

## In this issue

385  
Krueger floats  
workout mechanism

385  
Disbursement for  
Turkey

386  
Argentine  
disbursement  
delayed

387  
Behind the 1990s  
emerging market  
financing boom

389  
Investor relations  
seminar

391  
Jorgenson on  
IT revolution

394  
Global  
Interdependence  
Center conference

396  
Obstfeld on  
currency crises

398  
IMF Research  
Conference

and...

390  
Recent publications

390  
Selected IMF rates

393  
New on the web

## Resolving debt crises

### Krueger floats international workout mechanism

IMF First Deputy Managing Director Anne Krueger unveiled a groundbreaking plan on November 26 that could give countries with unsustainable debts legal protection from their creditors while they negotiate with them. In a speech at the National Economists' Club in Washington, she noted a "gaping hole" in the international financial system. "At the moment," she said, "too many countries with insurmountable debt problems wait too long, imposing unnecessarily heavy economic costs on themselves and on the international community that has to help pick up the pieces" (see the IMF's website at [www.imf.org](http://www.imf.org) for the full text of her speech).

"We lack incentives to help countries with unsustainable debts resolve them promptly and in an orderly way,"



Krueger: "At the moment, too many countries with insurmountable debt problems wait too long."

she observed. Up until now, the international community has had to bail out private creditors. She noted that a number of member countries have expressed interest in such a mechanism, "but even with unanimous political support, this approach could not be in place for at least two or three years." Krueger also said the workout mechanism could not be implemented in time to

help member countries currently facing difficulties, such as Argentina and Turkey.

#### How the mechanism might work

The new framework (modeled on corporate bankruptcy law) would allow countries to seek legal protection from creditors that stand in the way of restructuring, and in exchange *(Please turn to the following page, top)*

### IMF approves \$3.1 billion disbursement to Turkey, calls for strong economic response

On November 28, the IMF Executive Board agreed to release \$3.1 billion to Turkey as part of a \$19 billion loan package. The funds were due to be released in late September, but were delayed by the need to assess the repercussions on the Turkish economy of the September 11 terrorist attacks. The IMF had approved a three-year Stand-By Arrangement for Turkey in December 1999 totaling \$4 billion. It made additional financial resources available to the country under the Supplemental Reserve Facility in December 2000 and under the credit tranches in May 2001. (The full text of News Brief No. 01/121 is available on the IMF's website at [www.imf.org](http://www.imf.org).)

Turkey has been particularly affected by the events of September 11 because of its location, reliance on tourism, and indebtedness. In the aftermath of the terrorist attacks, Turkey's external financing gap is expected to rise to approximately \$10 billion for the remainder of 2001

and 2002. A new loan to help cover the financing gap will require a new multiyear Stand-By Arrangement with the IMF in support of a strengthened policy package, which is expected to be negotiated over the next month.

Following the Executive Board discussion, IMF First Deputy Managing Director Anne Krueger said "Executive Directors commended the Turkish authorities on their continued strong implementation of a challenging economic reform program. The fiscal position has greatly improved and an ambitious legislative agenda has established central bank independence, enhanced transparency in economic policymaking, and laid the basis for privatization of large state enterprises. In addition, important progress has been achieved in dealing with the problems of the banking sector.

"The results of this policy effort had begun to appear in August, when *(Please turn to the following page, bottom)*

**“The political imponderable is whether our members are prepared to constrain the ability of their citizens to pursue foreign governments through their national courts as an investment in a more stable—and therefore more prosperous—world economy.”**

—Anne Krueger

## More efficient debt restructuring process sought

(Continued from front page, top) debtors would have to negotiate with their creditors in good faith. Countries would come to the IMF and request a temporary standstill on their debts—probably lasting a few months—while the country negotiates a rescheduling or restructuring. Extensions would require IMF approval. The plan might also require the imposition of temporary exchange controls to stop money from fleeing the country. Krueger stressed that the “primary objective in creating a formal mechanism of this type would be to create incentives for debtors and creditors to reach agreement on their own accord, so the mechanism would rarely need to be used.” The IMF Executive Board discussed this plan on December 6.

A formal sovereign debt-restructuring mechanism would need to be built on four principles:

- creditors should not be allowed to disrupt negotiations by seeking recourse in their own national courts;
- debtor countries would need to provide assurances that they were negotiating in good faith and treating all creditors equally;
- private creditors would need to be encouraged to lend new money by receiving some guarantee that they would be repaid ahead of existing private creditors; and

- once agreement on a restructuring had been reached by a large enough majority of creditors, the rest would be bound to accept the terms.

### Issues to be considered

There are many technical questions that need to be addressed, such as

- how to provide a legal basis for the mechanism,
- who should operate the mechanism,
- how the standstill would be formally activated,
- how to ensure the debtor country behaved appropriately during the negotiations,
- what financing the IMF should provide after the restructuring, and
- to what type of debt the stay should apply.

The new mechanism would create a more efficient debt restructuring process by allowing countries to resolve debt problems in an orderly way, and it would contain incentives for both debtor countries and creditors. “The political imponderable is whether our members are prepared to constrain the ability of their citizens to pursue foreign governments through their national courts as an investment in a more stable—and therefore more prosperous—world economy,” Krueger said. ■

## Turkey funds released

(Continued from front page, bottom) financial markets stabilized and the economy seemed to be bottoming out, but have been set back by the events of September 11. The authorities have appropriately recognized that the impact of the events on the Turkish economy calls for an even stronger policy response, including maintaining a high public sector primary surplus and a renewed focus on banking sector reforms, public resource management, and private sector development. Directors agreed that an appropriately strong response would warrant additional support from the international community.

“Turkey’s fiscal policy performance so far has been strong, and the closing of extrabudgetary funds and the new public procurement law submitted to parliament will help to improve fiscal transparency. It is critical that the authorities continue these efforts and, in particular, reach the targeted public sector primary surplus of 6.5 percent of GNP in 2002, which will help ensure that the government debt position remains sustainable. Looking ahead, Directors saw a need for further reform of agricultural subsidies, retrenchment of public sector employment, and public sector wage restraint to underpin lasting fiscal adjustment over the medium term. They welcomed, in particular, the government’s keen attention to protecting spending on social services, education, and health services.” ■

### IMF delays Argentina disbursement

On December 5, IMF management told the Executive Board that it could not at present recommend the completion of the latest review of Argentina’s IMF-supported program. Completion of the review would have allowed Argentina to draw a further \$1.3 billion from the IMF. The IMF remains in close contact with the Argentine authorities and is committed to working with them to develop a sustainable economic program.

IMF External Relations Department Director Thomas C. Dawson later told the press that the failure to complete the review was based on IMF staff’s findings on Argentina’s performance under the 2001 program, as well as on the need to agree on a program for 2002. He said the outstanding issues related mainly to fiscal performance and prospects, and to the need to craft a program that would enable the Argentine authorities to meet their own objectives.

The full text of Dawson’s press briefing on December 6 is available on the IMF’s website ([www.imf.org](http://www.imf.org)).

## What was behind the 1990s boom?

Despite stable flows of foreign direct investment, annual net capital flows to emerging markets appear to have turned negative in 2001 for the first time in more than a decade. The sharp drop in net flows from a peak of \$230 billion in 1996 has sparked questions not just about the future but also about the past. One of the most intriguing is, “just what did happen in the 1990s?” Should the boom years of the previous decade be viewed as a cyclical phenomenon, linked in large measure to an upsurge in economic activity in the mature markets, or as a structural change, a one-off adjustment in portfolios after the emerging markets’ “lost decade” of the 1980s? The IMF’s latest quarterly *Emerging Market Financing* report examines key features of the financing flows and weighs the evidence for the structural and cyclical arguments.

### Flows and ebbs

Net capital flows encompass bonds, syndicated bank lending, portfolio equity, and foreign direct investment. Of these, only the last—foreign direct investment—has proved a stable source of financing for the emerging markets.

Since the 1990s, the international bond market has been the largest provider of net financing to emerging markets. It has also served as the mainstay of external financing for sovereign borrowers (in marked contrast to the 1980s when syndicated bank lending performed this role). But the largest source of financing has also been the most volatile. Although net bond flows to emerging markets remained positive in all but three quarters from 1994 through 2000, the current year is another story. As *Emerging Market Financing* notes, an extended “drought” in bond issuance, beginning in mid-August of this year, is chiefly responsible for a negative \$7 billion in net financing flows for the third quarter of 2001—the largest negative outcome to date.

