabilizing effects of shocks under real exchange rate targeting. It finds that money cannot replace the exchange rate as a nominal anchor for the domestic price level, irrespective of the degree of capital mobility. This conclusion is shown to apply over all time horizons, except possibly over the very short run.

JEL Classification Numbers
D44, G15

Summary of
WP/92/76

"A Taxonomy of Automated Trade Execution Systems"
by Ian Domowitz

Computerized trade execution is the final step in the automation of financial trading market operations, whereby traders submit orders through computer terminals, and the host computer determines trades, reporting results back to traders through their terminals. Over fifty automated trade execution systems currently operate worldwide, and at least five international organizations are looking into the regulation and standardization of the trade execution process.

This paper provides a unified technical summary of 53 automated trade execution systems, which are differentiated with respect to geographical location, date of inception, type of securities traded, and extent of global reach and are then described in terms of three classifications.

First, automated systems are classified by an ordered set of trade execution priority rules, 11 of which are identified. The priority assigned to bids and offers for a security governs the place of the order in the queue awaiting execution, and determines the distributional properties of transaction prices, conditional on order flow. A comprehensive view of the nature of automated systems in 16 countries is provided, by security type and over time.

Second, automated systems are classified according to the degree of automation of the price discovery process in order to clarify the diversity of trade-matching algorithms observed in existing automated markets. The level of price discovery has implications for the type and degree of regulatory oversight of automated markets. Trends in the automation of the price discovery process are analyzed by security type, market center, and over time. It is found not only that the number of automated markets is growing over time, but also that the degree of automation of market structure within this class is increasing.

Third, systems are classified by information structure. Regulatory concerns are focused on the type and amount of information provided to different classes of investors and system participants. Informational differences influence price volatility and liquidity of the market. All systems are classified with respect to the types of information they offer to direct system participants. Asymmetries of information between traders working on the system and outside investors, who do not have direct access to the automated market, are explored for a smaller set of markets. The paper examines differences in the provision of information by type of security, differentiating between futures and options trading and stock trading according to the degree to which participants have access to electronic order books.

JEL Classification Numbers
H25

Summary of
WP/92/77

"Treatment of Intercompany Transfer Pricing for Tax Purposes--
A Survey of Legislative and Administrative Issues"
by Yuichi Ikeda

Tax authorities in several countries have intensified their surveillance of transfer pricing in recent years. Concurrently, international discussions on methods for determining "arm's-length" prices are being renewed, especially the application of "fourth methods" and the valuation of intangible property where existing international rules do not provide sufficient guidelines.

Developments have also taken place in tax administration practices for monitoring transfer prices. More centralized administrative systems and more powerful administrative tools--for example, longer time limitations and some extraterritorial measures for collecting foreign-based information--have been introduced in some countries.

This paper reviews the legislative and administrative issues relating to the treatment of intercompany transfer pricing for tax purposes. It notes that one argument against the existing approaches to transfer pricing is that it is difficult to apply the pricing rules to actual cases and to determine precisely the arm's-length prices. In light of this, some systems for improving the predictability of taxation together with a prudent attitude on the part of tax authorities in their transfer pricing examination practices are essential. The system of advance pricing agreements involving preliminary discussions between competent authorities could be particularly important.

In spite of these efforts, application of the arm's-length price rule continues to be difficult and unpredictable. Unitary apportionment, a frequently proposed alternative to international income allocation, will remain an important topic in international tax circles, although it is unlikely that there will be an international consensus for a move to this approach.

The design and application of transfer pricing provisions is an important issue for developed and developing countries alike. For the developing countries, there are additional practical difficulties in applying transfer pricing concepts, owing to their limited tax administration resources. It is important therefore that ongoing discussions on international transfer pricing rules and practices take account of the experiences and practices of developing countries in dealing with transfer pricing problems.

JEL Classification Number
P52

Summary of
WP/92/78

"Spain: Landmarks in Economic Development, 1939-92"
by Erich Spitaller and Michel Galy

The recent success of the Spanish economy is frequently attributed to the benefits from its membership in the European Community (EC) and its participation in the exchange rate mechanism of the European Monetary System. By contrast, this paper takes the view that, to a large extent, Spain's economic success originated in earlier financial stabilization programs and structural reform and that the benefits from EC membership are best seen as reinforcing the favorable trends already in effect. Most significant were the "orthodox" stabilization and reform program under the auspices of the IMF in 1959, the "heterodox" adjustment program pursued on transition to democracy in 1977, the differences in policy response to the oil crises of the early and late 1970s, and the industrial restructuring accomplished largely in the first half of the 1980s.

The orthodox program, which included calls for the strengthening of financial policies, a devaluation of the peseta, and an opening up of the economy, brought about substantial improvements on the inflation and balance of payments fronts, as well as medium-term output gains. However, reductions in trade barriers and in price controls were limited. The heterodox stabilization program, accompanied as it was by fundamental political reform, combined devaluation of the peseta and monetary tightening with a successful incomes policy made possible by the new social consensus. At the same time, as part of that consensus, social expenditure was increased and, despite improved revenue buoyancy in the wake of a tax reform, fiscal policy remained accommodating. Stabilization under this program induced a sustained decline in inflation and a recovery of the current account. When oil prices increased in 1979-80, the Spanish authorities remained committed to monetary and income restraint, in contrast to the policy response to the 1973 oil crisis, thereby strengthening investment and sustainable output growth over the medium term.

Two main lessons can be drawn from the Spanish experience. First, sound financial policies without fundamental structural reform cannot succeed in bringing about durable price stabilization and sustained growth. Second, a policy mix that associates a restrictive monetary policy and income restraint with a lenient fiscal stance may help mitigate the social costs of restructuring the economy, thereby preserving the social consensus needed to implement the reforms. However, such a policy mix is bound to boost real interest rates, which tends to offset the favorable investment effects of lower labor costs and burden the budget.

On the whole, Spain's approach to financial stabilization was radical, and its approach to structural reform gradual. The paper concludes that by mid-1980 Spain had largely accomplished the transition to a modern economy, and prospects were favorable for sustainable expansion over the medium term. Against this background, Spain's subsequent integration into the EC lent further impetus to its progress.

JEL Classification Numbers
P42, L20, L32, D21

Summary of
WP/92/79

"Private Sector Development in
State-Dominated Economies" by Aasim M. Husain

A rapid expansion of the private sector is widely considered to be a key element in the economic transformation of Central and Eastern Europe. Although these economies have undertaken significant reforms, state-owned enterprises continue to produce a significant share of output. Because state-owned enterprises are not subject to bankruptcy and the resulting loss of future profit opportunities, they tend to overemploy nontraded factors of production, such as labor.

This paper analyzes the effect of state-owned enterprises on equilibrium levels of input employment and output of private firms. Use of a significant share of inputs by state-owned enterprises causes the market-clearing input price to rise. As a result, private firms' profit margins are reduced, and the equilibrium number of firms in the industry, as well as each firm's output, declines.

The framework developed in the paper allows for an interesting analysis of the impact of policy changes. Whereas policies that result in a reduction of the number of state-owned enterprises--such as those that "harden" enterprises' budget constraints--have a negative impact on industrial production in the short run, the market price of inputs declines, and the profitability of private firms increases. This induces more firms to enter the industry, and, in the long run, total output increases.

If financial policies can be designed to bring about a sustained depreciation of the real exchange rate or improve the efficiency of credit markets, the implementation of such policies improves the competitiveness of all firms and leads to an increase in output in the short run. In the long run, however, the resulting rise in factor prices may induce firms to exit the industry and could result in a decline in total production.

JEL Classification Numbers
D44, G15, K42

Summary of
WP/92/80

"Automating the Price Discovery Process: Some International
Comparisons and Regulatory Implications" by Ian Domowitz

Computerized trade execution systems automate the price discovery process by determining prices and quantity allocations. The systems operate according to a programmed set of rules that process bids, offers, and other information into market transactions. In practice, there is considerable diversity in the way this process works. Seven levels of automation of the price discovery process are considered in this paper: (1) passive pricing with prices obtained from another market; (2) use of price improvement rules; (3) negotiation capability, which dilutes the automation of the pricing process; (4) participation in trades by responding to quotes on a screen at the touch of a button; (5) automated continuous auctions supported by electronic limit order books; (6) periodic auctions in which all orders are executed at a single price determined by the system; and (7) automated auctions combined with securities pricing models.

On an international basis, 47 automated trade computerized financial markets are classified according to the degree to which they automate the price discovery process. Systems operating at each level are analyzed with respect to age, geographical location, and types of financial instruments traded. The age profile of system automation reveals some convergence to the continuous automated auction design; some persistent differences can be traced to the types of securities traded on these systems.

