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## *Editor's Note*

Given the IMF's historical emphasis on issues related to balance of payments adjustment, the analysis of exchange rate dynamics has, over the years, been a key focus of research at this institution. The first research summary in this issue surveys recent contributions by IMF staff to the literature on the *empirical analysis of exchange rates*.

Population aging presents a key policy challenge for many economies—developed as well as developing. The second research summary provides an overview of IMF research on the analytical and practical aspects of *pension reform*.

The country study in this issue is on *Brazil*. This economy underwent a period of turmoil in the late 1990s but has rebounded strongly since then. Recent IMF research on Brazil has helped to provide analytical underpinnings for IMF staff recommendations concerning the difficult policy challenges that this country faces.

This issue includes a summary of the analytical chapters of the April 2002 World Economic Outlook. Also featured are summaries of the proceedings of two recent IMF conferences on poverty reduction strategies.

—Eswar Prasad

*Research Summary*

# Empirical Analysis of Exchange Rates

Hamid Faruqee

*Exchange rates are a core area of the IMF's surveillance responsibilities. In the late 1970s, the IMF's Articles of Agreement were amended to reflect the new reality of floating exchange rates. The revised guidelines made it clear that surveillance would include freely floating rates, in particular, "behavior of the exchange rate that appears to be unrelated to underlying economic and financial conditions." Responding to this challenge, research at the IMF has analyzed exchange rates on several fronts. In an applied context, efforts have focused on developing a multilateral framework for estimating equilibrium exchange rates. Another key component of the research agenda covers the empirical analysis of the nature and determinants of exchange rate fluctuations. This article briefly summarizes recent studies on these topics at the IMF.*

(continued on page 2)

# Pension Reform

Axel Schimmelpfennig

*Existing pay-as-you-go (PAYG) pension systems in many industrial, Latin American, and transition economies are projected to come under pressure over the coming decades as the old-age dependency ratio, that is, the number of pensioners relative to the number of workers, increases dramatically in these countries. Two main strategies to address the demographic problem have been suggested: reforming the PAYG systems or introducing funded systems. For macroeconomic management, demographic changes and pension reforms pose important challenges. This article surveys recent research carried out at the IMF on pension reforms.*

(continued on page 5)

## *In This Issue*

## *IMF Staff Papers*



*IMF Staff Papers*, the IMF's scholarly journal, edited by Robert Flood, publishes selected high-quality research produced by IMF staff and invited guests on a variety of topics of interest to a broad audience, including academics and policymakers in IMF member countries. The papers selected for publication in the journal are subject to a rigorous review process using both internal and external referees. The journal and its contents (including an archive of articles from past issues) are available online at the **Research at the IMF** website at *http://www.imf.org/research*.



## Empirical Analysis of Exchange Rates *(continued from page 1)*

The IMF has established a long tradition of research and operational work to better understand exchange rate behavior, advise countries on exchange rate policy, and assess the prevailing alignment of currencies.[1] A major applied component of this research has been the development of a multilateral framework for exchange rate assessment.[2] In the latest installment of this work, Isard and others (2001) provide an update of the "macrobalance approach" which examines the consistency of exchange rates with medium-term "fundamentals" through the lens of internal and external balance.[3] Internal balance relates to an economy operating at potential output, while external balance refers to an equilibrium saving-investment balance. Thus, the IMF framework for exchange rate assessment relies heavily on current account assessments—the analysis of which has recently been extended to cover a large set of countries, including emerging market economies.[4]

After Meese and Rogoff (1983) set the bar for evaluating empirical exchange rate models, many studies have undertaken the frustrating, if not futile, attempt to outperform a random walk in terms of forecasting accuracy.[5] While success at explaining short-term movements remains elusive, empirical models of exchange rates have fared better over longer time horizons. Tests of the monetary approach to exchange rate determination, for example, have shown some success at long-horizon forecasts, though not without controversy.[6] Based on a simulation study of earlier work, Berkowitz and Giorgianni (2001) find little support for long-horizon predictability of the monetary model among the major currencies, except in rare cases where short-run predictability was also evident.[7]

Another popular empirical approach relies on uncovered interest rate parity, wherein expected changes in the (log) exchange rate correspond, one-for-one, to interest rate differentials. Testing this relationship at both short and long horizons, Chinn and Meredith (2001a, 2001b) obtain sensible coefficients in the latter context with G-7 data, while Flood and Rose (forthcoming) report results that are decidedly mixed for a broader set of countries at higher frequencies.[8] MacDonald and Nagayasu (2000) uncover evidence of a long-run connection between real interest rate differentials and real exchange rates in a panel of 14 industrial countries, suggesting that countries with relatively high real interest rates tend to have relatively weak or depressed real exchange rates.[9]

Testing the validity of purchasing power parity (PPP) as a benchmark for exchange rate behavior has also received considerable attention from researchers.[10] More recently, studies have sought to explain the so-called "PPP puzzle" (summarized by Rogoff, 1996), around the fact that deviations from PPP are extremely persistent.[11] Chen and Rogoff (2002) find that the terms of trade play a significant role in understanding real exchange rate behavior in Canada, Australia, and New Zealand, though a significant degree of "nagging persistence"—that is, the PPP puzzle—remains.[12] Comparing *inter*national to *intra*national real exchange rates, Bayoumi and MacDonald (1999) find that the former group displays mean-reversion while relative prices *within* the U.S. and Canada do not, suggesting that the comparative role of nominal versus real shocks may help explain these differences.[13] Investigating real exchange rate behavior over the business cycle, Chadha and Prasad (1997) identify nominal and real demand shocks (rather than supply shocks) as the primary sources of medium-term variation in Japan's real exchange rate.[14] MacDonald and Ricci (2001, 2002) find that including sectoral productivity and competitiveness measures in their panel estimates substantially reduces the half-life of deviations in the real exchange rate from long-run equilibrium.[15]

Pursuing the issue of long-run equilibrium has led several researchers to consider (stochastic) trends in real exchange rates. Employing a balance of payments framework, a series of papers explore long-run co-movements of real exchange rates with variables such as net foreign assets, the terms of trade, and productivity—where gains in each tend to raise or appreciate the real exchange rate.[16] Using this approach, Alberola and others (forthcoming) construct the bilateral exchange rate implications consistent with their multilateral analysis to generate empirical assessments for currencies inside and outside the euro area.[17] Lane and Milesi-Ferretti (2002b) separate the positive relationship between net foreign assets (NFA) and real exchange rates into two parts: (1) a negative relationship between NFA and the trade balance, and (2) a negative relationship between the trade balance and the real exchange rate.[18] Clark and MacDonald (1999, 2000) further extend the reduced-form approach in several ways to better estimate the permanent component of real exchange rates.[19]

Taking an asset market perspective, Faruqee and Redding (1999) examine possible nonlinear dynamics in G-7 exchange rates based on a noise-trader model.[20] Rapid (nonlinear) adjustment in market rates helps explain the fact that short-run changes in exchange rates are *not* normally distributed but, instead, display excess kurtosis or "fat tails."[21] Based on a simple asset-pricing model with rational expectations, Bartolini and Giorgianni (2001) find excess volatility in bilateral exchange rates for the major currencies, despite placing minimal restrictions on the "fundamentals."[22] Flood and Rose (1999) document that the higher exchange rate volatility accompanying a move toward more flexible rates occurs *without* an underlying increase in the volatility of macroeconomic "fundamentals."[23] They suggest that changes in the structure of financial markets and the role of portfolio balance shocks may be responsible.[24] Jeanne and Rose (2002) present a more detailed theoretical explanation of this universal phenomenon based on a noise-trader model.[25]

Empirical analysis of exchange rates is a daunting challenge to researchers. Nevertheless, as this selection of studies indicates, IMF research continues to make significant contributions to the empirical literature on exchange rate behavior, and these issues will no doubt engage researchers well into the future.

[1]See Jacques J. Polak, "Fifty Years of Exchange Rate Research and Policy at the International Monetary Fund," *IMF Staff Papers*, Vol. 42, No. 4, pp. 734–62, 1995; See also Jeromin Zettelmeyer, "Exchange Rate Regimes in Developing Countries and Emerging Markets," *IMF Research Bulletin*, Vol. 2 (March), 2001.

