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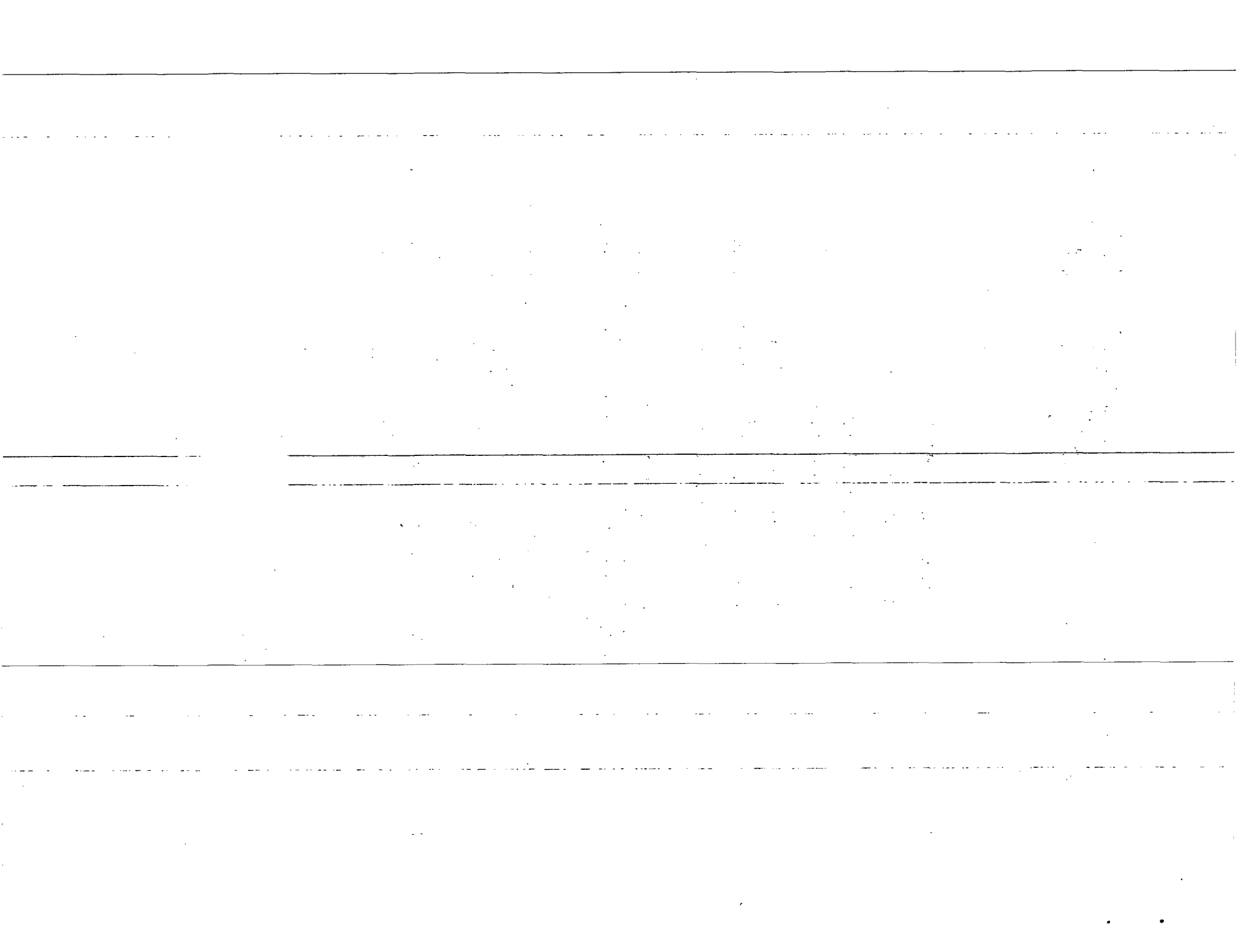
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"Taxation and Endogenous Growth in Open Economies"
by Gian Maria Milesi-Ferretti and Nouriel Roubini

This paper reconsiders the issue of the optimal taxation of human capital, physical capital and foreign assets in the context of models of endogenous growth. In a neoclassical exogenous growth framework, the standard result (the Chamley-Judd proposition) is that in the long run the optimal tax rate on physical capital income should be zero. In the long run, revenues should be collected only through taxes on labor income (wage taxes) since this is the way to tax the factor in fixed supply (the labor/leisure time endowment).

The presence of human capital modifies significantly these results. This happens because labor becomes a reproducible factor (human capital) and, therefore, a source of accumulation and growth in addition to physical capital. This paper studies how the impact on growth of human and physical capital income taxation and of taxation of foreign assets depends on the technologies for human capital accumulation and "leisure". The normative implications of the model for the optimal taxation of factor incomes are also derived.

The paper shows that there are general specifications under which the optimal long-run tax on both capital and labor income is zero. In these cases, the optimal taxation plan consists of taxing both factors in the short run, and financing spending in the long run through accumulated budget surpluses. Such a solution presupposes the ability of the government to commit to a given path of taxation into the foreseeable future. If restrictions on the ability of the government to borrow and lend are imposed, in the form of a balanced-budget constraint, the model implies that human and physical capital should be taxed similarly.

JEL Classification Numbers:
F21, F31, F33, 016

Summary of
WP/94/78

"The Impact of Controls on Capital Movements on the Private
Capital Accounts of Countries' Balance or Payments: Empirical
Estimates and Policy Implications" by R. Barry Johnston and Chris Ryan

This paper explores the impact of controls on the private capital accounts of countries' balance of payments by examining data from 52 industrial and developing countries for the period 1985-92. The paper examines different measures of private capital flows in the balance of payments, including estimates of unrecorded flows--errors and omissions in the balance of payments and estimates of trade misinvoicing. Samples of data from industrial and developing countries and from countries with restricted and liberalized regimes are examined. Equations including explanatory variables intended to capture portfolio balance and monetary explanations of capital flows are estimated. The impact of controls on capital flows is assessed through F-tests for structural differences between liberalized and restricted regimes and dummy variables identifying the nature of the exchange control regime.

The paper's main are that: (1) capital controls operated by developing countries have not been effective in insulating these countries' balance of payments, and (2) capital controls operated by industrial countries had some role in inhibiting foreign direct and portfolio investment outflows, but not in controlling other private capital movements. These findings are consistent with findings reached in other research. In particular, empirical examination of the determinants of countries' interest rates suggests that the role of capital controls in insulating national monetary policies is relatively limited, and a number of developing countries with extensive exchange controls have experienced capital flight; however, capital outflows from industrial countries are often observed to increase with the elimination of restrictions on such flows.

The increasing body of evidence on the ineffectiveness of capital controls in developing countries raises the question whether these countries should continue with such controls or eliminate them rapidly. The paper concludes that external liberalizations can support domestic financial reforms in terms of both macroeconomic flows and institutional and market development.

JEL Classification Numbers:
D81, F33, F34, G15

Summary of
WP/94/79

"Information Asymmetries in Developing
Country Financing" by George C. Anayiotos

This paper assesses the impact of information asymmetries between lenders and borrowers in developing country external financing and considers alternative techniques to reduce the adverse implications of such asymmetries. Information asymmetries arise when lenders cannot fully observe or verify borrowers' actions.

The second section of the paper examines the role of information in financial markets and analyzes the incentives to borrowers provided by alternative financial contracts and the risk-sharing properties of these contracts, particularly of state contingent (equity-type) contracts. It shows in a simple framework that in the presence of asymmetric information between lenders and borrowers, there is an inevitable trade-off between efficient risk sharing and incentive provision. It also argues that information asymmetries that are present in domestic finance are more prevalent in international finance, in particular in developing country external financing.

The third section reviews measures designed to resolve information asymmetries, including regulations and policies in borrowing and creditor countries, as well as innovative contractual agreements. However, despite the contribution of these measures, residual problems remain unresolved. Additional measures are suggested, including the enhancement of investment incentives within a conducive macroeconomic environment, which could be achieved through sound economic policies, and the improvement of the flow of information by establishing a set of regulations for channeling information.

International financial institutions, especially the IMF, are in a unique position through their relations with member countries to help alleviate some information asymmetries. By facilitating the design and monitoring the implementation of solid economic policies, the international financial institutions contribute to the resolution of problems associated with the overall macroeconomic environment. Furthermore, in the context of their catalytic role, these institutions can contribute to the sustainability of other capital flows.

JEL Classification Numbers:
E23, E32, E65, O52, P52

Summary of
WP/94/80

"Economic Reform and Structural Adjustment in East European Industry"
by Eduardo Borensztein and Jonathan D. Ostry

A popular criticism of the reform process in a number of Eastern European countries is that the decision to implement reforms relatively quickly was responsible for a larger-than-necessary initial decline in output. This view is based on the assumption that the massive relative price shock associated with price and trade liberalization set in train a process of resource reallocation which, in the short run, caused output to decline. According to this view, therefore, a slower pace of price and trade liberalization would have reduced the short-run output costs of the reforms by mitigating the transitional output losses associated with reallocating resources across sectors.

This paper examines whether it is reasonable to conclude that a significant fraction of the initial declines in output in four Eastern European countries (the former East Germany, the former Czechoslovakia, Hungary and Poland) is attributable to structural change. A methodology is presented which decomposes the total decline in output in the first two years following the implementation of reforms into a portion associated with resource reallocation across different industrial sectors (structural change), and a portion due to macroeconomic forces (factors common to all sectors within a country). The paper's finding is that most of the initial decline in output in the region reflects macroeconomic rather than structural factors.

Notwithstanding a number of caveats discussed in the paper, our results suggest that proposals to slow down the pace of reform in other economies in transition on the grounds that "going slower" would reduce short-run output costs lack empirical support. In fact, since all the economies in the region will ultimately have to undergo the structural adjustment associated with their decision to become market economies, it is not difficult to make the case that moving *more quickly* to implement reforms (particularly as regards corporate governance and the imposition of harder budget constraints) would have resulted in a faster resumption of growth than occurred under alternative, more gradualist, strategies. To the extent that political support for the reform process depends on a timely resumption of growth in these countries, the results presented in this paper suggest that a rapid implementation of structural and stabilization measures is less likely to jeopardize the transition to a market economy than more gradualist alternatives.

JEL Classification Numbers:
E52, F32, F33

Summary of
WP/94/81

"Capital Account Convertibility: A New Model for
Developing Countries" by Peter J. Quirk

Capital convertibility has been embraced by virtually all industrial countries in the 1970s and 1980s, and in the aftermath of the debt crisis by a rapidly growing number of developing countries. Recent experience in which convertibility has been adopted in the context of comprehensive stabilization programs, and with support from market-determined exchange rates, has contrasted sharply with the adverse experience with convertibility in the southern cone of Latin America in the late 1970s.

In earlier years, the main objectives of capital controls had been either to retain savings, or to insulate the domestic economy from external shocks. However, this paper contends that, based on its brief survey of the recent literature, optimality arguments for the long-term retention of controls to affect savings have been widely rejected. What has remained are questions of sequencing, whereby controls are either modulated (in either direction) as an adjunct to monetary policy instruments, or are phased out gradually as certain macroeconomic preconditions are met.

The paper reviews recent experiences in several developing countries (Costa Rica, El Salvador, Guyana, Indonesia, Jamaica, Trinidad and Tobago, and Venezuela) and suggests that controls can be dropped with little consideration of sequencing. Reforms of foreign exchange and domestic money and credit markets to provide sufficient flexibility in interest and exchange rates, can be, and have been, implemented quickly as part of essentially simultaneous "multi-pronged" packages. Success with such packages in this group of countries has been sufficiently pronounced that private capital flight has reversed rapidly. The paper finds that sterilization policies have prevented the inflows from re-igniting inflation, in part because the associated loosening of the external constraint has permitted increased import absorption, where it is supported by a sufficiently open trade system.

JEL Classification Numbers:
E62, H61, H74

Summary of
WP/94/82

"Restraining Yourself: Fiscal Rules and Stabilization"
by Tamim Bayoumi and Barry Eichengreen

Restraints on the fiscal autonomy of budgetary authorities are very much in the news. In Europe, the Maastricht Treaty on Economic Union specifies ceilings or "reference values" for the debts and deficits of EU members that participate in the monetary union. In the United States, the Gramm-Rudman-Hollings Act and subsequent legislation limit the U.S. Congress' leeway to legislate increases in the federal budget deficit.

Most previous research on statutory and constitutional fiscal restrictions has focused on their effectiveness in limiting debts and deficits. Many investigators have used data across U.S. states, all of which, aside from Vermont, are subject to statutory or constitutional debt and deficit limits. Since the stringency of these provisions differs, they offer a natural experiment on the effects of fiscal constraints on behavior. Political economy analyses which emphasize the roles of log-rolling and pork-barrel politics in creating excessive debts and deficits imply that fiscal restrictions designed to bring about their reduction are desirable.

This paper suggests, however, that there is another side to this coin. Fiscal restrictions that limit U.S. state debts and deficits are also found to reduce the responsiveness of state budgets to the cycle by up to 40 percent, and hence weaken the fiscal stabilization that could otherwise be provided by U.S. state budgets. These results are then used to estimate the potential effect of fiscal constraints on the level of stabilization provided by national governments. Simulations indicate that a reduction in national fiscal stabilizers of the magnitude estimated here for U.S. state governments could lead to a significant increase in the variance of output, on the order of 20 percent.

These findings have implications for several contexts in which the need for fiscal restraints has been mooted. The paper ends by considering the example of the Maastricht Treaty's ceilings on budget deficits. The U.S. experience suggests that such restraints, if vigorously enforced, could significantly diminish the stabilization afforded by national budgets. Since the EU budget will probably remain small compared with the national budgets, if the treaty does in fact inhibit national governments from adjusting their budgets to the cycle, post-Maastricht Europe could enjoy significantly less fiscal stabilization than does the United States.

JEL Classification Numbers:
D21, D62, D82, D83, E24, J22,
J23, J31, J63

Summary of
WP/94/83

"The Low-Skill, Bad-Job Trap" by Dennis J. Snower

This paper analyzes how a country can fall into a "low-skill, bad-job trap," characterized by a vicious cycle of low productivity, deficient training, and low-skilled jobs, preventing the economy from competing effectively in the markets for skill-intensive products.

"Bad jobs" are ones associated with low wages and little opportunity to accumulate human capital. They are the lot of the working poor. "Good jobs" command higher wages and higher skills. The paper argues that in countries with a small proportion of skilled workers, firms have little incentive to provide good jobs, since such positions would be difficult to fill; but if few good jobs are available, workers have little incentive to acquire skills, since such skills would be likely to remain underutilized and consequently insufficiently remunerated.

Thereby the paper provides a possible explanation for why individual western countries responded so differently over the 1980s to a broadly common shift in labor demand from unskilled to skilled labor--with earnings differentials across skill groups rising in some market economies, but remaining constant or even falling in others.

The paper examines the interaction between two mutually reinforcing externalities: a "vacancy-supply externality" and a "training-supply externality." The former arises when an increase in the number of skilled vacancies raises the probability that skilled workers will find good jobs and thereby raises the expected return from training. The latter arises when an increase in the number of skilled workers raises the probability that firms with good jobs will find skilled workers to fill them, and thereby raises the expected return from supplying vacancies.

Each of these externalities in isolation would lead the market mechanism to provide insufficient training. When both externalities are present, the market failure is considerably amplified.

It is shown that when an economy is in the low-skill, bad-job trap, "small" subsidies are associated with significantly smaller employment multipliers than are "large" subsidies. Finally, the paper argues that while the vacancy-supply and training-supply externalities make a policy stimulus for training both socially desirable and economically effective in any labor market equilibrium, the need for and effectiveness of such a stimulus--particularly one of sufficient magnitude--is especially pronounced when the economy is in a low-skill, bad-job trap.

JEL Classification Number:
F41

Summary of
WP/94/84

"Supply-Side Effects of Disinflation Program" by Jorge E. Roldós

This paper focuses on the supply-side effects of disinflation programs, an aspect of these programs that has been largely neglected in the literature. Although the results are based on some Latin American countries' programs, the introduction of supply-side factors is useful in understanding stabilization programs in Eastern Europe and the former Soviet Union where high inflation and structural changes are likely to coexist.

The paper considers an economy where a tradable good is produced using reproducible capital and labor, and a nontradable good is produced using land (that is, nonreproducible capital) and labor. This asymmetry in the reproducibility of the specific factors captures the slower medium-run response of the supply of nontradables. The tradable sector responds more flexibly through the importation of machinery and equipment compared to a nontradable sector that requires relatively more investment in infrastructure.

In this framework, inflation generates a wedge between the real return of foreign assets and that of domestic assets--money, capital, and land--owing to the cash-in-advance constraint. An exchange rate-based stabilization program reduces this wedge and leads to a higher desired capital stock. In the short run the capital stock is fixed, but an increase in aggregate demand causes a real exchange rate appreciation, an expansion in the production of nontradables, and a boom in land prices. As the new capital is installed it draws labor away from the nontradable sector, leading to further real exchange rate appreciation. The consumption and investment booms lead to a deficit in the current account of the balance of payments, which is gradually reduced as the production of tradables grows over time. It is worth noting that over the medium run the economy experiences a persistent real exchange rate appreciation together with an improvement in the trade balance. This suggests that commonly held notions of competitiveness and sustainability of external deficits may be misleading, especially when the stabilization program has achieved a reasonable degree of credibility.

Some evidence on these supply-side effects from the Argentine and Mexican stabilization programs is presented. In particular, both countries show a remarkable (at least fourfold) increase in imports of capital goods, the driving force of the model under study. This confirms existing evidence of the negative effect that inflation has on capital formation, which has consequences not only for the long run but also for the transitional periods that are the subject of the paper. There is also some evidence of an increase in labor force participation and hence in labor supply.

JEL Classification Number:
H6

Summary of
WP/94/85

"The Political Economy of Budget Deficits"
by Alberto Alesina and Roberto Perotti

In the last 20 years, several, but not all, OECD countries have accumulated large government debts. In some countries, debt-to-GNP ratios have reached levels typically associated with wars, rather than peacetime. Other countries, on the contrary, have low and stable debt-to-GNP ratios. What explains these large cross-country differences within a relatively homogeneous group of economies? Why did these fiscal imbalances appear in the last 20 years rather than before?

Purely economic explanations of budget deficits, such as the "tax smoothing" model, cannot answer completely these two questions, particularly the first one. Purely economic differences among OECD economies are unlikely to be sufficient to explain the extremely large cross-country differences in debt/GNP ratios. Therefore, this paper reviews the literature on politico-economic determinants of the government budget. It discusses the two questions highlighted above using six different approaches: (i) models based upon opportunistic policymakers and naive voters with "fiscal illusion;" (ii) models of intergenerational redistributions; (iii) models which emphasize the strategic incentive of today's government to "bind" its successor's fiscal policy by leaving a high deficit; (iv) models in which deficits result from political conflicts of social groups or political party members of the same coalition government; (v) models of geographically dispersed interests and of "pork barrel" politics; and (vi) models emphasizing budget institutions and procedures, or determinants of fiscal outcomes.

Although every one of these different approaches has something to contribute, the paper finds that models of type (iv) and (vi) probably contribute more than others.

The authors conclude with a discussion of institutional reforms which can enhance "fiscal responsibility." In particular, they focus on procedures for budget approval, on budget balance laws, on the relationship between the treasury and the central bank, and on different types of electoral systems.

