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Latin America

An End to Boom and Bust?



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Latin America Gets Its Groove on

LATIN America has long been a region of paradox and contrasts: a land of prosperity and poverty, of independence and dependence, and of stability and instability. But things may be changing. Throwing off its reputation for boom and bust, over the past decade the Latin American region has prospered. Faster and sustained output growth during much of the 2000s was accompanied by important improvements in social conditions. In addition, the region strengthened its economic fundamentals and better prepared itself for economic shocks—so the impact of the recent global crisis was in most cases relatively mild and short-lived when compared with the crushing economic problems it faced during previous episodes of global turbulence.

In our cover story, Nicolás Eyzaguirre, the Director of the IMF's Western Hemisphere Department, says that Latin America has the potential to become an increasingly important global player. But boosting productivity and competitiveness remain key policy challenges and the fruits of success must be more broadly shared. Other articles look in particular at prospects for Brazil, inequality in Latin America, and how to raise productivity.

* * * * *

We also look at rising agricultural prices, with many low- and middle-income countries once again battling with the

implications of high food prices, given their adverse effects on poverty, inflation, and, in the case of importing countries, the balance of payments.

As policymakers struggle to make the global monetary system more stable in the wake of the world financial crisis, we interview former IMF Managing Director Michel Camdessus, who headed a group of luminaries tasked with generating ideas. He discusses a proposed package of measures to make the system safer.

We also talk to growth guru Robert Solow, who won the Nobel Prize in 1987, about what we can learn from the global economic crisis. Two lessons economists should take to heart, he says, are that it is now impossible to pursue macroeconomics without taking into account finance, and that financial markets are not necessarily stable or self-correcting.

And with the size of public debt now so much in the spotlight, our *Picture This* column makes use of a new database from the IMF that tracks the build-up of debt from 1880 through the Great Depression and up to the present day. To accompany the article, we also have a fascinating slideshow that you can find on our website: www.imf.org/fandd.

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IMF head calls for systemic reform

IMF Managing Director Dominique Strauss-Kahn warned recently that lack of action to reform the international monetary system could sow the seeds of the next crisis.

“Global imbalances are back, and issues that worried us before the crisis—large and volatile capital flows, exchange rate pressures, rapidly growing excess reserves—are on the front burner once again,” Strauss-Kahn said during a panel discussion on the international monetary system held February 10 at the IMF’s headquarters in Washington, D.C.

But reforms to the international monetary system, he said, could both “bolster the recovery and strengthen the system’s ability to prevent future crises.”

Strauss-Kahn emphasized three areas of reform in particular: strengthening policy cooperation, reducing capital flow and exchange rate volatility, and enhancing liquidity provision in times of extreme volatility (for example, through the IMF’s new flexible credit line and precautionary credit line facilities).

Strauss-Kahn said that, over time, there may be a greater role for the IMF’s international reserve asset—the Special Drawing Right, or SDR—to contribute to a more stable monetary system.



Tiger in Bandhavgarh National Park, India.

Shady business

The United Nations Environment Program has announced that India, one of the fastest growing economies in the world, will host the World Environment Day 2011 on June 5. This year’s theme, “Forests: Nature at Your Service,” underscores the intrinsic link between quality of life and the health of forests and forest ecosystems.

India is a country of 1.2 billion people who continue to put pressure on forests, especially in densely populated areas where people are cultivating on marginal lands and where overgrazing is contributing to desertification.

But the Indian government has found solutions. While the socio-economic pressures on the country’s forests are tremendous, India has instituted a tree-planting system to combat land degradation and desertification, including windbreaks and shelterbelts to protect agricultural land.

In conserving its critical ecosystems, India has introduced projects that track the health of the nation’s plants, animals, water, and other natural resources, including the Sunderbans—the largest deltaic mangrove forest in the world and home to the tiger, one of India’s most iconic wildlife species.



Mother and child in Guiyang, China.

Nursery school

Investing in early childhood development and education yields high economic returns, is the most cost-effective strategy to break the intergenerational transmission of poverty, and improves productivity and social cohesion in the long run, says a new World Bank study.