[2]Paul Masson, Peter Isard, and Hamid Faruqee, "A Macroeconomic Balance Framework for Estimating Equilibrium Exchange Rates," in *Equilibrium Exchange Rates,* Ronald MacDonald and Jerome Stein, eds. (Boston: Kluwer Academic Press, 1999), pp. 103–33; Peter Isard and Hamid Faruqee, eds., *Exchange Rate Assessment: Extensions of the Macrobalance Approach*, IMF Occasional Paper No. 167, 1998; Peter B. Clark, Leonardo Bartolini, Tamim Bayoumi, and Steven Symansky, *Exchange Rates and Economic Fundamentals: A Framework for Analysis*, IMF Occasional Paper No. 115, 1994.

[3]Peter Isard, Hamid Faruqee, G. Russell Kincaid, and Martin Fetherston, *Methodology for Current Account and Exchange Rate Assessments*, IMF Occasional Paper No. 209, 2001.

[4]Menzie Chinn and Eswar Prasad, "Medium-Term Determinants of Current Accounts in Industrial and Developing Countries: An Empirical Exploration," *Journal of International Economics* (forthcoming).

[5]Richard Meese and Kenneth Rogoff, "Empirical Exchange Rate Models of the Seventies: Do They Fit Out of Sample?" *Journal of International Economics*, Vol. 14 (February), pp. 3–24, 1983.

[6]Kenneth Rogoff, "Monetary Models of Dollar/Yen/Euro Nominal Exchange Rates: Dead or Undead?" *Economic Journal*, Vol. 109 (November), pp. F655–F659, 1999; Barry Johnston and Yan

**June 2002**

## IMF Occasional Paper No. 209

### Methodology for Current Account and Exchange Rate Assessments

*Peter Isard, Hamid Faruqee, G. Russell Kincaid, and Martin J. Fetherston*

In exercising its surveillance responsibilities, the IMF makes judgments about the extent to which prevailing exchange rates deviate from levels consistent with medium-run fundamentals. This paper describes a methodology, developed by an interdepartmental Coordinating Group on Exchange Rates (CGER), for assessing exchange rates among industrial country currencies. The assessments employ a multilateral framework, drawing on both a macroeconomic balance approach and purchasing power parity considerations. Although CGER's assessments are not precise, the framework imposes consistency across currencies and over time. The interpretation given to substantial deviations between prevailing exchange rates and their medium-run equilibrium levels emphasizes that such deviations can persist for long periods and do not necessarily establish a case for policy actions, for example, when deviations stem from cyclical considerations. However, these deviations sometimes reveal tensions in the global configuration of current account balances and exchange rates. The paper also describes preliminary work to develop indicators of current account sustainability for emerging market economies.

Detailed contents of IMF Occasional Papers are available at the **Research at the IMF** website at *http://www.imf.org/research.*

## IMF Occasional Paper No. 210

### IMF-Supported Programs in Capital Account Crises

*Atish Ghosh, Timothy Lane, Marianne Schulze-Ghattas, Aleš Bulíř, Javier Hamann, and Alex Mourmouras*

During the 1990s, a number of emerging market countries faced "capital account" crises, in which sudden reversals of capital inflows, reflecting shifts in market sentiment, forced abrupt current account adjustments, often with pervasive macroeconomic consequences. Although concerns about the sustainability of external policies played a role in crisis propagation, it does not explain the magnitude of the adjustments. Other vulnerabilities, such as public debt dynamics, a risky public debt management strategy, or pervasive financial sector weaknesses were critical in changing investor confidence. The paper discusses three main issues. First, did the IMF-supported program's design adequately take into account what was distinctive about these crises? Second, can macroeconomic policies influence the adjustment process once a crisis has erupted? Third, what is the role of structural reforms in crisis resolution? Eight IMF-supported programs are reviewed: Turkey (1994), Mexico (1995), Argentina (1995), Thailand (1997), Indonesia (1997), Korea (1997), the Philippines (1997), and Brazil (1998).

Detailed contents of IMF Occasional Papers are available at the **Research at the IMF** website at *http://www.imf.org/research.*



Sun, "Some Evidence on Exchange Rate Determination in Major Industrial Countries," IMF Working Paper 97/98, 1997.

[7]Jeremy Berkowitz and Lorenzo Giorgianni, " Long-Horizon Exchange Rate Predictability" *Review of Economics and Statistics*, Vol. 83 (February), 2001.

[8]Menzie Chinn and Guy Meredith, "Testing Uncovered Interest Rate Parity at Short and Long Horizons" (unpublished; Washington: IMF), 2001a; idem, "Long Horizon Uncovered Interest Rate Parity," NBER Working Paper No. 6797, 2001b; and Robert P. Flood and Andrew K. Rose, "Uncovered Interest Parity in Crisis: The Interest Rate Defense in the 1990s," *IMF Staff Papers* (forthcoming).

[9]Ronald MacDonald and Jun Nagayasu, "The Long-Run Relationship Between Real Exchange Rates and Real Interest Rate Differentials: A Panel Study," *IMF Staff Papers*, Vol. 47, No. 1, pp. 89–102, 2000.

[10]Paul A. Cashin and C. John McDermott, "An Unbiased Appraisal of Purchasing Power Parity," IMF Working Paper 01/196, 2001; Karl Habermeier and Mario Mesquita, "Long-Run Exchange Rate Dynamics: A Panel Data Study," IMF Working Paper 99/50, 1999; Jun Nagayasu, "Does the Long-Run PPP Hypothesis Hold for Africa? Evidence from Panel Co-Integration Study," IMF Working Paper 98/123, 1998.

[11]Kenneth Rogoff, "The Purchasing Power Parity Puzzle," *Journal of Economic Literature*, Vol. 34, pp. 647–68, 1996.

[12]Yu-chin Chen and Kenneth Rogoff, "Commodity Currencies and Empirical Exchange Rate Puzzles," IMF Working Paper 02/27, 2002.

[13]Tamim Bayoumi and Ronald MacDonald, "Deviations of Exchange Rates from Purchasing Power Parity: A Story Featuring Two Monetary Unions," *IMF Staff Papers*, Vol. 46, No. 1, pp. 89–104, 1999;

[14]Bankim Chadha and Eswar Prasad, "Real Exchange Rates Fluctuations and the Business Cycle: Evidence from Japan," *IMF Staff Papers*, Vol. 44, No. 3, 1997; Pierre-Richard Agenor, Alexander W. Hoffmaister; Carlos Laranjo Medeiros, "Cyclical Fluctuations in Brazil's Real Exchange Rate: The Role of Domestic and External Factors ," IMF Working Paper 97/128, 1997.

[15]Ronald MacDonald and Luca Ricci, "PPP and the Balassa Samuelson Effect: The Role of the Distribution Sector," IMF Working Paper 01/38, 2001; idem, "Purchasing Power Parity and New Trade Theory," IMF Working Paper 02/32, 2002; Mark De Broeck and Torsten Slok, "Interpreting Real Exchange Rate Movements in Transition Countries," IMF Working Paper 01/56, 2001.

[16]Hamid Faruqee, "Long-Run Determinants of the Real Exchange Rate: A Stock-Flow Perspective," *IMF Staff Papers*, Vol. 42, No. 1, pp. 80–107, 1995; Philip R. Lane and Gian Maria Milesi-Ferretti, "Long-Run Determinants of the Irish Real Exchange Rate," *Applied Economics*, Vol. 34 (March), pp. 549–53, 2002a.

[17]Enrique Alberola, Susana Crevero, Humberto Lopez, and Angel Ubide, "Quo vadis, Euro?" *European Journal of Finance* (forthcoming).

[18]Philip R. Lane and Gian Maria Milesi-Ferretti, "External Wealth, the Trade Balance, and the Real Exchange Rate," *European Economic Review*, Vol. 46, No. 7, 2002b; "The External Wealth of Nations: Measures of Foreign Assets and Liabilities for Industrial and Developing Countries," *Journal of International Economics*, Vol. 55 (December), pp. 263–94, 2001.