JEL Classification Numbers:

012, 017, Q28

Summary of

WP/94/86

"On Corruption and Capital Accumulation"
by Carlos M. Asilis and V. Hugo Juan-Ramon

The assertion that corruption is an observed phenomenon (or so-called stylized fact) in most--if not all--countries seems undisputed. The incidence of corruption is arguably greater in institutional settings exhibiting large and pervasive bureaucracies, deficient judicial systems, bureaucratic incompetence, ill-defined property rights, and microeconomic controls, as all give rise to complex and time-consuming procedures, that is, "red tape." Such environments constrain foreign investors, domestic producers, and consumers, who, as a result, often succumb to "illegal taxation," that is, bribery of bureaucrats in key positions, whose capacity to absorb bribes is facilitated by the above-described settings.

Reforming economies have typically focused their reform plans on fiscal deficit reductions, privatization schemes, and restoration of the price system's role in allocating resources and conveying information. Although little attention has been given thus far to the impact of illegal activities on the success of reform/stabilization packages and optimal policy design, there is a need to establish a framework in which to assess an economy's response to alternative stabilization/reform packages as a function of the scope of corruption activities. This paper aims to develop one such framework, in which only the most fundamental questions, such as the effects of government anticorruption policies on output and welfare, are examined.

This paper studies the relationship between corruption and capital accumulation using a dynamic model in which the government is assumed to observe bribe activity imperfectly. The model differentiates between developing and developed economies according to the income share accruing to capital, which is higher for developing countries.

The model provides several interesting results. For example, it shows that reductions in public good output, as a fraction of the economy's total expenditure, lead to larger welfare decreases when in the presence of corruption. Also, the framework can accommodate political-economy analysis and is able to explain why, even when it is possible to eliminate corruption activity altogether, governments may choose not to do so. Moreover, the model also predicts that the effect of anticorruption penalties on the economy's capital stock can be greater in developing countries; in particular, it finds that the elasticity of the steady state average per capita stock of capital with respect to increases in anticorruption penalties is increasing in the income share accruing to capital.

JEL Classification Numbers:
C68, F13

Summary of
WP/94/88

"External Shocks, the Real Exchange Rate, and Tax Policy"
by Stephen Tokarick

This paper uses a computable general equilibrium model of the economy of Trinidad and Tobago to assess the effects of two different external sector shocks (trade liberalization and terms-of-trade shocks) on the real exchange rate and the overall fiscal position of the government. The results of the model show that a policy of trade liberalization raises consumer welfare (although real wages would decline), induces a real exchange rate depreciation that increases trade flows, and leads to a more efficient allocation of resources. The simulations highlight the importance of price flexibility of nontraded goods in determining the ultimate effects of trade liberalization. If the price of nontraded goods is inflexible, many of the beneficial effects of trade liberalization will not be realized. In this case, there may be a role for a nominal exchange rate depreciation, in conjunction with trade reform, to help facilitate the necessary adjustment in relative prices. A policy of trade liberalization would also increase the central government's budget deficit, and further strain the government's ability to borrow. Simulations with the model show that it would be possible to replace the tax revenue lost from trade liberalization with increases in other taxes, and still generate an aggregate welfare gain.

The model was also used to assess the effects of a change in the terms of trade on trade flows, welfare, and the overall fiscal position of the government. A deterioration in the terms of trade lowers welfare, reduces trade flows, and worsens the fiscal deficit. In response to the terms-of-trade deterioration, a policy of trade liberalization would reverse many of these effects by inducing a real depreciation, but trade liberalization would lead to a widening of the fiscal deficit. Furthermore, the model shows that an increase in the value-added tax rate would be the most efficient means of replacing the revenue lost from a terms-of-trade deterioration.

These results have important implications for the appropriate policy response to a rise in the international price of a primary export good. A policy of trade liberalization would raise welfare, introduce a real depreciation, and increase trade flows. Conversely, more restrictive trade barriers would lower welfare and produce a real appreciation in addition to that already caused by the rise in the international price of the exportable good.

JEL Classification Numbers:
H55, J14

Summary of
WP/94/89

"Aging Population and Canadian
Public Pension Plans" by Tamim Bayoumi

Demographic shifts caused by aging populations create a number of problems for policymakers. Among these, one of the more important is the funding of public pension plans. Canadian public pension plans (like those in most other industrial countries) are run on a "pay-as-you-go" basis, in which current contributions are used to pay for current entitlements. This paper explores the economic issues involved in the interaction between an aging population and the public pension system.

The two pay-as-you-go programs in the Canadian public pension system are the Quebec Pension Plan (QPP), which covers residents of Quebec, and the Canada Pension Plan (CPP), which covers all other Canadians. Both schemes are funded by payroll taxes and provide pensions that are related to income. A third program, Old Age Security, provides benefits that are equal across individuals and is funded out of general taxation. The analysis in this paper focuses on the CPP and QPP, whose contribution rates are projected to rise from their current level of 5 percent of eligible earnings to over 13 percent from 2030, reflecting the impact of the baby-boom generation.

A pay-as-you-go pension scheme can provide partial insurance against long-term adverse productivity disturbances by subsidizing generations that experience exceptionally low productivity and taxing those with exceptionally high productivity. It will also produce intergenerational transfers in response to a demographic disturbance. However, in this case, the effects are not so benign. The direction of the intergenerational transfers depends critically upon whether it is benefits or premiums that vary over time to keep the system funded. If benefit levels are maintained over time and premiums are allowed to vary, then the baby-boom generation will gain, since it will face relatively low premiums when working while still receiving the same benefits as earlier generations, whereas the generations immediately after the baby boomers will lose, since they will have to pay high premiums to finance the retirement of the baby-boom generation. This produces fiscal transfers across generations with little economic rationale.

An alternative is to set contribution rates at their underlying long-term levels, which would allow the system to accommodate the effects of demographic change without creating large intergenerational transfers. At current benefit levels, such a policy would imply a significant rise in current contribution rates, from 5 percent of eligible earnings to 10-10½ percent. This would allow the system to build up sufficient reserves over time (on the order of 15-20 percent of output) and enable it to cope with the retirement of the baby boomers without recourse to borrowing or significant increases in contribution rates. To the extent that it is desirable to keep contribution rates stable over time, this analysis implies that there is a substantial level of underfunding in Canadian pension plans.

JEL Classification Numbers:
F31, F41

Summary of
WP/94/90

"Long-Run Determinants of the Real Exchange Rate:
A Stock-Flow Perspective," by Hamid Faruquee

This study investigates the sources of long-run movements in the real exchange rate. For the United States and Japan, significant trends in their real exchange rates remain as prominent stylized facts of the postwar era, although the long-term drift in each case has been in opposite directions. In the case of the United States, there has been a steady overall decline in the real value of the dollar, whereas Japan has experienced extraordinary real appreciation in the yen since World War II.

To account for long-run relative price movements, this paper implements a version of the macroeconomic balance approach, emphasizing the stock-flow determination of the real exchange rate compatible with internal and external balance. Viewing purchasing power parity (PPP) as a fixed steady-state condition rather than as a long-run equilibrium condition, the analytical framework allows the long-run real exchange rate to be affected by real disturbances--representing fundamental shifts in the relative prices compatible with international equilibrium.

Using postwar data for the United States and Japan, cointegration analysis is used to examine the long-run co-movements between the real exchange rate and a set of fundamental determinants. Cointegration tests suggest a deterministic long-run relationship between the structural components in the current and capital accounts--underlying a country's net trade and net foreign asset positions--and the real exchange rate for these countries.

Specifically, cointegration estimates provide strong evidence that productivity differentials explain a significant portion of the trend variation in the real value of both the dollar and the yen. For the United States, there is also supporting evidence that the stock of net foreign assets has had an impact on the long-run real exchange rate. In both cases, there is little empirical support for the terms of trade determining the long-run path. The empirical analysis also provides estimates for the underlying stochastic trend in the real exchange rate for the United States and Japan, conditional on the empirically relevant fundamentals.

JEL Classification Numbers:
E31, E32

Summary of
WP/94/91

"Are Prices Countercyclical? Evidence from the G-7"
by Bankim Chadha and Eswar Prasad

A stylized fact that has served as a fundamental datum in the construction of a large class of business cycle models is the procyclical behavior of prices. A number of recent papers have shown that the cyclical components of prices and output are in fact negatively correlated and have interpreted this finding as a falsification of the conventional wisdom that prices are procyclical.

However, the traditional focus of many business cycle models has been the inflation rate rather than the price level. The objective of this paper is to provide a set of stylized facts for the main industrial economies that clearly differentiates between the cyclical behavior of inflation and the price level. This distinction is potentially important in discriminating between theoretical models on the basis of stylized facts. This distinction is also important for empirical models of the business cycle in motivating identifying restrictions that are based on the cyclical behavior of prices.

Using postwar quarterly data for the Group of Seven, this paper confirms recent evidence that the price level is countercyclical. The quantitative results are affected by the choice of the detrending procedure but the hypothesis of countercyclical price behavior is supported in most cases. The key finding of this paper is that the inflation rate, by contrast, is generally positively correlated with various measures of the cyclical component of output. The results are again sensitive to the choice of the procedure for detrending output, but the finding of procyclical variation of inflation holds in most cases for the Group of Seven.

This paper also examines the cyclical behavior of prices and inflation using the unemployment rate as an alternative indicator of the cycle. The cyclical component of unemployment is shown to be negatively correlated with inflation over the postwar period for the Group of Seven, confirming that inflation moves procyclically. However, the evidence on the countercyclical behavior of the price level is much less robust using this indicator of the cycle.

These findings suggest that the cyclical behavior of the price level and inflation do not provide conclusive grounds for rejecting either demand-determined or supply-determined models of the cycle. The results show the importance of making a clear distinction between inflation and the cyclical component of the price level when reporting and interpreting stylized facts regarding business cycles.

JEL Classification Numbers:
E62, O41

Summary of
WP/94/92

"Government spending, Taxes, and Economic Growth"
by Paul Cashin

This paper develops an endogenous growth model of the influence of public investment, public transfers, and distortionary taxation on the rate of economic growth. Rather than use the flow of publicly provided private goods to proxy for government services, as in current models in the literature, the model introduces increments in the stock of congested public capital as a positive influence on economic growth. The growth-enhancing effects of both intragenerational and intergenerational transfer payments are also modeled, again differing from current models in the literature, which typically view transfers as having a negative effect on growth.

Transfers are argued to raise the marginal product of private capital by reducing the negative externalities flowing from (1) poor enforcement of private property rights, and (2) workers with a below-average stock of human capital. The model also highlights the growth-inhibiting effects of the levying of the distortionary taxes necessary to finance the provision of public transfers and public capital. A trade-off exists between the growth-enhancing provision of public capital and transfers and the growth-diminishing influence of distortionary taxes. For small government (where public spending is low), the growth-enhancing effect is likely to dominate; for large government (where public spending is high), the growth-diminishing effect is likely to dominate.

The theoretical implications of the model are then tested with data from 23 developed countries between 1971 and 1988, using a time-series cross-sectional model to take into account the potential influence of unobserved country heterogeneity. The empirical results offer support for the theoretical implications of the model, as the three public finance variables are significant and enter with signs consistent with a priori expectations of their respective influences on economic growth. Productive government spending, in the form of public investment and transfer payments, is demonstrated to enhance economic growth. In addition, distortionary taxation is shown to have a detrimental effect on economic growth. The convergence implications of the neoclassical growth model are also borne out in this data set, as initial incomes are significant and negatively correlated with subsequent growth rates.

JEL Classification Numbers:
C22, E37

Summary of
WP/94/93

"Linkages in Price Level and Inflation Rate between
CFA Franc Zone Countries and France" by Diep Nuven

This paper investigates convergence in the price levels of the CFA franc zone countries to that of France and the interdependence of their inflation rates using the cointegration technique. Monthly data from 1979 to 1993 show that cointegration in price levels is accepted at the 5 percent confidence level in only 2 of 11 CFA franc zone countries. These results seem to contradict previous findings and the commonly held view that support the long-term convergence of price levels of these countries.

The Chow test proves that there is a change in the price level behavior in the mid-1980s. Regressions from 1979 to the break point and from the break point to 1993 provide different results. Over the first subperiod, the price levels of six countries are cointegrated with the price level in France. They are Burkina Faso, the Congo, Côte d'Ivoire, Mali, Niger, and Togo. Over the second subperiod, the price levels of seven countries are cointegrated with the price level in France: Burkina Faso, Cameroon, the Central African Republic, the Congo, Niger, Senegal, and Togo. Moreover, in all cases except the Congo, the cointegration regression coefficients change more or less significantly.

The above results clearly indicate a structural change in the price level pattern of the CFA franc zone countries in the mid-1980s. These findings are confirmed by the results of the error-correction model, which makes it possible to estimate the speed of adjustment of the price levels. Although the error-correction model explains little of the variations in the CFA countries' monthly inflation rate, it can be helpful in predicting these inflations. The vector autoregression model is used to examine the causal relationship in inflation rates among the countries of the same monetary union. Based on the available data, no causal relationship can be determined.

JEL Classification Number:
G15

Summary of
WP/94/94

"Cointegration of International Stock Market Indices"
by Ray Y. Chou, Victor K. Ng, and Lynn K. Pi

International capital market development in the past two decades has been marked by a series of policy changes that contribute to the liberalization and globalization of capital markets. These market developments can promote market integration and can change the relationship among equity prices in different countries.

The traditional approach of testing market integration by studying changes in correlations usually cannot provide very precise information in this regard, as correlations are also affected by short-term trading noise. To avoid this problem, this paper studies market integration by inspecting the long-run relationship among international stock market prices. The long-run relationship is given by the cointegration properties of the stock market price series. By studying changes in the cointegration properties of the set of stock price series, it is possible to derive implications on changes in the long-run relationship among the equity markets.

The paper's analysis employs the multivariate cointegration test of Johansen to test for the existence of long-run relationships among the stock market indices of the United States, the United Kingdom, Japan, France, Germany, and Canada. The result indicates that the set of six country stock price indices are cointegrated, and suggests that there are long-run equilibrium relationships among the stock market prices.

Subsample and subgroup analyses also indicate that the cointegration relationships have become stronger over time. Specifically, there is evidence that the European country stock markets have become more related to the United States and Canadian stock markets. Furthermore, the Japanese stock market has become more integrated with the other stock markets. The strengthening of international stock market integration is consistent with the increasing liberalization and globalization of capital markets.

JEL Classification Numbers:
F12, F14

Summary of
WP/94/95

"How Does Industrialization Affect the Structure of International Trade?
The Japanese Experience in the Pacific Basin, 1975-85"
by Sayuri Shirai and Dongpei Huang

Over the years, a great deal of research has focused on the expansion of intra-industry trade among the member countries of the European Union. Traditional international trade theories based on assumptions of constant returns to scale and perfect competition (e.g., the Heckscher-Ohlin model and the Ricardian model of comparative advantage) have been modified to explain this phenomenon (e.g., Helpman and Krugman, 1985). More recently, intra-industry trade has expanded between industrialized and newly industrializing countries, such as between Japan and Pacific Basin countries. In this context, international trade theories must again be modified to take into account the influence of industrialization.

Japan's intra-industry trade is more extensive with Singapore, Korea, and Thailand than with Indonesia, Malaysia, and the Philippines because, like Japan, the countries in the first group are relatively rich in skilled labor and capital, whereas those in the second group are relatively rich in natural resources. However, although Japan has maintained large-scale, inter-industry trade with the latter group, it has also expanded intra-industry trade by increasing manufactured imports as these countries have progressed toward industrialization. Intra-industry trade among all six countries has expanded since Japan's foreign direct investment in these countries increased owing to the sharp appreciation of the yen after 1985. As each country has become more specialized in certain manufactured products, Japan has formed production networks with them. This industrialization process is closely related to an increase in the variety of manufactured products (horizontal product differentiation) as well as an improvement in their quality (vertical product differentiation).

This paper provides a theoretical model to explain how industrialization affects the structure of international trade. Using conventional economic concepts such as economies of scale and monopolistic competition and considering both horizontal and vertical product differentiation, the model explicitly focuses on industrialization and its impact on the volume and share of intra- and inter-industry trade. The paper considers two processes: one that increases the quality of manufactured products and one that shifts labor from the agricultural to the manufacturing sector. The model shows that the volume and share of intra-industry trade increase when the quality of products in a developing country improves and when the difference in relative factor endowments between an industrial and a developing country shrinks. It also suggests that the faster a developing country industrializes, the faster intra-industry trade increases.

This paper investigates empirically the structural changes in Japan's international trade with Indonesia and Korea for 1975 and 1985. These countries were chosen because they differ in their relative factor endowments and technology.

JEL Classification Numbers:
E52, F32, F33

Summary of
WP/94/96

"Adopting Currency Convertibility: Experiences and Monetary
Policy Considerations for Advanced Countries" by Peter Quirk

An increasing number of countries, including relatively advanced developing countries, are considering moves to full currency convertibility in the light of the increasingly close integration of industrial countries' financial markets. This paper focuses on the issues for developing countries with relatively strong structural balance of payments. The issues for this group are somewhat different than those for developing countries with weak balance of payments for several reasons. First, paradoxically, developing countries' external sectors have generally strengthened following capital liberalization, while post-liberalization external sector performance in the industrial countries, to which the advanced developing countries are in some ways more closely related, has been mixed. Second, because of their different starting points, priorities for the stronger developing countries are oriented more toward ensuring stability of their domestic financial markets, including issues for monetary policies. The respective roles of the international organizations in this process are noted.

The paper provides evidence from monetary indicators for the industrial countries that the effects of capital liberalization have been very much sterilized. Despite overall increased volatility of foreign and domestic credit aggregates, interest rates, and exchange rates, the variability of broad money declined following capital liberalization. Empirical evidence from studies of individual industrial countries is, however, less conclusive.

In terms of policy implications, the outcome for the industrial countries suggests strongly that liberalization of exchange controls must be supported by greater flexibility of monetary policy and development of the instruments necessary to achieve this. Fiscal policy can also play an important role, except in the very short run. It is suggested that newly liberalizing countries need not fear that their domestic currencies will be subject to internationalization. Finally, the important role of strengthened supervision and improved market information in heading off speculative bubbles that might otherwise result from the liberalization is emphasized.

JEL Classification Numbers:
E24, J20, J65

Summary of
WP/94/97

"The Canadian Labor Market: Developments, Prospects, and Policy"
by Eswar Prasad

Since early 1990, the aggregate unemployment rate in Canada has risen by about 4 percentage points and, despite the recent cyclical rebound in output, has remained in a range close to 10 1/2 percent. The persistence of a high unemployment rate and subdued employment growth in this recovery relative to previous postwar recoveries suggests that there have been fundamental changes in the structure and functioning of the Canadian labor market. This paper seeks to shed some light on these developments by examining Canadian labor market data that are disaggregated by industry, skill level, province, and demographic classifications. The analysis corroborates a growing body of evidence that the increase in unemployment in Canada in the 1990s partly reflects an increase in the persistent or structural component of unemployment.