Differences in the degree of automation of price discovery are examined with respect to variations in the type of information provided to system traders and to asymmetries in information provided to participants with direct system access, compared with that provided to outside investors. It is found that the degree of asymmetric information generally grows as the level of automation increases, although automated systems have the capability of equalizing information to all participants.

The level of automation is proposed as a key factor in determining the potential for trading abuses. In particular, prearranged trading, noncompetitive execution of trades, and trading ahead by customers who do not have direct access to the automated market are examined within a framework that relates the level of automation to the potential for abuse. At some levels, notably in automated continuous auctions supported by electronic limit order books, possibilities for abuse may be wider than under conventional open outcry pit trading. It is argued that direct regulation of the form of the program governing trade execution is not desirable for some levels of automation, however, because such regulation could seriously hamper liquidity provision to the market. Overall, the level of system automation should affect the way in which regulatory authorities carry out their obligations.

JEL Classification Numbers
E41, F31

Summary of
WP/92/81

"Currency Substitution and Cross-Border Monetary Aggregation:
Evidence from the G-7" by Timothy D. Lane and Stephen S. Poloz

Recent studies have suggested that one can specify a stable aggregate demand for money for the countries participating in the European Monetary System (EMS). This paper evaluates two alternative interpretations of this result: first, the relationship between money demand and its determinants may be similar enough in the different countries that not much is lost by aggregating across national borders. Second, there may be currency substitution: if residents of EMS countries hold their money in a variety of European currencies and shift among them in response to exchange rate expectations and other difficult-to-measure factors, the demand for money in the EMS as a whole may be more predictable than in any one country.

The paper presents estimates of demand for narrow money in the Group of Seven (G-7) industrial countries; the smaller EMS countries are omitted because of data limitations, and the three non-European G-7 countries are included to allow for possible currency substitution outside as well as inside the EMS. Within a two-stage error-correction framework, Seemingly Unrelated Regressions (SUR) estimation is used to capture possible interaction between demand for money in the different countries and to permit tests of aggregation restrictions, namely, that the coefficients on income and interest rate variables for the money demand equations are the same for the four European G-7 countries. A common specification for the money demand equation is used for all seven countries, with dummy variables added to account for breaks in the data series (and for episodes of financial innovation documented in the literature). Exchange rates and foreign incomes are used to capture currency substitution.

In the first set of results, a cointegrating equation is estimated for the levels of the variables. It is found that for most countries, the currency substitution variables are needed to obtain a cointegrating relationship, while the aggregation restrictions do not appear to be consistent with the data. These results are borne out when dynamic error-correction equations are estimated using SUR: tests reject the hypothesis that currency substitution does not affect money demand and also the *imposition of the aggregation restrictions on the four EMS countries*. Moreover, both the static and dynamic equations yield significant and often negative correlations among the errors in money demand in different countries, and this also suggests cross-border shifts in money holdings.

These results support the view that currency substitution, and not merely similarities in money demand relationships across countries, may be responsible for the success of cross-border aggregation in money demand estimation. If borne out in further research, they would imply that national moneys may become more difficult to predict and control, strengthening the case for implementing monetary control on a supra-national level, such as through a European central bank.

JEL Classification Numbers
G21, G28, E44, E52, O16, P52

Summary of
WP/92/82

"Issues in Managing and Sequencing Financial Sector Reforms:
Lessons from Experiences in Five Developing Countries"
by Amer Bisat, R. Barry Johnston, and V. Sundararajan

This paper reviews the experiences of five developing countries in reforming their financial systems, illustrating the benefits and risks and examining the factors that contribute to successful financial liberalization. Although financial reform generally led to significant financial deepening, several countries also experienced some loss of monetary control. Inappropriately sequenced reforms, combined with inadequate prudential supervision and unstable macroeconomic conditions resulted, in some cases, in financial crisis.

Liberalizing interest rates and removing direct credit controls can improve financial sector competition and efficiency in the allocation of financial resources. However, to avoid loss of control, financial sector reform needs to be supported by active monetary policy and flexible and effective monetary control procedures. In some cases, financial sector reform was accompanied by an initial, more rapid growth of credit, which needed to be constrained by high positive real interest rates, with possible adverse effects on the real sector (through appreciation of the real exchange rate and the revaluation of assets). To minimize these effects, the sequencing of reforms should be consistent with a broader program of macroeconomic adjustment. In addition, the pace of the liberalization of interest rates and credit should take account of the solvency of financial and nonfinancial firms and their ability to respond to the new financial environment. In certain cases, countries may benefit from liberalizing interest rates and credit more gradually while pushing ahead with industrial sector restructuring and the recapitalization of banks.

A minimal system of prudential regulation must be in place if financial sector reform is to succeed. Too rapid liberalization can strain banks' credit approval process and may not give them time to develop sound banking techniques and supervisory procedures.

JEL Classification Numbers
C72, E31, E64

Summary of
WP/92/83

"Credibility Effects of Price Controls in
Disinflation Programs" by Pierre-Richard Agénor

Since the early 1980s, several countries (Argentina, Brazil, Israel, Mexico, and Peru) have launched comprehensive anti-inflation programs with extensive wage and price controls. These so-called heterodox programs are based on the idea that inflation displays considerable inertia because of backward wage indexation and lack of credibility. In this regard, controls were used to break the inertial process. Recent analytical studies have, in addition, argued that price controls can help "signal" the commitment of policymakers to a disinflation strategy.

This paper examines whether price controls may indeed enhance the credibility of a stabilization program. The analysis is based on a model that focuses on strategic interactions between the private sector and policymakers. The first part of the paper shows that a partial price freeze constitutes a time-inconsistent policy and is not fully credible. Paradoxically, price controls may lead to inflation inertia. The second part of the paper shows that the authorities may be able to determine the optimal intensity of price controls--that is, the proportion of prices subject to ceilings--so as to minimize the policy loss implied by a discretionary monetary strategy. However, this results in the effective imposition of price ceilings only if the cost of enforcing them is not too high or if the weight attached to price distortions in the policymakers' loss function is small.

JEL Classification Number
G18

Summary of
WP/92/84

"Coordinating Public Debt and Monetary Management
During Financial Reforms" by Sérgio Pereira Leite

The interplay between financial reforms and public debt management strongly suggests that financial reforms should take account of fiscal policy and that a public debt strategy should reflect the importance of debt management to financial sector performance and monetary policy implementation.

This paper portrays the typical state of public debt management at the onset of financial reform and discusses monetary policy and public debt through the different phases of the reform. It concludes that, irrespective of institutional arrangements, little can be done to implement financial reforms if the government is unwilling to accept two basic principles: (1) that it should pay market-related rates on its borrowing; and (2) that it should incur a short-term cost in developing an active financial market in government securities to ensure longer-term access to these markets at reasonable rates in the future.

Coordination between the central bank and the treasury becomes less stressful and more effective as reform progresses, particularly if the government has reduced the budget deficit to manageable levels. However, it is not only the budget deficit that places a burden on monetary management; the reverse is also true. Poorly conceived monetary instruments, such as reserve requirements and rediscount policies, can make it extremely difficult to develop a sufficiently deep and active government securities market.

Although central bank independence is very much in vogue, there may be a case for "treasury independence," that is, a treasury that is independent of the central bank. The treasury achieves independence when it is able to finance the government without using either central bank financing or regulations to force economic agents to hold its securities. There is substantial evidence indicating that the coordination between public debt and monetary management becomes much easier as the treasury acquires its independence.

The paper recommends setting up a committee of central bank and treasury officials to coordinate public debt and monetary management. It also suggests that both the treasury and the central bank should have units in charge of public debt management. In the treasury, the unit should be responsible either for making final decisions on placements of securities after consultation with the central bank or for monitoring the central bank's performance as debt manager if this task has been fully delegated to the central bank. The central bank unit will be in charge of monitoring developments in government financial markets and managing government security auctions. Operations in the secondary market, however, should be conducted by a separate central bank unit in charge of monetary policy implementation.

JEL Classification Numbers
G1, F41

Summary of
WP/92/85

"Capital Inflows to Latin America: The 1970s and the 1990s"
by Guillermo A. Calvo, Leonardo Leiderman, and Carmen M. Reinhart

For the first time since the onset of the debt crisis in the summer of 1982, capital started to return to Latin America in 1990 and 1991, and policymakers in the region have begun to voice concerns about the less favorable side effects of these capital inflows. Based on the experience of the debt crisis, which followed on the heels of the "capital bonanza" of 1978-81, they feared, specifically, that the inflows could be abruptly reversed.