[19]Peter Clark and Ronald MacDonald, "Exchange Rates and Economic Fundamentals: A Methodological Comparison of BEERs and FEERs," *Equilibrium Exchange Rates,* Ronald MacDonald and Jerome Stein, eds., (London: Kluwer Academic Publishers, 1999); idem,"Filtering the BEER: A Permanent and Transitory Decomposition," IMF Working Paper 00/144, 2000; Claudio Paiva "Competitiveness and the Equilibrium Exchange Rate in Costa Rica," IMF Working Paper 01/2, 2001; Tarhan Feyzioglu, "Estimating the Equilibrium Real Exchange Rate: An Application to Finland," IMF Working Paper 97/109, 1997.

[20]Hamid Faruqee and Lee Redding, "Endogenous Liquidity Providers and Exchange Rate Dynamics" *Canadian Journal of Economics*, Vol. 32 (August), pp. 976–94, August 1999.

[21]Lee Redding and Hamid Faruqee, "Asset Markets and Endogenous Liquidity," *Scottish Journal of Political Economy*, Vol. 48 (May), pp. 196–209, 2001.

[22]Leonardo Bartolini and Lorenzo Giorgianni, "Excess Volatility of Exchange Rates with Unobservable Fundamentals," *Review of International Economics*, Vol. 9 (August), 2001.

[23]Robert P. Flood and Andrew K. Rose, "Understanding Exchange Rate Volatility Without the Contrivance of Macroeconomics," *Economic Journal*, Vol. 109 (November) 1999; Kenneth Rogoff, " Perspectives on Exchange Rate Volatility," in *International Capital Flows*, ed. by Martin Feldstein (Chicago: University of Chicago Press and the NBER: 1999), pp. 441–53.

[24]Robert P. Flood and Nancy P. Marion, "Self-Fulfilling Risk Predictions: An Application to Speculative Attacks," *Journal of International Economics*, Vol. 50, No. 1, pp. 245–68, 2000.

[25]Olivier Jeanne and Andrew Rose, "Noise Trading and Exchange Rate Regimes," *Quarterly Journal of Economics*, Vol. 117 (May) 2002.

## Pension Reform *(continued from page 1)*

Under PAYG, each working generation pays for the retired generation's pensions. Typically, PAYG systems pay defined-benefit pensions with the payroll tax set at a level that finances current pensions. In a funded system, each working generation accumulates savings to provide for its own retirement. Funded pensions are typically paid on a defined-contribution basis, that is, they are determined by the rate of return.

As the dependency ratio rises, working generations will face dramatic increases in payroll taxes under existing PAYG systems, unless governments run large deficits. For example, even if the payroll tax in Japan was increased from 17½ percent to 30 percent over the next 50 years, government transfers to the social security system would still double by 2050.[1] Raising payroll taxes by this amount will be politically difficult. Moreover, raising payroll taxes when the demographic shock hits may negatively affect growth by reducing investment, labor force participation, and productivity growth.[2]

Other parameters besides the payroll tax can be adjusted to strengthen PAYG systems. Pension outlays can be lowered by reducing replacement rates, that is, the ratio of pensions to wages, or by moving toward less generous pension indexation formulas that give less weight to wages and more weight to inflation. Raising the retirement age in line with life expectancy would mitigate the effects of the demographic shock. In addition, the payroll tax could be raised by a small amount immediately (prefunding) to accumulate savings that would be used once the demographic shock hits. A combination of these measures, if undertaken early enough, could be sufficient to make existing systems sustainable.[3]

An alternative reform strategy is to replace the PAYG systems with funded systems. The latter are often thought to be superior to PAYG systems mainly because they are more conducive to growth. First, funding leads to increased capital accumulation because it raises national saving. Second, funding increases labor supply because the payroll tax is directly linked to benefits and is thus less distortionary than a PAYG payroll tax, which is usually only weakly linked to benefits. However, replacing PAYG systems with funded systems comes at significant transitional costs. The reform generation needs to provide for current pensioners through the PAYG system while also saving for its own retirement. Whether such a reform can help solve the demographic problem is, therefore, an empirical question. For the United States, Kotlikoff, Smetters, and Walliser (1999) argue that the introduction of mandatory funding would improve the position of future generations substantially, while leaving the reform generation only slightly worse off.[4] In related work, these authors show that transition costs are lower if privatization is voluntary, and, focusing on intragenerational redistribution, privatization can be designed to pose a higher share of the transition costs on those with high lifetime incomes.[5] Cubeddu (2000) finds that the U.S. social security system redistributes in favor of females and noncollege graduates; privatizing social security would reduce this redistributive effect.[6]

The claimed advantages of funding are carefully assessed in a number of studies. Brooks (2000) shows that funding also suffers from the adverse effects of a demographic shock because asset prices fall as their relative supply—which is a function of the dependency ratio—increases.[7] Barr (2000) casts doubts on the link between funding and growth because transition costs of moving from PAYG to funding would largely offset any increase in saving. Moreover, disincentives in ex-

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*Andrea Schaechter*

isting PAYG systems could be removed through design changes.[8] Finally, Valdivia (1999) shows that the welfare gains from longevity insurance provided by PAYG—benefits are paid until death, independent of contributions—outweigh the advantages of funding without such insurance.[9] However, longevity insurance can also be provided in funded systems through annuities.[10]

A critical question is how national saving would react to the introduction of a funded system. Dayal-Gulati and Thimann (1997) find that social security expenditure lowers private saving and the existence of funding schemes increases private saving in a sample of Southeast Asian and Latin American countries.[11] Kramer and Li (1997) show in a dynamic general equilibrium model that PAYG systems can have a negative impact on aggregate saving, income, and wages.[12] For the United States, Walliser (1999) finds that the response of national saving would depend on the details of the reform.[13] Mackenzie and others (2001) argue that changes in national saving, upon replacing PAYG with funding are likely to be small.[14]

The World Bank has suggested a three-pillar pension system which combines the advantages of PAYG and funding.[15] The system's first pillar is mandatory PAYG, providing minimum income during retirement. The second pillar is mandatory funding, ensuring that myopic individuals accumulate savings for retirement. The third pillar is voluntary funding. Hemming (1999) argues that the question of having a mandatory funded pillar in the pension system is a question about the role of government.[16] A paternalistic government may favor mandated funding. A government that leaves more room for individual choice may favor providing only a minimum income during retirement, through a mandatory PAYG pillar. Heller (1998) points out that governments would acquire a conjectural liability when mandating a pension system based on private providers.[17] Hence, moral hazard may distort the behavior of savers and providers. Moreover, conjectural liabilities complicate the assessment of fiscal policy in so far as they affect public sector size, the burden of fiscal measures, and the fiscal stance.

Researchers at the IMF have studied specific pension reform proposals. For example, Agulnik, Cardarelli, and Sefton (2000) find that the proposals for the United Kingdom in the 1998 Pensions Green Paper fall short of obviating further tax increases.[18] IMF staff have analyzed pension systems in several countries, including Greece, the Baltics, the Czech Republic, and Albania.[19] Current pension systems, even after some reforms, still appear vulnerable to the demographic shock. Further reforms should focus on strengthening existing PAYG systems through adjusting the system parameters. The introduction of mandatory funding should only be an additional step. In the case of India, which is not faced with a demographic shock, Gillingham and Kanda (2001) conclude that the pension system requires reform regarding management and administration of pension funds, financial soundness, and the provision of retirement income for the elderly poor.[20]

In addition to the dominant theme of pension reform, IMF staff have examined a number of specific issues. Razin, Sadka, and Swagel (2001) present a model that explains the empirical puzzle of a negative correlation between the dependency ratio and labor taxes as well as the generosity of social transfers.[21] Immigration is shown to help alleviate the demographic burden on pension systems, even when immigrants are low earners and net beneficiaries.[22] Baldacci (2000) suggests a statistical system for the provision of data to monitor the social security reform process.[23] Other IMF research has examined: the effects of social security contributions on the size of the shadow economy; the possible effects of harmonization of social security systems on EU-wide labor mobility; and the effect of measurement errors in the CPI on social security payments in the United States.[24]

[1]Hamid Faruqee and Martin Mühleisen, "Population Aging in Japan," IMF Working Paper 01/40, 2001. See also Manfred Koch and Christian Thimann, "From Generosity to Sustainability: The Austrian Pension System and Options for Its Reform," IMF Working Paper 97/10, 1997.