Some important structural problems that contribute to labor market rigidity are identified and described. Skill and geographical mismatch in the labor market as well as the unemployment insurance (UI) system appear to be important factors contributing to structural unemployment. Changes to the UI system recently proposed by the Government are briefly described, followed by an examination of various proposals for more fundamental UI reform. This paper then identifies some particularly vulnerable groups in the labor force--youth, unskilled workers, older dislocated workers, and immigrants. Active labor market measures that could foster their integration into the labor force and their absorption into employment are discussed.

The paper concludes that measures to remove structural distortions to labor supply and reduce job mismatch are necessary in order to significantly reduce structural unemployment and enhance the long-term growth prospects of the Canadian economy.

JEL Classification Numbers:
O11, O55, C13

Summary of
WP/94/98

"Effects of Macroeconomic Stability on Growth, Savings, and Investment in Sub-Saharan Africa: An Empirical Investigation" by Michael T. Hadjimichael, Dhaneshwar Ghura, Martin Mühleisen, Roger Nord, and E. Murat Uçer

This paper contributes to the debate on the factors that have accounted for the generally poor economic performance of sub-Saharan Africa. It provides a detailed assessment of economic performance during 1986--93 of sub-Saharan African countries as a group, and of selected, analytically interesting subgroups of countries. The analysis focuses on the evolution of sectoral savings, investment, and net financial balances and is supported by an econometric investigation of the impact of macroeconomic policies, exogenous factors, and structural reforms on growth, savings, and investment performance, as well as by an assessment of the impact of foreign assistance. The paper thus extends to sub-Saharan Africa the econometric analysis of the impact of macroeconomic stability on economic performance already undertaken by several researchers for developing countries generally, and for those in Asia and Latin America in particular.

The paper's analysis indicates that the unsatisfactory overall economic performance of sub-Saharan African countries during 1986--93 was due to inappropriate policies pursued by a number of countries. The countries that have cushioned the impact of large, cumulative losses in their terms of trade, through improvements in their external competitiveness and the implementation of broad-based structural reforms, have done better than others. These countries achieved higher rates of government savings and private investment, as well as positive per capita real GDP growth and lower inflation, during this period. Countries with positive per capita real growth were characterized by positive government savings, increases in government investment, and strong increases in private savings and investment. In contrast, countries with negative per capita real growth were characterized by declines in savings and investment by both the government and the private sector.

These findings are supported by the results of the econometric investigation undertaken in this paper. The sub-Saharan African countries that experienced a relatively more stable macroeconomic environment achieved higher rates of growth, domestic savings, and private investment. In addition, progress toward implementing structural and institutional reforms, by providing the necessary environment for private sector development, led to better economic performance. Macroeconomic stability is found to contribute to sustainable growth through its beneficial effects on the efficiency of private investment. Other important factors that are adjudged to influence economic performance include human capital development, the level of government investment, the level of foreign assistance, the state of financial intermediation, and exogenous shocks.

A policy implication of the findings of this paper is that progress toward macroeconomic stability and the removal of structural rigidities would have sizable and immediately realizable regional payoffs in terms of accelerated growth in real per capita incomes.

JEL Classification Numbers:
H1, H3, K4, L1, Z1

Summary of
WP/94/99

"Corruption, Governmental Activities, and Markets" by Vito Tanzi

Corruption is a phenomenon of great economic significance and one that is finally attracting the attention that it deserves. Newspaper articles in many countries have been reporting with increasing frequency stories purporting to show cases of corruption.

The paper defines corruption as noncompliance with principle of the arm's length relationship, which states that personal or family relationships ought not to play a role in economic decisions by private economic agents or by government officials. This principle is essential for the efficient functioning of markets.

The normative theory on the role of government implicitly assumes that the arm's length principle is respected by government officials. The theory of pure competition also assumes that the arm's length principle prevails in relationships among economic agents. However, in the real world, economic relations, are often influenced by personal or other kinds of relations and this influence distorts the working of markets. The paper argues that cultural factors may be important in determining the extent to which economic decisions and relations, including those between government officials and private individuals, are affected by personal relations. In some societies it will be difficult for individuals to resist pressures for favorable treatment coming from related individuals. Once a distinction based on relationships begins to be made, corruption, as defined above, often follows.

The paper argues that corruption is stimulated by government-determined conditions that encourage some individuals to get around obstacles or to attempt to get favorable treatment by bribing those who control particular public sector instruments. These bribes are often presented as gifts. The more pervasive is the role of the public sector (through regulations, taxes, etc.), and the more personalized are relations among individuals, the greater will be the scope for corruption. The paper also argues that, ceteris paribus, corruption is likely to grow with time because of the learning-by-doing quality that it entails. Individuals who begin to bend the rules will progressively find it easier on moral or practical grounds to break them; others, who, in a different environment, might not have succumbed to corruption, will begin to imitate those who have. When it is assumed that "everyone does it," corruption will no longer convey the stigma that it does in some countries.

The paper discusses the economic consequences of corruption for the allocative, redistributive, and stabilization role of the government and concludes that a reduction in the scope of corruption can come mainly from a drastic reduction of the pervasive role of the state in the economy.

JEL Classification Numbers:
I28, O10, O15, O41

Summary of
WP/94/100

"Tuition Subsidies in a Model of Economic Growth" by Philip R. Gerson

For more than thirty years, economists have stressed the role of human capital development in long-run economic growth. In an effort to encourage human capital development and spur economic growth, many countries in Africa and throughout the world heavily subsidize the education of their citizens. These subsidies are often objected to on equity grounds, because their benefits may accrue predominantly to students from privileged backgrounds. However, this paper raises a second and possibly more fundamental objection: in countries with a limited pool of resources from which to finance investment in physical and human capital, subsidies to education can actually reduce the long-run fraction of the population that chooses to become educated. Thus, countries that reduce subsidies to education for fiscal adjustment reasons may actually realize long-run increases in the fractions of their populations that become educated.

The paper analyzes a general equilibrium, human-capital-based model of aggregative growth where a spillover exists between the sector producing human capital and the sector producing a composite consumption/capital good. The model also features educated unemployment, which arises because of a fixed wage for educated labor. Workers in the model must solve an asset allocation problem, choosing whether to invest in education, which is produced by a competitive education sector, or to invest their tuition money in physical capital. In equilibrium, the expected lifetime return on an investment in human capital equals the lifetime return on an investment in physical capital. The first part of the analysis characterizes the equilibrium for such an economy.

Because education firms are unable to capture their spillovers into the production of the composite good, the output of the education sector is lower in the decentralized equilibrium than would be chosen as the solution to the social planning problem. Accordingly, a government may choose to offer a tuition subsidy to encourage enrollment in education. The analysis of the model demonstrates, however, that such subsidies can have perverse effects, leading in some cases to long-run declines in the fraction of the population that chooses to become educated. This result is most likely to occur in countries, like many in Africa, where the education sector is relatively small and the rates of subsidy and of population growth are relatively high. A related implication is that the greater the rate of population growth and of educational subsidy, and the smaller the relative size of the education sector in a country, the less likely are cuts in educational subsidies--undertaken by the country's government for fiscal adjustment reasons--to lead to substantial declines in the long-run educational attainment of its population.

JEL Classification Numbers:
E5, G1, G2

Summary of
WP/94/101

"Sequencing of Financial Sector Reforms: A Review" by Vicente Galbis

This paper provides a review of the literature on both analytical issues and country experiences with respect to the sequencing of financial sector reforms. It discusses the choice between "big bang" and gradual reforms, the relationship of financial sector reforms to other economic reforms, the internal sequencing of financial sector measures, and the influence of initial conditions. The paper concludes that a pragmatic approach to the sequencing issue is necessary, as there are only a few general principles valid for all countries.

One important principle seemingly valid for all cases is the need to accompany financial sector liberalization with the introduction and/or the enforcement of an adequate degree of prudential regulation and supervision. This is not a panacea, however, and consideration must also be given--especially in backward and emerging financial markets--to establishing procedures for imposing discipline through the development of markets and associated institutions. A related finding derived from experience is that delays in addressing the problem of failing financial institutions and in eliminating the causes of this problem can be very costly in terms of both fiscal resources needed for the eventual rescue and the malfunctioning of the liberalized financial markets.

Macroeconomic stabilization--always a worthwhile objective in its own right--can also help substantially in alleviating the problems of transition to a liberal financial system, and in maintaining the efficiency of the system once the liberalization has been completed. The transition generally has the temporary effect of increasing the rate of credit expansion above that of deposit creation; this expansionary effect must be offset through the use of newly created indirect instruments, but in a manner that avoids the risk that real interest rates might rise to very high and unsustainable levels. In addition to this transitory increase in liquidity, financial sector reforms may involve significant budgetary and real sector adjustment costs. These costs, although transitory and smaller than the long-term benefits, will likely affect the political determination to carry out the reforms and, therefore, the speed and sequencing of the measures.

Some common sense rules on sequencing can also help to avoid major policy errors, including the implementation of mutually inconsistent measures, which hardly promote the financial sector objectives, and premature liberalization measures, which crucially harm objectives in sectors other than the financial sector. These types of inappropriate sequencing can increase the risk of a financial crisis. Finally, the paper suggests that structural linkages among specific reforms (for instance, monetary instruments and money market structure) could dictate a specific sequencing of measures to ensure efficient implementation.

JEL Classification Numbers:
J21, J30, J60, E24

Summary of
WP/94/102

"Explaining Unemployment in Spain: Structural Change,
Cyclical Fluctuations, and Labor Market Rigidities" by Jeffrey Franks

This paper explores the characteristics and causes of unemployment in Spain and provides a brief discussion of recent labor market reform measures and their likely impact. Three characteristics distinguish the Spanish unemployment problem: (i) its magnitude (over 24 percent in early 1994); (ii) its persistence (above 15 percent since late 1981 despite a major economic boom in 1986-91); and (iii) the strength of the cyclical variation in unemployment (nearly 9 percentage points in the last cycle). The roots of the unemployment problem lie in a rapid demographic transformation over the past 15 years that has produced a large increase in female labor force participation and a substantial reduction in agricultural employment. Although the job creation record in Spain in the 1980s compares favorably with that in other European countries, it was insufficient to absorb the increasing nonagricultural labor force.

Two sets of explanations for high and persistent unemployment are explored. The first, called "market-clearing" explanations, looks at reasons why the reported unemployment rate would be high despite well-functioning labor markets. Little evidence is found in support of equilibrium business cycles theories, but between 6 and 12 percentage points of Spanish unemployment could be attributed to workers "voluntarily" unemployed owing to generous unemployment benefits and to those reportedly unemployed but really working in the underground economy.

The second set of explanations, denominated "market-failure" theories, looks at unemployment caused by rigidities in the labor market. Legal restrictions on hiring, firing, and employment mobility have created a labor market extremely unresponsive to fluctuations in the unemployment rate. Econometric estimates demonstrate that the unemployment rate has a unit root--an extreme manifestation of persistence that constitutes evidence in favor of unemployment hysteresis. A simple error correction model of wage determination shows evidence that the wage rate in Spain does not moderate when unemployment increases and does not respond positively to improvements in productivity.

The paper concludes with a brief discussion of recent reforms in the labor market introduced by the Spanish government. While a number of positive steps have been taken, particularly in reducing the generosity of and ease of eligibility for unemployment benefits, it is likely that additional reforms will be necessary if unemployment is ever to fall below 10 percent.

JEL Classification Numbers:
G14, G15, P52

Summary of
WP/94/103

"Emerging Equity Markets in Middle Eastern Countries"
by Mohamed A. El-Erian and Manmohan S. Kumar

This paper analyzes the development of equity markets in selected Middle Eastern countries, evaluating their informational efficiency and potential direct and indirect benefits. It provides a basis for exploring policies that would enhance the markets' role in stimulating investment and growth.

The backdrop for the analysis is the internationalization and integration of capital markets and the related sharp increase in private portfolio flows to developing countries. The paper starts by examining the nature of capital flows to developing countries, particularly in Asia and Latin America, in the context of the evolution of the international debt strategy and the restoration of these countries' access to voluntary market financing. The sharp increase in flows to developing countries has given an added impetus to the growth and development of these markets, leading to significant increases in capitalization and trading activity.

The process of development of equity markets in the Middle East, as well as their integration with international capital markets, is less advanced in most of these countries compared with emerging markets in other regions. Appropriately, therefore, there is recognition in the Middle Eastern countries as to the need to broaden these markets. This recognition comes at a time of pressures on external aid flows, increased international competition for private capital, and an uncertain environment for the region's terms of trade.

The paper's analysis focuses on a sample of six countries consisting of relatively active markets (Jordan and Turkey), an established but less active market (Egypt), and more recently established markets (Iran, Morocco, and Tunisia). It is based primarily on a range of quantitative indicators, including market capitalization and concentration, price earnings ratios, price volatility, and the extent of correlation with industrial country markets. It also identifies the main differences within the selected set of markets and relative to international comparators and examines the associated structural factors.

The paper notes that while there are significant differences across these countries in the importance and characteristics of equity markets, in general the supply of equities remains limited both in absolute terms and relative to the size of the economies. The factors affecting the supply constraint are analyzed. A quantitative analysis of the efficiency of selected markets in the region, and a comparison of the efficiency of these markets with a number of other emerging markets, is also undertaken. Taking all statistical results together, the paper concludes that the informational efficiency of the Jordanian and Turkish markets is not very different from that of other emerging markets.

JEL Classification Numbers:
H2, H3, H6, P2, P3

Summary of
WP/94/104

"Eastern Europe--Factors Underlying the Weakening Performance of Tax Revenues" by Gérard Bélanger

After some initial success in narrowing budget deficits, fiscal pressures have emerged in most countries of central and eastern Europe. Underlying these developments has been a rapid erosion of revenues. This paper analyzes the factors responsible for the decline of tax revenue/GDP ratios.

In several cases, the longer-term trend decline of revenue/GDP ratios was masked initially by a revenue bonanza from profit taxes: price jumps following price liberalization sharply increased profit tax liabilities due to the use of noninflation-adjusted valuation of inventories and depreciation allowances. Large valuation gains were also made in some cases on holdings of foreign currency deposits of enterprises. As inflation abated, the mitigation or disappearance of this boost to tax revenues brought out starkly in subsequent years the underlying weakness of profit taxes. On a cumulative basis, revenue losses from the taxation of enterprise incomes were the largest source of overall revenue losses, reflecting both a collapse of underlying profits and weak tax administration.

Although discretionary reform policies aimed at reducing the intermediation role of the budget contributed partly to the overall decline of revenues, the main factors responsible for declining revenue/GDP ratios were endogenous. Widening deficits required the adoption in later years of revenue-enhancing measures that offset, for the period as a whole, the impact of early measures to lower taxes.

For taxes other than the profit tax, the main source of dwindling revenue/GDP ratios was a decline of effective tax rates, typically particularly large in the second or third year of adjustment programs, with a continued erosion in subsequent years. This was especially evident for payroll/social security taxes and domestic indirect taxes, and likely reflected weak tax administration, as well as changed patterns of employment and consumption.

Looking forward, the paper concludes that a further large contraction of revenue/GDP ratios is unlikely, except perhaps in cases where inflation remains high and tax revenues may still include taxation of significant valuation gains. The likelihood of an uptrend in output and taxable profits, and of more effective tapping of the private sector tax base, suggest an improved profit tax performance. Moreover, economies commencing economic recovery have displayed more buoyant revenues from other taxes in the past year. However, with several factors still likely to affect revenue performance negatively in coming years, the paper does not expect a strong recovery of revenue/GDP ratios. It says much of the weight of continuing fiscal adjustment will thus have to be borne by keeping real increases in spending well below the recovery of growth.

JEL Classification Number:
H21

Summary of
WP/94/105

"The Pay-As-You-Earn Tax on Wages--Options for Developing Countries and
Countries in Transition" by Koenraad van der Heeden

This paper presents a comparative study of systems for withholding income tax on wages. It identifies types of withholding that can be used in developing countries and countries in transition where administrative capacity is a major consideration. Another consideration examined in the paper is the compatibility of withholding taxes with the income tax. A comprehensive income tax, which applies to all taxable income regardless of the source, offers a different environment than a schedular income tax with final taxation by source.

Following the introduction, Section II discusses the different aspects of preliminary and final withholding. Section III addresses the subject of integrating withholding of income tax from wages and withholding done for social security purposes. Section IV outlines the administrative constraints that developing countries and countries in transition face in designing and operating a withholding system. Section V summarizes the wage withholding systems of three developed countries, four developing countries, and two countries in transition. Section VI analyzes the impact of inflation on the withholding system. Finally, Section VII recommends a simple pay-as-you-earn system for developing countries and countries in transition that entails a minimum of return filing. The paper concludes that, ideally, taxation of income, including that from employment income, should be comprehensive and the return filing rules should be pragmatic.

JEL Classification Numbers:
D62, H21, Q20

Summary of
WP/94/106

"Tax Policy and the Environment: Theory and Practice" by Ronald T. McMorran
and David C. L. Nellor

This paper reviews the effectiveness of three types of environment taxes--Pigouvian taxes (per unit taxes on emissions); taxes on inputs or consumer goods whose use is related to environmental damage; and environment-related provisions in other taxes--and surveys the use of these taxes in 42 developing countries, economies in transition, and industrial countries.

The paper finds a wide gulf between the theory and practice of environment taxation. The three types of environment taxes are ranked in terms of conventional efficiency criteria: Pigouvian taxes, with appropriately set tax rates, are efficient; taxes imposed on goods whose use is linked to environmental damage are not usually efficient and are ranked second; and environment-related provisions in other taxes are ranked third. The survey suggests that environment taxes are not used extensively and that Pigouvian taxes, the efficient tax solution to environmental damage, are not generally employed. The conventional efficiency argument in favor of environment taxes is thus typically invalidated by the widespread use of taxes other than Pigouvian taxes.

A number of possible explanations for the wide gulf between the theory and practice of environment taxation are identified: (1) design and implementation factors vary significantly across countries, with the consequence that environment taxes may not be straightforward to use; (2) the effectiveness of environment taxes can be hampered by macroeconomic instability, soft state-owned enterprise budget constraints, and a failure in markets for substitutes for the taxed item; and (3) efficient environment taxes may conflict with other policy objectives such as economic output, employment, international competitiveness, and equity.

The preceding three impediments apply, in varying degrees, to all types of environment taxes, but the difficulty in designing and administering Pigouvian taxes, especially in developing countries, is the most significant obstacle to mitigating environmental damage through the tax system. In circumstances where Pigouvian taxes cannot be employed, environment taxes are not necessarily the best policy. Consequently, in practice, a combination of policies is likely to be required to address environmental damage. The extent to which use is made of environment taxes in these circumstances is defined by their relative cost effectiveness.

JEL Classification Numbers:
F3, G2

Summary of
WP/94/107

"The Role of Offshore Centers in International Financial Intermediation" by
Marcel Cassard

Offshore financial centers (OFCs), with their array of tax and regulatory incentives for nonresident investors and the complete flexibility granted to the management of foreign assets, have challenged the supremacy of the large industrial countries' financial centers. The emergence and growth of OFCs during the last three decades can be attributed primarily to regulations and taxes imposed in the industrial countries during the 1960s and 1970s, which provided incentives for firms to relocate some of their financial activities to offshore or Eurocurrency markets. By some estimates, more than half of the world's stock of money passes through offshore centers, about 20 percent of total private wealth is invested in these centers, and about 22 percent of banks' external assets are invested offshore.