This paper compares the recent capital inflows experience with that of the late 1970s, examining the differences and similarities between the two episodes in three broad areas: initial domestic macroeconomic conditions in the recipient countries, the behavior of the external factors that influence the international allocation of capital, and the response of key macroeconomic variables--such as the real exchange rate, reserves, and stock prices--to the inflow of capital. The paper aims at assessing how vulnerable these economies are to an unexpected swift reversal in capital inflows, and whether there are signs that the vulnerability has changed appreciably over time.

In some areas, Latin American countries are on a firmer footing now than they were in the late 1970s. Governments have reduced their spending and structural deficits, policies are oriented toward privatization and deregulation, and some countries are bringing inflation under control. In addition, during the 1980s, most of these countries learned to cope with adverse terms of trade shocks and have successfully maintained growth of real export earnings by expanding the volume of their exports. Some also succeeded in further diversifying their export base. This scenario contrasts with that of the late 1970s, when the favorable export performance was largely due to favorable terms of trade developments. As the experience of the 1980s shows, the external shock was fully reversed in an abrupt manner.

Although these economies have become more resilient over the past decade in a number of important areas, their vulnerabilities have also increased. As the key debt ratios show, external and internal public sector indebtedness remain sharply higher than those of the late 1970s, and the proportion of variable rate debt is now much greater. Taken together, the facts suggest that these economies are now more vulnerable to an increase in world interest rates than they were during the late 1970s. Stock markets have not deepened to any significant extent since the boom-bust of the late 1970s and early 1980s; rather, some of the evidence suggests the opposite. The banking system also remains vulnerable to a sudden withdrawal of deposits, particularly if its investments are less than fully liquid and if reserve requirements on short-term deposits are low. In sum, although the renewed optimism about the reintegration of Latin America in world capital markets is warranted, some of the economic indicators of these countries suggest that optimism should be tempered with caution.

JEL Classification Numbers
E2, O5, P5

Summary of
WP/92/86

"Structural and Macroeconomic Determinants of the Output Decline
in Poland: 1990-91" by Eduardo R. Borensztein and Jonathan D. Ostry

In the two years following the initiation of market-oriented reforms, Poland's measured output declined by nearly 20 percent. Although the actual decline may have been somewhat smaller owing to systematic measurement biases and inadequate monitoring of the emerging private sector, it is unlikely that the qualitative picture would change significantly once these factors were taken into account. After surveying the main characteristics of the Polish economic program and the main developments in the real economy since reforms began, this paper looks at two issues that are central to interpreting the decline in economic activity.

Any economy facing a completely new relative price structure as Poland did at the start of 1990 is likely to experience an interim period during which output declines as resources are reallocated across sectors. This is especially true in Poland, where significant adjustment costs and uncertainty may delay an expansion of activities that are profitable under the new relative price structure. Although the extent of output decline has differed across sectors, employment reduction has been remarkably similar, suggesting that little reallocation of labor across different activities has taken place thus far. Other evidence reported in the paper also suggests that relatively little of the output decline can be attributed to structural change in the economy following the relative price shock.

This finding implies that much of the output decline is related to macroeconomic factors. This paper tries to determine which macroeconomic factors have been relatively important and, in particular, whether demand-side shocks (relating, for example, to tight fiscal and monetary policies) or supply-side shocks (relating to administered energy price increases combined with tight credit conditions imposed on state enterprises) have predominated. According to the results, the relative importance of these shocks has varied over time in line with the overall policy stance. The econometric results suggest that although administered energy price increases have had a sizable negative effect on aggregate supply, their impact on equilibrium output has been mitigated by the relative inelasticity of demand for Polish industrial goods.

JEL Classification Number
F42

Summary of
WP/92/87

"Implementation of Monetary Policy in EMS Countries
Participating in the Exchange Rate Mechanism" by Michel Galy

Efforts to stabilize exchange rates in the framework of the European Monetary System (EMS) led to gradual monetary integration and interest rate convergence among the core EMS countries during 1979-91. It has been argued that the burden imposed by convergence on domestic policies was not equally shared among EMS members and that the German central bank retained a leadership role during this period.

This paper uses various Granger-causality tests and estimation of central banks' reaction functions to determine possible changes in regime and their rationale. The results support the thesis of German leadership but also point to an increased interdependence between French and German monetary policies after 1981-82, whereas the Italian and Spanish central banks appear to have retained more significant monetary autonomy. Changes in regime appear to be concentrated in the first years of the exchange rate mechanism (ERM) and are related to technical changes in the implementation of monetary policy and to the introduction of adjustment programs to strengthen the credibility of the exchange rate commitment, generally following a major realignment. The total removal of capital controls in 1990-91 has undoubtedly further reduced monetary autonomy among ERM participants, including Germany, thus requiring a rapid implementation of the concerted approach proposed in the Maastricht Agreement. However, the consecutive possible changes in ERM central banks' behavior are too recent to be identified by the tests presented in this paper.

JEL Classification Numbers
E31, E32

Summary of
WP/92/88

"Are Prices Countercyclical?"
by Bankim Chadha and Eswar Prasad

This paper examines the co-movement of prices with the cyclical component of output. It argues that applying the same stationarity-inducing transformation to the levels of output and prices and then examining the correlations of the resulting series is not a reliable way to determine the cyclical behavior of prices. A more appropriate procedure is to examine the correlations between the rate of inflation and the level of the cyclical component of output. If cyclical movements in output result primarily from movements in demand, the cross-correlations should be positive; if they result primarily from movements in supply, the cross-correlations should be negative.

In postwar U.S. data, the correlations between similarly transformed price and output data are consistently and often strongly negative, as reported recently by a number of authors (Kydland and Prescott (1990), Backus and Kehoe (1991), and Cooley and Ohanian (1991)) as evidence of countercyclical price behavior. However, the rate of inflation has a consistent and, usually, a strong positive correlation with various measures of the cyclical component of output estimated under alternative assumptions on the long-run behavior of output. These latter results are consistent with prices having been procyclical in the postwar United States and with the view that temporary movements in output are primarily associated with movements in demand.

Two simple macroeconomic models, a demand-driven sticky price model and a supply-driven flexible price model, are used to illustrate the arguments and to help reconcile some of the conflicting findings. Simulations of the models suggest that examining the cross-correlations between similarly transformed price and output data can easily yield negative correlations even when prices are, by construction, procyclical. For both models, correlations between the rate of inflation and the cyclical component of output are shown to reflect the cyclical behavior of prices accurately.

JEL Classification Numbers
O53, O57, P20, P50

Summary of
WP/92/89

"China: An Evolving Market Economy--A Review of Reform
Experience" by Michael Bell and Kalpana Kochhar

For three decades after the 1949 revolution, China pursued socialist economic development based on self-reliance and the centrally directed allocation of resources. In the late 1970s, China's policymakers recognized the untenability of this approach and began to overhaul the economic system.

They undertook the reforms without a detailed blueprint under a style that was generally incremental and experimental. Despite the absence of a blueprint, the authorities recognized the importance of the market and the strength of individual incentives to stimulate production. At the same time, their resistance to widespread private ownership led to a search for solutions that simulated the institutions of a market economy while retaining public ownership.

A key element of reform involved gradually opening China to the rest of the world, which policymakers viewed as a means of acquiring modern technology. In the area of domestic reform, China first experimented in the rural areas, and then, when new mechanisms were successful, extended the reforms to other sectors. Partly for this reason, progress in the various areas of reform has not been uniform.

There can be little doubt that the reforms had a positive effect on China's economic performance. In contrast with other reforming countries, where output collapsed, unemployment rose, and real incomes declined, China's output growth accelerated and living standards improved, in some cases dramatically. However, the gradual approach and the resultant incompleteness of reform perpetuated some distortions and contributed to pronounced macroeconomic cycles marked by inflation and external disequilibrium. Because indirect instruments were ineffective for macroeconomic management, the authorities reverted to administrative means to contain excess demand, thereby slowing the pace of reforms.

China's reform experience differs from that of other countries undertaking structural reform for a number of reasons, including favorable initial macroeconomic conditions; continuation of the prereform political order; a very small external debt burden; and the benefit of having withdrawn from the CMEA arrangements many years earlier. Thus, the favorable results of China's reform to date cannot necessarily be attributed wholly to the more gradual approach that it has followed.

Beginning in early 1992, the pace of reform accelerated markedly, indicating the onset of a new stage in China's reform efforts. Detailed analysis of developments during 1992, including the decisions of the Fourteenth Party Congress in October 1992, will be the subject of a further study.