Early Childhood Development and Education in China: Breaking the Cycle of Poverty and Improving Future Competitiveness says that prenatal care and the quality of life experienced in children’s first six years affect their physical and brain development and lay the foundation for their subsequent cognitive and socio-emotional development. The report—produced jointly by the World Bank and the Chinese government—offers proposals on how human development can be advanced by investing in early childhood development and education.

“In China, about 16 million babies are born each year. If the window of opportunity is missed during early childhood, it would be much costlier and harder to build a successful life later,” said Zhao Baige, Vice Minister of China’s National Population and Family Planning Commission.

IMF launches Spanish blog



The IMF has started a Spanish-language blog for Latin America, *Diálogo a Fondo*. The blog focuses on international issues and economic topics related to Latin America. The new blog complements the IMF’s English-language blog, *iMFDirect*—the Fund’s global economy forum.



Progress in Paris

At the Group of Twenty (G-20) ministerial meeting in Paris on February 18–19, leaders agreed on a set of indicators to measure global economic imbalances.

This agreement was the latest step toward implementing the so-called “mutual assessment process,” or MAP, designed to help improve policy collaboration and reduce global imbalances. The MAP originated at the G-20’s Pittsburgh Summit in September 2009, where leaders introduced the *Framework for Strong, Balanced, and Sustainable Growth*. The backbone of this framework is a multilateral process through which G-20 countries identify objectives for the global economy and the policies needed

to reach them. In Pittsburgh, the leaders also committed to a “mutual assessment” of their progress toward meeting these shared economic objectives.

The G-20 aims to decide by their next meeting in April on guidelines against which each of the indicators agreed upon in Paris will be assessed.

The IMF is providing technical and analytical support for the process, with inputs from other international organizations. If implemented effectively, IMF Managing Director Dominique Strauss-Kahn said, the MAP could lead to significantly higher growth, jobs, and poverty reduction.



Nemat Shafik

Nemat Shafik joins IMF

The IMF has named Nemat Shafik as Deputy Managing Director to succeed Murilo Portugal, who left the institution in early March.

Shafik comes to the IMF from the U.K. Department for International Development (DfID), where she held the post of Permanent Secretary since 2008. Before DfID, she served as a Vice President at the World Bank.

A national of Egypt, the United Kingdom, and the United States, Shafik holds a Ph.D. in Economics from Oxford University. She has published widely, especially on the Middle East and North Africa, and has taught at the University of Pennsylvania’s Wharton School of Business and at Georgetown University.



Events in 2011

March 25–28, Calgary, Canada

Annual Meeting of the Inter-American Development Bank

April 16–17, Washington, D.C.

Spring Meetings of the IMF and the World Bank

May 3–6, Hanoi, Vietnam

Annual Meeting of the Asian Development Bank

May 20–21, Astana, Kazakhstan

Annual Meeting of the European Bank for Reconstruction and Development

May 26–27, Deauville, France

Group of Eight Summit

June 6–9, Montreal, Canada

International Economic Forum of the Americas

June 9–10, Lisbon, Portugal

Annual Meeting of the African Development Bank

September 23, Washington, D.C.

Annual Meetings of the IMF and the World Bank

November 3–4, Cannes, France

Group of Twenty Summit

Hope for Haiti

Haiti can achieve GDP growth of 6–8 percent a year over the next decade if the right public policies are put in place, the private sector becomes increasingly engaged, and support from the international community is sustained.

This is a key finding of the World Economic Forum’s *Private Sector Development in Haiti: Opportunities for Investment, Job Creation and Growth*, a report issued recently in partnership with the World Bank, the Inter-American Development Bank, and the International Finance Corporation.

Despite clear challenges, profitable investment opportunities exist in Haiti, and increased private sector engagement today will create further investment opportunities in the future, the report says.



Digicel building in Port-au-Prince: Haiti’s telecoms market could double in five years.



Residual Brilliance

Atish Rex Ghosh in conversation with economist Robert Solow

HE doesn't use e-mail—yet his name is inextricably linked with technological progress. An avid sailor who never strays far from shore, Robert Solow is one of the most adventurous minds in economics, but worked in the same university office overlooking Boston's Charles River for more than half a century.