However, the role of OFCs began to be challenged in the 1980s. During the last 15 years, the financial industry has experienced massive deregulation--particularly in the OECD countries--capital and financial controls have been dismantled, markets opened, tax rates reduced, and international cooperation improved. As a result, the regulatory and fiscal environments of domestic financial centers have converged with those of offshore centers and significantly reduced the comparative advantages that OFCs once had. In addition, the importance of offshore centers diminished as international banks reduced their activities in the interbank markets, which represent the primary business of OFCs, and increased their involvement in derivative finance, which tends to be conducted in the major financial centers. Finally, the higher concentration of financial activity in a small number of large financial centers offering considerable economies of scale--deep and liquid markets, efficient clearing and settlement systems, and sophisticated technology--raised the cost of switching from major financial centers to OFCs.

In light of these trends, the recent proliferation of small offshore centers (for example, Dublin, Cyprus, Madeira, Malta, Malaysia's Labuan Island, and Bangkok's International Banking Facility) is unlikely to result in a proportionate increase in demand for their services. In the current liberalized and highly competitive environment, offshore centers will have greater difficulty in attracting financial activities away from the major financial centers.

JEL Classification Numbers:
E24, J23, J31

Summary of
WP/94/108

"Disequilibrium in the Labor Market in South Africa" by Bankim Chadha

This paper characterizes wages, employment and unemployment in South Africa from a macroeconomic viewpoint. Unemployment is decomposed into a Keynesian or cyclical component that can be identified with deficient aggregate demand, and a classical or structural component that can be identified with aggregate supply. The evidence suggests that unemployment is largely structural and associated with supply factors rather than due to cyclical factors associated with the recent recession.

Alternative explanations for the persistence of deviations of market wages from full-employment levels are explored. Three models are discussed: a nutrition-efficiency-wage model; a wage-incentive model; and a model of collective bargaining. Each is shown to be empirically capable of generating the kinds of wage and employment gaps observed in South Africa. While the models are, therefore, observationally equivalent at an aggregate level, it is useful to examine the different models because they stress alternative factors in creating a wage gap and thus unemployment.

The predictions of the models for wages and employment are discussed in light of recent and prospective developments in South Africa. These developments include: the effects of increases in the capital stock and improvements in multifactor productivity; the redistribution of social expenditures that is underway; reductions in effective transportation costs associated with the removal of apartheid; structural measures that increase labor market flexibility; and changes in union membership.

JEL Classification Number:
O55

Summary of
WP/94/109

"Economic Trends in Africa: The Economic Performance of Sub-Saharan African Countries" by Pierre Dhonte, Daudi Ballali,
Gilbert Terrier, and Stéphane Cossé

This paper finds that the economic outlook for sub-Saharan Africa is better today than it has been for a long time. The external environment is finally becoming somewhat more favorable for most countries, notably the cotton and coffee producers. More important, the far-reaching adjustments in relative prices and in trade and payments practices in many countries are paying off and are being powerfully reinforced by policy adjustments in the CFA countries. There remain, however, major difficulties, including an insufficient level of domestic savings in most countries, a high rate of inflation in many, and an inclination to revert to restrictive policies in some.

Despite the brighter outlook, the paper notes that the region's total real GDP growth will continue to be low--on the order of 2-2 1/2 percent in 1994. Growth will benefit from increased non-oil exports and from a pickup in capital formation. Investment could rise by 1 percentage point, to 17 percent of GDP in 1994; on average, that level remains likely to be lower than necessary to sustain positive real income growth per capita over the medium term, suggesting a need for higher savings and, in many cases, for greater efficiency of investment. A more significant pickup in the region's growth zones could be expected in 1995.

The paper highlights differences in performance and in structural characteristics between country groups. Three groups are identified: the CFA countries, Nigeria, and a group of "other" countries. The first group is notably characterized by a weaker output performance over the medium term and by the stability of its real exchange rate, which contrasts with the fall in its terms of trade. The other groups have achieved a better balance between terms of trade and real effective exchange rate developments and a better growth record. In this context, the recent devaluation of the CFA franc represents a major adjustment, which, as the paper indicates, is supported by policies that aim at increasing substantially the domestic savings ratio and the investment ratio.

An important focus of the paper is the discussion of progress in liberalizing exchange and trade systems. The paper reviews in some detail recent experience in this regard, describing the typical sequence of steps followed by the countries; it sums up the results in showing that spreads between official and parallel exchange markets have been narrowed very significantly.

Finally, the paper discusses current developments in regional integration. It describes the steps taken in the CFA region, in the wake of the devaluation of the currency, to move on from monetary to economic integration. The paper also provides an overview of the arrangements for economic cooperation in the Southern Africa region.

JEL Classification Numbers:
O19, O40

Summary of
WP/94/110

"How Does Foreign Direct Investment Affect Economic Growth"
by Eduardo Borensztein, José De Gregorio and Jong-Wha Lee

Technology diffusion plays a central role in the process of economic development. Recent growth literature has highlighted the role of the process of "catching-up" with the technologies available in more advanced countries in explaining the rate of growth in developing countries. An important component of this process is foreign direct investment (FDI) by multinational corporations, which is a major channel for access to advanced technologies by developing countries.

This paper examines empirically the role of FDI in the process of technology diffusion and economic growth in developing countries. To motivate the empirical work, the paper develops a model of endogenous growth in which the rate of technological progress is the main determinant of the long-term growth rate of income. Technological progress takes place through a process of "capital deepening," in the form of the introduction of new varieties of capital goods. Multinational corporations possess more advanced "knowledge," which allows them to introduce new capital goods at lower cost. However, the application of these more advanced technologies also requires the presence of a sufficient level of human capital in the host economy. The stock of human capital in the host country, therefore, limits the absorptive capability of a developing country.

The paper tests the effect of FDI on economic growth in a cross-country regression framework, utilizing data on FDI flows from industrial countries to 69 developing countries over the past two decades. The results suggest that FDI is in fact an important vehicle for the transfer of technology, as it appears to contribute to growth in larger measure than domestic investment. Moreover, a fairly robust finding is that there is a strong complementarity between FDI and human capital, that is, the contribution of FDI to economic growth is enhanced by its interaction with the level of human capital in the host country.

The contribution of FDI to economic growth thus comprises two effects. First, the results suggest that although FDI has higher productivity than domestic investment, the higher productivity of FDI occurs only when the host country has a minimum threshold stock of human capital because of the importance of the interaction between FDI and human capital in the host economy. Second, FDI has the effect of increasing total investment in the economy more than one for one, which suggests the predominance of complementarity effects with domestic firms.

JEL Classification Numbers:
E24, J31, J42

Summary of
WP/94/111

"Technological Change, Relative Wages, and
Unemployment" by Pierre-Richard Agénor and Joshua Aizenman

Well-documented features of the labor market in several industrial countries in the 1980s have been a fall in the relative wage of unskilled workers and a relative increase in employment of highly educated workers. The existing evidence suggests that, at least for the United States, both phenomena may have been caused by skilled-biased technological progress.

The paper examines analytically the effect of this type of technological shock on the structure of wages, the composition of employment, and the level of unemployment. It develops a dual labor market model that incorporates efficiency wages, worker heterogeneity, minimum wage legislation, and unemployment benefits. The first part of the paper shows that, in such a setting, a wage differential emerges in equilibrium as a result of efficiency wage considerations in the primary sector. Equilibria with full employment or unemployment of skilled workers are shown to be possible outcomes, depending on the perceived disutility of effort and the structure of unemployment benefits.

The second part of the paper shows that a technological shock that reduces the use of unskilled labor while raising the use of skilled workers always reduces the demand for unskilled labor in the primary sector. In contrast, the net effect on the demand for skilled labor reflects two conflicting factors: a direct technological effect, which is positive; and an indirect effect, which is negative and operates through changes in the efficiency wage paid to skilled workers. If efficiency considerations play a limited role, the technological shock has no effect on wages or on total employment in the primary sector; employment of skilled workers rises by the same magnitude as the fall in employment of unskilled workers. When efficiency considerations are moderately important, the adoption of the new technology raises the relative wage of skilled workers, reduces aggregate employment as well as the employment level of unskilled labor in the primary sector, and will in general raise the employment level of skilled workers. However, if efficiency considerations are very important in the primary sector, the indirect effect of the technological shock may completely offset the direct, positive effect, and the level of employment of skilled workers may remain unchanged. Thus, the effect of technological shocks on the employment level of skilled workers depends crucially on the strength of efficiency considerations in the primary sector.

The analysis also shows that the technological shock can move the economy from an initial equilibrium in which there is no unemployment to a situation where skilled workers who are unable to obtain a job in the primary sector may choose to remain unemployed rather than seek employment in the secondary sector. To offset this adverse effect, policymakers may need to reduce unemployment benefits to restore the incentive to work.

JEL Classification Numbers:
H30, H40, H51

Summary of
WP/94/112

"Achy But Healthy: Lessons from the Israeli Health Sector" by Yaakov Kop

Surgical treatment is sometimes essential, although risky. In some situations, it may be avoided by using more moderate medical treatment; in many cases, however, both treatments can be avoided if preventive measures are taken early. This is true for individuals, and not less so for health systems: overall reforms are analogous to surgical treatment; incremental corrections are analogous to moderate medical treatment; and the proper planning of health services ensures the healthy growth of a health sector, just as preventive medicine does for individuals.

This paper identifies three fundamental requirements that a health sector must fulfill in order to be considered satisfactory: universal access, high-quality treatment, and moderate cost. The Israeli health sector, although suffering some symptoms of illness, appears, in general, to pass this three-dimensional test. Nevertheless, "surgeons" and "internists" argue whether a comprehensive cure should be pursued through radical operations or through more moderate, incremental treatment.

The paper shows that by international standards the health services in Israel perform quite well, although they can be improved in a number of respects. This level of performance has been achieved through balanced doses of the three types of treatment: drastic, incremental, and preventive. The third treatment, preventive--the backbone of the health sector--is administered by means of a sick fund that was designed and developed on the basis of equity principles, which have since been applied by all other factors. The second treatment, incremental, has been carried out by administrative control and by the managed competition that has developed over time. The first treatment, drastic, has been applied in various stages, such as through the budget cuts that were part of the stabilization policy adopted in the 1980s. All treatments have included efficiency measures to improve the utilization of existing capacity.

The international aspect of the research done for this paper reveals an interesting pattern: ranked by their share of health expenditure in GDP, most OECD countries had the same relative position in 1990 as in 1970, despite the diverse reforms that had taken place in each. This is an indication that the factors at work in each country's health sector are the dominant determinants of the level of health expenditure.

The approach offered at the end of this paper is to classify countries by their scores on the above-mentioned three-dimensional test. This is suggested as an initial step in applying in other countries the lessons learned from the Israeli experience.

JEL Classification Numbers:
F10, F14, F17

Summary of
WP/94/113

"Measures of External Competitiveness for Germany" by Robert A. Feldman

This paper assesses Germany's external competitive position. This issue is particularly interesting in light of the substantial real appreciation of the deutsche mark in recent years, as indicated by several conventional measures of the real exchange rate, and the key role that exports have played in past economic recoveries.

Competitiveness is assessed from different angles. The paper first examines movements in several real exchange rate indices for Germany and reviews briefly their relationship to observed changes in trade flows. Against this background, the analysis seeks to shed further light on Germany's competitive position by using the so-called constant market share approach. Finally, the paper briefly investigates the extent to which international competition may have narrowed German profit margins in tradable goods industries and offers a brief assessment of trade prospects based on recent developments in export order statistics.

The analysis demonstrates the differing picture of Germany's external competitiveness painted by various indicators. A number of them have shown a deterioration in competitiveness, some by sizable margins. However, it also appears likely that Germany's external competitive position is stronger than suggested by standard measures based on the manufacturing sector alone. An analysis of broader-based real exchange rate indices supports this conclusion. Moreover, the results of constant market share analysis suggest some positive competitiveness effects. These results are particularly significant for the period up to 1990 insofar as an absolute squeeze on profits at home was not readily apparent in the available data. They also suggest the need to take into account product mix, quality factors, and market orientation in evaluating the international competitiveness of individual countries.

JEL Classification Numbers:
E50, E52, F31, G12

Summary of
WP/94/114

"Estimating and Interpreting Forward Interest Rates: Sweden 1992-1994"
by Lars E. O. Svensson

Forward interest rates are interest rates on investment and loans that start at a future date--the settlement date--and last to a date further into the future--the maturity date. The purpose of this paper is to demonstrate the use of forward interest rates as a monetary policy indicator. Both the estimation and the interpretation of forward rates are discussed, using data from Sweden during the eventful period 1992-1994 as an example.

There is an increased need for monetary policy indicators when flexible exchange rates replace fixed exchange rates. In Europe, in particular, the collapse of fixed exchange rates and the widening of ERM bands mean that a well-defined intermediate target for monetary policy has been lost. In this situation, regardless of whether a new intermediate target is introduced, the role of indicators will be crucial for assessing the state of the economy and the stance of monetary policy, and for deciding whether the instrument of monetary policy is on track to achieve the goal of monetary policy.

Although the use of yield curves is standard in monetary policy analysis, central banks, such as the Board of Governors of the Federal Reserve System, the Bank of England, and the Sveriges Riksbank, have only recently started to use forward interest rates--as, of course, only one indicator among the many that are needed--for monetary policy purposes.

In the absence of a full set of forward markets, implied forward interest rates need to be estimated from the standard yield curve of existing financial instruments, usually treasury bills and government bonds. For financial analysis, the estimation of forward rates is done with a number of different methods--some rather complex--to achieve sufficient precision. For monetary policy analysis, the demand for precision is arguably less, which can be traded for increased robustness and simplicity of the estimation method. The paper discusses and uses an estimation method that is simple and robust but appears to have a precision well beyond what is needed for monetary policy purposes.

Forward interest rates can, under specified assumptions, be interpreted as indicating market expectations of future short-term interest rates, inflation rates and currency depreciation rates. Although forward rates contain the same information as the standard yield curve, they present the information in a way more easily interpreted for monetary policy purposes. Whereas the yield curve can be interpreted as expected future averages of the variables in focus, the forward rate curve can be interpreted as indicating the expected future *time path* of these variables. Therefore, the forward rate curve more easily allows a separation of expectations for the short, medium, and long term than does the yield curve.

As an example, the paper uses forward rates to interpret Swedish monetary policy during the May 1992-June 1994 period.

JEL Classification Numbers:
E65, F41, O55

Summary of
WP/94/115

"Macroeconomic Policies and Smuggling: An
Analysis of Illegal Oil Trade in Nigeria" by Jian-Ye Wang

This paper examines the relations between macroeconomic policies and smuggling. The study is based on observations of unofficial cross-border trade in petroleum products between Nigeria and neighboring countries in West Africa. Such trade has long been noted to have adverse effects on price and output structures, exchange rates, and public finances in the region.

Available statistical evidence indicates that despite the periodic upward adjustment in the domestic sale prices of petroleum products and substantial trade liberalization in Nigeria under the country's Structural Adjustment Program, the main incentive for smuggling--the price differentials of petroleum products between Nigeria and its neighbors--rose in 1986-93. Oil smuggling from Nigeria to neighboring countries persisted or even grew over the period.

To explain this pattern, the paper develops a simple model focusing on the links among smuggling, public finances, and the Government's monetary, exchange rate, and oil pricing policies. The model shows that a vicious circle emerges. Inappropriate domestic oil pricing policy gives rise to implicit oil subsidies, which provide the incentive for smuggling. The smuggling worsens the Government's financial position, and monetary financing of the fiscal deficit accelerates domestic inflation and currency depreciation. The Government's attempt to fix the prices of petroleum products is tantamount to indexing the implicit oil subsidy to the exchange rate, which pushes up the cross-border oil price differentials. Smuggling then increases, exacerbating the fiscal imbalances. This process eventually forces the Government to abandon the previous oil prices. In the absence of a fundamental fiscal correction and reform of the oil pricing policy, the vicious circle continues. Macroeconomic indicators of Nigeria in 1986-93 support this analysis.

The model is also used to shed light on the impact of the devaluation of the CFA franc on cross-border oil trade. The paper concludes with policy implications for financial stabilization and adjustment in Nigeria.

JEL Classification Numbers:
052, 914

Summary of
WP/94/116

"Defining, Measuring and Alleviating Poverty in an Economy
in Transition: The Case of Lithuania" by Peter K. Cornelius

Poverty was for many years a subject of great sensitivity in the former Soviet Union. It was generally assumed that the administratively determined system of wages and transfers would be adequate to meet minimum living standards. However, with economic activity sharply contracting following the dissolution of the former Soviet Union, the Baltic countries, as well as the other newly independent states, are facing a serious policy dilemma. While the number of people needing social assistance has significantly increased, the capacity to finance social welfare services has considerably declined.

In order to maintain popular support for economic reforms, a number of countries concerned have recently begun to take important steps to identify the neediest segments of the population and to reform the comprehensive system of cash benefits, under which the state had assumed responsibility from "cradle to grave." Such a system has widely been perceived as costly and inadequate in preventing poverty and need; however, owing to the lack of data, little empirical evidence has been presented for these countries.

This paper presents some first empirical estimates for Lithuania, where, with technical assistance from the World Bank, the authorities have recently started to conduct monthly household surveys. These household surveys contain important information about the age-sex structure of the Lithuanian population, the sources of income, the consumption pattern of households, and the distribution of income. Based on these surveys, the paper first discusses attempts to define a subsistence minimum and establish a poverty line. Then, it briefly reviews different approaches to measuring poverty and presents empirical evidence about the magnitude of poverty in Lithuania. The paper also analyzes the profile of the poor and discusses the causes of poverty, and examines to what extent poverty has been alleviated by social assistance. Finally, simulations are run to indicate to what extent poverty could potentially be reduced without increasing budgetary resources for social assistance.

The paper contains three principal findings. First about 20 percent of Lithuania's population has an income that falls short of the calculated subsistence minimum, with the poverty-gap ratio amounting to about one third. Second, the current system of social assistance has had only a marginal impact in reducing the extent of poverty. Third, poverty could be reduced to a much larger extent if social benefits were better targeted. These results seem particularly important in light of the authorities' plans to reform the social safety net, which aim at achieving a higher degree of transparency by reducing the number of benefits, coordinating the social safety net with the tax system, and introducing means testing.

JEL Classification Numbers:
E44, E58, G21, G28, G32

Summary of
WP/94/117

"Financial Market Fragilities in Latin America: From Banking Crisis
Resolution to Current Policy Challenges" by Liliana Rojas-Suarez and
Steven R. Weisbrod

This paper deals with key issues in Latin American financial markets. After examining a sample of countries dealing with severe banking difficulties, the paper analyzes remaining fragilities and current challenges faced by policymakers who have the complementary objectives of maintaining long-run macroeconomic stability and a healthy financial system.

The experiences of five Latin American countries--Argentina, Chile, Colombia, Mexico, and Peru--over the last decade are reviewed to derive lessons regarding the most effective ways to deal with banking difficulties in developing countries. It is shown that the strength of banks at the onset of the banking crises and the quality of central bank leadership were important determinants in how quickly public confidence was restored in each of the financial systems. Where the banking system was relatively strong, bank supervisors and bankers were able to implement credible programs to restore confidence in the banking system; the soundness of the rescue programs prevented the eruption of inflation, even though substantial increases in credit were involved. In sharp contrast, in those countries with relatively weak banking systems, banking regulators further aggravated the problem by attempting to take over the role of banks as direct lenders. In those cases, credit expansion was associated with episodes of high inflation.