[2]Karl F. Habermeier and Fabrice Lenseigne, "French Public Finances: Modeling Long-Term Prospects and Reform Options," IMF Working Paper 98/12, 1998.

[3]Sheetal K. Chand and Albert Jaeger, *Aging Populations and Public Pension Schemes*, IMF Occasional Paper No. 147, 1996.

[4]Lawrence Kotlikoff, Kent Smetters, and Jan Walliser, "Privatizing Social Security in the United States," *Review of Economic Dynamics*, Vol. 2, No. 3, pp. 532–74, 1999; see also idem, "Finding a Way Out of America's Demographic Dilemma," NBER Working Paper No. 8258, 2001; idem, "The Economic Impact of Privatizing Social Security," in *Redesigning Social Security*, ed. by Horst Siebert (Tübingen: Mohr, 1998), pp. 327–49.

[5]Lawrence Kotlikoff, Kent Smetters, and Jan Walliser, "Distributional Effects in a General Equilibrium Analysis of Social Security," in *The Distributional Effects of Social Security Reform,* ed. by Feldstein and Liebman, 2001; idem, "Opting Out of Social Security and Adverse Selection," NBER Working Paper No. 6430, 1998; idem, "Social Security: Privatization and Progressivity," *American Economic Review – Papers and Proceedings*, Vol. 88, No. 2, pp.137–41, 1998.

[6]Luis Cubeddu, "Intragenerational Redistribution in Unfunded Pension Systems," *IMF Staff Papers*, Vol. 47, No. 1, pp. 90–115, 2000.

[7]Robin Brooks, "What Will Happen to Financial Markets When the Baby Boomers Retire?" IMF Working Paper 00/18, 2000.

[8]Nicholas Barr, "Reforming Pensions: Myths, Truths, and Policy Choices," IMF Working Paper 00/139, 2000.

[9]Victor Valdivia, "The Insurance Role of Social Security: Theory and Lessons for Policy Reform," IMF Working Paper No. 97/113, 1997.

[10]Jan Walliser, "Regulation of Withdrawals in Individual Account Systems," IMF Working Paper 99/153, 1999; idem, "Adverse Selection in the

Annuities Market and the Impact of Privatizing Social Security," *Scandinavian Journal of Economics*, Vol. 102, No. 3, pp. 373–93. See also Max Alier and Dimitri Vittas, "Personal Pension Plans and Stock Market Volatility," World Bank Policy Research Working Paper No. 2463, 1999.

[11]Anuradha Dayal-Gulati and Christian Thimann, "Saving in Southeast Asia and Latin America Compared: Searching for Policy Lessons," IMF Working Paper 97/110, 1997. See also Tim Callen and Christian Thimann, "Empirical Determinants of Household Saving: Evidence from OECD Countries," IMF Working Paper 97/181, 1997.

[12]Charles Kramer and Yutong Li, "Reform of the Canada Pension Plan: Analytical Considerations," IMF Working Paper 97/141, 1997.

[13]Jan Walliser, "Regulation of Withdrawals in Individual Account Systems," IMF Working Paper 99/153, 1999.

[14]G. A. Mackenzie, Philip Gerson, Alfredo Cuevas, and Peter S. Heller, "Pension Reform and Fiscal Policy Stance," IMF Working Paper 01/214, 2001. See also G. A. Mackenzie, Philip R. Gerson, and Alfredo Cuevas, *Pension Regimes and Saving*, IMF Occasional Paper No.153, 1997; and Axel Schimmelpfennig, "Pension Reform, Private Saving, and the Current Account in a Small Open Economy," IMF Working Paper 00/171, 2000.

[15]World Bank, *Averting the Old Age Crisis: Policies to Protect the Old and Promote Growth* (Washington: World Bank and Oxford University Press, 1994).

[16]Richard Hemming, "Should Public Pensions Be Funded?" *International Social Security Review*, Vol. 52, No. 2, pp. 3–29, 1999.

[17]Peter S. Heller, "Rethinking Public Pension Reform Initiatives," IMF Working Paper 98/61, 1998.

[18]Phil Agulnik, Roberto Cardarelli, and James Sefton, "The Pensions Green Paper: A Generational Accounting Perspective," *Economic Journal*, Vol. 110, No. 467, pp. F598–F610, 2000.

[19]International Monetary Fund, *Greece: Selected Issue—An Overview of Pension Reform*, IMF Staff Country Report No. 02/58, 2002; Jerald Schiff, Niko Hobdari, Axel Schimmelpfennig, and Roman Zytek, *Pension Reform in the Baltics*, IMF Occasional Paper No. 200, 2000; Marta de Castello Branco, "Pension Reform in the Baltics, Russia, and Other Countries of the Former Soviet Union (BRO)," IMF Working Paper 98/11, 1998; Thomas Laursen, "Pension System Viability and Reform Alternatives in the Czech Republic," IMF Working Paper 00/16, 2000; Volker Treichel, "Financial Sustainability and Reform Options for the Albanian Pension Fund," IMF Working Paper 01/47, 2001; Marco Cangiano, Carlo Cottarelli, and Luis Cubeddu, "Pension Developments and Reforms in Transition Economies," IMF Working Paper 98/151, 1998.

[20]Robert Gillingham and Daniel Kanda, "Pension Reform in India,"IMF Working Paper 01/125, 2001.

[21]Assaf Razin, Efraim Sadka, and Phillip Swagel, "The Aging Population and the Size of the Welfare State," NBER Working Paper No. 8405, 2001 (also forthcoming in *Journal of Political Economy*).

[22]Holger Bonin, Bernd Raffelhüschen, and Jan Walliser, "Can Immigration Alleviate the Demographic Burden?" *Finanzarchiv*, Vol. 57, No. 1, pp. 1–21, 2000; and Assaf Razin, and Efraim Sadka, "Migration and Pension," IMF Working Paper 98/165, 1998.

[23]Emanuele Baldacci, "Monitoring Social Security Reforms: The Role of Statistical Information," in *Reforming the Social Security System: An International Perspective*, ed. by Emanuele Baldacci and Franco Peracchi, ISTAT Essays No. 8 (Rome: Instituto Nazionale di Statistica, 2000).

[24]Friedrich Schneider and Dominik Enste, "Shadow Economies Around the World: Size, Causes, and Consequences," IMF Working Paper 00/26, 2000; Paul Masson, "Fiscal Policy and Growth in the Context of European Integration," IMF Working Paper 00/133, 2000; James E. Duggan and Robert Gillingham, "The Effect of Errors in the CPI on Social Security Finances," *Journal of Business and Economic Statistics*, Vol. 17, No. 2, pp. 161–69, 1999.

*Country Study*

# Brazil

Agnès Belaisch

*In January 1999, mounting pressure on the Brazilian exchange rate forced the authorities to float the* real. *The new government, which had just taken office, undertook to devise policies that would lead the country out of the crisis and protect it against further turbulence. In the years that followed, the government would establish the credibility of its new inflation targeting framework and implement a fiscal adjustment that would allow Brazil to weather the substantial shocks that have recently struck emerging market economies. During this time, the IMF supported Brazil through a Stand-By Arrangement negotiated in the aftermath of the Russian default, followed by a second program negotiated in the summer of 2001. Recent IMF research on Brazil has focused on these difficult policy challenges; this article provides an overview of the research.*



Brazil's crawling-peg exchange rate regime came under attack in the latter half of 1998, partly as a result of financial turmoil in other emerging markets. The Russian default in August 1998 resulted in significantly curtailing access to international capital markets for many emerging markets.[1] In a period of presidential elections, the Brazilian Central Bank (BCB) increased short-term interest rates from 19 to 43 percent in two months to fend off a speculative attack on the *real* and defend the exchange rate band. However, without other supporting policy adjustments, the loss of credibility of the exchange rate regime was so strong that a large IMF program approved in December could not reverse it. After a significant loss of reserves, the BCB allowed the *real* to float in mid-January 1999. In the following months, inflation was selected as a formal nominal anchor and Brazil became the first inflation targeting country with an IMF-supported adjustment program. IMF staff research focused on identifying the parameters of decision making under this new monetary framework.