A self-styled solver of puzzles, who eschews grandiose ideas, Solow developed a landmark model that fundamentally changed research on how economies develop and grow. Now Professor Emeritus at the Massachusetts Institute of Technology (MIT), Solow won the Nobel Prize in economics in 1987 for his seminal contributions to growth theory.

"Here is a scholar whose work has left an indelible imprint on his discipline," said Princeton professor Alan Blinder. "Not just a model, mind you, but even a residual bears his name!" (Blinder, 1989).

Child of the Depression

We meet on one of those beautiful, crisp, sunny New England days that are the last gasp of fall before winter sets in. He is a lanky man, with a warm smile. Solow's room in the MIT economics department also has a view of the Boston skyline; it's an office he had occupied for the better part of 60 years, and that he relinquished a few weeks later. "This is the only full-time academic job I've ever had. So I'm not a bird of passage; I settled here."

As an assistant professor he would never have merited such a magnificent office, he hastens to inform me, but when the economics department moved into its new building in 1952, Solow, who had been on the faculty for only a couple of years, was already a close friend and colleague of the late Paul Samuelson, one of the most important economic theoreticians of the 20th century. It was understood that he had

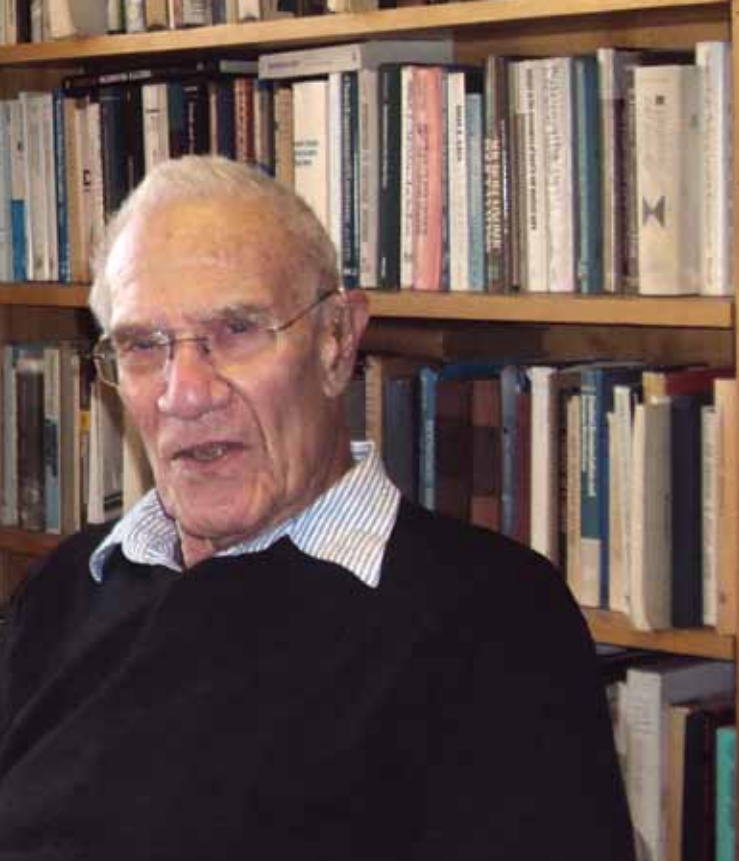
to have the office next to Samuelson—who, of course, had to have the best office in the department.

Born in New York in 1924, Solow has lived through both the Great Depression and the Great Recession. The son of a furrier who traded with the Soviet Union, he grew up in Brooklyn. The events of the Depression left an indelible imprint on the minds of many future pioneers in economics, and Solow was no exception. "I was very much aware, even as a kid, that something bad had happened and that it was called the Depression. And it meant that there were a lot of people out of work and a lot of people were poor and hungry, and that stuck with me. It was an important thing in my life and probably has a lot to do with attitudes I have, even now."

After his arrival on a scholarship to Harvard at the age of 16, his interest in the underlying factors behind social upheaval led him to study sociology and anthropology, together with some elementary economics (and some not-so-elementary economic tomes, such as in Wassily Leontief's just-published *Structure of the American Economy*). But the attack on Pearl Harbor in December 1941 prompted him to drop his studies and sign up immediately as a private in the U.S. Army. Had he waited to graduate, he could have enlisted as an officer, but "defeating Nazism was simply the most important thing to do at that time," he said. He joined a signals intelligence unit (he knew both Morse code and German) and saw active duty in North Africa and Italy.