Having just resolved the financial difficulties of the 1980s, however, Latin American policymakers faced new challenges to the stability of banking systems in the early 1990s. This paper analyzes two of the issues involved: (a) financial market risks associated with the recent large capital inflows; and (b) the potential threat to the profitability of banks in the form of increased competition from recently developed domestic capital markets.

Regarding financial market risks associated with the capital inflows, the paper concludes that the quality of the inflows invested outside the banking system--say, in the equity markets--is strongly related to the strength of the domestic banking system. It is also shown that the policy response to the inflows may have an important impact on the soundness of banks. Conclusions regarding both the desirability and the method of sterilization are linked to the strength of the central bank relative to that of the commercial banks. As for bank competition from domestic capital markets, the paper argues that such developments are still years away from seriously threatening bank soundness. Even in those countries where fixed income markets have developed, open market interest rates are still high relative to bank interest expenses, and the instruments are still held by only a few investors.

Finally, the paper deals with the key macroeconomic issue of the capacity of central banks to withstand speculative attacks on the exchange rate. It argues that the degree to which a Latin American central bank succeeds in this task is influenced by the strength of the banking sector. The paper also addresses the issue of the appropriate holdings of foreign exchange reserves by central banks and the role of dollarization.

JEL Classification Numbers:
C3, E51, E52, E58

Summary of
WP/94/118

"Monetary Aggregation: A Reconciliation of Theory
and Central Bank Practice" by Huw Pill and Mahmood Pradhan

While academic economists have exerted considerable influence over the evolution of many areas of public policy in recent years, this has been far from the case in the field of monetary aggregation. Over the last two decades, academics have consistently advocated the use of weighted aggregates, notably the Divisia Index, that purport to measure the services provided by monetary assets to the depositors who hold them. However, over the same period, central banks have remained wedded to conventional simple-sum aggregates in presenting policy and implementing monetary targets. This paper offers an explanation of why academic economists have failed to influence central bankers' choice of monetary aggregates.

Weighted monetary aggregates, such as the Divisia Index, attempt to measure the transactions services provided by monetary assets. Implicitly, advocates of such aggregates are assuming that the transactions model of money is the correct specification at a macroeconomic level. However, this need not be the case; there are alternative models of the role of money and the banking system in the macroeconomy that attribute a central role to the aggregate size of the banking system's balance sheet. This paper suggests that a conventional simple-sum aggregate may provide the appropriate measure of money in such a model.

Identification problems make testing between the alternative structural models essentially impossible in macroeconomic time series. Central bankers--who are primarily interested in the "information content" of monetary data--are content to rely on estimates of reduced-form relationships that reveal the statistical indicator properties of various monetary measures. The paper concludes that until weighted measures perform unambiguously better on such criteria, central bankers may be justified in continuing to use the conventional simple-sum aggregates.

JEL Classification Number:
F31

Summary of
WP/94/119

"Foreign Exchange Auctions and Fixings: A Review of Performance"
by Arto Kovanen

Recent developments in developing countries' foreign exchange markets suggest that the need for more flexible exchange rates became apparent during the 1980s, evidenced by shifts in the exchange rate regimes toward more flexible arrangements, including floating exchange rates. A number of developing countries have adopted floating exchange rates within the context of interbank markets, but sometimes auction market arrangements have also been used.

This study provides an analysis of the group of developing countries that have adopted floating in the context of foreign exchange auctions. It surveys the major issues relating to foreign exchange auction arrangements, both in theory and in practice, and attempts to identify potential advantages and disadvantages of auction mechanisms. The study provides a guide to the actual operations of an auction market, and reviews the official fixing arrangements used by some developing countries with floating exchange rates.

The study accepts that auction markets in principle are likely to improve the allocation of foreign exchange while providing a transparent way of determining the price of foreign exchange. But the paper says the practical efficiency of auction markets is often undermined by government interference and manipulation of the auction-based exchange rate as well as the allocation of foreign exchange, which has led to situations where the credibility of the auction market is lost and the transparency of the auction system becomes doubtful. Sometimes market efficiency has been undermined because foreign exchange has been concentrated in the hands of a few influential buyers or sellers who were able to manipulate the market-based arrangement. Further, auction market arrangements have not generally succeeded in unifying official and parallel exchange rates.

Because of inconsistencies between macroeconomic policies and the desire to maintain a strong official presence in the foreign exchange market, auction market arrangements have rarely been sustainable in the long run. In fact, some developing countries that have introduced auctions have eventually terminated them and returned to a fixed exchange rate regime. Other countries that have continued to maintain an auction arrangement have combined it with an interbank market, but this raises questions about the degree of transparency and the transitional contribution that the auctions may have made to the efficiency of foreign exchange allocation.

Some developing countries use official fixing arrangements, either to fix the rate for the interbank market or to establish a rate to effect official transactions. Although such arrangements may, in the interim, be justified on the basis of lack of an efficient interbank market, in the longer run it is clear that direct interbank transactions should be encouraged. Since the fixing arrangements often underscore the centralized allocation by forcing most transactions through the fixing system, thus limiting the scope of the interbank trading, they are likely to slow down the development of a genuine interbank market.

JEL Classification Numbers:
E21, F36

Summary of
WP/94/120

"Consumption, Income, and International Capital
Market Integration" by Tamim Bayoumi and Ronald MacDonald

By allowing countries to borrow and lend money efficiently, capital markets can provide the same services across countries that they provide within a single economy, allowing more efficient use of funds for investment and improving the allocation of consumption over time. While the potential gains from open international capital markets are clear, measuring the actual level of international capital mobility has proved to be more difficult. Among the main measures used in the literature are comparisons of onshore-offshore nominal interest rates and the correlation of saving and investment rates across countries. Tests involving nominal interest comparisons generally indicate a high degree of capital mobility, while those involving real rates and savings-investment relationships show relatively low levels.

This uncertainty has revived interest in alternative measures of the openness of international capital markets. One promising avenue involves using consumption patterns across countries as a measure of capital mobility. The logic behind the test is that, if capital markets are integrated, consumers will be able to insulate themselves against idiosyncratic disturbances. Hence consumption across individual countries should be highly correlated with the path of the aggregate across all countries. This paper extends this work on international consumption patterns. As well as looking at a larger set of countries, a somewhat different estimating equation is derived that takes explicit account of the possibility that part of local consumption depends upon local income.

The paper finds that Japan is the only industrial country in the sample for which national consumption appears to be fully integrated with the rest of the world. For the other countries considered, however, the source of the failure varies. Within the EC, with the notable exception of the United Kingdom, the failure is almost universally associated with incomplete integration across individual national capital markets. Greater integration of national capital markets caused by moves toward a single market and, possibly, a single currency, could therefore provide potentially significant gains in economic welfare by improving consumption patterns across the region. In the rest of the sample, national capital markets appear to be integrated. However, except in the case of Japan, consumption is disrupted from its optimum path by incomplete access of individuals to these national capital markets.

JEL Classification Numbers:
F41, E62, O19, H62

Summary of
WP/94/121

"Political Business Cycles and Expenditure Policies in Developing Countries"
by Ludger Schuknecht

This paper examines the impact of elections on economic policymaking in developing countries and finds that governments try to improve their re-election prospects by pursuing expansionary expenditure policies. Rising fiscal deficits before elections are followed by fiscal consolidation afterwards. These cycles are found particularly in countries that are less trade-oriented because additional demand does not leak abroad and in countries that pursue fixed exchange rate policies, perhaps because additional import demand does not trigger a devaluation-inflation spiral.

The paper also shows that certain IMF-supported programs contribute to fiscal stabilization but do not affect the incidence of fiscal cycles over elections. This finding suggests the importance of taking account of election constraints in macroeconomic projections and policy advice on the design and schedule of reforms. The political feasibility of reforms should be strengthened before elections.

The paper's findings may be summarized as follows:

On fiscal deficits. Regression results show that the overall fiscal balance worsens by over 0.6 percent of GDP over an election period. Deteriorating terms of trade, natural catastrophes, and inward-oriented policies also contribute to larger fiscal deficits. On the other hand, SAF/ESAF programs (from the second program period) and EFF arrangements improve the overall fiscal balance.

On revenue and expenditure. Regression results indicate that the election-induced fiscal stimulation translates into increasing government expenditures rather than declining revenues.

On the expenditure composition. The estimations show that, prior to elections, capital expenditure rises as a share of both overall expenditure and GDP, presumably to create short-term employment in public works.

On fiscal cycles in various country groups. Countries with flexible exchange rate regimes do not exhibit election cycles, but cycles are very pronounced in countries with fixed rates and adequate reserves. Fiscal cycles over elections occur both when a country has an IMF-supported program and when it does not, which indicates that domestic political constraints dominate international influences. Economies that are not trade-oriented exhibit very pronounced election cycles, while trade-oriented countries show more fiscal stability over election periods.

JEL Classification Numbers:
E22, H52, O54

Summary of
WP/94/122

"Public Education Expenditure and Other Determinants of Private Investment
in the Caribbean" by Benedict Clements and Joaquim V. Levy

This paper analyzes the determinants of private investment in the Caribbean region, using data for 1977-91. Drawing on the endogenous growth literature, it develops a model to capture the impact of public education expenditures on private sector capital formation. The implications of this model are tested in the context of a simple econometric model that evaluates the impact of education expenditures and other variables on the ratio of private investment to GDP.

Confirming the implications of the theoretical model, the econometric results reveal that public education expenditures appear to have a significant effect on private investment. *Ceteris paribus*, a country that sustains a 1 percentage point increase in the ratio of public education expenditures to GDP would experience an increase of 1 percentage point in the private investment/GDP ratio. The econometric results also show that economic growth has a positive impact on the share of private investment in GDP, with a 1 percentage point increase in economic growth rates being associated with an increase of 1 1/2 percentage points in the private investment/GDP ratio. Public investment has an adverse effect on private sector capital formation, even when central government capital expenditure is used as a measure of public investment. Real interest rates and external debt burdens are found to have no statistically significant relationship with private investment rates. The insignificance of the external debt overhang may reflect the highly concessional nature of much of the foreign debt held by Caribbean countries.

Correlation analysis reveals that both private and total investment rates are high in countries that mobilize a large amount of national savings. High national savings, in turn, are associated with low budget deficits. Countries with the highest growth in the region tended to have high rates of national savings and private investment, relatively low budget deficits and external debt, and relatively high real interest rates.

JEL Classification Numbers:
E65, I30, P21

Summary of
WP/94/123

"Albania: Income Distribution, Poverty, and Social
Safety Nets in the Transition, 1991-1993" by Caroline Van Rijckeghem

This paper describes changes in income distribution and poverty in Albania during the transition period 1991-93, drawing particular attention to the role of price liberalization and terms of trade shifts in favor of agriculture, an increase in unemployment in the state sector, emigrant remittances, and social safety nets. The study covers private agriculture, state enterprises, the civil service, pensioners, the unemployed receiving benefits, and those on social assistance. It presents estimates of average agricultural incomes by district based on acreage, number of livestock, yields, and urban household income distribution. As a check on the results, developments in per capita consumption of food items are examined.

According to income and remittance data, real incomes in the rural sector increased by about 50 percent between 1991 and 1993. Real urban incomes, including government transfers, declined by 12 percent between the first half of 1991 and the second half of 1993, and the share of the urban population with incomes below subsistence levels increased from about 6 percent to 25-30 percent. The ratio of presumptive agricultural income to public sector income increased from 1/2 to 1 between 1991 and 1993. Consumption data indicate that per capita food consumption increased in urban areas, implying that a large decline in urban real incomes and an increase in poverty are implausible.

The incomes of the recipients of government transfers who also receive remittances from abroad--that is, the incomes of half the government transfer recipients--exceeded the poverty line. The incomes of the other half fell below the poverty line.

The policy implications are that (1) targeting will be cost-effective and (2) an increase in benefit levels is necessary for those with incomes currently below subsistence levels. Recent government initiatives--block grants to communities and self-targeted public works--are in line with these prescriptions.

JEL Classification Numbers:
E4, E5

Summary of
WP/94/124

"Changes in the Relationship Between the Long-Term Interest Rate and
its Determinants" by William Lee and Eswar Prasad

From October 1993 to June 1994, long-term interest rates in the United States rose by about 1 1/2 percentage points, substantially more than the increase in short-term rates and despite the relatively stable inflation during this period. The purpose of this paper is to assess the quantitative importance of various explanations for the increase in long-term rates and to investigate whether this increase can be explained using standard models of the term structure of interest rates.

This study finds evidence that the estimated coefficients from a standard term structure equation--that models the long rate as a function of a long distributed lag on realized short-term rates--may have changed substantially since the early 1980s. Further, this equation performs poorly after 1993, apparently because it is unable to capture adequately the important role of expectations regarding current and prospective monetary policy in determining the level of long-term interest rates.

The responsiveness of the long-term rate to monetary policy appears to have increased since the early 1980s. This is illustrated by comparing changes in long- and short-term rates during periods of monetary policy tightening. In addition, it is shown that the estimated coefficient from a simple regression of the change in the long-term rate on the change in the federal funds rate has more than doubled since 1989.

The standard term structure equation is then augmented by the addition of variables that proxy for the stance of monetary policy and that attempt to control for the effects of portfolio shifts. The augmented equation tracks variations in the long-term rate significantly better than the traditional term structure equation. However, the augmented specification also shows signs of a structural break in the 1980s. The coefficients on the monetary policy, economic activity, and portfolio shift variables increase in absolute magnitude when the equation is estimated over the 1984-94 period. Thus, an important finding of this paper is that the sensitivity of long-term interest rates to changes in current and prospective monetary policy has increased significantly since the early 1980s.

JEL Classification Numbers:
H22, H23

Summary of
WP/94/125

"The Equity Impact of Value-Added Tax in Bangladesh"
by Shahabuddin M. Hossain

This paper examines the income distributional impact of different VAT schemes on the urban and rural household groups in Bangladesh. It argues that, among the existing approaches to evaluating the nonmarginal tax reform proposals, the Computable General Equilibrium modeling approach is inappropriate for Bangladesh, both on analytical and empirical grounds. An alternative approach, which is based on the "equivalent variation" measure and focuses on the household and welfare side, is adopted to identify the losers and gainers of a policy change in a heterogeneous population.

This approach involves estimating parameters of the Linear Expenditure System for each of the 12 urban and rural household groups (based on their levels of per capita monthly expenditure). The pattern of the results shows that a single, uniform value-added tax (VAT) rate for all commodities, where the rate is chosen such that it has a revenue-neutral effect, is very regressive (relative to the current state) in its impact on the income of different households. In general, richer households gain while the poorer households in both urban and rural areas (the majority of the population) lose.

This paper also explores an alternative package consisting of a basic rate of VAT with exemptions for certain foodstuffs, plus additional excise taxes on tobacco, commercial energy, and sugar. The choice of commodity groups for exemptions and additional excises was facilitated by the estimation of distributional characteristics of the goods discussed in the text. This analysis permitted the identification of commodity groups for VAT exemption and for the imposition of excises.

The welfare consequences of the alternative package is found to be much less regressive relative to the uniform, proportional VAT case. It is therefore likely to be more acceptable to the general public and to policymakers.

JEL Classification Numbers:
G12, G14

Summary of
WP/94/126

"Noise Trading, Transaction Costs, and the Relationship
of Stock Returns and Trading Volume" by Charles Kramer

The relationship between trading volume and stock returns has been the focus of much recent interest. Empirical studies have found relationships between volume and various moments of return, while theoretical studies have sought to explain these findings by modeling traders and the trading environment. This paper introduces a model that links this literature to classical methods for asset pricing.

The model is a simple variant of the standard intertemporal consumption-investment problem under uncertainty in discrete time. When trading assets, the agent pays transaction costs, and these costs depend on the level of market activity or noise trading. This device is consistent with stylized facts about market depth and trading costs. In equilibrium, the marginal cost of transaction--and hence noise trading--is priced risk. Omission of this risk factor could underlie well-known anomalies such as market size and January effects.

The model is estimated with aggregate data on real consumption, real stock market returns, and trading volume for the United States. There is a significant link between trading volume and equilibrium returns, and estimated marginal costs decline with volume, so that changes in volume influence returns more when the average trading volume is lower. Specification tests show that the parameters shift over time, but the parameter for transaction cost is still significant, including when the October 1987 crash is omitted from the sample.

This paper also examines the role of volume in the relationship of risk to return in linear capital asset pricing. Both market and consumption pricing models fit better in high-volume months. This is consistent with the estimates of decreasing marginal costs in the intertemporal model.

JEL Classification Numbers:
E58, G28, N24

Summary of
WP/94/127

"Central Banking in Central and Eastern Europe: Lessons from the Interwar
Years' Experience" by Marcello de Cecco

A number of central banks in Central and Eastern Europe were established in the 1920s with the primary aim of creating monetary stability in the new order following the First World War. This paper examines the philosophies behind the institution of these central banks. It argues that their interwar experience may prove relevant to current institution-building and policymaking efforts following the imposition and subsequent demise of the socialist economic order in these countries.

During the war, many Central and Eastern European countries used highly inflationary practices, such as printing money and issuing short-term treasury bills, to finance government fiscal debt. The international financial conference held in Brussels in 1920 sought to curb such state-induced inflation by establishing politically independent central banks. This paper reviews the main features of the central banking laws adopted in Central and Eastern European countries in the 1920s. It notes that, in general, the views of the Financial Section of the League of Nations, dominated by the Bank of England, were incorporated into these laws. As the United States was not a member of the League of Nations, its views, shaped by a very different central banking tradition, were initially ignored. Under the direction of the League of Nations, the new central banks in Central and Eastern Europe were encouraged to centralize the payments function and manage exchange rates, in order to keep control of the money supply and achieve monetary stability. The importance of banking supervision, a policy advocated by the U.S. Federal Reserve system, was not fully appreciated until the following decade, by which time most central banks in Central and Eastern Europe had been forced to impose rules of behavior on commercial banks. In this regard, the particular experiences of Czechoslovakia, Hungary, and Poland are examined.

JEL Classification Numbers:
F4, N1

Summary of
WP/94/128

"France and the Breakdown of the Bretton Woods International Monetary System" by Michael D. Bordo, Dominique Simard and Eugene N. White

This paper examines French international monetary policy under President Charles de Gaulle. It challenges the widely held interpretation of France's role in the breakdown of the Bretton Woods international monetary system. In this view, the demise of Bretton Woods in 1971 can be traced back to the deliberate conversion of dollars into gold by France, beginning in 1965. These actions are considered part of President de Gaulle's broader challenge to U.S. military and economic pre-eminence in Europe. According to this perception, French policy is viewed as opportunistic and lacking in consistency, alternating between cooperation, offering unacceptable reform proposals, and assaults on the dollar. Persistent U.S. balance of payments deficits provided France with large dollar holdings whose conversion into gold would embarrass the United States and reduce its dominance.