For emerging market corporations, net syndicated bank loans form the principal source of financing. And these loans, the report observes, have never really recovered from the Asian and Russian crises. After declining to near zero in the third quarter of 1998, net syndicated loan commitments to emerging markets essentially remained there for a year and a half. In effect, new loans simply replaced maturing loans.

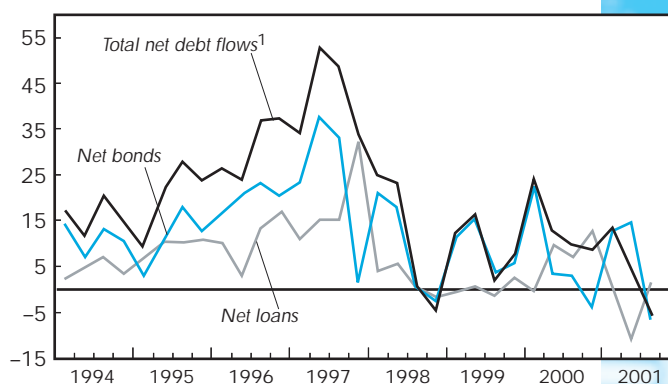
This remarkable stability of cumulative net issuance indicates that international banks were tightly limiting, but nonetheless maintaining, their exposures to emerging market borrowers. But the report finds changes in the composition of syndicated bank loans. Lenders have increasingly sought out better-quality corporates, those with ownership links to multinationals and those

covered by political risk insurance. In the aftermath of the crises, lenders have also shifted some of their attention away from Asia, the largest recipient of such loans among the emerging market regions.

*Emerging Market Financing* also points out that as overall bank balance sheets have grown, the nominal stock of exposures to emerging markets has remained constant, thus indicating, in effect, a reduced portfolio

### Net debt flows set to turn negative for 2001

(public and private flows, billion dollars)



<sup>1</sup> Net debt flows include bonds and loans.

Data: IMF, *Emerging Market Financing*, November 14, 2001

share devoted to emerging markets. A modest recovery in net syndicated loan flows in the latter part of 2000 seemed at the time to suggest the beginning of a longer-term recovery. But net new commitments (around \$15 billion for the year) were dominated by the volatile technology-media-telecom sector and proved transitory. By the third quarter of 2001, net syndicated loan flows again hovered around zero, returning to the post-Asian crisis norm.

International equity placements grew steadily through 2000—both in absolute terms and as a share of total net new financing to emerging markets. Asian equity issues primarily drove this growth—supported heavily by the technology-media-telecom sector and then by jumbo privatization issues from China. In sync with global developments, however, new international equity placements by emerging markets slowed to a trickle in the first quarter of 2001 and show no signs of recovering.

### Cyclical or structural?

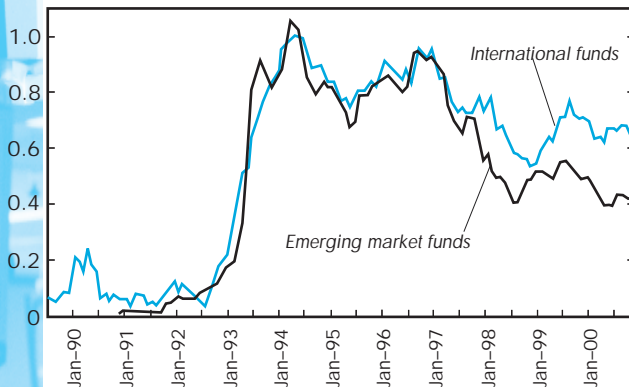
Sifting through these ebbs and flows, *Emerging Market Financing* finds evidence to support both structural and



cyclical explanations for the sharp drop in financing flows. Immediately following the Asian and Russian crises, net debt financing flows (bonds and bank lending) to emerging markets mounted a recovery but have yet to approach previous highs (see chart, page 387).

## Equity diversification changed dramatically in 1993–94

(percent of total net assets of all U.S. equity mutual funds)



Data: IMF, *Emerging Market Financing*, November 14, 2001

During 1999–2000, net debt flows averaged slightly less than \$10 billion a quarter—dramatically less than the \$25 billion and \$45 billion averages recorded in 1996 and 1997, respectively. Since the cyclical slowdown in mature market economies is a more recent phenomenon, this suggests structural change may offer a more compelling explanation for the decline in average volume since the Russian crisis.

Also bolstering the structural explanation is the role that lower demand may be playing in the reduced volume of net emerging market financing. Emerging markets have lower external financing “needs” than they did before the Asian and Russian crises. Emerging Asia has current account surpluses, and Latin America’s current account deficits are smaller. Add to this, the report suggests, the wider use of flexible exchange rates since the crises and the painful firsthand knowledge of what exchange rate risks entail, and there may be good reason why domestic entities are looking to domestic markets for financing in local currencies. Historically low local interest rates (and differentials) may also be making domestic markets even more attractive.

Clearly, the report notes, part of the structural break is linked to the stagnation in net syndicated bank lending, which some observers attribute to more prudent bank behavior. Some distortions that had earlier boosted bank flows have undoubtedly been removed, and banks have indicated a desire to move up the credit spectrum and avoid poor credit risks. Indeed, with some notable exceptions, the stagnation in bank lending chiefly reflects reduced

demand for international syndicated loans from higher quality emerging market corporates.

But the global slowing, the report also argues, surely has had some direct impact on the flow of capital to emerging markets. Emerging markets have remained an opportunistic asset class farther down the credit spectrum. In periods of notable economic slowdown or sharply heightened global risk aversion, emerging markets are considerably affected by the flight to higher quality. The report notes that anxiety in November 2000 over Argentina and Turkey—then expected to be the largest sovereign borrowers on international markets—came close on the heels of growing concern over the U.S. slowdown, a sell-off in the U.S. high-yield market, and the subsequent closure of (dollar) primary markets for emerging markets.

Compounding the cyclical factors is the synchronized nature of the current global slowdown. Simultaneous downturns in the United States, Europe, and Japan have afforded fewer opportunities to benefit from diversification in global and emerging markets. The report notes, in particular, the impact of the technology-media-telecom bubble, which was highly correlated with the U.S. economic cycle and played a key role in shaping the volume of financing flows to emerging markets. The boom in this sector raised not only equity placements but also syndicated bank loans and bond issues from the sector. And the subsequent unwinding has played a major role in reducing the volume of new flows.

Finally, *Emerging Market Financing* looks at the respective shares of U.S.-based international and emerging market funds as a proportion of all U.S.-based equity mutual funds. The report finds that international and emerging market shares moved hand in hand (see chart, this page) and that similar considerations drove allocations to both markets. This seems to reflect a discrete change in investor awareness and preferences for international diversification and indicates a large increase in international and emerging market allocations during 1993–94 as investors sought out the benefits of international diversification. Both shares have been declining since, though this may reflect cyclical as well as structural factors, given the relatively better performance of U.S. equity markets in this period.

More analytical work is needed on the structural versus cyclical debate, *Emerging Market Financing* concludes. And a projected recovery in 2002 may make it easier to decipher what is, in fact, linked to cyclical developments and what is due to structural change. ■

Subir Lall  
IMF International Capital Markets Department

**Photo credits:** Denio Zara, Padraic Hughes, Pedro Márquez, and Michael Spilotro for the IMF.

## Countries need to keep investors better informed

**S**purred by the financial crises of recent years in emerging markets, the international community has been exploring ways to prevent crises and resolve more quickly the ones that do occur. Improved communication between investors and creditors looks to be a key—in particular, the recent advent of investor relations programs being pursued by a number of countries and global corporations.

But what constitutes a good investor relations program? To explore this question, the IMF and the Institute of International Finance (IIF) held a joint seminar on November 5–6 in Washington that brought together officials from 22 countries and representatives from a wide variety of private financial institutions, including commercial banks, investment banks, mutual funds, and rating agencies. In their opening remarks, Anne Krueger, IMF First Deputy Managing Director, and Charles Dallara, IIF Managing Director, urged participants to examine ways in which a frank, meaningful, and sustained dialogue could help stabilize and lower the risks associated with cross-border flows of private capital and strengthen the international financial system.