As soon as he got back home, he married his sweetheart, economic historian Barbara Lewis, to whom Solow has been married for more than 65 years.

On his return to Harvard in 1945, Solow decided—at Lewis's suggestion—to study economics, becoming Leontief's pupil, research assistant, and, eventually, lifelong friend. He credits Leontief with his transformation from graduate stu-



dent to professional economist. As his tutor, Leontief would assign Solow a paper to read each week for discussion during their next meeting.

In those days, economics was not very mathematical, and Solow lacked college-level mathematics, but he got sick of being given only nontechnical papers—one can hear the indignation and determination in his voice: “I wasn’t going to allow *that* to happen, read the second-rate papers because I couldn’t read the first-rate articles.” So he enrolled in the necessary mathematics courses in calculus and linear algebra.

It was a fortuitous decision. Not only did it earn him an assistant professorship at MIT (to teach probability and statistics), it also meant that Solow was able to speak the same language as Samuelson and to keep up with him intellectually—a feat he likens to “running as hard as you can, all the time.” Samuelson, in turn, described Solow as the “consummate economist’s economist.”

They were colleagues and friends for the next 60 years, and whenever Solow was offered a position at another university, he would stipulate that he would move only if Samuelson’s office were moved alongside his. This never quite worked out, and was one of the reasons both men ended up spending their careers at MIT.

Reconstruction and decolonization

Post–World War II reconstruction in industrialized countries and economic development in newly independent colonies meant that growth theory was *the* topic for economists in the 1950s. Before Solow’s contribution, the field did exist, but it was a somber one. Seminal papers by Roy Harrod in 1939 and Evsey Domar from 1946 onward had postulated that steady long-run growth was a possible but an exceedingly unlikely outcome that teetered on a knife edge in the standard macro-

economic models of the time. For steady growth to prevail, the economy’s saving rate had to match exactly the product of the capital output ratio and the rate of growth of the labor force.

But in the Harrod-Domar growth model, these three variables—the saving rate, the capital-output ratio, and labor force growth—were fixed and exogenous—given by assumptions on preferences, technology, and demographics, respectively. There was no reason for the required equality to hold, and if it did not, the model predicted that the economy would be subject to ever-increasing fluctuations.

Solow came into this debate with two valuable insights. First, despite the 1890s recession, Great Depression, and World War II, Solow thought it was historically untenable that the main characteristic of capitalist economies should be explosive volatility (either growing without bound or shrinking out of existence) rather than stable growth (with occasional crises). Nor did he accept predictions that a higher saving rate would lead to increased long-run growth.

Second, of the outside influences of the Harrod-Domar model, Solow’s attention was naturally drawn to his research specialty: the production side. This choice made his reputation. In his 1956 “A Contribution to the Theory of Economic Growth,” Solow showed that relaxing the production technology to allow a flexible capital-output ratio made steady-state growth not only possible, but a natural outcome. Growth theory could rid itself of reliance on finely balanced configurations. And as all students of economics now know, the long-run growth rate in Solow’s model is independent of the saving rate.

He did not stop there. Not satisfied with the prospect of much spilling of ink by growth theorists following his 1956 article, Solow further shook up empiricists with his “Technical Change and the Aggregate Production Function” in 1957. He used his theoretical model to decompose the sources of growth among capital, labor, and technological progress. And he showed that technological change, rather than capital accumulation, was the main driver of long-run growth. This “technical change residual”—so called because it is the part of growth that cannot be explained by identifiable factors such as capital accumulation or labor force growth—would forever bear his name.

The Solow residual

Ironically, Solow himself was surprised by the size of the residual and its importance in accounting for growth, even though a central prediction of his model is that long-run growth can come only from technological progress. His next major paper—on embodied technology—was an attempt to accord capital accumulation a larger role in long-run growth.

Solow’s work has strongly influenced governments’ policies to augment funding for technological research and development to spur economic growth (see box).