The paper argues that French policy in fact followed well-established objectives, first articulated in the interwar period, that aimed at the creation of a symmetrical and cooperative gold exchange standard. The recommendations of the Financial Commission at the 1922 Genoa Conference, the Tripartite Agreement of 1936, and the French Plan of 1943 preceding Bretton Woods all offered projects to produce such a system. France's economic malaise prevented it from playing an important role in the immediate post-World War II design of the international monetary system. However, once the economy was stabilized in 1958, France re-emerged as a major player in international finance. The French Government believed that the Bretton Woods system conferred an extraordinary position on the United States as the provider of a currency that was held as official central bank reserves. This position permitted the United States to finance a persistent balance of payments deficit without making significant adjustments, while threatening to export inflation to other countries. The paper contends that French policy was a response to this perceived threat and represented an effort to offer a more advantageous alternative.

According to the paper, a close study of events reveals that the French followed a careful strategy of using proposals for a return to an orthodox gold standard and dollar conversions into gold as tactics to induce the United States to cooperate in a reform of the international monetary system. The paper asserts that relations between France and the United States can be characterized as a noncooperative bargaining game with a rational threat. In this game, the equilibrium--the Bretton Woods regime--was sustained by the threat of French dollar-for-gold conversions. This equilibrium broke down following the intensification of the Vietnamese war. The war was a fiscal shock that altered the payoffs and led the United States to pursue a high rate of monetary growth, even though this implied that France's best response would be to convert dollars into gold and consequently risk the possible collapse of the Bretton Woods system.

JEL Classification Numbers:
E41, E50, F41, O53

Summary of
WP/94/129

"Dollarization in Lebanon" by Johannes Mueller

Lebanon's 15-year-long civil war had a devastating effect on the economy. Over time, because of large-scale inflation and currency depreciation, Lebanese households and enterprises increasingly resorted to using foreign currency for transaction, store-of-value and unit-of-account purposes. This reliance on foreign currency persisted even after the end of the civil war, a normalization of the political and economic situation, and a significant reflow of funds from abroad.

This paper analyzes the determinants of the use of foreign currency in the Lebanese economy during the last two decades and--going beyond the conventional literature on the dollarization phenomenon--explicitly addresses the persistence in its use. The two econometric models developed in the paper model the persistence through the inclusion of a ratchet variable, thus implying an asymmetric substitution process between domestic and foreign currency. The paper experiments with two different definitions of the dollarization ratio and of the ratchet variable and also estimates the likely length of the ratchet effect in Lebanon.

The existence of the ratchet effect is attributed to prolonged periods of financial innovation and the related fixed costs of developing, learning, and applying these new money management techniques to "beat" inflation. Once these fixed costs are overcome, households and enterprises have little incentive to switch back to domestic currency after the period of instability ends. As a result, the effect on the relative demand for foreign and domestic currency money is more long-lasting. In addition to the costs, the extent of credibility of the authorities' stabilization efforts as well as the design of and changes to the institutional and regulatory framework may influence the duration and strength of the ratchet effect.

The estimation results suggest that the ratchet variable is significant in the case of Lebanon. The ratchet effect is particularly pronounced and unambiguous when defined as the past-peak dollarization ratio and is likely to last for at least 4 1/2 to 4 3/4 years. Moreover, and in line with the conventional literature on currency substitution and dollarization, the expected depreciation does have an impact on households' holding of foreign currency deposits. The interest rate differential is insignificant if only domestically held foreign currency deposits are considered in the dollarization ratio but is likely to be significant when cross-border deposits are included. Most of the adjustment in households' portfolios takes place after a certain lag, as indicated by the high significance of an included stock adjustment variable. Taken together, these findings suggest that there is only limited scope for the Lebanese authorities to actively promote a fast de-dollarization of the economy.

JEL Classification Numbers:
E63, F13, F31, F41

Summary of
WP/94/130

"Trade Reform and Inflation Stabilization"
by Vivek B. Arora and Manmohan S. Kumar

In recent years, a large number of developing countries have undertaken inflation stabilization programs. In many instances, these programs have been accompanied by structural reforms in the external sector, in particular trade liberalization. It has been increasingly recognized that the degree of openness of an economy, and the efficiency gains brought about by trade liberalization, can influence the success of a program. Yet the analytical literature on inflation stabilization has largely ignored the potential role that can be played by greater openness--both structural and policy-induced--in supporting a stabilization effort. This paper examines the implications of structural reforms to increase openness in determining the likelihood that an inflation stabilization program will be successful.

The paper identifies conditions under which different policies with regard to openness are likely to improve the probability of success of a stabilization program. In several empirically realistic cases, policies that promote openness, including trade liberalization policies, have a positive effect on the ex ante probability that a program will succeed. An important conclusion is that in cases where the exchange rate elasticities of imports and exports are sufficiently large (that is, the Marshall-Lerner condition holds), a greater degree of openness increases the probability of success. This is because, with greater openness, the extent to which persistence in inflation in nontraded goods results in real exchange rate appreciation is dampened, thereby mitigating the adverse effect of this persistence on the trade balance.

The paper derives additional conclusions about the likely effects of trade liberalization on the probability of success of stabilization by explicitly considering the role of trade taxes in budgetary revenues and the role of imported intermediate goods in the production process. The model suggests that trade reform would most strongly support a stabilization effort when the productivity of imported inputs is high and the price elasticity of imports is low.

JEL Classification Numbers:
B41, F00, F13, F23

Summary of
WP/94/131

"The Meaning of Balance of Payments Statistics
in an Interdependent World" by Jack Bame

The adequacy of available international economic data--in particular, the balance of payments and international investment position, which constitute the standard set of international accounts--has recently been the subject of widespread criticism. Several studies have proposed that other data be integrated with these accounts and/or that the residency criterion be revised or replaced by an ownership criterion. Such proposals, if accepted, would compromise the structure of both international and national accounts. Given that the two most important international standards for measuring these accounts--the 1993 *System of National Accounts (SNA)* and the fifth edition of the *IMF Balance of Payments Manual*--were recently issued and closely harmonized, efforts to change them would be misguided.

The central role of residence is identical in both sets of guidelines because the residency status of producers in an economy determines the limits of domestic production, affects the measurement of GDP--among other variables--and is the basis for compilations of balance of payments transactions and for the rest-of-the-world sector in the national accounts. Nonetheless, it is recognized that no one statistical measure can satisfy all possible purposes. The development and use of complementary or supplementary data is therefore both necessary and valuable for policy purposes, in particular, for trade negotiations. However, if such data are combined with standard measures to derive new "net balances" (e.g., for transactions in international goods and services), they should not be confused with, accorded the same weight as, or take precedence over, the standard measures.

It is more important for countries to adhere to the conceptual, definitional, and classification standards of the *SNA* and the *Balance of Payments Manual* than to revise or "adjust" standard measures. Such conformity can help reduce existing bilateral, regional, and global asymmetries in the international accounts and thereby improve the statistical basis for analysis and policy formulation.

Significant international, regional, and national initiatives are under way to refine and improve the coverage and measurement of international transactions within the framework of the *Balance of Payments Manual* and the *SNA*. Increasingly, partner countries are working toward harmonizing and exchanging data. These developments will enhance the relevance and usefulness of the standard measures. This is not to say that the structure and concepts of the *Balance of Payments Manual* and the *SNA* should not be reassessed at some future time, and certainly within a shorter interval than the 16 years and 25 years, respectively, between the previous and latest editions of the two international standards.

JEL Classification Numbers:
C510, F310

Summary of
WP/94/132

"Exchange Rate Fluctuations and
U.K. Manufacturing Exports" by Hossein Samiei

The United Kingdom's export performance since the 1970s, it has often been argued, has reflected a tendency for U.K. exporters to use favorable exchange rate movements to improve profit margins rather than to strengthen their competitive position and boost foreign demand for their products. Exports, however, also depend on supply-side performance, which, unlike demand, is positively influenced by improved profit margins. The effect of exchange rate fluctuations on export performance therefore depends on the price sensitivities of both supply and demand and on the pricing policies of exporting firms. In a competitive international market, exporting firms follow a pricing-to-market policy, taking prices in foreign currencies as given and offsetting the effects of exchange rate depreciation by appropriately adjusting local currency export prices. At the opposite extreme, setting prices based only on domestic factors, for example in order to preserve profit margins, implies a full exchange rate pass-through to consumer prices abroad. The former pricing policy maintains demand while the latter sustains the firm's ability to invest and supply.

Depending on the market structure, a lack of response (or a partial response) of export prices to sharp or sudden exchange rate fluctuations could indicate the presence of hysteresis in the sense that a transitory shock to the system would permanently change relative prices. Moreover, when investment and production involve costs that are irreversible, the supply of exported goods may manifest hysteresis that arises from the entry and exit decisions of firms. The response of export prices to exchange rate movements may also depend on the prevailing exchange rate regime. A question in relation to the United Kingdom is whether this response was influenced by sterling's membership in the ERM and its subsequent departure from the system in September 1992. In principle, the disciplinary effects of a credible fixed exchange rate system are likely to influence price determination by, for example, reducing the likelihood that devaluations will be used to improve competitiveness.

This paper examines the impact of exchange rate fluctuations on U.K. manufacturing exports. The results indicate a recursive structure in the long run, wherein prices influence the volume of exports demanded but are not influenced by it. They also indicate that U.K. exporters only partially offset the impact on foreign consumers of fluctuations in the effective exchange rate of the pound. During the ERM period, however, the extent of pass-through to foreign prices weakened, a process that appears to have reversed after exit from the ERM. Hysteresis in the form of limited exchange rate pass-through is supported by the results, but that arising from regime switches in supply is not.

JEL Classification Numbers:
E58, E52

Summary of
WP/94/133

"The Payments System and its Effects on Monetary Operations:
Recent Experience in the Russian Federation"
by Gabriel Sensenbrenner and V. Sundararajan

Recent developments and reforms in the Russian payments system are discussed in this paper from the perspective of their impact on the conduct of monetary policy. The large and highly variable payment float in the balance sheet of the Central Bank of Russia (CBR) has contributed to large excess reserves of commercial banks, and has complicated both monetary management and the transition to indirect methods of monetary control. It is argued that well-coordinated and mutually supportive reforms of both monetary operations and the payments system are needed to deal with the monetary consequences of payments system deficiencies.

After reviewing institutional and operational developments in the Russian payments system during 1989-94, an analytical framework is developed to measure and explain the behavior of the CBR payment float, which is viewed as an indicator of the efficiency and effectiveness of the payments system structure. An equation specifying the determinants of float is developed and estimated in order to assess the impact of initial payments system reforms. It is found that these reforms have contributed to stabilizing the initially turbulent situation and have improved the reliability and speed of payments. The empirical analysis also finds that the float has acted as an automatic stabilizer, offsetting the impact of net credit to government by the central bank. Nevertheless, this effect cannot be extrapolated and the level and variability of CBR float still remain high, contributing to a continued large demand for reserves. A factor that has also contributed to reducing the level and variability of CBR float is the rapid development of correspondent banking, on which data are not available.

Stabilization of the payments system has set the stage for medium-term reforms, whose design is progressing well. High priority is being attached to developing a large ruble interbank funds transfer system to provide real-time gross settlements. In addition, clearing houses have been licensed to improve clearing of bulk payments; progress is under way in developing new payment instruments, improving legal and regulatory framework, strengthening settlement procedures for government securities, and developing communications platforms, technical standards, and new automation architecture. Continued progress in the implementation of these reforms--including transitional steps based on readily available technology that could provide immediate benefits while implementing the medium-term structures--remains critical to support the emerging needs in money and foreign exchange markets and in monetary operations.

Payments system reforms, including the medium-term reforms now under way, need to be monitored closely in light of their strong potential to influence the demand for reserves. In particular, the implementation of a large value transfer system and the associated accounting reforms may reduce the demand for reserves, depending on the specifics of the design and its alignment with the monetary regime. This underscores the importance of proper coordination of payments system reforms with the ongoing reforms to develop indirect monetary instruments.

JEL Classification Numbers:
E52, F31

Summary of
WP/94/134

"Fixed or Floating Exchange Regimes: Does It Matter for Inflation?"
by Peter J. Quirk

Issues of fixed versus floating exchange rates are addressed by an extensive literature and are not as black and white as frequently implied. This paper deals with implications of exchange regime choices for inflation, focusing on two issues: the operational distinctions between regimes and the empirical evidence. The usefulness of a market-driven exchange rate as a monetary indicator is clear when structural changes limit the usefulness of monetary aggregates, or when observations on real interest rate and yield curves are blurred, owing to inflation or insufficient depth of domestic financial markets. The paper concludes that, because the exchange rate can be such a useful indicator, even fixed rate regimes should normally allow short-run market flexibility, within relatively wide margins. Fixed-rate regimes should also allow sufficient medium-term flexibility to deal with shocks that are not reversible.

Recent cross-country experience with fixed and market-driven exchange rate regimes is examined in the paper. Evidence is presented that in industrial countries, inflation has tended to lead exchange rate volatility (which declined on an annual basis in the 1980s). A survey of the recent empirical literature suggests a mixed record in the attempts to associate exchange regimes with inflation. One-shot, anchor-type adjustments of the Bretton Woods variety appear to have had little success in stabilization, except when inflation was initially low. However, this empirical outcome might have been attributable to the incompleteness of the traditional adjustments, owing to uncertainty about the equilibrium rate level and related monetary and fiscal policy shortcomings. Very recent, but as yet inconclusive, evidence on strict rule-based monetary and exchange rate policies under the currency-board approach has been more positive. Other anchor-type adjustments have often been preceded by considerable exchange rate flexibility, which re-established international reserves, or have been followed by flexibility, so that their characterization as an anchor is questionable.

Independently floating regimes, a relatively new but by now widespread phenomenon in developing countries, have been demonstrably successful in the available studies. Such regimes have almost always been adopted in the context of comprehensive programs of stabilization and liberalization, and most have been aimed at addressing the effects of the debt crisis. However, the overall conclusion of the paper is that there is no automatic linkage between exchange regime choice and inflation. Whether additional credibility could be gained by anchoring both the exchange rate and monetary policies depends on whether the two sets of responsibilities are vested in more than one institution--central bank, ministry of finance, or regional, multilateral institutions. Usually, responsibilities are not effectively split this way in developing countries. Moreover, the important issue is how the responsibilities are actually discharged and the track record that is established.

JEL Classification Numbers:
D44, H19

Summary of
WP/94/135

"Treasury Bill Auctions: Issues and Uses"
by Leonard Bartolini and Carlo Cottarelli

Academic and policy-oriented debate on the design of government securities auctions has intensified in recent years, motivated both by the desire for more cost-effective strategies to finance large stocks of government debt, and by the recognition that noncompetitive behavior may be a pervasive and costly feature of auctions of government securities around the world.

This paper reviews the main issues that arise in the design of treasury bill auctions, examining different aspects of auction design that may affect revenues from sale of government securities, such as the effect of the winner's curse on bidders' strategy and incentives to collude and corner markets. The analytical review is integrated with a survey of the relevant empirical literature. The paper's main contribution is a detailed description of the actual design of treasury bill auctions in a sample of 42 industrial and developing countries. The format of these auctions is compared with the predictions of auction theory. The authors note the striking contrast between the preference granted by the theoretical literature to uniform-price auctions, and the overwhelming prevalence of the multiple-price format among actual auctions of treasury bills around the world.

The paper finds that most treasury bill auctions tend to be of the discriminatory type, that most governments remain rather secretive in publishing auction results (except in highly aggregate form), and that governments do not appear to promote the development of organized secondary and (especially) forward markets for treasury bills. A possible explanation is that, in most countries, concerns about cornering and collusion in treasury bill auctions have tended to dominate.

The authors argue that greater effort is needed--and is likely to be forthcoming--toward extending existing models of auctions to capture actual auction of government securities more accurately. Clearer understanding of the relative incentives to noncompetitive behavior in repeated, common-value auctions of divisible objects, and clearer understanding of how auctioneers can alter such incentives by modifying auction procedures, are thought to be likely goals of future research.

JEL Classification Number:
E21

Summary of
WP/94/136

"Household Saving in France: Stochastic Income and Financial Deregulation"
by Jonathan D. Ostry and Joaquim Levy

In recent years, the household saving ratio in France has increased substantially, offsetting some of the decline in the saving ratio that occurred during the 1980s. This paper investigates the roles of two factors in accounting for recent saving behavior in France. First, the deterioration in labor market conditions may have created a precautionary demand for saving by households wishing to insure themselves (by accumulating assets, or saving) against potentially large (adverse) income shocks (for example, becoming unemployed). Second, financial deregulation may have increased the sensitivity of households to movements in real interest rates, so that relatively high real rates would elicit larger increases in saving than in the past.

To investigate the first hypothesis, the paper estimates a permanent-income model of household consumption that has been augmented to include the effects of the variability of household labor income. In such a model, saving rises whenever the mean of household income is expected to decline over time ("saving for a rainy day") and whenever the variance of household income is expected to rise (precautionary saving). This augmented permanent-income model tracks recent developments in household saving remarkably well. However, the "saving for a rainy day" component of saving seems to play a much more significant role in recent developments than the precautionary motive. Specifically, reductions in expected future income growth seem to be quantitatively much more important than increases in the expected variability of income in accounting for recent saving behavior.

On the effects of financial deregulation, the paper finds support for the view that the interest rate elasticity of household saving has increased significantly as a result of deregulation. Indeed, as a quantitative matter, the results suggest that recent high levels of real interest rates in France have played a significant role in stimulating household saving.

JEL Classification Numbers:
E61, Q38

Summary of
WP/94/137

"Fiscal Policy Sustainability in Oil-Producing Countries"
by Claire Liuksila, Alejandro García, and Sheila Bassett

The need for meaningful, yet easily calculable, indicators of fiscal sustainability has long been recognized. Conventionally defined measures of the government deficit and public debt may misstate both government solvency and the sustainability of a given fiscal policy because they focus on only a portion of government assets and liabilities and have a narrow time perspective--generally a single budget year. A number of economists have called for a forward-looking balance sheet approach to analyzing fiscal sustainability that would focus on maintaining a desired level of government net worth over the long term. In this view, net worth would encompass the whole range of government assets and liabilities, including, for example, the expected stream of income from the exploitation of exhaustible natural resources.

This paper proposes that such an approach is particularly useful for assessing the sustainability of fiscal policies in countries in which a significant share of government revenue is derived from petroleum exploitation. Political and growth pressures often push governments in these countries into a cycle of "stop-go" fiscal policies, dictated by the swings in international petroleum prices. Taking a long view is especially important to help these countries avoid this policy pitfall.

The paper argues that for countries in which a significant proportion of government revenue is derived from the exploitation of an exhaustible natural resource, fiscal policy sustainability can best be assessed within a permanent income framework that takes into account total government wealth, including the imputed wealth from reserves of natural resources. Using this framework, the paper takes a sample of six countries in which government revenue from petroleum extraction is significant and draws conclusions about the sustainability of their fiscal policies during 1980-92.

JEL Classification Numbers:
O11, O41

Summary of
WP/94/138

"On the Dynamics of Economic Growth" by Michael Sarel

In examining the dynamics of economic growth, this paper first takes a closer look at the standard neoclassical growth model with constant elasticity of intertemporal substitution. It demonstrates that this model can generate either increasing growth rates and international divergence in income levels, or diminishing growth rates and international convergence. The actual outcome will depend on the initial conditions that existed before the process of economic growth began. Furthermore, the paper shows that both theoretical arguments and empirical facts point to initial conditions that are exactly the opposite of those needed to generate the standard predictions of the model.