### What is an investor relations program?

In essence, an investor relations program is designed to keep investors informed about developments that may affect the value and stability of their investments. Located in the central bank or treasury, or elsewhere in government, such a program is designed to respond to inquiries from institutional investors and financial analysts and provide regular business and financial reports in printed form. It is also proactive in disseminating relevant information to investors. The program may use “road shows” (including private meetings with investor groups and government officials in world financial centers and speaking engagements at seminars and conferences), as well as electronic mail, webcasts, and other means. And it seeks to ensure that market participants have access to relevant government officials when necessary.

The thinking behind such programs is that, with private flows dwarfing official flows, it is critical for debtors and creditors to share reliable and timely information to prevent investor panics in emerging markets. These programs can help capital market participants make better borrowing and lending decisions and appreciate the risks involved, thereby reducing the risk of systemic instability.

### What these programs should do

Participants generally agreed that an investor relations program should be used to communicate realistic and forward-looking policy initiatives and ensure that

lenders would gain an understanding of the country's macroeconomic and structural objectives. The credibility of such a program depends crucially on the reputation and experience of those in charge. The senior spokesperson should have the highest access to policymaking circles and be able to communicate effectively the authorities' strategy, as well as distill the markets' concerns for the key policymakers. Participants cautioned against using the office to provide rosy and unrealistic forecasts, which can erode market confidence. Moreover, they pointed out the importance of maintaining the continuity and stability of investor relations office personnel, even when the country's political environment changes.

Gerd Häusler, Director of the IMF's International Capital Markets Department, noted that investors are interested in receiving reliable and consistent time-series data and ascertaining whether the country has appropriate, forward-looking policies. He also observed that the IMF encouraged officials of its member countries to be well informed about market sentiment and pointed out that the regularity of interaction with market participants that these programs entail can be quite useful. Häusler stressed, however, that such a program “is not a panacea for all woes or a substitute for good macroeconomic policy”—a view echoed by most other participants.

Do any of the current investor relations programs do this? Brazil and Mexico were cited by many as models of maintaining reliable lines of communication with global investors. These countries used their programs to explain their economic strategies and constraints to global markets and created a dialogue that helped them maintain their external credit lines, even in the face of regional turmoil. The programs allowed investors to air their concerns about policies as well as to make suggestions about the type and quality of data that global markets needed. Conference participants said that obtaining such feedback was important for institutions that collect and disseminate data, as well as for regulators seeking to design appropriate and effective legal and financial regulations.

Of course, investor relations programs are not new for capital markets. Private sector representatives said that U.S. corporations had long recognized their importance. Most large corporations in the United States, and increasingly in other countries, maintain these programs to update investors on company prospects and products and to provide analysts with the information needed to better gauge the risk of new ventures. Recent advances



*Mohsin Khan, Director of the IMF Institute, with Anne Krueger, IMF First Deputy Managing Director, at the opening of the investor relations seminar.*

**Brazil and Mexico were cited by many as models of maintaining reliable lines of communication with global investors.**



Gerd Häusler

in technology, such as webcasts and electronic mail, have reduced the cost of information dissemination and encouraged firms of all sizes to develop investor relations programs. In the United States, this has been encouraged by government regulations requiring financial disclosure. Such information provision is perceived to have lowered the cost of capital and enabled firms to have access to a broader set of financing options, even during market downturns.

### How the IMF can help

Where do the international financial institutions fit in? Participants agreed that the IMF could play a role in helping countries develop investor relations programs and in encouraging countries tapping the capital markets to use the IMF's guidelines on best data practices—known as the Special Data Dissemination Standards—as a template for structuring the information they present to investors and other stakeholders. IMF staff pointed out that the IMF and the World Bank are already engaged in setting up investor councils in Africa, with pilot programs starting in Ghana, Senegal, and Tanzania.

The IMF also has moved aggressively in recent years to work more closely with the private sector by, among other things, establishing the Capital Markets



Charles Dallara

Consultative Group, which is aimed at promoting financial stability by encouraging dialogue. A recent report of its Working Group on Creditor-Debtor Relations recommended that countries establish investor relations programs, provided guidelines for doing so, and stated its support for IMF efforts to integrate investor relations program reviews with Article IV consultations—the IMF's periodic checkup of country economies. ■

Ralph Chami  
IMF Institute

### Selected IMF rates

Week beginning	SDR interest rate	Rate of remuneration	Rate of charge
November 26	2.33	2.33	2.74
December 3	2.25	2.25	2.65

The SDR interest rate and the rate of remuneration are equal to a weighted average of interest rates on specified short-term domestic obligations in the money markets of the five countries whose currencies constitute the SDR valuation basket. The rate of remuneration is the rate of return on members' remunerated reserve tranche positions. The rate of charge, a proportion of the SDR interest rate, is the cost of using the IMF's financial resources. All three rates are computed each Friday for the following week. The basic rates of remuneration and charge are further adjusted to reflect burden-sharing arrangements. For the latest rates, call (202) 623-7171 or check the IMF website ([www.imf.org/cgi-shl/bur.pl?2001](http://www.imf.org/cgi-shl/bur.pl?2001)).

General information on IMF finances, including rates, may be accessed at [www.imf.org/external/fin.htm](http://www.imf.org/external/fin.htm).

Data: IMF Treasurer's Department

### Recent publications

#### IMF Staff Country Reports (\$15.00)

- 01/207: Italy: 2001 Article IV Consultation
- 01/208: Benin: Second Review of the First-Year Program and the Second-Year Program Under the PRGF
- 01/209: Republic of Croatia: First Review of the Stand-By Arrangement
- 01/210: Georgia: Financial System Stability Assessment
- 01/211: Georgia: Recent Economic Developments and Selected Issues
- 01/212: Georgia: 2001 Article IV Consultation, First Review Under the Three-Year Arrangement Under the PRGF, and Request for Waiver of Performance Criteria
- 01/213: Finland: 2001 Article IV Consultation
- 01/214: Finland: Financial System Stability Assessment
- 01/215: Finland: Selected Issues
- 01/216: Ukraine: Fifth and Sixth Review Under the Extended Arrangement
- 01/217: Brazil: Report on Observance of Standards and Codes—Fiscal Transparency Modules

#### Working Papers (\$10.00)

- 01/159: *Should Banks Be Narrowed?* Biagio Bossone

- 01/160: *Financial Development and Poverty Alleviation: Issues and Policy Implications for Developing and Transition Countries*, Paul Holden and Vassili Prokopenko
- 01/161: *Inflation Targeting Under Asymmetric Preferences*, Francisco J. Ruge-Murcia
- 01/162: *Systemic Financial Crises, Balance Sheets, and Model Uncertainty*, Mark R. Stone and Melvyn Weeks
- 01/163: *Trade in the Mashreq: An Empirical Examination*, Rodolphe Blavy
- 01/164: *Private Costs and Public Infrastructure: The Mexican Case*, Russell D. Murphy and Andrew Feltenstein

#### Other publications

- Annual Report of the Executive Board, Financial Year 2001* (free)
- International Financial Statistics Yearbook 2001* (\$72.00)
- Macroeconomic Issues and Policies in the Middle East and North Africa*, edited by Zubair Iqbal (\$28.00)
- The Modern VAT*, Liam P. Ebrill, Michael J. Keen, Jean-Paul Bodin, and Victoria P. Summers (\$35.00)

Publications are available from IMF Publication Services, Box X2001, IMF, Washington, DC 20431 U.S.A. Telephone: (202) 623-7430; fax: (202) 623-7201; e-mail: [publications@imf.org](mailto:publications@imf.org).

For information on the IMF on the Internet—including the full texts of the English edition of the *IMF Survey*, the *IMF Survey's* annual *Supplement on the IMF, Finance & Development*, an updated *IMF Publications Catalog*, and daily SDR exchange rates of 45 currencies—please visit the IMF's website ([www.imf.org](http://www.imf.org)). The full texts of all Working Papers and Policy Discussion Papers are also available on the IMF's website.



## Revolution in information technology requires a revolution in economic thinking

**P**rofessor Dale Jorgenson of Harvard University came to the IMF Institute with a message. Economists need to grasp the extent to which the information technology (IT) revolution has changed the world and their profession. He talked with IMF Institute Senior Economist Alicia Jimenez about that revolution and what policy-makers need to know about its impact on the economy.