One key element for the BCB was to be able to determine the timing and scope for preemptive policy action when inflation was expected to deviate from its targeted path (Leone, 1999).[2] Schwartz (1999; Rabanal and Schwartz, 2000a) asks whether the low pass-through of the depreciation of the *real* to domestic prices following the float is a structural feature of the economy or only reveals a long lag in price adjustments.[3] His vector autoregression (VAR) model confirms that the exchange rate pass-through is smaller in Brazil than in other countries due to the low reliance of the economy on imports and a large output gap—it is, however, more rapid. How could monetary policy affect aggregate demand rapidly? Rabanal and Schwartz (2000b), using a VAR model, find that the overnight interbank rate (Selic) is the most effective instrument to affect aggregate demand rapidly, and that the transmission of policy works primarily through a bank lending channel.[4]

Another crucial ingredient of successful inflation targeting is the ability to announce reliable inflation forecasts. Rabanal and Schwartz (2000c) show that VAR and Bayesian VAR models are useful tools in the case of Brazil; today these types of models complement the structural model used by the BCB to forecast inflation.[5] Building on the experience of Brazil, Blejer and others (2001) analyze the adjustment to program conditionality necessary when a country adopts inflation targeting.[6]

This new monetary framework could not have worked without accompanying fiscal reform. In 1999, the government crafted a new institutional fiscal framework aimed at improving fiscal management and ensuring sustainability. Zandamela (1999) and de Mello (2002a) assess how borrowing limits, spending rules, and sanctions embedded in the Fiscal Responsibility Law (FRL) imposed fiscal discipline at the different levels of government.[7] Ramos (2000) simulates the medium-term path of fiscal expenditure and revenue, casts it in a macroeconomic framework, and concludes that, if the FRL is respected, projected public deficit and debt would be sustainable.[8] De Mello's (2002b) VAR model shows that, in the spirit of the FRL, Brazil's impressive fiscal adjustment since the float is the result of a common retrenchment effort by central and subnational governments and public enterprises.[9] Despite such recent progress, Ramos and Tanner (2002) find no evidence yet of monetary dominance—where fiscal deficits adjust to changes in public liabilities in order to limit debt accumulation—in Brazil.[10] In related work, Goldfajn (1998) examines the implication of recent macroeconomic developments in Brazil on the structure of its public debt.[11]

Even with the adoption of a flexible exchange regime, the persistence of large current account deficits remains a concern for macroeconomic growth and stability. Rossi (2000) simulates the IMF's multicountry dynamic model

(Multimod) and concludes that continued fiscal discipline and progress in developing an import substitution industry would increase confidence in the Brazilian economy, reduce debt spreads, and ensure medium-term external sustainability.[12] Paiva (2000) analyzes external sustainability by looking at the nature and destination of foreign direct investment (FDI) in Brazil, which as a percentage of GDP grew sevenfold during 1995–99.[13] He finds that, because FDI responded positively to structural reforms, it would remain a reliable source of finance even after privatization inflows subside and would continue to increase productivity, exports, and output. Estimating a gravity model, Bannister (2002) demonstrates that integration with Mercosur has benefited Brazil's exports; however, further trade liberalization by Brazil and its partners would be required to stimulate manufacturing trade.[14]

During this stabilization period, growth has remained weak and IMF research has endeavored to analyze which policies could lay the groundwork for growth-enhancing economic performance. Maia and Perez (2000) find that state-owned banks fare much worse than their private sector counterparts, and that the government's ongoing plan to privatize or liquidate these banks would improve the soundness and profitability of the system.[15] Also, credit remains low as a share of GDP, and Belaisch (2002) finds that a lack of competition in the banking system could help explain the high level of lending interest rates.[16] A low savings rate represents a serious impediment to higher and more sustainable growth in Brazil, and Paiva and Jahan (2002) find that further fiscal consolidation and financial deepening would be likely to raise private savings in the long run.[17]

Brazil has one of the highest levels of income inequality in the world and, as a result, allocates considerable resources to social programs. In the process of fiscal retrenchment associated with ongoing reforms, the IMF views as critical the need to strengthen social policy instruments while looking for ways to make them more cost effective. Gupta and others (1999) and de Mello (2000c, 2000d) review the effectiveness of various social programs and conclude that they do not provide adequate social protection: better targeting of benefits, rather than increased spending, would allow a more effective expansion of the safety net.[18]

[1] I. Goldfajn and T. Baig, "The Russian Default and the Contagion to Brazil," IMF Working Paper 00/160, 2000. Also see I. Goldfajn and E. Cardoso, "Capital Flows to Brazil: The Endogeneity of Capital Controls," IMF Working Paper 97/115, 1997.

[2] A. Leone, "Inflation Targeting in the Brazilian Setting," in *Brazil Selected Issues,* IMF Staff Country Report 99/97, 1999.

[3] G. Schwartz, "Price Developments After the Floating of the Real: The First Six Months," in *Brazil Selected Issues,* IMF Staff Country Report 99/97, 1999; P. Rabanal and G. Schwartz, "Exchange Rate Changes and Consumer Price Inflation: 20 Months After the Floating of the Real," in *Brazil Selected Issues,* IMF Staff Country Report 00/251, 2000a.

[4] P. Rabanal and G. Schwartz, "Forecasting Inflation in Brazil: How Useful Are Time Series Techniques?" in *Brazil Selected Issues,* IMF Staff Country Report 00/251, 2000b.

[5] P. Rabanal and G. Schwartz, "Testing the Effectiveness of the Overnight Interest Rate as a Monetary Policy Instrument," in *Brazil Selected Issues,* IMF Staff Country Report 00/251, 2000c.

[6] M. Blejer, A. Leone, P. Rabanal, and G. Schwartz, "Inflation Targeting in the Context of IMF-Supported Adjustment Programs," IMF Working Paper 01/31, 2001.

[7] R. Zandamela, "Brazil: The Fiscal Responsibility Law," in *Brazil Selected Issues,* IMF Staff Country Report 99/97, 1999; L. de Mello, "Brazil's Fiscal Adjustment: An Overview of 'Fiscal Responsibility' Reforms and Legislation," in *Brazil Selected Issues,* IMF Staff Country Report 02/12, 2002a.

[8] A. Ramos, "Medium and Long-Term Fiscal Sustainability in Brazil: 2000–10," in *Brazil Selected Issues,* IMF Staff Country Report 00/251, 2000.

[9] L. de Mello, "Fiscal Consolidation in Brazil: How Much Is Due to the Subnational Governments and Public Enterprises?," in *Brazil Selected Issues,* IMF Staff Country Report 02/12, 2002b.

[10] A. Ramos and E. Tanner, "Fiscal Sustainability and Monetary versus Fiscal Dominance: Evidence from Brazil, 1991–2000," IMF Working Paper 02/5, 2002.

[11] I. Goldfajn, "Public Debt Indexation and Denomination: The Case of Brazil," IMF Working Paper 98/18, 1998.

[12] M. Rossi, H. Faruqee, and S. Mursula, "Medium-and Long-Term Current Account Stability in Brazil," in *Brazil Selected Issues,* IMF Staff Country Report 00/251, 2000.

[13] C. Paiva, "Foreign Direct Investment and Transnational Enterprises in Brazil," in *Brazil Selected Issues,*" IMF Staff Country Report 00/251, 2000.

[14] G. Bannister, "Brazil and Mercosur: Identifying Trade Creation and Trade Diversion," in *Brazil Selected Issues,* IMF Staff Country Report 02/12, 2002.

[15] G. Maia and L. Pérez, "Restructuring Brazil's State-Owned Financial System," in *Brazil Selected Issues,* IMF Staff Country Report 00/251, 2000.