Second, the paper examines an alternative growth model. The alternative model is a generalized version of the neoclassical growth model, with increasing rates of intertemporal substitution due to a Stone-Geary type of utility. Both micro and macro studies in recent literature find strong evidence for this type of preferences. The dynamics of economic growth generated by this growth model are consistent with endogenously determined initial conditions. Moreover, they are in accord with the historical patterns of growth rates, capital flows, savings rates, and labor supply. This growth model generates these dynamics without the need to assume heterogeneous preferences, externalities, or increasing returns.

This paper has important policy implications regarding the effectiveness of different strategies of development, explaining, for example, why a strategy of development based on capital flows to developing countries cannot have long-term effects. The model presented in the paper also suggests an alternative strategy of development: assist poor countries in getting richer by helping them to increase the level of technology and of knowledge, including human capital.

JEL Classification Numbers:
C51, E31, E52

Summary of
WP/94/139

"Asymmetric Effects of Economic Activity on Inflation: Evidence
and Policy Implications" by Douglas Laxton, Guy Meredith, and David Rose

This paper examines the evidence on asymmetries in the relationship between economic activity and inflation. As previous theoretical and empirical work provides little guidance as to the form that such asymmetries might take, alternative models are estimated using pooled Group of Seven data for the period 1967-91. The paper finds strong evidence in favor of a nonlinear relationship, in which the effect of excess demand in raising inflation is much stronger than that of excess supply in reducing it. In addition, the preferred specification implies an upper limit on the level of output in the short run: as output approaches this level, inflationary pressures rise without bound. The paper also shows that the absence of strong evidence in favor of nonlinearities in previous studies may have been due to a misspecification of the level of potential output. In particular, in a stochastic economy with an asymmetric inflation-activity trade-off, trend output lies below the level of output at which there is no tendency for inflation to either rise or fall; ignoring the difference between these two concepts is shown to reduce the power of tests of the nonlinear hypothesis.

The existence of inflation-activity asymmetries has important implications for demand-management policies. Simulations of a small macroeconomic model indicate that, in a linear world, it may be desirable for policymakers to postpone responses to positive shocks to aggregate demand. In a nonlinear world, in contrast, it is preferable to respond quickly to incipient inflationary pressures, as deep recessions are needed to offset periods of mild excess demand. Minimizing the initial rise in demand thus reduces the cumulative loss in output. This is an example of a more general proposition about the role of demand-management policies. Specifically, in a nonlinear world, the average level of output lies below its potential level by an amount that depends on the variance of output and the degree of convexity of the inflation-activity trade-off. By adopting rules that minimize the variance of output, policymakers can raise the average level of output of the economy over time.

JEL Classification Numbers:
F11, F14, F31, F32

Summary of
WP/94/140

"Devaluation, Relative Prices, and International Trade:
Evidence from Developing Countries" by Carmen M. Reinhart

Developing countries have often resorted to devaluations to reduce large external imbalances, correct perceived "overvaluations" of the real exchange rate, increase international competitiveness, and promote export growth. The 50 percent devaluation in early 1994 by the CFA franc zone countries stands out as an example of such a policy. However, a devaluation can accomplish these tasks only if, in the first place, it translates into a real devaluation and, second, if trade flows respond to relative prices in a significant and predictable manner.

With regard to the response of the real exchange rate to a nominal devaluation, the empirical literature appears to agree that, indeed, in most devaluation episodes the real exchange rate responds significantly to the nominal exchange rate shock, at least in the short run. As for the impact of real exchange rate changes on trade flows, an older empirical literature on trade commonly found evidence that relative prices play a significant role in the determination of trade flows. However, some of the recent studies that have taken into account the time-series properties of these variables have arrived at a very different conclusion, namely, that no systematic relationship between trade balances and relative prices is discernible from the data.

This paper re-examines the role of relative prices in affecting trade and therefore, implicitly, the effectiveness of devaluation policies, in light of the recent time-series literature that deals with variables that have unit roots and no well-defined limiting distributions. Several empirical regularities emerge. First, the analysis suggests that, in accordance with standard microeconomic theory, income and relative prices are, more often than not, both necessary and sufficient to pin down steady-state trade flows. However, the "traditional" specifications appear to fare better when modeling developing country demand for imports than when applied to industrial country demand for developing country exports. This finding may suggest that a fruitful area to investigate is trade among developing countries. Second, for the majority of cases, relative prices are found to be a significant determinant of the demand for imports and exports. Third, although relative prices have a predictable and systematic impact on trade, price elasticities tend to be low, in most instances well below unity. This result suggests that large relative price swings are required to have an appreciable impact on trade patterns. Finally, industrial country income elasticities are well above their developing country Asian and Latin American counterparts, suggesting that in a scenario of balanced growth the developing country trade balance should improve. However, this result does not hold for Africa, most likely because of the high primary commodity content of African exports.

JEL Classification Numbers:
F31, F39, G28, O16

Summary of
WP/94/141

"Foreign Exchange Risk Regulation: Issues for
Industrial and Developing Countries" by Philipp Hartmann

In light of the internationalization of banking and the more general liberalization of financial markets, together with the increased importance of floating exchange rates, the Basle Committee on Banking Supervision and the European Union took steps recently to harmonize national prudential regulations on foreign exchange risk by applying the capital-adequacy approach already adopted for the 1988 Basle Accord on credit risk. The increasing number of developing countries liberalizing their foreign exchange markets has also led to consideration of quantity restrictions on banks' capacity to take open foreign exchange positions. This paper explores the theoretical considerations underlying these regulations and restrictions, and evaluates their effectiveness and possible impact on the workings of foreign exchange markets, based on a sample study of 41 developed and developing countries.

The theoretical literature on banking regulation is rather critical of the approach that imposes limits on bank portfolios, whether or not the limits are related to capital. Possible spillovers (or expected external costs) from failures in one jurisdiction to another provide a rationale for coordinating regulations in countries with internationally active banks. However, because it is not established that the Basle approach decreases international systemic risk, optimal coordination could involve considering both the abolition and introduction of capital-adequacy regulations.

This paper suggests that the proposal to amend the 1988 Basle Accord on foreign exchange risk--although potentially improving harmonization of banking regulations--contains several problems. Market risks related to foreign exchange business would not be comprehensively covered, and disincentives would discourage the use of the more market-based method to determine position limits, and thus the exercise of modern portfolio management. These shortcomings stem partly from anticipated adverse effects on exchange rate volatility of the uniform use of the proposed simulation technique, which, in turn, point to a policy dilemma that can arise in attempting to establish prudential foreign exchange risk regulations while managing exchange rates.

In addition, the theoretical literature does clearly indicate whether the capital-adequacy approach is applicable to developing countries. Optimal timing of reform suggests that it might not be advantageous for an incipient foreign exchange market to introduce restricting regulations. Nevertheless, 26 developing countries in the sample collected use foreign exchange position limits, although often for reasons other than prudential regulation. Some limit banks' long positions more than their short positions in order to alleviate devaluation pressures, clearly contradicting prudential considerations. Moreover, at least one developing country has lowered position limits in order to increase interbank trading activity. The experience of these countries suggests that there is a need--perhaps not limited to developing countries--to distinguish prudential exposure limits from position limits used as capital controls.

JEL Classification Numbers:
C82, F17

Summary of
WP/94/142

"Improving the Estimation Methodology of Monthly
Data in Direction of Trade Statistics" by Xiaoning Gong

As one of the Fund's major statistical publications, Direction of Trade Statistics (DOTS) has been widely used within and outside the Fund. Compared with collections of similar data provided by other international agencies, DOTS is well recognized for its coverage and currentness. Its high coverage of world trade and currentness of statistical information are based in large measure on estimation of the direction of trade for late-reporting and nonreporting countries from their trade partners' data on a monthly basis. The accuracy of the DOTS database thus depends on two factors: the availability and quality of the trading partners' data and the estimating procedures incorporated in the system. Because of the low coverage of monthly reporting, the estimating procedure plays a role of increased importance in the compilation of DOTS.

This paper reports the results of an assessment of the estimating procedures and proposes improvements in the underlying methodology. Two questions are analyzed: How efficient is the current DOTS estimation methodology in using the reported information in the form of total trade in International Financial Statistics (IFS); and how can the effectiveness with which DOTS estimates a country's trade data by its partners' reports be improved? In the process of pursuing answers to these questions, the study sheds light on the outlines of a simpler, more efficient, data-driven, and algorithmic estimation methodology for DOTS.

Some of the basic findings are as follows: DOTS reported trade data agree more closely with IFS in total trade than DOTS estimated data. The current uniform 10 percent CIF/FOB factor is significantly different from the actual discrepancies between a country's reported exports and imports and the respective imports and exports reported by its trade partners. Therefore, applying these factors to estimate trade values for late-reporting and nonreporting countries by use of their partners' data is misleading and inaccurate. This study also shows that in obtaining the estimates of the bilateral trade between DOTS nonreporting countries, the current methodology makes too little use of cross-sectional information in the form of total trade figures from IFS. An analysis of variance of the total trade between DOTS and IFS reveals that there is a systematic bias in DOTS estimation against the IFS standard.

Three ways to improve the DOTS estimates are proposed. First, where possible, the IFS reported total trade figures should be distributed among the trading partners on the basis of shares of trade derived from partner reports. Second, the uniform 10 percent CIF/FOB factor should be replaced by the actual historical difference between the FOB value of exports and the CIF value of imports, when using the trade partner's data for the estimation. The third improvement applies to the situation when reported partner data are insufficient for partner estimation but IFS total trade figures are available. In this case it is proposed that raking methods such as the so-called RAS procedure be applied, in concert with estimates of bilateral trade from time-series cross section models that make use of past information.

JEL Classification Numbers:
J11, J21, O47

Summary of
WP/94/143

"Demographic Dynamics and the Empirics of Economic Growth" by Michael Sarel

This paper examines the effects of demographic dynamics on the measured rates of economic growth. The presence of strong demographic dynamics affects the measurements of the differences in economic performance both across countries and over time. Having better measures of economic growth is extremely important for improving our understanding in this area and has direct policy applications. This paper attempts to improve the empirics of economic growth by taking full account of the effect that demographic dynamics have on economic growth. The methodology used in this paper is unique in that it relies on macro rather than micro data.

The principal result of this paper is the construction of a panel data base covering 119 countries for the period 1960-85 that includes measures of economic growth that are free of demographic effects. Other significant findings include a function that describes how productivity of labor varies with age and a panel data base of average effective labor supply per person, covering both past and future periods, up to the year 2025.

JEL Classification Numbers:
O31, O40

Summary of
WP/94/144

"North-South R&D Spillovers" by David T. Coe,
Elhanan Helpman, and Alexander W. Hoffmaister

This paper examines the extent to which less developed countries that hardly invest in research and development themselves benefit from the R&D that is performed in the industrial countries. Recent theoretical arguments suggest that international trade plays an important role as a transmission channel for R&D spillovers to the less developed countries. This study provides quantitative estimates of these effects for a group of 77 developing countries based on equations that relate a developing country's overall productivity to the foreign R&D capital stock, the share of imports from industrial countries in the developing country's GDP, and the secondary school enrollment rate. The foreign R&D capital stock consists of a weighted average of the domestic R&D capital stocks of 22 industrial countries with which the developing country trades, using bilateral import shares with the industrial countries as weights.

The results imply that a developing country's total factor productivity is larger the greater is its foreign R&D capital stock, the more open it is to trade with the industrial countries, and the more educated is its labor force. In addition, a developing country has higher productivity when its trade is more biased towards industrial countries that have large cumulative experiences in R&D. A developing country with a larger import share in GDP or a higher secondary school enrollment rate is also more productive. In the preferred specification, the foreign R&D capital stock only affects productivity when interacted with the import share. This implies that a country that is more open to trade derives a larger marginal benefit from foreign R&D, and a country that has a larger foreign R&D capital stock gains more productivity from a marginal percentage increase in imports.

The estimated elasticities suggest that the R&D spillovers from the North to the South are significant and substantial. The implied rates of return--the rise in real GDP of the developing countries resulting from a 100 U.S. dollar increase in the domestic R&D capital stock of an industrial country--are large. They suggest, for example, that an addition of 100 dollars to either the U.S. or Japanese domestic R&D capital stock raises total GDP in the 77 developing countries as a group by almost 25 dollars. The paper concludes that R&D spillovers from the industrial countries in the North to the less developed countries in the South are substantial.

JEL Classification Numbers:
C22, C49, F14

Summary of
WP/94/145

"China's Imports: An Empirical Analysis Using Johansen's
Cointegration Approach" by Mingwei Yuan and Kalpana Kochhar

A very important component of China's economic transformation, which began in 1978, has been the process of "opening up" to the outside world. Consequently, the role of external trade in China's economy has grown dramatically in the last 15 years. The main feature of China's foreign trade policy during this period has been an emphasis on the promotion of exports to generate foreign exchange, coupled with a relatively restrictive and managed import regime, although the trade system has been progressively liberalized as part of the reform process. The focus of this paper is on the behavior of imports--which is specified as functions of real economic activity, relative prices, and foreign exchange reserves (the latter as a proxy for the use of quantitative import controls)--during the 1980-92 period. Specifically, the paper estimates the long-run and short-run determinants of China's imports by applying Johansen's generalization of the cointegration and error-correction approach to time series analysis.

The results show that imports depend positively on the level of foreign exchange reserves and negatively on relative prices, both in the short and long run. Also, the paper finds that long-run output elasticity of imports is considerably smaller than in the short run, suggesting that some import substitution has taken place over time. Parameter stability tests indicate that the estimated parameters of the short-run relationship are stable over the sample period. A comparison of the forecasting ability of the Johansen error-correction model with a conventional partial adjustment model shows that the former predicts the turning points with a greater degree of accuracy than does the latter.

JEL Classification Numbers:
E52, E31, E37

Summary of
WP/94/146

"A Monetary Impulse Measure for Medium-Term Policy
Analysis" by Bennett T. McCallum and Monica Hargraves

This paper proposes a measure of monetary impulse that is intended to reflect the medium-term inflationary implications of a country's current monetary policy. The measure has been designed to be relatively uniform across the major industrial countries, and it could serve as a complement to the country-specific indicators that are relied upon for policy analysis and discussion.

The proposed measure consists of the growth rate of the monetary base, adjusted for reserve requirement changes and augmented by an implicit forecast of future growth rates of base velocity. Because this forecast is based on past velocity growth--its average value over the previous four years--the impulse statistic reflects an easy-to-calculate measure of a variable that could be accurately controlled by any central bank that chose to do so. Other controllable reserve aggregates could be considered instead, but the monetary base has the desirable property of reflecting the effect of open market purchases on both reserves and currency. Thus, if adjusted for changes in reserve requirements, the base provides a reasonably comprehensive summary measure of the actions of the central bank. The velocity adjustment term is designed to incorporate effects of technological and regulatory change in the payments and financial industries, and thus the impulse measure should also be useful for analyzing policy stances in the future.

Given the velocity-growth feature of the proposed measure, its magnitude at any time will reflect the implied medium-term growth rate of nominal GDP. The inflationary implications are then readily obtained from a comparison of this figure with the trend growth rate of real GDP for the economy in question. Figures for each of the seven major industrial countries present time series of the impulse measure together with bands reflecting an appropriate sample average annual rate of real GDP growth plus 1 to 3 percentage points. These bands then represent a low-inflation range centered on a rate of 2 percent. The figures serve as the basis for a discussion of the inflationary experiences of 1965 through 1993 for each of the economies and suggest that the impulse measure usefully characterizes monetary policy behavior and its consequences over those years.

To assess the impulse measure relative to other widely used monetary indicators, an additional set of figures for each country presents the impulse measure together with time series on consumer price inflation, the yield curve slope, and growth in a broad monetary aggregate. The impulse measure tracks inflation much more consistently over time than does the yield curve slope indicator, although changes in the yield curve slope have served in some periods as a signal of a change in monetary stance. The proposed impulse measure performs at least as well as the broad money growth measure in almost all countries, and in several cases the impulse measure signals future inflation more closely and more consistently over time.

JEL Classification Numbers:
E43, F31, F33

Summary of
WP/94/147

"The Credibility of the United Kingdom's Commitment
to the ERM: Intentions Version Actions" by Paul Masson

"Credibility" is defined in the paper as the likelihood that policy commitments will be carried out, as viewed by private agents. This concept of credibility is viewed as having two components: the private sector's assessment of the government's "type"--with respect to its commitment to fighting inflation--and, given the type of government, an assessment of the probability that an optimizing government will actually decide to carry out its announced policies in the face of adverse shocks. A formal model assessing the type of government and the policy choice that it will make is developed, which is then applied to the credibility of the U.K. commitment to its deutsche mark parity during the October 1990-September 1992 period of exchange rate mechanism (ERM) membership. It is assumed that private agents perceive that there are two types of government, which differ by the importance attached to fighting inflation, but that they do not know which one applies. A crucial assumption is made that even a government that is fully committed to fighting inflation also attaches some cost to unemployment.

The violence and suddenness of the September 1992 crisis have naturally raised the issue of self-fulfilling speculation. Was the ERM crisis due to a speculative attack that took on a life of its own, rather than to fundamentals? The model allows for the possibility of multiple equilibria and, hence, of self-fulfilling attacks. In particular, unemployment is assumed to depend on exchange rate surprises: an unexpected devaluation will tend to stimulate employment. Conversely, if private agents expect a devaluation, but the authorities do not change the parity, there are employment losses. Therefore, a "credibility crisis," in which, for instance, investors doubt that the government is committed to a particular parity or gives as much weight to inflation as it says that it does, may make the costs of maintaining the parity very high, if the government also cares about unemployment, as is assumed. This circumstance may then trigger a devaluation.

The model is tested by using Kalman filter estimation to account for the variation of credibility over time. The estimates suggest that at least in the case of the United Kingdom, lack of credibility in the summer of 1992 was due not to doubts about the type of government, that is, its commitment to the ERM, but rather to concerns about the unemployment costs of maintaining the parity. Consequently, even a government committed to the ERM might not want to continue to bear those costs. In fact, continuing downward pressure on sterling and upward pressure on interest rates made the costs too high to bear, and the pound sterling was floated on September 16, 1992. Although speculation made the defense of the pound sterling more difficult, the model estimates suggest that speculation was linked to fundamentals and, hence, was not purely self-fulfilling.

JEL Classification Numbers:
E61, E52, E58

Summary of
WP/94/148

"The Coordination of Domestic Public Debt and Monetary Management in
Economies in Transition--Issues and Lessons from Experience"
by V. Sundararajan, Hans J. Blommestein, Peter Dattels,
Ian S. McCarthy, and Marta Castello-Branco

The coordination of objectives, instruments, and institutional arrangements of public debt and monetary management assumes particular significance in economies in transition. Such coordination can be achieved either through the pursuit of joint actions to achieve commonly shared objectives or, where strict institutional separation of objectives, functions, and instruments exists, through the work of market forces. Because financial markets are underdeveloped in economies in transition, the objectives and operations of monetary and debt management cannot be strictly separated. Rather, the development of financial markets--along with monetary control--is a common objective linking the monetary and fiscal authorities.