**JIMENEZ:** Can we identify a year and a place where the information technology (IT) revolution began?

**JORGENSEN:** If I had to identify one year and one place, the year would be 1947 and the place would be Bell Labs. What took place at that time was the invention of the transistor. The transistor is a switch that can be used to encode information in binary form—a string of ones and zeroes. This was the beginning of digitization and became an economic revolution when transistors were combined into integrated circuits or computer chips.

**JIMENEZ:** In terms of its impact on the economy, how would you compare the IT revolution with, say, the invention of electricity?

**JORGENSEN:** Information technology has been more pervasive and more highly decentralized and has developed at a truly incredible speed. The progress of information technology, measured in terms of transistors on a chip, has been in the range of 35–45 percent a year. If you measure the spread of power grids and electrical devices, the comparable rate of progress would have been 2–3 percent a year.

Economic historians have begun to realize that the IT revolution has had a far greater impact than any previous economic revolution. It really stands by itself. That's why it is so important for economists and for institutions like the IMF to grasp the breadth and the speed of the IT revolution.

**JIMENEZ:** What will it take for the economic profession to gain a better understanding of the IT revolution and modify its analytical framework accordingly?

**JORGENSEN:** IT is not hard to comprehend, but it does require that we economists rethink our understanding of how growth works. We conceptualize the growth process in terms of the neoclassical growth model that Jan Tinbergen developed in the 1940s and Robert Solow refined in the 1950s. This model is based on a very significant and highly fruitful simplification: we think about growth in terms of a single commodity—output or GDP.

This simplification allows us to understand a great deal about economic growth. We abstract from many of the

complexities to focus on the determinants of growth rates. This abstraction is now a barrier to our understanding of IT's impact. Why? Because the tremendous advances in IT add one further degree of complexity. We have to understand the implications of falling IT prices relative to the prices for all other outputs in the economy.

This additional degree of complexity means, unfortunately, that we will have to rework the conceptual apparatus we have built around the Solow growth model. We have to disaggregate GDP, carve out a separate role for information technology, try to understand how that affects the composition of output, and, most important, gauge how it affects investment incentives and what impact it has on productivity growth.

In one sense, this is a small step, but it means challenging the way economists have been thinking about growth for almost half a century. This will require a revolution in economic thinking.

**JIMENEZ:** Prices of IT have declined very quickly, especially in the semiconductor sector. How is this price decline linked to growth?

**JORGENSEN:** IT contributes to growth in two ways—through investment (growth of input) and productivity growth (growth in output per unit of input). For investment, the story is simple. In response to rapid price declines, decision makers throughout the world are finding it economical to substitute information technology for existing technologies. This is happening in services and industrial processes and even changing how we manage our homes.

The rate of productivity growth in IT production has been stupendous and is increasing. But IT applications are increasingly important in a whole range of products. IT now represents about 20 percent of the value of automobiles; within the next 10 years, that figure is likely to double.

Now, what does this mean for IT's contribution to the U.S. growth rate? Investment accounts for about two-thirds of this contribution, and productivity accounts for about one-third. The composition of IT's contribution to growth varies from country to country, depending on the relative importance of IT production and IT applications.



Dale Jorgenson with Alicia Jimenez.



*Jorgenson: "7 percent of the economy is responsible for something like 40 percent of U.S. economic growth."*

**JIMENEZ:** What impact does information technology have on the sources and dissemination of business cycles?

**JORGENSEN:** It is useful to keep one key fact in mind: IT production is extremely volatile. It has periods of very rapid growth and periods of rapid pullback or slow growth. Volatility has characterized the industry since its inception. Over the past decade, we have had only one growth cycle in the United States and three cycles in the IT industry.

As information technology has become more important, it has become a substantial source of the economic volatility that leads to business cycles. It is important for economists, like the staff of the IMF, to do their best to absorb these lessons as soon as they can and make their understanding available to those who are on the front line in making policy decisions.

**JIMENEZ:** What percentage of U.S. growth can be attributed to information technology?

**JORGENSEN:** Since 1995, about 1/2 of 1 percent of the 4 percent U.S. economic growth can be associated with IT productivity and about 1 percent with IT investment. Together, that's 1 1/2 percent of the 4 percent growth of the U.S. economy. This means that 7 percent of the economy is responsible for something like 40 percent of U.S. economic growth. That is a huge contribution.

Of course, the next question is, "is this contribution permanent or transitory?" The growth we saw during the end of the 1990s—4 percent a year—would become permanent if we could maintain a two-year product cycle in IT and a level of investment and saving consistent with a balance between the growth of capital stock and output.

U.S. growth during the 1990s was very unbalanced in that capital stock grew more slowly than output. It seems paradoxical, but while U.S. economic growth was at its postwar peak, our personal saving rate was becoming negative. Combined with changes in monetary policy that could have been a bit better timed, this led to the end of very rapid growth.

I think the consensus view of a 3.2–3.3 percent growth rate for the United States for the next decade is realistic. All the post-September 11 discussion about an economic stimulus package has centered on stimulating consumption, but we need to save and invest more. That's a radical view, I know, but this is what would be necessary to maintain a higher growth rate. I do not think this will happen.

**JIMENEZ:** What impact will post-September 11 uncertainties have on the U.S. information technology sector?

**JORGENSEN:** Uncertainty is always bad for investment. I am sure that many firms are waiting until some of the uncertainties are resolved before they move ahead on IT investments. That has undoubtedly worsened the IT downturn that was already under way.

If you consider the way markets have responded to September 11, you can see some areas where the recovery has been very quick. Automobiles, for example, are now headed for possibly the best year in their history. Automobiles are a major purchase for many households, but prices came down and a lot of consumers are very price-sensitive.

I think we will see IT stage a similar comeback. The prices of IT are coming down rapidly. Very strong firms, like Intel and IBM, are going to withstand this pressure, but others will disappear. Some firms that have been strong, like Hewlett-Packard and Compaq, appear somewhat weaker after September 11. I foresee some consolidation, but downward pressure on prices will mean a quick recovery for information technology.

**JIMENEZ:** Economic growth theory suggests that poor countries are supposed to grow faster and ultimately converge with the industrial countries. Will information technology aid or impair this trend toward convergence?

**JORGENSEN:** This is a very challenging issue and the core of the ongoing debate on globalization. If we had a perfectly globalized world—one world market; no trade barriers; and a free flow of capital, labor, and commodities—we would expect information technology to diffuse rapidly and contribute to convergence.

In the real world, there are barriers to trade and capital movements and these impede investments in information technology. These barriers undermine the natural tendency toward convergence because they allow the leading IT-producing countries to move ahead relative to the others.

More rapid diffusion of IT resulting from further steps toward globalization would accelerate convergence. This puts the IMF in an extremely critical position in dealing with the spread of IT.

**JIMENEZ:** How can developing economies benefit more from information technology?

**JORGENSEN:** Developing economies are already benefiting from information technology. The most successful ones—Korea and Taiwan [Province of China]—are participating very actively in the production of information technology. IT is a cost-driven business, and it is cost-effective for U.S. firms to produce semiconductors in Malaysia or Singapore



because low costs of packaging and transportation make it worthwhile.

As wages rise as a result of the East Asian miracle, the IT industry is increasingly migrating to China and India. So then the question for developing countries is, what do we need to do to attract information technology? The answer is simple—be open to foreign investment, foreign technology, and foreign capital.

**JIMENEZ:** *In the final accounting, who really benefits more from information technology: users because of lower prices, workers because of higher wages, or producers because of higher profits?*

**JORGENSEN:** IT users have benefited enormously from lower prices, but workers have also benefited a great deal from higher wages. That was not so apparent in the United States, where real wages seemed to stagnate for a long time. There is no doubt now, though, that real wages rose rapidly in conjunction with the IT boom in the late 1990s.

For producers, however, the picture is decidedly mixed. Intel, for example, has a very high profit margin. They are a cutting-edge firm and can command rents associated with being out in front of everybody else. It's part of their corporate strategy, and they do it very well. IBM, long in the doldrums, is now quite profitable too. But others are obviously in decline.

With the acceleration of IT development, Schumpeter's famous process of "creative destruction" is now taking place in a highly compressed time frame within the IT sector. That is good for producers, but is even better for users. The big winners are IT users and those workers who have upgraded their skills to make effective use of this technology.