[16] A. Belaisch, "Bank Intermediation and Competition in Brazil," in *Brazil Selected Issues,* IMF Staff Country Report 02/12, 2002.

[17] C. Paiva and S. Jahan, "An Empirical Study of Private Savings in Brazil," in *Brazil Selected Issues,* IMF Staff Country Report 02/12, 2002.

[18] S. Gupta, R. Gillingham, and L. de Mello, "Strengthening Social Policy Instruments," in *Brazil Selected Issues,* IMF Staff Country Report 99/97, 1999; L. de Mello, "Social Spending in Brazil: Recent Trends in Social Assistance and Insurance," in *Brazil Selected Issues,* IMF Staff Country Report 00/251, 2000c; idem, "Social Spending in Brazil: Education and Health Care," in *Brazil Selected Issues,* IMF Staff Country Report 00/251, 2000d. Also see C. Benedicts, "Income Distribution and Social Expenditure in Brazil," IMF Working Paper 97/120, 1997.

## International Conference on National Poverty Reduction Strategies

Summary by Gita Bhatt

*The IMF and World Bank organized and held an international conference on poverty reduction strategies in Washington, DC, on January 14–17, 2002. The conference was part of a joint review of the poverty reduction strategy papers (PRSPs) approach and brought together country officials from almost all eligible low-income countries, representatives from donor organizations, and civil society representatives to discuss experiences and lessons learned in the PRSP process. A half-day session was also devoted to reviewing the IMF's concessional lending window for low-income countries—the Poverty Reduction and Growth Facility (PRGF).*

Ideas and proposals were the purpose and the product of the conference. Reflecting the extensive consultation (including four regional events) that had already taken place, the international conference refined and reinforced the main messages that had been emerging from stakeholders and partners. Chief among these messages was a strong endorsement of the PRSP approach, which all agreed had made important progress in a relatively short time. The PRSP gave central focus to poverty reduction, strengthened participation in policy making, and provided a single strategy around which development partners could align their development assistance.

The conference simultaneously highlighted many areas where improvements were needed, with greater efforts required on moving beyond refining the participatory process to focusing on content and effective implementation of countries' strategies. In his opening remarks, IMF Managing Director, Horst Köhler, noted that poverty reduction takes time and sustained effort, and he cautioned that while we need to be "ambitious" in our objectives, we must be "realistic" in our methods. Recurring themes during the conference included the importance of building the capacities of governments and civil society; the need to set realistic goals and targets, especially growth targets, and manage expectations; the need to factor external shocks into country strategies, and for the international community to revisit the availability and flexibility of instruments to deal with the shocks; the desirability of considering alternative policy choices in the PRSP process; and the importance of flexibility to allow for different country starting points.

The various discussions centered around several key aspects of the PRSP, notably its call for broad participation and country ownership, comprehensive policy actions rooted in an analysis of country needs, and supportive actions, such as better alignment of donor assistance with the PRSP goals and effective monitoring that would allow everyone to gauge the progress being made. The following points raised the most interest and debate among participants.

- **Participation.** The PRSP approach was acknowledged as contributing to more open dialogue within governments and with, at least, some parts of civil society than had previously existed. As the same time, the need to strengthen and institutionalize participatory processes, with respect to a broad range of domestic stakeholders as well as development partners, was stressed. The importance of involving parliamentarians in the preparation, approval, and monitoring of country strategies was also noted.
- **Content.** Many participants focused on the enormous challenge of deciding how best to prioritize among sectors and design policies to achieve growth beneficial to the poor. There was recognition that the international community's knowledge of what policies can best reduce poverty is incomplete—and that improving knowledge in this area would be critical to improving the well-being of the poor. In this regard, better understanding of the sources of sustainable growth and strengthening the linkages between policies and poverty outcomes were critical. Finally, there was strong emphasis on the need for development partners, including the World Bank and the IMF, to assist countries in their efforts to improve their public expenditure management systems so that poverty reducing spending could be effectively delivered and monitored, to undertake systematic poverty and social impact analyses of major policy choices, and design offsetting compensatory measures. In each of these areas, conference participants called for further research and the development of better analytical tools.
- **Alignment.** Nearly all bilateral and multilateral donors have agreed to the principle of aligning their assistance programs with PRSPs. However, participants noted that much remains to be done to achieve this objective.

There is a pressing need for donors to reduce the cost to low-income countries of mobilizing and utilizing aid so that both aid resources and limited country capacity can be used more effectively. This includes harmonizing and simplifying reporting requirements and aligning assistance with national cycles of government decision making, including the budget. More information on medium-term aid commitments and greater predictability of aid flows, especially to those countries implementing sound policies, would help low-income countries better plan and implement their strategies.

- **The PRGF.** Has the design of PRGF-supported programs been faithful to the objective of poverty reduction and growth? Participants noted that efforts to streamline structural conditionality, to increase budget allocations for spending that is beneficial to the poor, and to provide more flexible fiscal frameworks were proceeding well. In other areas, however, more progress and more rapid actions were needed. In particular, many civil society participants wanted more evidence that the PRGF-supported programs were, in fact, drawn from and consistent with countries' PRSPs. They also suggested that the openness and transparency of PRGF-supported programs could be bolstered through discussions of alternative policy scenarios, greater analysis of their poverty and social impact, and more elaboration in IMF staff reports about the policy dialogue and policy choices considered in program design.

### What is the PRSP Approach?

In September 1999, the IMF and World Bank adopted a new approach to help developing countries better position themselves to speed up growth and eradicate poverty. An important element of this approach has been a refocusing of development assistance—beyond the operations of the IMF and the World Bank—around national poverty reduction strategy papers (PRSPs), which more than 60 countries are now developing and implementing. The objectives of the PRSP approach—all of which are directed toward the fundamental goal of poverty reduction—are to ensure country ownership of poverty reduction strategies; develop strategies that take a comprehensive, long-term perspective; strengthen participation in policy making, including by tapping the views of a broad cross section of society, especially the poor; focus on results that matter for the poor; and foster domestic and external partnerships that improve the effectiveness of development assistance.

Details about the conference proceedings and the resulting staff papers on the PRSP and PRGF reviews can be found on the IMF website at http://www.imf.org/External/NP/prgf/2002/list.htm.



## Visiting Scholars at the IMF, January–March 2002

**Philippe Bacchetta;** Study Center Gerzensee, Switzerland
**Michael Bordo;** Rutgers University
**Giancarlo Corsetti;** University of Rome III, Italy
**Morris Goldstein;** Institute for International Economics
**Pierre-Olivier Gourinchas;** Princeton University
**David Hummels;** Purdue University
**Graciela Kaminsky;** The George Washington University
**Michael Keane;** Yale University
**Ari Kuncoro;** University of Indonesia, Indonesia
**Philip Lane;** Trinity College Dublin, Ireland
**Ronald MacDonald;** University of Strathclyde, U.K.
**Dalia Marin;** University of Munich, Germany
**Stephen Morris;** Yale University
**Anthony Musonda;** Bank of Zambia, Zambia
**Zafar Nasar;** Pakistan Institute of Development Economics, Pakistan
**A.F. Odusola;** NCEMA, Nigeria
**Arvind Panagariya;** University of Maryland
**William Perraudin;** Birbeck College, U.K.
**Raghuram Rajan;** University of Chicago
**Assaf Razin;** Tel Aviv University, Israel
**Andrew Rose;** University of California at Berkeley
**Nouriel Roubini;** New York University
**Kenneth Singleton;** Stanford Graduate School of Business
**Robert Townsend;** University of Chicago
**Elias Udeaja;** University of Ibadan, Nigeria
**George von Furstenberg;** Fordham University
**Beatrice Weder;** University of Mainz, Germany

## Conference on Macroeconomic Policies and Poverty Reduction

Summary by Catherine Pattillo

*The IMF Research Department organized and held a Conference on Macroeconomic Polices and Poverty Reduction in Washington, DC, on March 14–15, 2002.* Key themes included: aid effectiveness and the debt burden in low-income countries, trade reform and inequality, the role of financial institutions in poverty reduction, poverty and distributional consequences of financial crises and large shocks, and the politics of fiscal expenditures for the poor. The conference agenda and brief descriptions of the papers follow.*