Solow initially thought of his model exclusively in terms of advanced economies like the United States. Later, however, he came to believe it also applied to developing countries, provided the institutional prerequisites are in place. (He attributes China’s spectacular growth to the country’s very high

investment rates and the government's determination to get the economy on the technological frontier.)

Regardless, he readily acknowledges his intellectual debt to Arthur Lewis's work on growth in labor-surplus countries. He is also quick to give credit to Trevor Swan, who independently arrived at much the same model at almost exactly the same time, but never received as much recognition as Solow for it. The reasons for this are not clear, though Solow says he had "a slightly better mousetrap."

In a 2007 paper, Solow speculates as to why his work attracted more attention. First, Swan presented his model in terms of a specific (the Cobb-Douglas) production function (and only in a posthumously published paper did it become clear he was aware of the more general case all along). This was a case where Solow's more general assumption turned out to be simpler and more transparent. Second, Swan's model, which included an important appendix ("Notes on Capital"), was perceived to be a response to the likes of Joan Robinson and Piero Sraffa, mired in the "Cambridge capital controversy" (a technical and mathematical dispute over how to account for capital in economic models), and therefore lost attention as those controversies lost the profession's interest. And third, Solow was an American publishing in the *Quarterly Journal of Economics*, Swan an Australian publishing 10 months later in the less widely read *Economic Record*. What is clear is that, over the years, Solow has made what Barbara Spencer (Trevor Swan's daughter, and a well-known trade economist) terms "generous efforts" to ensure that Swan's work was not overlooked.

Solow's talent was recognized early. He received the John Bates Clark Award, given by the American Economic Association to the best economists under age 40. He also served on the staff of President John F. Kennedy's Council of Economic Advisers during the 1960s and later was president of the American Economic Association in 1979.

Involving private sector research

Solow believes there should be much greater interaction between cloistered university economists and those working in private sector research laboratories.

His suggestion to economists modeling technological progress is to spend some time in research laboratories to better appreciate the randomness of scientific progress and the interplay between the creative process and the incentives of profit-making firms. Solow should know: he served for eight years on the Science Advisory Committee of General Motors, where the research laboratories are "the size of a small university."

"I'm convinced that the problem is there will always remain for economics an exogenous element in technological progress because there is an exogenous element in science. Any scientist or analytical engineer will tell you that when you work on something, you often end up solving a problem different from the one you thought you were working on. And so, from the point of view of economics, what comes out of science and engineering is exogenous. And there will always be that element, but the endogenous growth literature just doesn't seem to me to be capturing that."

Irresistible combination

The combination of the empirical success and analytical simplicity of Solow's model proved irresistible to economists in a variety of fields looking for a workhorse model, but Solow often disapproved of the way his model was used. And it did not take long for economists working in separate subdisciplines to adopt the model to their own purposes, ranging from explanations of entrepreneurship and business cycles to improvements in product variety and innovation.

Solow emerged as a robust critic of the burgeoning field of *real business cycle theory*, which placed his own model at the heart of an explanation of short-run macroeconomic fluctuations that said recessions were efficient market behavior and were not the result of some market failures. On theories of unemployment, he has argued that labor market failures should be a central component of business cycle analysis, rather than assumed away.

More recently, as most real business cycle theorist do, Solow has welcomed the development of New Keynesian approaches to macroeconomics. In particular, he has held out hope that the introduction of "sticky" (or slow to adjust) prices, monopolistic competition, and other market imperfections into macroeconomic theory would at last help provide a sounder foundation for short-run analysis.

Success in economics is not without its fair share of ironies. Just as Solow was reluctant to project his experience of the Depression and the Second World War directly into an explosive theory of long-run growth, he never thought his growth model adequately depicted short-run fluctuations. Indeed, his 1956 article goes out of its way to emphasize that his model was one of long-run growth, not business cycle movements. However, in the 1960s and 1970s, Solow worked on aspects of business cycle theory with an array of economists, such as Joseph Stiglitz and Blinder, who would make their own names in the field. He related the short-run behavior of the economy to stickiness in prices and wages, especially the downward rigidity of wages, and he defended Keynesian predictions for the effectiveness of fiscal policy against the monetarists' claims that government borrowing would crowd out private sector borrowing. In the process, he emerged as a witty critic of economists who advocated for extreme government intervention in the economy, or none at all. "Everything reminds Milton Friedman of the money supply," he once quipped; "everything reminds me of sex, but I try to keep it out of my papers."