And that is something I'd like to see economists do too. Let me reemphasize my earlier point: Economists need to upgrade their understanding of IT's role in the economy so that they can help their clients, the world's policymakers, benefit from the IT revolution. We economists have a long way to go. ■

**"Economists need to upgrade their understanding of IT's role in the economy so that they can help their clients, the world's policymakers, benefit from the IT revolution."**

**—Dale Jorgenson**

## Available on the web ([www.imf.org](http://www.imf.org))

### Press Releases

- 01/48: IMF and World Bank Support \$3 Billion in Debt-Service Relief for Tanzania Under Enhanced HIPC Initiative, November 27
- 01/49: IMF Approves in Principle Three-Year, \$93 Million PRGF Arrangement for the Kyrgyz Republic, November 30

### News Briefs

- 01/118: Aninat Welcomes Agreement with Peru on New Program, November 21
- 01/119: IMF Completes First Review of Vietnam's PRGF Program and Approves \$52 Million Disbursement, November 21
- 01/120: IMF Completes Fourth Review Under Mauritania's PRGF Arrangement and Approves \$8 Million Disbursement, November 21
- 01/121: IMF Approves \$3 Billion to Turkey Under Stand-By Arrangement, November 28
- 01/122: IMF, World Bank, ADB, and UNDP Sponsor Regional Conference in Hanoi on National Poverty Reduction Strategies, November 29
- 01/123: IMF Completes in Principle Review Under Burkina Faso's PRGF Arrangement and Approves \$7 Million Disbursement, November 30
- 01/124: IMF Completes Djibouti's Review Under the PRGF Arrangement and Approves \$5 Million Disbursement, November 30
- 01/125: IMF Completes Madagascar's Review Under the PRGF Arrangement and Approves \$14 Million Disbursement, December 5
- 01/126: IMF Completes Review Under The Gambia PRGF Arrangement and Approves \$4 Million Disbursement, December 6

### Public Information Notices

- 01/121: IMF Concludes 2001 Article IV Consultation with Italy, November 20
- 01/122: IMF Concludes 2001 Article IV Consultation with Finland, November 21

### Speeches

- The Challenges of the New Financial Economy—Statement by Flemming Larsen at the Joint Meeting of the Commission des Finances of the French National Assembly and the Haut Conseil de la Coopération Internationale, November 15
- A New Approach to Sovereign Debt Restructuring—Address by Anne Krueger, IMF First Deputy Managing Director, at the National Economists' Club, Washington, D.C., November 26 (see page 385)

### Transcripts

- Press Briefing on the Staff Report of the Article IV Consultation with Italy by Maxwell Watson and Gian Maria Milesi-Ferretti, European I Department, November 20
- Press Briefing by Thomas Dawson, Director of IMF External Relations Department, December 6 (see page 386)

### Other

- Statements by H.E. Masajuro Shiokawa, Minister of Finance of Japan; Pedro Malan, Minister of Finance of Brazil; and Gerrit Zalm, Minister of Finance of the Netherlands, International Monetary and Financial Committee, Ottawa, Canada, November 20\*
- IMF Financial Activities, November 23
- Financial Statement of the IMF, Quarter Ended October 31, 2001, December 3\*

\*Date posted.

## United States holds the key to global recovery, but Japan and Europe could do more

Following a decade of phenomenal growth, the U.S. economy has faltered; experts acknowledge that it has entered a recession. The U.S. slowdown was already under way before September 11, but the terrorist attacks have magnified it. With the rest of the world feeling the repercussions of both the slowdown and the attacks, and no country or region healthy enough to take over the role of locomotive played in recent years by the United States, what are the prospects for a global economic recovery? This question was the focus of the Global Interdependence Center's twentieth annual conference on global monetary, fiscal, and trade issues, held on November 5 in Philadelphia.

The panelists, ranging from current and former U.S. government officials to academics and private sector leaders, agreed that the United States holds the key to a global economic recovery but that Japan and Europe could be doing a lot more to help. The panelists also agreed that recovery, when it does come, must lead to a more even distribution of economic benefits around the world and greater acceptance by the major economic powers of their global roles. But there was no consensus on just how serious the U.S. slowdown is and when recovery can be expected.

### U.S. economy: good and bad news

The conference took the form of a tour of the world, with panelists providing a snapshot of different regions. Martin Barnes, presenting the U.S. outlook, suggested that the recession would be deep, not shallow, as many predicted. But he disagreed with the pessimistic view that the United States faces years of economic misery as a result of the excesses built up over the 1990s. He pointed to lower energy costs, lower interest rates, and the tax rebates as positive signs, although he acknowledged they wouldn't fully offset declining employment and the loss of wealth caused by the terrorist attacks. The recession won't last forever, he said, and recovery may even come by next spring.

As for three often-cited structural concerns, Barnes dismissed them as overstated.

- First, the United States does not have an especially low saving rate, and Barnes argued that there was no evidence of a severe debt strain. With lower interest rates, he said, people can refinance their debt. The U.S. financial system is also in good shape.

- Second, Barnes disagreed that there was massive overcapacity following the investment boom of the 1990s. Unlike in Japan, he said, investment has been productive. One obvious area for further investment and growth is the energy sector, as the United States

develops domestic energy to reduce its dependence on Middle Eastern oil.

- Third, although the United States has become a big debtor country, and the growth of its external debt is unsustainable, Barnes disputed that this presents a serious short-term problem. The trade deficit is a symbol of U.S. vigor, he said, representing strong U.S. demand. Moreover, U.S. productivity growth has risen—and the rise isn't just cyclical—although the pace is likely to have slowed in the wake of the terrorist attacks, with resources having to be devoted to security rather than more productive expenditures.

All in all, Barnes concluded, the United States is doing more than anyone thought it would do and, in cutting interest rates, is doing the right thing.

### Can Europe do more?

Looking across the Atlantic, Robert Solomon noted that Europe's growth had been strong in 1999–2000, but that it had slowed since late 2000—particularly in the largest economies of the euro area: France, Germany, and Italy. The explanation lay partly in policies and policy constraints associated with the creation of the European Economic and Monetary Union (EMU) under the Maastricht Treaty of 1991. One of its requirements is that participating countries limit their budget deficits to 3 percent of GDP, which they in fact have done. Another feature of the EMU was the birth of the euro. The objective of monetary policy in the euro area is price stability, which is expected to encourage growth and employment but which has limited the support that monetary policy has provided to demand in the short term.

For Lawrence Klein, similarly, the Europeans' single-minded focus on curbing inflation and meeting the Maastricht criteria has “held back healthy expansion for a number of years” and prevented a timely response to the worsening economic situation. The European Central Bank finally lowered interest rates and is expected to lower them even more, but a number of speakers agreed that monetary policy alone cannot do the job. Solomon stressed that Europe could do more with fiscal policy. Klein, stating the consensus view at the conference, observed that “Europe demonstrates a lack of imagination, passing up opportunities to stimulate the economy by coordinating monetary and fiscal policies.”

### Japan...and the rest of Asia

Turning to Japan, Edward Lincoln suggested three sources for its economic malaise: the \$800 billion to \$1 trillion in nonperforming loans, the questionable conduct of macroeconomic policy, and the lack of systemic

### Building a Global Recovery: Policymakers and Investors Working Together

#### Participants

*Martin Barnes*  
Managing Editor  
*The Bank Credit Analyst*

*William Dunkelberg*  
Chair, Global  
Interdependence Center

*Lincoln Gordon*  
Guest Scholar  
The Brookings Institution

*Robert Hormats*  
Vice Chair  
Goldman Sachs  
International

*Lawrence Klein*  
Benjamin Franklin  
Professor of Economics  
Emeritus, University of  
Pennsylvania

*Steven Landefeld*  
Director, Bureau of  
Economic Analysis  
U.S. Department of  
Commerce

*Edward Lincoln*  
Guest Scholar  
The Brookings Institution

*Anthony Santomero*  
President, Federal Reserve  
Bank of Philadelphia

*Allen J. Simpson*  
Conference Chair

*Robert Solomon*  
Guest Scholar  
The Brookings Institution



**"The estimates for Africa show more promise, in a relative sense, than is usually the case."**

—Lawrence Klein

reform. Why wasn't Japan addressing its loan problem? He argued that politics is at the root. Japanese politicians have incestuous relations with borrowers and the banking community, Lincoln said. For example, investment banks commonly lend money to politicians to buy a particular stock and then ramp up stock prices, allowing the politicians to sell out, repay the loan, and make a profit. If the nonperforming loan problem were cleared up, many such illegal transactions would come to light, causing embarrassment to both individuals and institutions. This reluctance to undertake a final accounting of illegal transactions will certainly delay recovery, but Lincoln felt it would not, ultimately, prevent recovery.