### Aid and Debt

**Odious Debt**
*Michael Kremer and Seema Jayachandran (Harvard University)*
Discussant: Raquel Fernandez (New York University)

**Aid and Fiscal Management**
*Aleš Bulíř and Timothy Lane (IMF)*
Discussant: Alberto Alesina (Harvard University)

### Trade and Inequality

**Trade Reforms and Income Inequality in Colombia**
*Orazio Attanasio (University College London), Pinelopi Goldberg (Yale University), and Nina Pavcnik (Dartmouth College)*
Discussant: T.N. Srinivasan (Yale University)

### Finance and Poverty

**Safety Nets and Financial Institutions in the Asian Crisis: The Allocation of Within-Country Risk**
*Robert Townsend (University of Chicago)*
Discussant: Abhijit Banerjee (MIT)

**Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment**
*Robin Burgess (London School of Economics) and Rohini Pande (Columbia University)*
Discussant: Jonathan Morduch (New York University)

### Poverty and Distributional Effects of Crises and Large Shocks

**Financial Crises, Poverty, and Income Distribution**
*Emanuele Baldacci, Luiz de Mello, and Gabriela Inchauste (IMF)*
Discussant: Ceclia Garćia-Peñalosa (GREQAM)

**Growth, Shocks, and Poverty During Economic Reform: Evidence from Rural Ethiopia**
*Stefan Dercon (Oxford University)*
Discussant: Angus Deaton (Princeton University)

### Crises and Political Economy of Safety Nets

**Economic Shocks, Wealth, and Welfare**
*Elizabeth Frankenberg (UCLA), James P. Smith (RAND), and Duncan Thomas (UCLA)*
Discussant: François Bourguignon (World Bank)

**Who Is Protected? Theory and Evidence on the Incidence of Fiscal Expansions and Contractions**
*Martin Ravallion (World Bank)*
Discussants: Michael Keen (IMF) and Lant Pritchett (Harvard University—JFK School of Government)

**Kremer and Jayachandran** argue that sovereign debt, incurred without the consent of the people and to benefit the elite, should be considered odious and that successor governments should not be responsible for repayment. In a sovereign debt model, they show how an international institution, in denouncing a regime as odious, could create an equilibrium whereby creditors would stop odious lending because successor governments would not be held responsible or suffer a reputational penalty by refusing to repay the debt. If the institution declared debt odious ex ante of the debt being incurred, and by a supermajority, potential problems of alleged favoritism to debtors by the institution and possible drying up of the loan market for other countries could be avoided.

**Bulir and Lane** show that foreign aid is more volatile than domestic fiscal revenue, particularly for countries heavily dependent on aid. Aid is also procyclical, so that, rather than smoothing out cyclical shocks, it tends to exacerbate them. In addition, official aid commitments are more likely to be in excess of aid disbursements rather than less, even for countries with 'on-track' programs. The authors then discuss the implications of these findings for short-term fiscal policy management.

**Attanasio, Goldberg and Pavcnik** find that trade liberalization in Colombia was associated with greater wage inequality and an increase in the relative wages of skilled workers. Tariff reductions work their way through the economy and contribute to the following: increased returns for the college educated, lower industry premiums for sectors with higher shares of unskilled workers, and a shift of the labor force toward the informal sector. However, trade liberalization explains only a small share of the worsening wage inequality.

Using panel data for the crisis period in Thailand, **Townsend** finds that regional and idiosyncratic shocks are even more important than macro shocks in explaining consumption and investment changes. The author uses the theory of optimal allocation of risk bearing as a benchmark against which to evaluate the role of the financial system, financial sector reforms, and safety net policies. The limited risk-reallocation role played by financial institutions, including commercial banks and the primary agricultural development bank, was partly a function of financial sector policies which contributed to distortions. Money lenders and the informal sector were also not able to help smooth investment during this period.

**Burgess and Pande** challenge the conventional view that large-scale government intervention in credit markets is ineffective and ends up benefiting elites. They study the Indian "social banking experiment," 1969–92, when government policies favored the expansion of bank branches into previously "unbanked" locations, and find that the policy helped reduce rural poverty and inequality. After observing a trend break, where states with more banking locations in 1961 saw faster growth in bank locations before 1977 (the turning point in social banking policy), but slower growth after 1977, they ask whether diversification, poverty and inequality also exhibit a similar trend break. The authors also use an instrumental variables approach to try and control for factors, such as income growth, which affect both potential bank profitability in "unbanked" locations and the diversification and welfare outcomes.

**Baldacci, de Mello, and Inchauste** use both cross-country macro data and micro data, from before and after the 1994–95 Mexican crisis, to ask how poverty and income distribution is affected by financial crises. The cross-country analysis compares precrisis and postcrisis average changes in welfare indicators in countries which experienced crises, relative to a control sample of countries which did not experience crises. They find an increase in poverty and a worsening of income distribution after crises, transmitted through inflation, unemployment, lower growth and reduced government spending. The Mexican data also show increases in poverty postcrisis, although inequality did not increase because of a disproportionate decline in the income of the wealthiest.

**Dercon** analyzes the determinants of consumption growth and poverty changes in Ethiopia during the 1990s, a period of economic reform. The theoretical framework is a farm income-generation model used to analyze the links among changes in fixed endowments, relative prices, and shocks and the effects on consumption. Dercon finds that reforms, including the liberalization of agricultural prices, helped some households grow out of poverty. Among the poor, those with better endowments of land, labor, and access to roads were better able to take advantage of the opportunities that reforms provided. Common and idiosyncratic shocks matter greatly for consumption, suggesting imperfect risk-sharing, credit, and savings opportunities.

The 1998 Indonesian crisis marked a dramatic and unexpected reversal of economic growth—real GDP fell by about 15 percent in one year. **Brandenburg, Smith, and Thomas** provide evidence of how households attempted to smooth out the effects of large, unanticipated shocks, and evaluate the consequences of those strategies for welfare indicators. They find that households adopted many mechanisms by which they adjusted to the crisis and maintained consumption, or exploited the new opportunities that arose for some. Households reorganized living arrangements, increased labor supply, and deferred expenditure on some goods. Rural households sold gold to smooth consumption—one of the only assets whose value did not decline with the collapse of the rupiah and spiraling inflation.

**Ravallion** asks who is protected when crises or reforms result in large budget cuts. He shows that the answer is theoretically ambiguous, depending on a "utility effect," that is, how quickly the marginal utility of the non-poor's spending on the poor declines relative to spending on themselves as compared with a "power effect." The paper then draws on micro-based empirical studies of social programs in India, Bangladesh, and Argentina, which study how the incidence of spending varies with the aggregate level of spending. Ravallion finds that spending on the non-poor is protected from budget cuts and targeting worsens during fiscal contraction. The paper also discusses the policy implications for designing effective safety net policies.

The conference concluded with a panel discussion on "**Poverty Reduction: What Are the New Ideas?**" featuring **Anne Krueger** (IMF), **Nicholas Stern** (World Bank), **Montek Ahluwalia** (IMF), **Santiago Levy** (Instituto Méxicano des Seguro Social), and **Nancy Birdsall** (Center for Global Development).

*Organizing Committee: Ashoka Mody, Ratna Sahay, and Catherine Pattillo.

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Proceedings of IMF conferences and seminars, including agenda and papers, can be obtained through the "Conferences, Seminars and Workshops" link at the **Research at the IMF** website at *http://www.imf.org/research.*

## IMF Working Papers, December 2001–February 2002

*Working Paper No. 01/193*
**Stock Market Liberalizations: Financial and Macroeconomic Implications**
Fuchs-Schundeln, Nicola; Funke, Norbert

*Working Paper No. 01/194*
**Exchange Rate Pass-Through to Domestic Prices: Does the Inflationary Environment Matter?**
Choudhri, Ehsan U.; Hakura, Dalia S.