JEL Classification Numbers
F43, O41

Summary of
WP/92/90

"International Trade, Distortions and Long-Run
Economic Growth" by Jong-Wha Lee

How are international trade and trade policy linked to long-run growth? How much can differences in trade policy explain cross-country variations in long-run growth rates? This paper attempts to present new insights into these long-standing questions.

The paper investigates the links between trade and growth in a neoclassical model of an open economy in which domestic production requires both domestic and imported inputs. The model shows that trade distortions induced by such government policies as tariffs and exchange controls generate significant cross-country divergences in growth rates and in per capita income over a long transitional period. An interesting theoretical prediction is that the effects of trade distortions on the growth rate of a country depend on "free trade openness"--the country's share of imports in GDP under a free trade regime. Thus, distortionary trade policies are considered to be more disadvantageous to growth in small, resource-scarce countries, which would be more open in a free trade regime, than in large, resource-abundant countries. The model also explains why capital may flow from low-income to high-income countries: namely, because trade distortions decrease substantially the marginal productivity of capital, they may cause capital to flow from highly distorted low-income countries to high-income countries with low distortions.

The paper presents empirical findings on the links between trade distortions and economic growth by using a cross-section of data on 81 countries from 1960 to 1985. The empirical results confirm that tariff rates on imports of foreign inputs and black market premiums, interacting with an estimate of "free trade openness," have significant negative effects on the growth rate of per capita income. In a typical developing country, whose import share would be 20 percent of GDP in the absence of trade distortions, distortionary trade policies, such as a 25 percent tariff and a 50 percent black market premium, decrease the growth rate by about 1.4 percent a year.

JEL Classification Numbers
D50, D91, H30

Summary of
WP/92/91

"The Savings Trap and Economic Takeoff"
by Carlos M. Asilis and Atish R. Ghosh

It has long been recognized that savings behavior influences economic development. Virtually without exception, countries that have achieved high savings rates have also enjoyed high levels and growth rates of per capita income--although the direction of causality between savings and income growth remains a matter of debate.

Time-series studies of specific countries reinforce the idea that economic development is associated with a discrete change in savings behavior. Indeed, a fairly clear pattern emerges from the various success stories of economic development: an initial period of low savings--perhaps 5 percent of GDP--and slow economic growth; the "takeoff" period during which, in just a few years, the savings rate increases dramatically to more than 10 percent, perhaps to as much as 20-30 percent of GDP; and the "mature economy" phase, marked by declining savings rates and growth rates. Breaking out of the initial phase may be the most important step toward economic development (Rostow, 1960).

This paper provides an analytical framework to account for the above-mentioned dynamics of economic development and to determine effective policy measures that may direct an economy onto a higher growth path. Specifically, it develops an overlapping-generations model of savings and investment in which "culture" and technology interact to determine the growth rate of an economy.

Investment is assumed to be subject to intermediation or to other costs that may, in each period, result in two possible equilibria for the savings rate. At the "good" equilibrium, savings and growth are higher than at the "bad" equilibrium. A country cannot simply grow out of a bad equilibrium because the steady state associated with it is dynamically stable. Whether, in any period, the country attains the good or the bad equilibrium depends upon the beliefs of each individual about the savings behavior of other agents in the economy. This paper postulates that these beliefs depend upon the history--or culture--of the society and that this cultural factor is sufficient to determine which path the economy will follow. The model suggests that fiscal policy or public activities that facilitate private investment can influence savings behavior, in particular, that a sustained period of fiscal restraint can shift an economy onto a high savings/high growth path.

JEL Classification Numbers
E21, E24, E31, E65, J30, J31

Summary of
WP/92/92

"Price Liberalization in Russia: The Early Record"
by Vincent Koen and Steven Phillips

After being almost completely fixed for decades, prices in Russia have been decontrolled in several steps since early 1991. This paper analyzes their behavior before and after the January 1992 price liberalization as well as the associated movements of wages and overall consumer incomes and expenditures, focusing on developments in the first half of 1992. It presents evidence on shortages, saving, and income distribution and compares Russia's experience with recent experiences in Eastern Europe.

The main lessons are as follows. The Russian price jump of January 1992 far exceeded those registered in Eastern Europe. The question of overshooting, however, remains open. Following the January jump, CPI inflation dropped sharply but continued at double-digit monthly levels, in contrast to the aftermath of other comprehensive price liberalizations. The jump in industrial producer prices in January was even larger than that of the CPI. The sustained growth of these prices may result from the fact that households were subject to credibly hard budget constraints in 1992 whereas state enterprises were not. The increase in the price level not only rationed consumer demand but also induced some supply response at the retail level. The availability of goods in stores increased significantly, and the rundown of retail inventories was ended. The spread between prices for similar goods in free markets and state stores declined sharply. However, the extent of the supply response at the producer level remains more difficult to assess.

The disequilibrium that grew through 1991 was the result of an increase in the measured real wage, which was out of proportion to the supply of consumer goods and desired saving. The price jump of January 1992 brought the average wage, in real terms, to about two-thirds of its 1987 level (1987 being the last year before the beginning of a pronounced divergence in wage and price developments). A recovery of real wages ensued, and, by June 1992, they had returned to their 1987 level. The incomes policy Russia pursued failed to provide a nominal anchor, with nominal wage inflation averaging nearly 30 percent a month during the first half of 1992. The overall distribution of wages widened significantly, partly reflecting widening intersectoral dispersion. By historical standards, the level of the minimum wage and of pensions was significantly lower than that of the average wage in the first half of 1992.

Household expenditures grew considerably in the late 1980s and surged in late 1991 in conjunction with a significant rundown of retail inventories. With the January price burst, recorded real expenditures plummeted although they recovered partially thereafter. The impact of the decline in expenditure on consumer welfare was presumably offset, to some degree, by reliance on previously accumulated stocks and by the reduction of time spent in queues. The saving rate grew significantly in the late 1980s and rose further in 1991, with a surge in nominal incomes and increasing shortages. After prices were liberalized in January 1992, the measured saving rate remained near the levels of late 1991.

JEL Classification Numbers
F21, F34, H63

Summary of
WP/92/93

"Linkages Between External Debt Data and Balance of Payments,
Government Finance, and Monetary Statistics" by Jan Bové

This paper provides, first, a brief review of the governmental, private, and external sectors of an economy, focusing particularly on external financing. Second, it describes the salient features of statistical systems that allow economic analysts and policymakers to examine the linkages between these sectors so as to provide a global view of economic conditions. Third, it addresses issues in the compilation of those statistics. A set of tables presenting some important macroeconomic statistics, based broadly on economic characteristics for African nations, illustrates linkages between the statistics on external debt and debt-related flows. Problems commonly encountered in assuring consistency between the data sets are also discussed.

The paper concludes that, although considerable progress has been made in measuring external debt and related flows, further improvements are needed. To help compilers achieve greater consistency among the statistics, thereby augmenting their usefulness for analysts and policymakers, low-cost but vital measures should be taken, including improved communications among compilers of related statistics, better knowledge of internationally accepted statistical methodologies, and a stricter adherence to those methodologies. The need for increased resources to develop statistical systems is also recognized.

JEL Classification Number
F14

Summary of
WP/92/94

"The European Community's Trade and Trade-Related Industrial Policies"
by Miranda Xafa, Roger P. Kronenberg, and Joslin Landell-Mills

This paper examines the trade policy objectives and instruments of the European Community (EC) from 1987 to mid-1992. The internal market program, aimed at a single market in goods, services, and factors of production by the end of 1992, will give a further boost to intra-EC trade. The EC's external trade regime after 1992 is still evolving, but efforts to replace national restrictions with EC-wide measures may in some instances lead to continued reliance on managed trade.

There is considerable scope for trade and domestic support policies in the EC to accelerate structural reform. The EC's external trade regime is characterized by relatively low industrial tariffs, but also relies heavily on nontariff measures as instruments of protection in selected sectors (such as agriculture, textiles and clothing, and automobiles). The Common Agricultural Policy reforms agreed upon in May 1992 are a positive step toward reducing distortions in agriculture but will need to be strengthened over the longer term if such distortions are to be eliminated. EC competition policy has been more strictly enforced since 1985, and state aids are being subjected to greater scrutiny. The outcome of the Uruguay Round will also be instrumental in shaping the EC's external regime after 1992.

An important aspect of the EC's external regime is the extensive network of preferential and nonreciprocal trade arrangements. Such links are being strengthened further, particularly with regard to the European Free Trade Association and Eastern and Central Europe, as more countries seek to participate in the benefits to be derived from the single market program.