Resurgence in growth theory

As Solow embarked on his journey to Stockholm at the behest of the Royal Swedish Academy of Sciences to receive the 1987 Prize in Economic Sciences in Memory of Alfred Nobel (the formal name for the economics award), a resurgence in growth theory was under way. Among others, Paul Romer and Robert Lucas declared their dissatisfaction with allowing the long-run steady-state growth rate to be determined only by an external "technological process." Solow agrees wholeheartedly. His own theoretical and empirical work had shown the importance of technological progress in accounting for growth—now the

profession sought a deeper understanding of what drives that progress, and hence what drives growth.

The explosion of papers that followed proposed theories along three different lines. Some of the earliest contributions, such as Romer's first paper, proposed that steady-state growth was possible even in the absence of technological progress, as long as capital did not have diminishing marginal returns. A second strand of papers added extra accumulable factors such as human capital. The final category of papers decided to model explicitly the process of technological innovation; Solow thinks of this as the most interesting strand, though he also thinks that economists have a lot to learn about how scientific and technological innovation actually comes about. Innovation to produce new varieties of products, or higher-quality products, was modeled as an active business decision of firms. Government policies on capital accumulation, and incentives for research and development, could now, at least in theory, affect the economy's long-run growth rate.

Such results in the new field of *endogenous growth theory*, as it came to be called, were attractive to economists and policymakers, to the extent that in 1994 even Gordon Brown, who went on to become the British Chancellor of the Exchequer and then Prime Minister, could not resist referring to the theory as a cornerstone of his proposed agenda. Although Solow believes this is the most promising avenue for explaining long-run growth, he also considers models that treat technical innovation as simply another product—the mechanical output of a production function—are hopelessly unrealistic.

Learning from the crisis

So where did that leave the state of macroeconomics on the eve of the 2008 global financial crisis? Too much the prisoner of its own (representative agent, real business cycle, frictionless equilibrium) models, in Solow's view. Not that Solow would blame the crisis itself on whether economists were using quite the right models; rather, the crisis resulted from the belief that "if the market for orange marmalade is self-regulating, the market for fixed-income securities must also be self-regulating." Economists, he says, played a role in furthering that belief, but even without such endorsement, too many people made too much money from that premise for it not to have taken hold anyway.

Two lessons Solow would like to see economists take to heart are that, in the modern world, it is impossible to pursue macroeconomics without taking account of finance; and second, financial markets are not necessarily stable or self-correcting. "You know, I'm getting old. I don't have very long to wait. But I'd like to see the macroeconomics profession learn from the crisis. You're supposed to learn from observation, and big deviant observations should teach you more than little teeny-tiny deviations, and there's not much sign of that."

Power of groups

Armed with a biting wit, Solow says he tries not to take himself too seriously. When asked to contribute to a book on the life philosophies of famous economists, he wrote an essay

"on coping" and believes more in the value of group or team accomplishments than individual achievement.

In his own case, he recalls, he was lucky to be part of such a group when he was in the army; when he was in the MIT

"I think that the most important thing in intellectual success is being part of a high-morale group."

economics department; and when he worked for the Council of Economic Advisers from 1961 to 1963 with the likes of Walter Heller, Arthur Okun, and Kenneth Arrow. "I think it's really important," says Solow, "if you want to make intellectual progress, to create nice communities that work well together. It's a process. You succeed, your morale is good; you succeed more."

The light is fading, and I take some photos of Solow in his book-lined office. I do not ask him whether he is sad to be vacating it, but I think not. Solow projects a sense of contentment—as though he is confident he has given the profession a running start and is ready now to pass the baton to the next generation.

While we pack up, I ask if he has any last reflections. "Yes," he says. "It's one of the lessons of my work and life. I think that the most important thing in intellectual success is being part of a high-morale group. I think that progress comes from intellectual communities, not from individuals generally. That's what's wrong with Nobel Prizes and all that."