In the process of financial market development, the relative roles of the monetary and fiscal authorities need to be delineated and developed in the areas of primary debt issuance, secondary market operations, and reserve money and government debt programming. This paper surveys the key institutional and operational arrangements for such delineation and coordination of functions. These include the role of debt and monetary management committees in coordinating objectives and instruments; procedures for sharing information on, and forecasting variations in, government cash balances; legal and administrative arrangements for limiting central bank credit to the government; rules and procedures for the treatment of central bank profits and losses; the appropriate division of debt-management responsibilities between various agencies; and the legal underpinning and institutional infrastructure for secondary markets in government securities.

These arrangements and structures will vary across countries depending on sociopolitical factors, efficiency considerations, policy objectives, and the stage of financial market development. Proper arrangements for coordination, however, play a key role in fostering financial market development in economies in transition. In such economies, with no secondary markets in government securities initially, primary market issues of government debt are often used for monetary purposes, calling for much closer day-to-day collaboration between the monetary and fiscal authorities. The effective use of primary debt issues for monetary management requires appropriate selling techniques and supporting use of other monetary instruments to both encourage market development and ensure monetary control. This coordinated development of primary market arrangements and market-based monetary management creates incentives for secondary markets to grow. The authorities can further encourage secondary markets in government securities by providing transparent and equitable system for regulating and supervising markets; developing an efficient clearing and settlement system; fostering an appropriate market micro-structure, including the role of "market-makers"; and managing market liquidity actively with market-based instruments.

JEL Classification Numbers:
K39, H61

Summary of
WP/94/149

"Toward a Framework for a Budget Law for Economies in Transition"
by Bill Allan

Many of the economies in transition have not yet established a comprehensive legal framework for public expenditure management. Such a framework is a necessary basis for building public expenditure management institutions. One option could be to model budget legislation in economies in transition on that of one or several of the OECD countries. The budget legislation of Western industrialized economies, however, was largely developed at a time when compliance with parliamentary appropriation was the main objective--and relatively few countries have revised their budget legislation to deal with the concerns of modern economies regarding macroeconomic management and efficient use of resources. Many aspects of budget legislation in these countries are, of course, relevant to economies in transition. It is argued, however, that these economies need a legal framework that covers all of the issues of fiscal management more explicitly than the framework of most industrialized countries--primarily because economies in transition lack an institutional structure that can effectively use administrative measures to deal with the macroeconomic and efficiency aspects of fiscal management.

This paper discusses principles of public expenditure management in relation to budget legislation, reviews budget legislation in a selected group of industrialized countries, and recommends elements to be included in the budget legislation of economies in transition. The paper places particular emphasis on three points. First, comprehensive coverage of the financial operations of general government--in particular, budget legislation--should encompass key aspects of the operation of so-called extrabudgetary funds. Second, the management role of the ministry of finance--or other relevant agency--should be explicitly stated, particularly in relation to public borrowing, cash management, and execution of the budget. Third, the budget should be presented in a macroeconomic framework, and explicit upper limits for the deficit and bank financing of the government deficit should be stated in the annual budget law.

JEL Classification Numbers:
E65, I30, P21

Summary of
WP/94/150

"Unemployment Hysteresis, Wage Determination, and Labor Market Flexibility:
The Case of Belgium" by Reza Moghadam and Caroline Van Rijckeghem

This paper examines the potential contribution of unemployment hysteresis theories to the understanding of the Belgian labor market. It gives an overview of the Belgian labor market, reviewing the indexation system and the wage bargaining process. It estimates models of wage determination using aggregate data (1970-90) and firm-level panel data (312 manufacturing firms during 1978-84).

The time-series results suggest that there is strong persistence in unemployment and that it occurs primarily because the long-term unemployed cease to exert downward pressure on wages. The results also show that the suspension of indexation during 1982-86 had a significant and negative long-run impact on real wages. Furthermore, the two-yearly bargaining round and the indexation system induce long lags in wage determination.

The panel results provide evidence of insider power in wage determination but also indicate that the industry-wide and national unemployment rates continue to play a role in wage determination. However, as with the time-series results, this impact diminishes when the proportion of long-term unemployed increases.

The policy implications are threefold. First, the finding that the long-term unemployed exert no downward impact on wages points to the usefulness of tightening up the benefit system in order to encourage the unemployed to seek jobs, and of providing targeted training and employment opportunities. Second, insider power in wage determination needs to be reduced to help employment generation by, for example, reducing hiring and firing costs or removing entry barriers to new firms. Third, insider power suggests the need for flexibility in applying indexation during a recession to prevent layoffs that, given an insider wage setting, would become irreversible. Recent initiatives, including the introduction of a competitiveness norm for indexation and labor market programs aimed at the long-term unemployed and the young, such as the *plan d'accompagnement* and the *plan d'embauche des jeunes*, are consistent with these policy implications.

JEL Classification Number:
F3

Summary of
WP/94/151

"Foreign Exchange Hedging with Synthetic Options
and the Interest Rate Defense of a Fixed Exchange Rate Regime"
by Peter M. Garber and Michael G. Spencer

The usual prescription for the defense of a fixed exchange rate during a speculative attack is aggressive sales of foreign currency on the spot and forward markets, combined with increases in short-term interest rates of a sufficient magnitude to squeeze speculators who are short in the currency. Two developments in international financial markets in recent years may have reduced the effectiveness of this advice. First, institutional and other large investors have diversified their portfolios internationally. Consequently, the potential exposures to currency risk are growing, and also the potential selling pressure if the ability of the authorities to maintain a fixed exchange rate comes into question. Second, the growth in the markets for foreign exchange derivatives has both improved the ability of investors to hedge their exposures and provided instruments through which speculators can take highly leveraged positions against weak currencies.

This paper discusses the possibility that the operations of banks and nonbanks to hedge their currency exposures may weaken the effectiveness of the classic interest rate defense. The focus is on market and central bank behavior in the last moments of a fixed exchange rate regime. In addition to providing powerful tools for speculation, options-pricing models can be used by banks and investors to construct synthetic currency put options by trading regularly in the cash markets. These synthetic options provide a hedge against exchange rate changes if the positions can be adjusted continually. In the presence of this dynamic hedging, an increase in interest rates to defend against a speculative attack may automatically trigger even more selling of the currency that is under attack. The paper finds that interaction between the timing of different trading strategies--dynamic hedging programs and the reaction of speculators who are caught by the interest rate increase--is crucial to the outcome of the central bank's policy. If the volume of selling motivated by dynamic hedging overwhelms that of the purchases by speculators seeking to close out their positions, the central bank may reach its credit limits with commercial banks or its own position limits, forcing it to abandon the fixed exchange rate. However, raising rates gradually in an interest rate defense may immunize the central bank against being pushed beyond its position limits.

JEL Classification Numbers:
E0, J3, J5

Summary of
WP/94/152

"Shocks and Structural Breaks: Labor Market Reforms
in the United Kingdom" by Ramana Ramaswamy and Eswar Prasad

Radical labor market reforms were initiated in the United Kingdom in the early 1980s. These reforms included legislation to curb industrial disputes and measures to decentralize wage bargaining. This paper evaluates the impact of these reforms on the growth of labor productivity, the responsiveness of employment to variations in output, the rate of wage inflation, and the trade-off between wage inflation and unemployment. The effects of the reforms on the aggregate economy and on the manufacturing sector are analyzed separately. The manufacturing sector is of particular interest as the legislation concerning unions had the most direct impact in manufacturing--where unions have traditionally had a stronger presence--than in other sectors.

The labor market reforms resulted in a significant increase in the rate of growth of labor productivity in manufacturing, but not in the aggregate economy. This paper argues that the increase in the growth rate of manufacturing productivity after 1980, as well as the improved speed of labor adjustment to variations in output, can be attributed largely to the success of the reforms in reducing industrial disputes and removing a number of structural impediments in the labor market.

However, the labor market reforms did not succeed in moderating real wage growth or improving the trade-off between wage inflation and unemployment. This is attributed to two main factors. First, unlike a fully market-based system, a decentralized wage-bargaining system with unions is unlikely to produce wage moderation. Second, when relative wage comparisons are an important part of the bargaining norms, decentralized bargaining may prove more inflationary than a system with some implicit coordination. Both standard econometric techniques and recent developments in labor market theory are used to support these arguments.

JEL Classification Numbers:
G12, E31, E44, C32

Summary of
WP/94/153

"Asset Prices, Financial Liberalization, and the Process
of Inflation in Japan" by Alexander W. Hoffmaister and Garry J. Schinasi

This paper examines the relationship in Japan between asset price inflation and macroeconomic variables, and in particular monetary factors. The focus is on land price inflation, rather than stock price movements; while stock prices are difficult to model empirically, land prices generally move systematically in response to changes in economic fundamentals. Several related questions are investigated: (1) was there a structural break in the way monetary factors affected asset prices in the 1980s; (2) did monetary factors contribute importantly to asset price inflation in the 1980s; (3) what accounted for the divergent behavior of asset prices and consumer prices; and (4) is there support for the view that the effects of monetary factors were "concentrated" in asset markets rather than in goods markets?

The paper finds strong evidence of a shift in the relationships between monetary factors and land prices in the early 1980s: in particular, the parameters of an estimated vector autoregression imply that the transmission of monetary factors to asset prices was greater in the 1980s than in the 1970s. A key conclusion is that monetary shocks led to more asset price inflation and less consumer price inflation in 1984-93 than during 1970-83. This "shift in regime"--which is largely attributed to the effects of financial liberalization--concealed the true, unsustainable, nature of the rise in asset prices in the late 1980s, which may explain why policymakers did not fully perceive the implications of allowing the asset price inflation to proceed as far as it did.

JEL Classification Numbers:
E21, E23, E65, P20, P22, P24, P27

Summary of
WP/94/154

"How Large Was the Output Collapse in Russia? Alternative
Estimates and Welfare Implications" by Evgeny Gavrilentov and Vincent Koen

While production has indeed collapsed in many sectors of the Russian economy since the late 1980s, the official figures seem to exaggerate the size of the fall in aggregate output that has occurred so far in the course of the transition. In addition to strong anecdotal evidence, this presumption is based on the recognition by the statistical authorities themselves that, as in other transition economies, the tools at their disposal fail to capture a significant component of economic activity; on the relative resilience of household consumption and electricity use; and on discrepancies between financial and production indicators.

Official real GDP data in Russia are derived only from the production side. Real GDP is re-estimated here from the demand side using a set of very conservative assumptions that deliberately minimize the size of the revision. A lower bound for real GDP is thus computed. In cumulative terms, it turns out that real GDP declined by no more than one third between 1989 and 1994, rather than by one half as implied by the official data.

For a number of reasons, the severe depression in output did not have a commensurate negative impact on household welfare. First, investment declined much more than consumption, partly as a reflection of prior overaccumulation of capital. Second, much of the consumer goods that are no longer produced were not desired by consumers. Third, price liberalization reduced searching and queuing costs and improved the variety and quality of supply. Last, the demise of central planning and the gradual hardening of budget constraints on enterprises cut down on waste and other forms of inefficient resource use.

JEL Classification Numbers:
O15, O40, H20

Summary of
WP/94/155

"Human Capital Flight: Impact of Migration on
Income and Growth" by Nadeem U. Haque and Se-Jik Kim

This paper examines the impact of the migration of human capital on the growth and levels of incomes in the context of an endogenous growth model. A two-country endogenous growth model with heterogeneous agents is used to study the impact on growth and incomes of migration of human capital that could arise from wage differentials. The paper shows that wage differentials can truncate the distribution of talent in the country of emigration in the presence of migration and assimilation costs. The after-tax wage differential between the home and the foreign country determines where the domestic human capital distribution will be truncated: the higher the tax differential, the lower the point of truncation. This point of truncation is reduced with decreases in migration and assimilation costs, as well as with increases in average levels of education in the home country.

It can be shown that "brain drain" reduces the growth rate of the effective human capital that remains in the economy and, hence, generates a permanent reduction of per capita income growth in the home country. Brain drain also can induce an increase in the growth rate of the country to which migration has taken place although the effect can vary over time, depending on the evolution of the ratio between the average human capital in the two countries. The paper also shows that migration of human capital can lead in the long run to differences in both the growth rates and the levels of per capita incomes across countries. The magnitude of the adverse impact of the brain drain depends on the contribution of the quality of differing levels of human capital in the production process. Unfortunately, this is an area on which little theoretical work has been done, and for which it is extremely difficult to develop empirical evidence.

The paper also analyzes the impact of policies aimed at fostering human capital accumulation by subsidizing education. In a closed economy, a tax-financed increase in education subsidy that preserves the fiscal balance will induce a positive growth effect while, in an open economy (where labor is mobile), such a policy can have a negative impact on growth because migration takes place beyond a particular education level. The optimal policy should take this information into account and, in the presence of migration, allow the subsidy to increase with the education effort up to this level of education.

The analysis presented in this paper has important implications for economic policy in developing countries. For example, demand management, which is an important element of adjustment programs, is frequently achieved by a combination of increased taxes and wage restraints. To the extent that ability is an important determinant of growth, the design of adjustment programs should be concerned with the consequences of such policies for migration.

JEL Classification Numbers:
G14, G18

Summary of
WP/94/156

"Analysis of the Yield on Foreign Exchange Bearer Certificates:
Rationality and Financial Behavior in Pakistan" by Karim Abdel-Motaal

This paper investigates financial market efficiency in Pakistan, which has been undergoing financial sector reform since the late 1980s in the context of its adjustment and reform efforts. The picture that emerges from the behavior of recently liberalized interest rates in Pakistan raises questions at first about the efficiency of financial markets. A seemingly perverse relationship persists between instruments that, in principle, should command identical returns and the positive valuation of instruments that deliver negative real and effective returns. Rupee-denominated assets, such as administratively controlled bank deposits, federal investment bonds, and treasury bills were paying negative average real returns during the period under consideration. Dollar-denominated foreign currency accounts generally also paid negative exchange rate-adjusted returns.

The paper explores this issue using information contained in the secondary market prices of Foreign Exchange Bearer Certificates (FEBCs), which are rupee-denominated government bonds that must be purchased in foreign exchange but may be cashed in either rupees or foreign currency. FEBCs have been paying ex post rates of return that are, on average, negative in real terms and when adjusted for exchange rate devaluation, and lower than the returns on comparable local and international assets. This perverse interest rate structure challenges efficient market propositions, which constitute the basis of finance theory. This perversity is shown to stem from financial regulation and therefore to be consistent with portfolio optimization and efficient arbitrage of return differentials by market agents.

A reduced-form model for FEBC yield is specified as an equilibrium relation between this yield and the returns on local and foreign substitutes, inflation and devaluation expectations, and regulation proxies. The role of the FEBC as a means of relaxing the legal foreign exchange constraint and of transferring funds from the informal to the formal sector is shown to be a significant predictor of yield. Adjusting for these effects, yield sensitivity to local and international rates of return is sustained. Financial reform appears to have increased the impact on FEBC yield of interest rate movements and reduced those of regulation effects.

The model outperforms conventional interest parity specifications as a description of FEBC yield and, in fact, helps explain why the parity theorem fails to hold for Pakistan. Coefficient estimates of the proxies are used to remove the regulation-induced discount in FEBC yield. Adjusted nominal and real yield series are constructed, indicating that a rational interest rate structure underlies regulation-laden rates of return. The FEBC has been paying an adjusted yield that is positive in real and effective terms and that, on average, is well above LIBOR.

JEL Classification Numbers:
F34, 052

Summary of
WP/94/157

"Financing the Transition of Previously
Centrally Planned Economies: Macroeconomic Effects
on Western Europe" by Steven Symansky and Leonardo Bartolini

This paper takes a new look at the macroeconomic implications of the financing of Previously Centrally Planned Economies' (PCPEs') transition, based on a multicountry macroeconomic model extended to include a very stylized PCPE block, and allowing for different assumptions on the sources and uses of the capital flows. Under alternative assumptions of the likely developments in external financing of PCPE transition, the study simulates the response of PCPEs to a transfer of capital from the industrial countries, and assesses the potential implications for Western Europe over the next ten years.

Western European capital markets are likely to experience only a mild squeeze from concerted efforts to provide external financing to PCPEs, and most macroeconomic aggregates are likely to suffer shocks significantly smaller than would be expected from a typical business cycle. The results of the simulation suggest that industrial countries could well afford a significant (perhaps 20-fold) increase in financial assistance to PCPEs, before the impact on their capital markets could induce effects of business-cycle magnitude on economic activity and consumption.

Several reasons underlie these conclusions. First, the flow of capital forthcoming from industrial countries to the economies in transition is likely to be modest compared to industrial countries' saving and investment, even when the most generous estimates of *likely* flows are adjusted upwards toward estimates of *needed* flows. Second, projected outflows must be viewed from an intertemporal perspective, an approach that is more likely to capture other potentially beneficial effects that any flow of capital from the West to the East is likely to generate.

JEL Classification Number:
G61

Summary of
WP/94/158

"The Response of Wages and Labor Supply Movements to
Employment Shocks Across Europe and the United States" by Alun H. Thomas

This paper compares the degree of labor market flexibility across geographical regions in the United Kingdom and the United States and across four European countries (France, Germany, Italy, and the United Kingdom). This comparison is motivated by the prospect of European Economic and Monetary Union, within which the ability to vary bilateral exchange rates will be eliminated. This will necessitate a greater reliance on other forms of adjustment for countries within the Union.

The paper uses a multivariate VAR framework to assess the degree to which relative regional and national wages and labor forces adjust to employment shocks. The paper finds that the responsiveness of wages to employment shocks in the United States and in Europe is minimal but that there are large differences in the response of the labor forces in both areas. There is a high degree of interregional migration in the United States, so that when a region experiences a large reduction in employment, a sizable fraction of the labor force moves to surrounding regions. This movement is sufficient to prevent persistent unemployment differences across U.S. regions. In Europe, the German and French economy-wide labor forces and the British regional labor forces adjust to a limited degree to employment shocks, but the magnitude of the adjustment is insufficient to prevent the appearance of persistent unemployment rate differences. There is very little adjustment of the British and Italian economy-wide labor forces to employment shocks.

The paper concludes that Europe must promote measures to stimulate interregional and international migration to facilitate its adoption of a common currency.

JEL Classification Numbers:
F31, F41, G15

Summary of
WP/94/159

"Sterilization of Money Inflows:
Difficult (Calvo) or Easy (Reisen)?" by Jeffrey A. Frankel

After seven years of sharply reduced lending to developing countries, capital inflows once again began to surge in 1990. Although these inflows have gone partly to finance renewed trade deficits in some countries, they have also showed up as renewed surpluses on the overall balance of payments. In many countries, fears that increases in the money supply would be inflationary have prompted the central banks to attempt to sterilize the inflows. For the purposes of this paper, sterilization refers to offsetting policy measures by the central bank to leave the aggregate money supply unchanged.

In the context of the simplest textbook model, this paper reviews the arguments of Calvo and Reisen concerning the ease or difficulty of sterilizing inflows of money to countries undergoing exchange rate-based stabilization and financial liberalization. It concludes that local interest rates are not likely to rise if the source of the disturbance is an exogenous capital inflow but will rise if the disturbance is an increase in money demand or in exports. In every case, sterilized intervention will cause interest rates to be higher than if the inflow took place unsterilized.

Although it is difficult to distinguish the source of a disturbance or its likely duration, an attempt to discern this information is likely to be useful in deciding the appropriate response, regardless of the model.