JEL Classification Numbers
P34, P59

Summary of
WP/92/95

"Managing Payment System Risk During the Transition From a
Centrally Planned to a Market Economy" by Andrew T. Hook

This paper reviews the objectives and functions of payments systems in centrally planned economies and provides a framework for managing payment risk as these economies move toward market-based systems. It focuses on the payments systems of a number of centrally planned economies, where risks that had not existed under the previous regime came into play as the economies started to liberalize. The older arrangements for clearing and settlement still existed but were no longer adequate for monitoring new risk, particularly credit and liquidity risk.

Essentially, a payments system is a set of rules governing the clearing and settlement of payments. An ideal payments system should be reliable and sound, efficient, and fair; these qualities can serve as guidelines for the specific rules, which must be widely accepted if the system is to function.

In market economies, commercial banks have typically developed the rules and penalties so as to facilitate their own payments. In many of the centrally planned economies, banks in the private sector are just beginning to function as profit-maximizing entities and face a major restructuring of their operations. Even where the private banks have the financial and operating capabilities, as well as the desire, to lead the reform, the central bank should play a vital role overseeing the risk management of the system, expediting agreement on the rules that will govern the payments, and ensuring that the rules are fair.

This paper argues that a clear distinction should be drawn between short- and long-term strategies for dealing with payments problems. Although, in the short term, there is no alternative to the existing arrangements, they can be significantly improved precisely because little attention was paid to efficiency or reliability under the previous regime. The paper outlines specific recommendations in accounting, clearing, settlement, netting, and standardization.

A long-term strategy for reforming and modernizing the payments system should be developed jointly by users, commercial banks, and central banks. The central bank should establish a small team to be responsible for designing and implementing payments reforms. This team will liaise with the commercial banks, ideally in the framework of a national payments council, and help formulate the long-term strategy. Because of the large number of participants, the heavy demand for resources, and the need to gain familiarity with payments in a market system, the transforming economies should allow at least a year to develop the long-term strategy.

JEL Classification Numbers
E43, E52, E58, F31

Summary of
WP/92/96

"Asymmetry in the ERM: A Case Study of French and German Interest
Rates Since Basle-Nyborg" by E.H. Gardner and W.R. Perraudin

This paper analyzes empirically how Germany's leadership role has evolved in the exchange rate mechanism (ERM) of the European Monetary System since the Basle-Nyborg Agreement of September 1987 by examining the joint behavior of French and German short-term interest rates. The Basle-Nyborg Agreement was chosen as the starting point because it represents a significant change in the rules regulating intervention in the ERM. This study, unlike others, uses daily sampling to detect the presence of regime shifts--in particular, structural breaks around the time of German unification--over this shorter period.

There is wide disagreement in the literature over the merits of using onshore versus offshore interest rates for empirical testing. On the one hand, offshore rates have the advantage of not being contaminated by domestic developments related to reserve requirements and other institutional factors. On the other hand, onshore rates are more likely to be influenced by the monetary policy actions of the authorities concerned in the presence of capital controls. In light of these problems, this study uses both rates.

In the estimated models, a vector of daily changes in French, German, and U.S. short-term interest rates is regressed on cross-country contemporaneous interest changes, on five own lags of the interest change vector, and on five lags of changes in benchmark long-term interest rates for each country. To identify the model, it is assumed that (1) French and German interest rates are not directly affected by each other's long-term interest rates; (2) U.S. interest rates are not affected by changes in French and German rates; and (3) the covariance matrix of innovations to the system are orthogonal instantaneously. The Generalized Method of Moments is used to estimate the model.

The results for the whole sample (October 1987-August 1992) reject German dominance--unidirectional causality--thereby confirming the general findings of other authors. The effect of France on Germany is significant, albeit smaller than the German effect on France. However, the results strongly suggest the presence of a structural break coinciding with news of German unification, that is, at the end of 1989. Before unification, the system clearly works asymmetrically, with German monetary policy actions having a stronger effect on France than vice versa, although, to a significant degree, only for offshore rates. In the first year of German unification, France assumes the leadership role, particularly for onshore rates. However, Germany appears to regain its leadership role in 1991-92.

JEL Classification Numbers
E6, H3, O11, O53

Summary of
WP/92/97

"Fiscal Policy in Pakistan Since 1970"
by Nadeem U. Haque and Peter J. Montiel

Like many other developing countries, Pakistan adopted a policy in the 1970s that had the effect of expanding the role of the public sector over the medium term. This expansion, combined with the Government's difficulties in raising fiscal revenues, resulted in overall fiscal deficits during much of the period 1970 to 1990 that were high in relation to the size of the economy. During this period, the ready availability of external finance at concessionary rates, as well as an elastic supply of domestic nonbank finance at less-than-world-market rates of return, mitigated the adverse effects of these high fiscal deficits. In this paper, it is argued that, although the use of concessional external financing may have moderated the inflationary consequences of fiscal deficits, this result was achieved at the expense of some crowding out of private investment and thus implied slower growth than would otherwise have been observed. Controlling the overall fiscal deficit during this period would have contributed to more favorable macroeconomic outcomes--at least with respect to growth and the external accounts--provided this had been done without reducing development spending.

Because of the high level of outstanding debt and limits on the availability of concessional financing, fiscal adjustment is likely to remain an important policy concern in Pakistan. The analysis indicates that debt-servicing costs alone could increase the overall fiscal deficit significantly, assuming that the additional debt required to finance future primary deficits was floated at market rates.

Fiscal deficit reduction in Pakistan may also have become more important in recent years because the comprehensive measures taken to remove trade and exchange restrictions (including the reduction of the negative import list and the removal of restrictions on capital flows and foreign currency holdings by domestic residents) are likely to have reduced the potential for collecting an inflation tax. Of three alternative policies for fiscal deficit reduction--reducing government current expenditures, reducing government investment expenditures, and increasing taxation--the simulation model used in this paper suggests that a reduction of government investment would be least desirable in terms of output growth and inflation objectives. The most favorable growth and inflation outcomes result from a policy of limiting government current consumption. In reality, however, a combination of current expenditure control and revenue enhancements might be the most desirable policy choice to achieve a lasting fiscal adjustment for the 1990s.

JEL Classification Numbers
E3, F3, F4

Summary of
WP/92/98

"The Terms of Trade and Economic Fluctuations" by Enrique G. Mendoza

This paper examines the relationship between economic fluctuations and terms of trade disturbances in the context of a stochastic intertemporal equilibrium model of a small open economy. The analysis aims to establish whether terms of trade shocks can account for a significant part of observed output variability, and whether the intertemporal equilibrium approach can explain the positive response of the trade balance to an improvement in the terms of trade--the Harberger-Laursen-Metzler effect--and fluctuations in real exchange rates of the magnitude observed in the past two decades.

The model's equilibrium co-movements, computed using recursive numerical simulation methods, reproduce many of the characteristics of recent economic fluctuations in the Group of Seven and 23 developing countries. In particular, a Harberger-Laursen-Metzler effect, which is stronger in industrial countries, and substantial deviations from purchasing power parity, which are larger in developing economies, are observed. The results also show that the model explains more than 50 percent of the observed variability of output in industrial countries. The intertemporal and intratemporal income and substitution effects that interact in the model to produce these results are examined by analyzing sensitivity to changes in the model's parameters and by constructing impulse response functions for the alternative parameter specifications.

The results of this analysis suggest that, despite the unquestionable role of nominal disturbances in explaining some aspects of the business cycle, terms of trade and productivity shocks themselves play an important role. Even when no market failure, no imperfections of capital markets, and no barriers to capital mobility are evident, small open economies may experience significant fluctuations in economic activity, the external balance, and the real exchange rate simply as the optimal response of economic agents to disturbances affecting export and import prices.

JEL Classification Numbers
E51, F32

Summary of
WP/92/99

"Money and Credit Under Currency Substitution"
by Carlos A. Rodríguez

In an economy operating under currency substitution, macroeconomic effects may derive from either shifts between denominations of currency holdings or shifts in the locational composition of foreign currency holdings. A shift from dollar deposits abroad to deposits in the local system increases the credit supply of the financial system without increasing money demand. Given an initial situation of credit constraint, the extra credit results in an equivalent accumulated current account deficit that is also associated with temporary real currency appreciation, which is expected to be hard to reverse. In contrast, when there is an excess demand for money, one would expect a general reduction in expenditure leading to both capital inflows and current account surpluses.