On the macroeconomic front, Lincoln said that monetary policy has failed to stimulate the economy and that the on-again, off-again approach to fiscal policy has left the public wondering where the government stands. Interest rates are now close to zero, and deflation has become entrenched at 1 percent a year. Could the authorities do more? Most economists agree that the Bank of Japan should target positive inflation, which the Bank of Japan appears unwilling to do. But here, too, Lincoln suggested that politics was to blame. The Bank of Japan became independent only in 1998, when interest rates were close to  $\frac{1}{2}$  of 1 percent. There is outside pressure on the Bank of Japan to try inflation targeting, but if it responds to the pressure, it cannot prove its independence. Thus, Lincoln said, there is a stalemate.

Of course, Japan needs to deregulate in certain sectors and increase transparency. Some progress has been made on this front over the past 10 years, but Lincoln noted that changes had been more legal than behavioral. Moreover, he said, until 10 years ago, the Japanese were proud of their economic system, which had performed well for four decades. They felt they had a kinder, gentler form of capitalism and resisted changing to what they considered a harsher, less caring, U.S. style of capitalism. In the end, there isn't too much public pressure for change because, even in recession, people are still better off than they were 10 years ago.

How are Japan's regional neighbors doing? Klein reported that most of the Asian economies hit by financial crisis in the late 1990s had recovered, with Hong Kong SAR, Korea, Malaysia, and Singapore taking a spectacular turn for the better. However, by 2001 a few countries had experienced secondary relapses, and those that had strong links to the U.S. economy and were part of the high-tech boom have been hit particularly hard. But their chances for improvement are good, Klein said, if they improve their financial transparency, reduce corruption, adopt uniform accounting standards, reduce nonperforming loans, and combine such structural reforms with macroeconomic stabilization policies. He cited two cases of notable performance in Asia: China, which escaped the crises of 1997–98 and has been an island of stability for Asia; and India, which expanded at an

impressive rate before succumbing to the effects of the U.S. downturn.

### Africa and transition economies

Turning to Africa, Klein noted that "the estimates for Africa show more promise, in a relative sense, than is usually the case." But the challenges are enormous. The rapidly increasing population hampers per capita growth, and strong expansion is held back by weak commodity prices, political instability, and the ravages of AIDS.

The picture for Eastern and Central Europe has been clouded by the U.S. slowdown, Klein observed, although it is still brighter than for other spots. Overall growth is expected to dip, but inflation is broadly under control. He noted that the Baltic countries and Hungary are hanging on to their earlier gains better than their neighbors, including Poland, which had become a "bright economic star in the east" but registered poor production activity over the summer. Another relatively bright spot is Russia, which grew strongly in 2000 and should continue to expand but at a more modest rate. Lower energy prices, held down by the global downturn, have helped Russia, Klein said, but Middle East conditions leave the supply situation in doubt and the future trend of oil prices uncertain.

### Latin America: a troubled picture

As for Latin America, Lincoln Gordon was pessimistic about its short-term growth prospects, given its dependence on a U.S. recovery. Argentina is, he said, in its third consecutive year of negative growth. Moreover, "the dam on its debt situation is about to burst, and default is likely." Unemployment, a serious political issue, is dangerously high at about 20 percent, increasing the country's political uncertainties and raising questions about the regime itself.

Brazil, the region's largest economy, turned in a stronger-than-expected performance in 2000 but will not meet early hopes for this year. Gordon said that it, too, has been affected by the global economic slowdown, as well as by the effects of an electric power crisis last summer, contagion from Argentina's troubles, and uncertainties about the political leadership in the run-up to a major election in October 2002.

The good news, Gordon said, is that the medium- and longer-term outlook for the region look better, except in Colombia, where drugs, civil war, and political strife reign. Among the reasons for his optimism are that democracy appears to be taking hold and education is being universalized, which is expanding the middle class and should, therefore, improve income distribution.

### Is growth accurately measured?

Of course, all these economic projections hinge on good data and good measurement techniques. So, against the backdrop of the boom years of the 1990s, Steven





The United States is experiencing the highest combined level of economic and personal uncertainty since the Cuban missile crisis.

—Robert Hormats

Landefeld asked if the existing instruments for measuring global growth, inflation, and productivity are accurate, especially in what appears to be a new type of economy. First, he asked three other questions: Is the “new economy” a real phenomenon? Has there been an increase in productivity and growth? And, is technology driving growth and productivity? The answers, Landefeld said, are yes.

But current measurement instruments, he said, are oriented toward the old, industrial economy and may well measure wages and salaries in that sector, while understating prices, output, and income in the services sector. For example, he said, it was traditional to measure hours worked to estimate banking sector GDP. But to measure productivity growth in the high-tech banking sector more accurately, Landefeld said, we need to take concrete steps to measure output, such as by counting the number of ATM transactions, wire transfers, and withdrawals and deposits.

#### Future of global interdependence

Robert Hormats summed up by exploring what global interdependence meant for a world in a sharp, synchronized slowdown, with the fate of most countries depending on a U.S. recovery. And the United States is experiencing the highest combined level of economic and personal

uncertainty since the Cuban missile crisis, he said. In the wake of the terrorist attacks, consumers are reluctant to spend and people feel uncertain about their future. A major element of the new economy has been the movement of goods, ideas, and people across borders, but the terrorist attacks have bogged down this movement, creating a drag on the economy that could last for some time.

As for what the United States has been doing and what it should do, Hormats agreed with Barnes that cutting interest rates has been the right way to go. However, he called U.S. fiscal policy confusing and suggested that bipartisanship might collapse without passage of an economic stimulus bill. He called for an investment tax credit in the corporate sector, a tax rebate for the 51 million low-income families that have not already received one, and a state sales tax holiday. These measures are not panaceas, but would make good economic and humanitarian sense. Even with fiscal stimulus, Hormats expected a slow and difficult recovery even if there are no more terrorist acts. But since September 11, he concluded, the United States has become more global, “in spite of the anti-global position of the incumbent government,” and should continue to move in this direction. ■

Elisa Diehl  
Assistant Editor, *IMF Survey*

## Obstfeld reflects on currency crises, exchange rate regimes, and early warning systems

**O**n November 1, Maurice Obstfeld, a Professor of Economics at the University of California, Berkeley, gave a seminar at the IMF Institute on speculative attacks. Olivier Jeanne, an Economist in the IMF's Research Department, took the occasion to ask Obstfeld about currency crises and the economist community's efforts to both understand these crises and predict them.

**JEANNE:** How different is the way we think about currency crises now from how we thought about them, say, 10 or 15 years ago?

**OBSTFELD:** In the early 1980s, the Paul Krugman model provided the economic model for thinking about currency crises. And it served as a useful theoretical counterpoint to the claims of government ministers

who argued that the gnomes of Zurich—irrational and ill-intentioned speculators—caused these crises. Krugman's model demonstrated that, even though sudden attacks may seem to be the product of arbitrary speculative sentiment, they are in fact the outcome of rational speculation with perfect foresight.

The elegance of that sort of model, however, took us too far along the road of ignoring real world problems. There are nuanced situations in which crises can

occur. And the epidemic developments of the past 15 years or so have helped us understand that there are several mechanisms through which expectations can either hasten crises or bring about crises that would not have occurred in the absence of that speculation. A “second-generation” model of currency crises explored these mechanisms.

We have reached a healthier middle ground now, and we recognize a variety of crises. Some, indeed, are of the Krugman variety—the inevitable result of inconsistent or unsustainable policies. But others are akin to the classical distinction between liquidity and solvency. There can be liquidity crises that would not have occurred in the absence of a loss of confidence, even when a situation is sustainable over the longer term.

**JEANNE:** After the Asian crisis, the consensus seemed to be that we were experiencing a new kind of crisis and that a “third-generation” theory was needed to account for them. What is your view on this?