His final words reflect his insistence, recurrent throughout our talk, on crediting others with contributing to his successes. And as he walks down the steps of the MIT economics building toward his wife, I am struck that someone who has accomplished so much in—and for—his profession should be so unassuming. A modest man, who has little to be modest about. ■

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Sustaining Latin America's *Transformation*

Building on recent successes, Latin America now has a chance to raise its profile in the global marketplace

Nicolás Eyzaguirre

“There is nothing so joyous as a Mexican fiesta, but there is also nothing so sorrowful,” wrote Nobel-Prize-winning poet Octavio Paz, in The Labyrinth of Solitude. “Our fiestas are explosions. Life and death, joy and sorrow, music and mere noise are united.”

ACROSS Latin America, countries will soon join Mexico in celebrating their 200th anniversaries of independence. There are many reasons for Latin America to feel proud of

how much it has achieved over the past two centuries, including in recent years. But despite its potential, the region is still underdeveloped and profoundly unequal, with about one-third of its people living in poverty.

Latin America has long been a region of paradox and contrasts: a land of prosperity and poverty, of independence and dependence, of stability and instability.

But things may be changing. Throwing off its reputation for boom and bust, over the past decade the Latin American region has



Federal district of Mexico City, Mexico.

prospered. Faster and sustained output growth during much of the 2000s was accompanied by big improvements in social conditions. In addition, the region strengthened its economic fundamentals and better prepared itself for economic shocks—so the impact of the recent global crisis was in most cases relatively mild and short lived when compared with the crushing economic problems during previous episodes of global turbulence.

With the global crisis behind it, the region—endowed with a wealth of commodities and now facing favorable external conditions—has great economic opportunities and the potential to become an increasingly important global player.

Three countries in the region—Argentina, Brazil, and Mexico—are members of the Group of Twenty, which is playing an increasingly prominent role in shaping the world economy. The region can advance even more by building on recent progress to lock in economic stability and with the determination to tackle long-standing problems of low productivity and high inequality.

Improved policies

Better policies played a critical role in the region's recent relative success, supported by much broader social consensus about the importance of macroeconomic stability. In fact, macroeconomic policies remain prudent in many countries, regardless of transfers of power between elected governments of different political orientation. At the same time, keeping fiscal deficits down became easier, thanks to the generally favorable external conditions prevailing during much of the past decade.

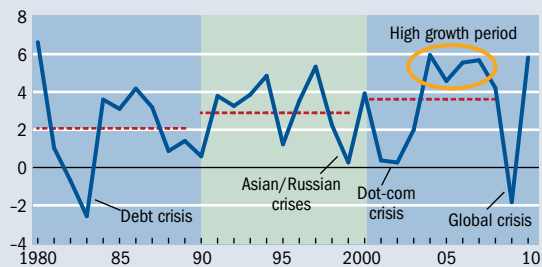
Strengthened macroeconomic policies brought new resilience. The region got through the global economic crisis of 2008–09 relatively unscathed. Output, after beginning a sharp contraction in late 2008, had rebounded in many countries by the middle of 2009 (see Chart 1). Improved government finances, reduced external debt and higher international reserves, more flexible exchange rates, and strengthened financial regulation and oversight in the years leading up to the global crisis played an important role in limiting the impact of the crisis on the region.

In part, that is because the region generally did not have to cope with homegrown problems as it did in the past. Unlike in past international shock episodes—in 1982, 1998, and 2001—the region was in a stronger position to take steps to counteract the effects of the global recession (see Chart 2). This time, many governments and central banks were able to fight the impact on output and employment by expanding public spending and reducing interest rates, allowing their currencies to depreciate along the way. And this time, currency depreciation helped Latin American economies cope with external shocks without triggering a severe jolt to inflation or widespread financial system distress.

Chart 1

Climbing a rollercoaster

Latin America's growth since 1980 has been erratic but on an upward trend, with a striking recovery from the crisis. (real GDP growth, annual percent change)



Sources: IMF, World Economic Outlook database; and IMF staff estimates.
Note: Red line represents average growth for each decade; for 2000s, covers precrisis period 2000-08.