Data from Argentina and Peru following the stabilizations after hyperinflation show that the capital inflows have been associated with significant worsening in the current account. They therefore support the hypothesis that the inflows were induced by portfolio reallocations or by foreign investors responding to the lower interest rates in the United States.

Higher temporary marginal reserve requirements (nonremunerated) are one alternative for slowing down domestic credit expansion caused by the repatriation of foreign assets. In the case of dollar deposits in the local financial system, the higher reserve requirements should apply only to that part that is locally lent. For overseas operations, reserve requirements should be at rates compatible with international competition. Moreover, local taxes should not be imposed on the profits earned from financial intermediation based on dollar deposits that are reinvested overseas by local banks. Otherwise, deposit rates for local dollar deposits will not be able to compete internationally and, in consequence, the repatriation of assets could be hampered. The marginal reserve requirements should be lowered as monetization advances or as the ability of the economy to adapt to trade deficits without substantial relative price swings improves.

JEL Classification Numbers
F33, F41, F42

Summary of
WP/92/100

"Optimal and Sustainable Exchange Rate Regimes:
A Simple Game-Theoretic Approach" by Masahiro Kawai

This paper focuses on how to design optimal and sustainable exchange rate regimes in a world economy comprising two interdependent countries. For this purpose, it develops a simple game-theoretic, two-country model of the Barro-Gordon type, in the context of which noncooperative equilibria are compared under different assumptions of credibility and different exchange rate regimes. By means of a two-stage approach to the strategic choice of policy instruments, sustainable (Nash or self-enforcing) and optimal (in a Pareto sense) exchange rate regimes are identified. The paper concludes that international coordination requires each authority to agree not on the conduct of monetary policy but only on an exchange rate regime. Because the choice of such a regime is found to depend fundamentally on the credibility of monetary policy commitments by the two countries' authorities, the paper also examines the decision-making process whereby an authority chooses whether or not to acquire credibility.

Some of the innovative results of the paper can be summarized as follows:

First, when both countries' authorities are fully credible, flexible and managed exchange rate regimes yield identical welfare outcomes, and, therefore, coordination concerning the choice of exchange rate regimes is unnecessary. The fixed exchange rate regime can become optimal and sustainable only when real shocks to the economies are global or goods produced in both countries are perfect substitutes.

Second, when one authority is credible and the other is not, international coordination is required to prevent the credible authority's exchange rate management from adversely affecting the noncredible authority. The credible authority must agree to control the money supply, while the noncredible authority may either control the money supply or manage the exchange rate. Thus, a flexible or managed exchange rate regime, with the anchor country pursuing a stable and low-inflationary policy, emerges as an optimal, sustainable regime.

Third, when neither authority is credible, only the flexible exchange rate regime is both optimal and sustainable. Insofar as exchange rate management by one authority has a beggar-my-neighbor effect on the other, the managed exchange rate regime is Pareto-inferior. No scope exists for fixed exchange rates as an optimal and sustainable regime.

Finally, the lower the cost of pursuing an anti-inflation monetary policy and the lower the subjective rate of time preference, the more incentive there is for each authority to establish and maintain its policy credibility.

JEL Classification Numbers
O16, O40, O50

Summary of
WP/92/101

"Financial Development and Economic Growth"
by José De Gregorio and Pablo E. Guidotti

Ever since the pioneering contributions of Goldsmith (1969), McKinnon (1973), and Shaw (1973), the relationship between financial development and economic growth has remained an issue of debate. Numerous theoretical and empirical studies have dealt with different aspects of this relationship. This paper re-examines the empirical relationship between financial development and long-run growth by using the ratio of bank credit to the private sector to GDP as an indicator of financial development. It argues that this indicator has a clear advantage over real interest rates or monetary aggregates such as M1, M2, or M3 in that it represents accurately the actual volume of funds channeled to the private sector. The paper also reviews measurement issues and surveys the analytical literature on economic growth and financial development.

Section III comprises an empirical investigation using different data sets. First, by including its proxy for financial development as an explanatory variable, the paper extends Barro's (1991) cross-country growth regressions for a sample of 98 countries during 1960-85. In order to check the robustness of the paper's results, De Long and Summers' (1991) data set is also used. Second, using De Gregorio's (1992a) panel data for 12 Latin American countries during 1950-85, the paper explores the relationship between financial intermediation and growth in Latin America.

The paper's main findings are as follows: First, using Barro's (1991) data set, the paper finds its measure of financial development to have a significantly positive effect on the long-run growth of real per capita GDP. Second, it finds the impact of financial intermediation on growth to be mainly the result of its impact on the productivity rather than the volume of investment. Third, when it examines the relationship between financial intermediation and economic growth in Latin America, the paper finds a robust and significant negative correlation between these two variables. This effect, which may appear puzzling, is interpreted in light of the extreme experiments of financial liberalization that were witnessed by Latin America during the 1970s and 1980s.

A simple model is used to illustrate how, in the absence of proper regulation, more financial intermediation may be associated with a lower efficiency of investment. The paper concludes that the positive relationship between financial development and economic growth may be reversed in the presence of unregulated financial liberalization and expectations of government bailouts.

JEL Classification Numbers
C15, E31, E51, E58, E62

Summary of
WP/92/102

"Inflation and Fiscal Deficits: The Irrelevance of
Debt and Money Financing" by José M. Barrionuevo

The experience of many industrial and developing countries suggests that fiscal deficits have introduced significant distortions in the economy without stimulating economic activity. Barro (1974) shows that, under certain conditions, changes in public deficits arising from a switch from tax to bond financing (borrowing) of a given level of real spending will not affect real economic activity. Propositions of this kind are important because they suggest that the only way to stimulate economic activity is by reducing taxes and spending.

Public sector deficits have a bad reputation because, sooner or later, governments will resort to money creation, and hence inflation, to finance them. Sargent and Wallace (1981) and Sargent (1987) discuss deficit financing regimes that are intermediate to the models that use only money or only bonds. In these intermediate regimes, an increase in interest-bearing debt eventually leads to higher inflation because increased debt signals future increases in money. However, these models' predictions of inflation hinge on the assumption about the time required to balance the government budget. A major drawback of this assumption is the uncertainty about whether the government budget can be balanced in 5, 10, or 20 years.

This paper presents a model that circumvents the requirement of explicitly setting a period for balancing the fiscal budget yet implies that increases in the growth of public debt are bound to increase inflation if there is no perceived commitment to reduce the fiscal deficit. The model represents an economy with no certain time horizon within which the inter-temporal government budget is to be balanced. Inferences about whether a fiscal deficit is too high or too low at any given time are drawn from the market's expected real rate of return. Two special cases of the model are the Sargent and Wallace money and debt financing irrelevance proposition and the quantity theory of money. More importantly, the model introduces a trading pattern that allows a more flexible use of credit and money.

Three irrelevance propositions on the effects on inflation of debt and money financing are presented. The money and debt irrelevance propositions are used to characterize the mechanics of inflation under alternative financing policies. Numerical simulations are used to illustrate and interpret the dynamics of inflation as implied by the alternative financing strategies. A simple example suggests that declines in inflation can be achieved only through strong fiscal reform rather than through isolated tightening of fiscal and monetary policy or price controls.

JEL Classification Numbers
C82, E59, P34

Summary of
WP/92/103

"Money and Banking Statistics in Former Soviet Union (FSU) Economies"
by Robert Di Calogero, K. Wilhelm Nahr, and Richard T. Stillson

The former Soviet financial system played a passive role in administering the credit allocation decisions that were contained in the overall economic plan. To monitor and control monetary and credit flows, the Soviet authorities developed a detailed accounting system (the Gosbank Standard Plan of Accounts) that, with some modifications, can be adapted to the requirements of the Fund's money and banking statistics (MBS) methodology. The major modification is the introduction of the residency criterion to distinguish domestic from foreign transactions. This paper presents a derivation table, or key, that allows one to construct monetary statistics from the Standard Plan of Accounts.

Historical monetary aggregates compiled from Soviet data would not help determine the behavior of such aggregates during either the period of a command economy or the transition to a market economy. In the command economy, monetary aggregates played only a passive role, whereas in the transition to a market economy financial institutions have changed so rapidly that it is impossible to determine the underlying relationships of monetary aggregates to macroeconomic activity.

When the MBS methodology is applied to the former Soviet republics, problems arise owing to the collapse of their financial institutions. Foremost among these problems are the treatment of ruble currency circulation and the classification of the claims on financial institutions in the former Soviet Union.

Ruble currency circulation is a problem because the ruble is not the liability of a resident financial institution in any of the former republics except the Russian Federation. This problem is addressed through the introduction of a monetary authorities' account that reflects both the foreign (nonresident) and domestic (resident) characteristics of the ruble in each of the former republics.