**OBSTFELD:** In academia, we tend to rely on labeling and advertising our product. The so-called third-generation models are fundamentally similar to what we had labeled the second-generation models. Both really hinge on self-fulfilling mechanisms through which market expectations can make a crisis more likely.



Obstfeld: “When the authorities draw a line in the sand and dare the markets to go over it, well—the markets just might.”

The initial wave of second-generation models identified the heart of the problem as an optimizing government reacting to the crisis. In reality, that is what we see in these other crises as well. You can build a model in which there are constraints that lead to a crisis even in the absence of government intervention, but these constraints are often not as harsh as the models make them out to be, and there are trade-offs that a government is following in its choice of policies and in its dealing with the IMF and the private sector. All in all, I would say the commonalities between the second- and so-called third-generation models probably outweigh the differences.

**JEANNE:** Floating exchange rate regimes with inflation targeting are now in fashion for emerging economies. Floating regimes are thought to be immune to the kind of crises that have afflicted fixed currency pegs, but inflation-targeting regimes may lack credibility just as fixed currency rates do. Are speculative attacks on floating exchange rates conceivable?

**OBSTFELD:** There is essentially no such thing as a purely floating exchange rate—or at least it's very rare. There really is a continuum between fixed and floating. And the closer you are on that continuum to having an exchange rate target, the greater the potential for an attack of the type we see under fixed rates. When the authorities draw a line in the sand and dare the markets to go over it, well—the markets just might.

Even in the more idealized case of a free float, you can see rapid sell-offs as market sentiments change or as new information is released. The critical difference is that an exchange rate that is largely market-determined is incorporating expectations and market assessments as soon as they become available. In the case of a peg, whatever information is driving trades is being reflected in other variables—reserves, interest rates, and so on—perhaps over a long period and possibly with great collateral damage to the economy. And the damage can come not only through the direct effects of these variables but also through the sometimes ill-advised actions that governments take to retain their pegs. Think of the United Kingdom's forward interventions in support of sterling in the 1960s, which ended up being remarkably costly. Or look at Thailand's more recent interventions in support of the baht.

Of course, you can intervene under a floating rate to slow the fall of the exchange rate, and you can lose money in the process, too, but the incentive to do so is much smaller. The government's prestige is much less tied up in a floating rate than it is in a declared peg that the government is bent on defending. So I would still argue that fixed rates hold significantly greater hazards. The escape valve that a continuously adjusting exchange rate provides for a floating rate is simply not there for a more fixed rate until far down the line. And at that point, a government's hand is forced in circumstances that often turn out to be quite devastating.

The other issue, of course, that arises with fixed versus floating rates is the extent to which the illusion of fixity may lull market participants into insufficient hedging of the risks they are taking. That's a problem we have seen in many recent crises.

**JEANNE:** From a theoretical point of view, how much should a country hold in reserves to prevent a speculative attack? And can you comment on a basic, but recurring, problem in the design of IMF programs—how much should we lend?

**OBSTFELD:** You could argue that if you really want to immunize your country against a financial-fragility-based speculative attack, you should have liquidity available to completely repay your country's entire short-term external debts. But that could be a lot of liquidity, and it could raise moral hazard issues if the assurance of this liquidity provides inducements for excessive short-term borrowing. I guess the answer really is that there is no easy answer to this question. Of course, some types of attack are unrelated to the level of international liquidity. They are instead based on the connection between currency expectations and basic macro conditions. In those situations, no amount of reserves would foreclose a crisis.

On your second question, though, there clearly is a role for IMF lending, but its needs to be a catalyst for private sector involvement. It would be quite misguided to view the IMF as an organization that behaves as an international lender of last resort—one with immense resources that allowed it to bail out anyone at any time. The safeguards that domestic central banks can impose against moral hazard are perhaps themselves insufficient, but certainly the IMF doesn't have even these safeguards, and it has no sanctions available to it in dealing with sovereign governments.

**JEANNE:** Let's conclude with a question on early warning systems. How far can we go in predicting currency crises?

**OBSTFELD:** Well, the evidence shows some limited predictability of crises even out of sample. But these sorts of exercises also produce many false positives. One is reminded of Paul Samuelson's quip about the stock market predicting 10 out of the last 3 recessions. I think it is very useful to try to quantify the variables that help predict crises. There are few surprises there, and in fact these variables, by their significance in forecasting equations, do lend support to a number of the theories of crises that we have developed in recent years.

But in practice it is difficult, I think, to know how to use these forecasting tools optimally and how to respond. For example, one type of exercise looks at the probability of a crisis, and we found explanators of probabilities of crises that perform reasonably well even out of sample. But at what point should the alarm bells

At what point should the alarm bells go off for the domestic government or the IMF—at 25 percent probability of crisis, at a 50 percent probability of crisis?

—Maurice Obstfeld

go off for the domestic government or the IMF—at 25 percent probability of crisis, at a 50 percent probability of crisis? And then what does one do about it? The models are useful in giving us some sense of the factors raising the probability of crisis but those are often correlated and models don't really make clear what the most effective policy response is.

Finally, there is the issue of what we gain beyond looking at indicators. Going back to the case of Thailand, the IMF noticed the current account deficit and other problems in the country, and the meltdown of the asset prices warned about the precarious situation of the baht, but you couldn't really get any response. Would a model have helped? There may be a

political economy argument that if the IMF has a model and its indicator could credibly claim to be flashing red, it may have more clout in getting governments to adjust than if you simply have the hunches of the Research Department or the Managing Director.

I don't know the answer to that. Models can be run in many different ways; they are subject to discretion and judgment. I would be skeptical of the political economy view for having the model. Increasingly, policymakers are sophisticated about how these forecasts are made, and a model based on assessments would probably have only a marginally greater clout than the judgmental assessments that the IMF has issued in the past. ■

### IMF Research Conference

## Participants explore effective conditionality, costs of currency crises, disinflation

**I**naugurating the IMF's second Annual Research Conference, First Deputy Managing Director Anne Krueger said she was "jealous not to be able to attend the whole event." She had reason to be: the November 29–30 conference featured lively discussions on what made for successful IMF programs, how to design effective conditionality for IMF loans, and the impact of currency crises. IMF Economic Counsellor Ken Rogoff delivered a tribute to the enduring academic legacy of MIT professor Rudi Dornbusch. And Dornbusch himself made a cameo appearance.

During the Asian crisis, conditions attached to IMF loans were criticized for being too extensive: asking for too much too soon. In response to such criticism—some of it shared in internal IMF assessments—the IMF has launched a review of its conditionality. Several papers at the conference offered fresh ideas to make conditionality more effective.

Allan Drazen (Tel Aviv University) said that recognition of the "heterogeneity of interests within countries" is the key. Groups within a country seldom agree on the policies needed to surmount a financial crisis; they may agree even less on measures needed to enhance longer-term prospects. Particularly important in the political process are so-called veto players—interest groups powerful enough to block reforms. Conditional lending, according to Drazen, ought to enable the IMF to push forward with reforms in the face of this diversity of interests, in some cases by buying the acquiescence of veto players.

Indeed, new work presented at the conference found that strong special interests and lack of political cohesion were among the factors that had thrown IMF programs off track. The study, by the IMF's Anna Ivanova, Alex Mourmouras, and George Anayiotos (in joint work with Wolfgang Mayer of the University of Cincinnati), analyzed 170 programs approved during the 1990s.

Jeffrey Frieden (Harvard University) questioned whether IMF lending is large enough to provide by itself the incentives to induce substantial changes in domestic policies. He suggested that IMF conditionality is instead a way for many countries to render themselves more attractive to the bigger pools of private capital by signaling their willingness to pursue certain kinds of reforms.

### Whose program is it, anyway?

IMF Institute Director Mohsin Khan emphasized the role of conditionality in reconciling the sometimes divergent interests of the IMF and borrowing countries. Drawing on work done with his colleague Sunil Sharma, Khan said conditionality should, in theory, play the role covenants have played in private financial contracts. Many private loan contracts use collateral or devices such as covenants to safeguard the lender's money. Contracts between the IMF and its borrowers can be viewed as a type of "complex covenant." The borrowing country agrees to a set of policies to provide assurances to the IMF that it will be able to repay the loan.