*Working Paper No. 01/195*
**Fiscal Expenditure Policy and Non-Oil Economic Growth: Evidence from GCC Countries**
Fasano, Ugo; Wang, Qing

*Working Paper No. 01/196*
**An Unbiased Appraisal of Purchasing Power Parity**
Cashin, Paul A.; McDermott, C. John

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**Limiting Currency Volatility to Stimulate Goods Market Integration: A Price-Based Approach**
Parsley, David; Wei, Shang-Jin

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Loungani, Prakash N.; Swagel, Phillip L.

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Dabla-Norris, Era; Weber, Shlomo

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**Risk Diversification in the Credit Portfolio: An Overview of Country Practices**
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**Financial Stability and Fiscal Crises in a Monetary Union**
Jahjah, Samir

*Working Paper No. 01/202*
**Corporate Restructuring in Japan: An Event-Study Analysis**
Chan-Lau, Jorge

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**Mind the Gap: What Is the Best Measure of Slack in the Euro Area?**
Ross, Kevin; Ubide Querol, Angel J.

*Working Paper No. 01/204*
**The Impact of Corporate Governance Structures on the Agency Cost of Debt**
Chan-Lau, Jorge

*Working Paper No. 01/205*
**Central Bank Independence and the Design of Fiscal Institutions**
Castellani, Francesca; Debrun, Xavier

*Working Paper No. 01/206*
**Quality Controls, License Transferability, and the Level of Investment**
Krishna, Kala; Tan, Ling H.; Ranjan, Ram

*Working Paper No. 01/207*
**Uncovered Interest Parity in Crisis: The Interest Rate Defense in the 1990s**
Flood, Robert P.; Rose, Andrew K.

*Working Paper No. 01/208*
**Government Spending, Legislature Size, and the Executive Veto**
Baqir, Reza

*Working Paper No. 01/209*
**The Treatment of Nonperforming Loans in Macroeconomic Statistics**
Bloem, Adriaan; Gorter, Cornelis N.

*Working Paper No. 01/210*
**Convertibility Risk: The Precautionary Demand for Foreign Currency in a Crisis**
Black, Stanley; Christofides, Charis; Mourmouras, Alexandros T.

*Working Paper No. 01/211*
**Systemic Weaknesses of Budget Management in Anglophone Africa**
Lienert, Ian C.; Sarraf, Feridoun

*Working Paper No. 01/212*
**Legal Central Bank Independence and Inflation in Latin America During the 1990s**
Jacome H., Luis I

*Working Paper No. 01/213*
**A Model of the Joint Distribution of Banking and Exchange-Rate Crises**
Flood, Robert P.; Marion, Nancy P.

*Working Paper No. 01/214*
**Pension Reform and the Fiscal Policy Stance**
Mackenzie, George A.; Gerson, Philip R.; Cuevas, Alfredo; Heller, Peter S.

*Working Paper No. 01/215*
**An Investigation of Output Variance Before and During Inflation Targeting**
Nadal De Simone, Francisco D.

*Working Paper No. 01/216*
**Import-Reducing Effect of Trade Barriers: A Cross-Country Investigation**
Wang, Qing

*Working Paper No. 02/1*
**The Impact of Changes in Stock Prices and House Prices on Consumption in OECD Countries**
Ludwig, Alexander; Slok, Torsten M.

*Working Paper No. 02/2*
**The Austrian Theory of Business Cycles: Old Lessons for Modern Economic Policy?**
Oppers, Stefan E.; Office in Europe

*Working Paper No. 02/3*
**Currency Crises and Uncertainty About Fundamentals**
Prati, Alessandro; Sbracia, Massimo

*Working Paper No. 02/4*
**Financial Crises, Poverty, and Income Distribution**
Baldacci, Emanuele; De Mello Jr., Luiz R.; Inchauste Comboni, Maria G.

*Working Paper No. 02/5*
**Fiscal Sustainability and Monetary versus Fiscal Dominance: Evidence from Brazil, 1991–2000**
Tanner, Evan C.; Ramos, Alberto M.

*Working Paper No. 02/6*
**Financial Reforms and Interest Rate Spreads in the Commercial Banking System in Malawi**
Mlachila, Montfort P.; Chirwa, Ephraim W.

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Iwata, Shigeru; Khan, Mohsin S.; Murao, Hiroshi

*Working Paper No. 02/14*
**Exchange Market Pressure, Currency Crises, and Monetary Policy: Additional Evidence from Emerging Markets**
Tanner, Evan C.

*Working Paper No. 02/15*
**Activation of a Modern Industry**
Wang, Ping; Xie, Danyang

*Working Paper No. 02/16*
**Population Aging and Its Macroeconomic Implications: A Framework for Analysis**
Faruqee, Hamid

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**The Role of Affordable Mortgages in Improving Living Standards and Stimulating Growth: A Survey of Selected MENA Countries**
Erbas, S. Nuri; Nothaft, Frank E

*Working Paper No. 02/18*
**A New Rule: "The Swiss Debt Brake"**
Danninger, Stephan

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**Debt, Deficits, and Age-Specific Mortality**
Faruqee, Hamid

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**Lending Booms, Real Estate Bubbles, and The Asian Crisis**
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# World Economic Outlook, April 2002

Summary by James Morsink

*While the central focus of the IMF's World Economic Outlook (WEO) is a comprehensive review of recent global developments, current prospects, risks, and policy recommendations, it also provides an in-depth analysis of a number of topical issues, which helps underpin the projections and policy advice. This article gives a brief summary of the analytical chapters of the April 2002 WEO.*

The main analytical chapter contains an empirical analysis of **recessions and recoveries in industrial countries**, in order to place the recent global slowdown in context. The chapter looks at all the *level recessions* (these are roughly defined as two consecutive quarters of negative GDP growth) in 21 industrial countries over the period 1973–2001: 93 recessions in all. The chapter also look at the history of recessions going back to 1881 for a narrower set of countries. The main result is that, while every recession has its own unique features, the recent global slowdown had much in common with past downturns:

- synchronized recessions are the historical norm,
- a sharp drop in business fixed investment is typical in the lead-up to a recession,
- increases in interest rates have regularly marked the onset of recessions,
- the historical trend is toward shallower recessions, and
- recoveries tend to be driven by upturns in private consumption.

Another analytical chapter contains three essays on how financial markets affect real activity. The first looks at why many countries in Latin America have had a disproportionate number of **debt crises**. The essay emphasizes three vulnerabilities. First, although external debt levels have not been high relative to GDP, they have often been high relative to exports. Second, macroeconomic volatility has been high, stemming not only from terms-of-trade shocks, but also from procyclical fiscal policy. Third, government borrowing is disproportionately external and foreign currency denominated, which has left countries exposed to the effects of a sharp sudden exchange rate depreciation. The essay notes that many countries in the region have made substantial progress in recent years, including important fiscal reforms and more flexible exchange rate systems, so vulnerabilities should be lower going forward.

The second essay looks at **wealth effects on consumption**, in particular the impact of huge run-ups in household wealth in industrial countries during the 1990s on consumer spending. The essay finds that the impact is larger in market-based financial systems than in bank-based systems, reflecting the greater share of household assets held as equities and housing in market-based systems, as well as households' greater ability to borrow against their wealth. The analysis also finds that consumption has become increasingly sensitive to stock market and housing prices. To the extent that changes in wealth affect inflation and output, stock market and housing prices may have become more significant considerations for monetary policy, though this does not imply that monetary policy should directly target asset prices.

The third essay looks at the **challenges to monetary policy in a low inflation era**. The essay argues that the reduction in inflation in industrial countries owed much to widespread changes—including institutional changes—in the conduct of monetary policy toward a more hawkish attitude on inflation, and the associated beneficial shifts in private sector behavior. In the new low-inflation environment, central banks need to balance concerns about higher inflation against concerns about deflation. Downward nominal rigidities of prices and wages make adjustment to deflation painful. If, in addition, inflation expectations are sluggish, then deflation puts a floor on how low the central bank can push real interest rates, given that nominal interest rates cannot go below zero. Concerns about deflation suggest that central banks need to be more proactive in responding to sharp downward shocks to activity. The essay argues that the danger of getting into a sustained deflation increases as inflation targets are lowered.

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The April 2002 WEO can be found in full-text format at **http://www.imf.org/research**.