Claims on financial institutions in the former Soviet republics should be separately identified in banks' balance sheets. When claims have been made on defunct institutions, they could be considered either as de facto claims on the republican governments--which are the ultimate guarantors of their citizens' deposits--or as charges against capital.

JEL Classification Numbers
H2, H23, K33, Q3

Summary of
WP/92/104

"International Environmental Taxation in the
Absence of Sovereignty" by Bernard P. Herber

International environmental taxation is an elusive topic owing to the absence of sovereign international governments with the authority to impose taxes. Nonetheless, considerable potential exists for using traditional tax and other fiscal instruments to resolve important transnational and global environmental problems. The paper examines the economic nature of international environmental externalities and their close relationship to the so-called global commons and discusses the conflicting industrial and developing nation property rights and interests that often accompany such issues. Whereas, within a nation, sovereign political authority exists for imposing taxes and other fiscal instruments to help internalize environmental externalities, no such correspondence exists in the case of international environmental externalities whose scope exceeds the sovereign authority to internalize them. Rather than a reassignment of sovereignty, which would create a corresponding sovereign supranational government, international environmental agreements or treaties are seen as the best available means for overcoming this noncorrespondence.

The paper extends the theoretical concepts and policy instruments of traditional public finance to the world of delegated authority and treaties, describing alternative international environmental tax and fiscal instruments that may be used to overcome international environmental externality and global commons problems. It also describes environmental tax and fiscal instruments found under existing international environmental agreements. Finally, it examines a possible agenda for more efficient and equitable international environmental regimes, including earmarked excise taxes, trust funds, and financial transfers, first, in relation to current proposals for an international carbon tax to abate global warming, and, second, in relation to the entire global commons, including the atmosphere, oceans, and space resources, and the preservation of biological diversity.

The paper concludes that contemporary international political attitudes and institutional constraints are likely to prevent the early introduction of sophisticated international environmental tax and fiscal instruments. However, it suggests that an evolutionary or gradual approach may be feasible, building upon such existing international institutions as the Global Environment Facility. Meanwhile, long-run parameter changes may eventually allow the widespread use of sophisticated forms of international environmental taxation.

JEL Classification Numbers
G11, H21

Summary of
WP/92/105

"Risk-Taking and Optimal Taxation with
Nontradable Human Capital" by Zulu Hu

Although governments and the public generally take a favorable view of individual/entrepreneurial risk-taking activity, the question of how public policy, such as taxation, affects this risk-taking behavior continues to be debated.

This paper re-examines the question in a continuous-time life-cycle model. First, individuals' optimal consumption and portfolio rules in the case of two assets--one risk free, the other risky--are derived. Risk-taking can then be conveniently measured as demand for the risky asset or, alternatively, investment in the real production process. According to common assumptions about investor preference, individuals will hold a constant share of the risky physical asset all the time. When human capital is introduced, however, the optimal portfolio share of the risky asset will be age-dependent insofar as human capital varies over the life cycle. When labor supply is inelastic and real wages are known with certainty, a labor income tax reduces risk-taking.

This conclusion will no longer hold true if there are random fluctuations in labor income. The paper demonstrates that the uncertain income from human capital has systematic effects on risk-taking behavior. The exact effects of a labor income tax will generally depend on the covariance of human capital risk and physical capital risk. Surprisingly, when the two are positively correlated, a labor income tax may actually encourage risk-taking, owing to investors' hedging demand.

Finally, the paper examines how the risk and nontradability of human capital can affect the optimal tax structure. If human capital risk is idiosyncratic--that is, if there is no aggregate shock--government taxation of labor income essentially provides insurance for individuals insofar as moral hazard causes a breakdown of private markets. When the insurance role of labor income taxation and its disincentive effects on labor supply (assuming labor supply is elastic, of course) are jointly taken into account, a Pareto-efficient tax implies a strictly positive tax rate.

JEL Classification Numbers
O41, O47

Summary of
WP/92/106

"Testing the Neoclassical Theory of Economic Growth: A Panel Data Approach" by Malcolm Knight, Norman Loayza, and Delano Villanueva

The basic model of Solow (1956) and Swan (1956) has been the workhorse of growth theorists for the past three and a half decades. It predicts that the steady-state level of per capita income is determined by the prevailing technology, the rate of saving, and the rates of population growth and technical progress. Allowing for country differences in steady states, the model predicts "conditional" convergence across countries; that is, the lower a country's initial level of per capita income relative to its steady-state value, the higher its subsequent growth rate.

In response to recent criticism of this model by the new growth theorists, Mankiw, Romer, and Weil (1992) show that the predictions of the Solo-Swan model for the effects of the differences in saving rates and population growth on output growth are consistent with evidence from a cross section of countries. They also find evidence of conditional convergence at about the rate predicted by the model, once cross-country differences in saving and population growth rates are taken into account.

This paper extends Mankiw, Romer, and Weil's model in two directions. First, it employs a panel of time-series cross-sectional data to determine the significance of country-specific effects, which are ignored in standard empirical studies that employ cross-sectional data only. To exploit the additional information contained in panel data, the paper extends the econometric technique by applying an estimation procedure outlined in Chamberlain (1984). Second, labor-augmenting technical change is assumed to be influenced by the extent of openness to international trade and the level of public infrastructure.

The paper's empirical findings imply, first, that the estimated effects of country-specific factors on economic growth result in a faster estimated rate of conditional convergence than that implied by the work of Mankiw, Romer, and Weil and Barro (1991). This difference occurs because the present study accounts for the correlation between country-specific effects and the independent variables in the growth process. Second, investment in physical capital has been less productive for developing countries with lower initial stocks of human capital and social infrastructure and higher rates of effective protection, all of which tended to reduce the overall efficiency of physical investment. Third, overall economic efficiency is influenced significantly and positively by the extent of a country's openness to international trade and by the level of social infrastructure in the domestic economy. Fourth, when openness and public infrastructure are taken into account, investment in physical and human capital becomes more quantitatively important in the growth process. These results corroborate the widespread view that openness and growth are positively related and provide empirical support for the policy advice that argues that countries that pursue outward-oriented policies are likely to enjoy higher growth.

JEL Classification Number
F39

Summary of
WP/92/107

"Fund Transactions and Reserve Creation" by Samir Fawzi

Many Fund transactions result in the creation or absorption by the Fund of international reserves in the form of foreign exchange and Fund-generated reserve assets. Sales of members' currencies and SDRs by the Fund--mainly in purchase transactions--allocations of SDRs, and borrowing by the Fund from members in their own currencies generally increase the level of international reserves held by monetary authorities. Repurchases by members of their outstanding obligations to the Fund in currencies and in SDRs and repayments of Fund borrowing in the creditor's own currency tend generally to have a contractionary effect on the level of members' reserves.

This paper illustrates the immediate, as well as the second-round, effects of Fund transactions on the gross reserves of the members involved, taking account in each case of the currency used and members' positions in the Fund. In a Fund transaction, the effects on members' international reserves differ according to the currency used, and the choice of currency or currencies to be used is determined by the Fund. The purchase of a freely usable currency (any of the G-5 currencies) adds that currency to the purchaser's reserves, whereas a purchase of another currency converted--at the purchaser's request--into an equivalent amount of a freely usable currency does not have the same effect because the central bank of the member whose currency the Fund used buys back its currency and transfers to the purchaser a freely usable currency that is already part of the existing stock of international reserves. Different effects on members' reserves also result from their positions in the Fund at the time a transaction is undertaken. A purchase in the reserve tranche of the currency of a member not indebted to the Fund adds the amount of the purchase to international reserves, reflecting the increase in the reserve tranche position of the member whose currency is used, while the composition, but not the total, of the reserve holdings of the purchaser changes. If the member whose currency is purchased is indebted to the Fund, then there would not be any reserve creation because the reduction in the Fund's holdings of its currency is normally attributed to repaying outstanding liabilities to the Fund.

The paper also estimates the net annual reserves created or absorbed by the Fund in the 1980s. Fund transactions resulted in additions to international reserves in the first half of this decade and to reserve declines in the latter half. These changes in reserves created or absorbed by the Fund were found to be negatively correlated with changes in other nongold reserves for most of the 1980s. This negative correlation reflects the fact that the demand for Fund resources (which by itself generates reserves) generally increases (falls) when world liquidity is relatively tight (plentiful). The Fund can, therefore, be seen as a natural "shock absorber" in the face of exogenous supply or demand shifts in the members' external transactions, thus contributing to a stable international monetary system.