But how can the covenant entered into by borrowing countries and the IMF be enforced? One way is to bolster ownership by giving borrowing countries a true say in the design of their programs, thereby reducing the temptation to deviate from the agreed policies.

Where program ownership is lacking, Khan suggested that the IMF should consider blending its current practices with outcomes-based conditionality. That is, it could make the release of IMF resources conditional on the achievement of concrete results. Likewise, the IMF's Tito Cordella and Giovanni Dell'Ariccia suggested that, if faced with a lack of program ownership, donors should assist specific projects rather than provide direct support for the country's budget, which can more easily be diverted to unproductive uses.



Allan Drazen



Anna Ivanova



Jeffrey Frieden



Making conditionality more effective may also require that the IMF say no more often. Clearly, knowledge that the IMF is unwilling to mete out punishments is likely to reduce the incentives borrowing countries have to treat conditionality as a covenant to be honored. But the reasons why countries are let off the hook can be many. Continued assistance to the country may be deemed essential to the stability of the international financial system or may be necessary on humanitarian grounds, or there may be political pressure on the IMF from some of its shareholders to continue to provide assistance to certain countries.

Indeed, Korea University's Jong-Wha Lee (presenting work conducted jointly with Harvard's Robert Barro) alleged that countries with stronger political connections to the IMF are more likely to get an IMF loan approved. They measured political connections in terms of the member's country quota, its national staff at the IMF, and its political proximity to major shareholders, notably the United States. (Political proximity was determined by looking at how closely a country voted in the United Nations along with major shareholders.)

In discussing the Barro-Lee paper, the IMF's Tim Lane said it was difficult to interpret these political factors. Their influence on the odds of getting an IMF loan may simply reflect the authors' decision to exclude concessional financing from their analysis; the poorer countries have small quotas and small representation on IMF staff and typically get concessional financing rather than Stand-By or Extended Arrangements. And the voting record may, in part, reflect the ideological affinity that existed among groups of countries in the Cold War era.

Lane also raised cautionary flags about the Barro-Lee finding that IMF programs over the past quarter century appear to have no impact on countries' long-run growth. He noted that the study used five-year averages of data, thus encompassing some of the decline in growth that is typical of the period prior to the adoption of an IMF program. Lane also noted that, over time, growth has been given greater prominence as an objective of IMF-supported programs; hence, it would be interesting to examine whether the Barro-Lee finding would hold over a more recent time period.

### Are currency crises costly?

As Rudi Dornbusch has noted, the *prima facie* evidence that currency crises are costly is that finance ministers and central bank governors typically lose their jobs. Several papers at the conference addressed the costs of currency crises and how they have changed in recent years.

The IMF's Ratna Sahay (presenting joint work with the IMF's Poonam Gupta and the World Bank's Deepak Mishra) noted that economic output has responded to currency crises in quite varied ways. While catastrophic declines tend to draw most atten-

tion, there are many more cases of modest declines. In fact, 40 percent of the 200 crisis episodes they studied, Sahay said, were actually associated with increases in output.

Such a result is not wholly unexpected. In principle, a devaluation gives the country a temporary competitive advantage in export markets, and this effect tends to boost output. Kristin Forbes (U.S. Treasury) sought just such an effect by examining the impact of recent devaluations on firms that produce commodities for export.

Nevertheless, the finding that most crises are associated with output contractions means that the beneficial impact on exports is overwhelmed by adverse impacts elsewhere. Nouriel Roubini (New York University) provided a useful catalogue of these other channels. One prominent one is the adverse impact of devaluation on the balance sheets of companies and banks; the ensuing credit crunch is often the culprit in the output decline observed after many currency crises. Two other papers at the conference studied the links among credit crunches, currency crises, and output growth: Aaron Tornell (University of California, Los Angeles) and Frank Westermann (University of Munich) studied boom-bust cycles in credit-constrained emerging markets, while Adolfo Barajas (IMF) and Roberto Steiner (Universidad de los Andes) examined the troubling emergence of credit stagnation in five Latin American economies.

Currency crises can exact a toll not just on output growth but on inflation. But the inflationary consequences of many recent crises have been surprisingly benign. Northwestern University's Martin Eichenbaum (in joint work with colleagues Ariel Burstein and Sergio Rebelo) presented evidence that lower inflation is partly the result of consumers switching from imports to lower-priced (and sometimes lower-quality) domestic products in the aftermath of a devaluation. Moreover, distribution costs, which are insensitive to exchange rate changes, may play a larger role than generally assumed.

Frankfurt University's Axel Weber and Günter Beck studied the impact of currency crises on global economic integration, as reflected in the extent to which consumer prices in different countries move in tandem. The authors assembled a large data set of consumer prices in some 200 cities (or regions) in more than 20 countries. They found that, in response to the currency crises of the 1990s, price differences between locations on different continents have gone up—a phenomenon the authors labeled “continental drift.”

The Asian crisis sparked a debate on the role of fiscal policy in stimulating economic activity during a crisis. The IMF's Emanuele Baldacci, Marco Cangiano, Selma Mahfouz, and Axel Schimmelpfennig examined the behavior of fiscal policy during recessions, many of which have in recent years coincided with currency crises. Their analysis suggests that an expansionary fis-



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December 10, 2001  
400



*IMF Economic Counsellor Ken Rogoff (left) with former IMF First Deputy Managing Director Stanley Fischer.*

cal policy may be of some help in making recession less severe, but the effect appears to be small and varies a fair bit across recessions.

The IMF's Stephanie Eble and Petya Koeva studied how Russians felt about the transition to a market economy in the immediate aftermath of the 1998 currency crisis in Russia. Nearly 40 percent of those surveyed desired a return to socialism. And, as expected, those whose economic fortunes had declined since the start of the transition tended to have more negative views of market reforms. Another finding was that resistance to reforms rose with age: older people, particularly retirees, were far more inclined than the young to want to turn back the clock. In the ensuing debate over the implications of this finding, some suggested the opposition was rooted in ideology (they were "die-hard Stalinists" in the words of discussant Anders Aslund of the Carnegie Endowment of International Peace). Others felt the elderly opposed reforms for purely economic reasons and argued that policies could be better designed to ameliorate the adverse impact of transition on those with fixed incomes.

### Why disinflations fail

Countries experiencing high inflation typically embark on attempts at stabilization or disinflation. Why do some of these succeed while others fail? The IMF's Javier Hamann and Alessandro Prati conducted a careful study of 51 stabilization episodes to answer this question. Several factors are important in determining success or failure. Countries that start out from higher initial levels of inflation are more likely to succeed, a result that discussant Holger Wolf of George Washington University quipped may be because "the greater the sin, the greater the repentance." Countries that used an exchange rate peg as a nominal anchor were more likely to succeed in their disinflation attempts.



*The conference paid special tribute to Rudi Dornbusch (right) for his seminal work on "overshooting."*

Participants at the conference noted that the unpopularity of exchange rate pegs must therefore be due to other problems, such as the difficulties in letting go of a peg in an orderly fashion once the disinflation goal has been met. Good luck helps—world interest rates and import demand from partner countries can influence the success of a disinflation attempt. Credibility matters, too. Countries with a longer history of high inflation are more likely to fail. Political institutions and conditions were also found to be important determinants of success.

### Bright star in academia's firmament

The Mundell-Fleming lecture, delivered by IMF Economic Counsellor Ken Rogoff, commemorated the twenty-fifth anniversary of a seminal article by Rudi Dornbusch on "overshooting." The article traced the path the exchange rate will follow in response to a change in money supply. Dornbusch demonstrated that the exchange rate will initially go beyond (or overshoot) the level at which it subsequently settles. (In principle, "undershooting" is also possible if output is very responsive to interest rates; indeed, in a paper presented in the conference, Oxford University's Janine Aron and John Muellbauer suggested this was the case for South Africa.)

Rogoff credited Dornbusch's paper with reviving the then-moribund field of international finance. He noted that when he needs a quick answer, he is far more likely to turn to the elegant Dornbusch paper than to his own 900-page textbook, *New Open Economy Macroeconomics*. Dornbusch had the last word: Coming to the stage in a cameo appearance, he said that Rogoff had been generous "far beyond reason" and that he appreciated Rogoff's willingness "to put his credibility on the line" so early in his tenure at the IMF. ■

Prakash Loungani  
IMF External Relations Department