JEL Classification Numbers
C68, E62, F14

Summary of
WP/92/108

"Tax Policy and Trade Liberalization: An Application
to Mexico" by Andrew Feltenstein

In 1985, Mexico embarked on an ambitious program of trade liberalization, which involved, in particular, gradually replacing quantity restrictions with tariffs. Tariff rates were, in turn, reduced and their coverage and range made more uniform. The results have been very positive. Productivity of the export sector has improved steadily, and, until 1990, the trade balance remained positive while the volume of imports increased. Moreover, total revenues from import duties have remained approximately constant in real terms while overall budgetary revenues have risen. This paper develops a model to analyze the effects of these changes in the trade regime and examines the macroeconomic effects of the tariff reduction policies incorporated in the North American Free Trade Agreement (NAFTA).

The model incorporates aggregate import quotas and tariffs. The shadow price of the quotas is calculated, and a measure of the true cost to consumers of the restricted imports is derived. The model is calibrated to the macroeconomic outcomes of the quota regime, that is, to the pre-1985 trade policy. Then the relaxation of quotas and their replacement by tariffs are imposed to test whether the model accurately predicts the outcomes of the trade reforms.

The paper then analyzes the effects of tariff elimination in 1990-91 to capture the desired outcome of the NAFTA. Government revenues are predicted to decline by 0.8 percent of GDP in 1990 and by 0.9 percent in 1991 in response to the tariff reduction. The budget deficit rises by 0.5 percent and 0.6 percent of GDP in 1990 and 1991, respectively. At the same time, the deficit in the trade balance--1.2 percent and 2.4 percent of GDP in 1990 and 1991, respectively--grows to 1.5 percent and 2.8 percent, respectively, after tariffs have been removed.

The paper supposes that the Government compensates for the tariff relaxation by increasing corporate and personal income tax rates by 1 percent. As a result, revenues rise by 0.6 percent of GDP in 1990 and 1991. The overall budget deficit declines to 5.5 percent of GDP from 5.9 percent in 1990 and to 2.6 percent of GDP from 3.0 percent in 1991. The trade deficit, on the other hand, does not improve. The increase in domestic tax collection is accompanied by an appreciation in the real exchange rate, thereby putting pressure on the trade balance.

It is difficult to compensate for the loss in tax revenue after tariff liberalization while neutralizing the trade account. If there is no change in the exchange rate regime, then reduction in the budget deficit brings about an appreciation in the real exchange rate, negating any positive effects that fiscal austerity may have had on the trade balance. The Government therefore needs to coordinate its exchange rate policy with the new fiscal regime in order to avoid this appreciation.

JEL Classification Numbers
C68, E21

Summary of
WP/92/109

"The Volatility of Consumption in a Simple
General Equilibrium Model" by Gunnar Tersman

This paper studies the volatility of consumption relative to output in a simple general equilibrium model of a small open economy subject to exogenous shocks in productivity. With infinite horizons and exogenous terms of trade, the model generates variance estimates that are typically well above those that can be observed in empirical data. The time-series process of consumption in empirical data, judged in this perspective, would thus seem "excessively smooth," too stable to be consistent with inter-temporal optimization. However, if one allows for finite horizons, broadly interpreted as liquidity constraints, the model is able to come up with more reasonable estimates.

Although finite horizons and endogenous terms of trade help in one dimension, by reducing the volatility of consumption relative to output, the model still fails to produce a plausible degree of serial correlation with respect to the consumption growth rate. The fact that the growth rate of consumption is positively correlated suggests that durability and adjustment costs are important aspects of consumption behavior. When these aspects are incorporated into the household's decision problem, the model does well on both dimensions.

JEL Classification Numbers
C88, E61, E17

Summary of
WP/92/110

"Macroeconomic Models for the PC" by Willem Bier

This paper describes a menu-driven computer program that can be used to build simultaneous equation macroeconomic models that can include several different feedback mechanisms. The program can specify up to 18 behavioral equations for the national accounts, the public sector, the monetary sector, the balance of payments, and foreign debt. Each equation can have between 5 and 11 independent variables, which can be designated either endogenous or exogenous.

The program can also perform simulations of alternative adjustment and growth policies by varying any of the exogenous variables; the experiments can be repeated for different model specifications. This paper describes a number of simulations with a standard model of an open economy in which output and prices are endogenous. The program calculates the value of more than 75 macroeconomic variables for five years: the results can be printed, viewed in the form of charts and tables, and imported into a Lotus 1-2-3 file. This program can be used to build many of the macro models that have been published in the IMF as well as other models.

JEL Classification Numbers
E32, F32, F41

Summary of
WP/92/111

"Robustness of Macroeconomic Indicators
of Capital Mobility" by Enrique Mendoza

This paper examines the performance of several well-known macroeconomic indicators of capital mobility in an intertemporal equilibrium framework of a small open economy. Recursive numerical solution methods are used to compute equilibrium co-movements of a model economy subject to stochastic disturbances affecting productivity or the terms of trade. These co-movements are compared with stylized facts of business cycles in Canada and Mexico to establish the model's ability to assess the implications of capital mobility. Several simulation exercises are then conducted to examine the performance of the mobility indicators under different regimes of capital mobility and different specifications of the parameters used to measure relative risk aversion, the price elasticity of labor supply, and the variability and persistence of the stochastic shocks.

The results show that the strong Fisherian separation of saving and investment that holds in a deterministic environment, the principle on which the use of macroeconomic co-movements as indicators of capital mobility is based, is only a rough first approximation in a setting with uncertainty. This finding has significant quantitative implications for the usefulness of macroeconomic indicators of capital mobility. In particular, high saving-investment correlations are a necessary but not sufficient condition to establish the immobility of capital. Moreover, saving-investment correlations, as well as other indicators based on the cyclical behavior of output, consumption, and investment, tend to be more sensitive to slight differences in the parameters that describe preferences and the stochastic process of the disturbances than to the degree of capital mobility.

This analysis suggests that the evidence presented to date on capital mobility based on macroeconomic indicators should not be interpreted as showing that the welfare and efficiency gains resulting from the integration of world capital markets have not materialized. Furthermore, empirical tests aimed at establishing the mobility of capital across countries using macroeconomic indicators may be affected by the noise attributed to structural differences among the economies. Unless this information can be properly incorporated into the tests, an approach based on direct measurement of international flows of financial capital may be the best alternative.

JEL Classification Numbers
E62, H72

Summary of
WP/92/112

"U.S. State and Local Government Finances
over the Current Cycle" by Tamim A. Bayoumi

The recent slowdown in the U.S. economy led to significant budgetary problems for the state and local government sector, resulting in well-publicized tax increases and expenditure cuts, while during the 1985-89 economic expansion the fiscal balance of state and local governments in the United States steadily deteriorated. Thus, the sector amplified both the upswing and the downswing in activity in the current cycle. This paper looks at whether this behavior is typical and, if not, what might explain the difference this time around.

Comparing the most recent cycle with others, this paper concludes that the period since 1985 differs from earlier cycles in the 1970s and 1980s. In the earlier periods, the fiscal balance deteriorated during downturns and rose during recoveries, providing a significant part of government automatic stabilizers.

The immediate cause of the recent fiscal problems lies in the interaction between the low level of reserves accumulated over the upswing and existing laws requiring balanced budgets. For example, in mid-1980, before the two recessions of the early 1980s, state general government cash balances were 9 percent of expenditure; in mid-1989, by contrast, they were less than 5 percent. A similar pattern is evident for local government. As a result, the 1990-92 slowdown forced state and local governments to improve their financial position, undermining their role in stabilizing the economy.

But what explains this failure to build up reserves? Several possibilities are examined, including the role of federal government grants, federal mandates, tax revolts, and compensation to labor. The evidence indicates that the first three factors played little role in changing behavior, but that a large change in relative compensation over the 1980s was important. Between 1984 and 1990, this rise in relative compensation raised state and local government spending by almost \$30 billion, equal to the whole of the deterioration in the fiscal balance over the period.

As a result of these developments, the state and local government sector will need to continue to cut services and raise revenues in the short term. Over the longer term, the question is whether the sector will resume the pattern of the 1970s and early 1980s or whether it will continue to act as it did in the late 1980s. On the whole, the evidence points to the former. Although external factors, such as rising Medicaid payments, may cause continued fiscal strain, they have not been the core of the problem. The current fiscal squeeze, with its pressure to control costs, including labor costs, may well improve the longer-run financial outlook for the sector, enabling it to resume the countercyclical behavior of the 1970s and early 1980s.