And now even more people are experiencing a higher standard of living, compared with previous periods of economic expansion. Poverty rates fell by more than 10 percentage points between 2002 and 2008, bringing over 40 million people out of poverty. Income distribution, a long-standing weakness in the region, also improved in 15 out of 18 countries in the region (see “Spreading the Wealth” in this issue of *F&D*). This stands in sharp contrast not only to the trends of the 1990s, but also to those observed in recent years in many other emerging economies and in advanced economies, where the distribution of incomes has become more unequal. Increased government transfers to the poor, as well as a narrowing of the wage gap between skilled and low-skilled workers, help explain these improvements (Lopez-Calva and Lustig, 2010). The region's success in bringing down inflation, which hurts poor people most, has also played a key role.

Differing performance

Not all countries have done equally well, however. In part this is because global developments affect countries in dif-

fering ways. Many of the commodity-exporting countries of Latin America are benefiting from high export prices and low global interest rates (see Chart 3). Yet some still have only limited access to external financing and some others—including the countries of Central America—are net importers of commodities. Countries with stronger ties to the dynamic emerging markets of Asia, especially China, have been more successful recently. Record-high commodity prices have also made these countries more attractive to foreign investors.

By contrast, countries with strong economic ties to advanced economies have recovered more slowly from the crisis—the result of weaker economic growth and employment conditions in the United States. Mexico and Central American countries faced a significant blow from the weak recovery in the United States, which is a major source of their income—from exports, tourism services, and remittances from their nationals working there.

Countries with weaker policies did less well than those with a record of more prudent fiscal and monetary policies. Not only were they unable to adopt countercyclical policies during the downturn, but they are benefiting much less from the current favorable external financing conditions. This has been particularly true for some of the oil-exporting countries, where, despite the rebound in oil prices, output has been lagging or even contracting. A combination of weakness on the supply side (the product of a business environment that hinders investment) and policies that support excessive demand has led to substantial inflation, particularly in Venezuela, which also saw output contract in 2010. In Argentina, where growth performance has been much better, demand is also putting upward pressure on inflation.

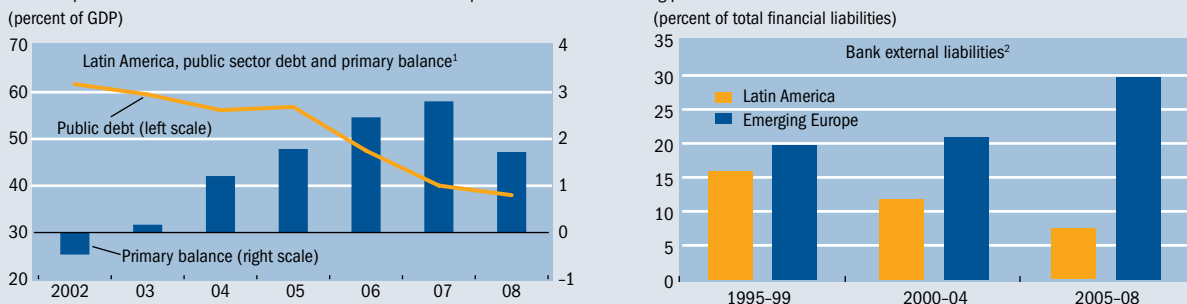
Strong potential

With the effects of the global crisis mostly past, the region has the potential to become more prominent on the global stage and raise its share of world output, which has been stable at about 8 to 9 percent in recent decades. The region's output grew by about 6 percent in 2010 (second only to emerging Asia) and is projected to settle at about 4 to 5 percent in the coming years, still well above its 30-year average of less than 3 percent.

Chart 2

Be prepared

Reduced public debt combined with healthier bank balance sheets put Latin America in a strong position to face the crisis.



Sources: IMF, *International Financial Statistics* and World Economic Outlook database; and IMF staff estimates.

¹General government. Simple average for Latin America, excluding Argentina.

²Ratio of nonresident liabilities to total financial liabilities. Simple average for Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

Achieving—or even bettering—this outcome will require skillful macroeconomic management in the near term, as well as structural reforms to strengthen the region’s resilience to shocks and boost growth. In light of the region’s legacy of macroeconomic and financial instability—including a tendency to boom-bust cycles—it is important to take stock of efforts to enhance resilience and prepare for shocks to come.

Where are the remaining challenges to stability? The region has made important strides in terms of its macroeconomic policies and in building institutions, but progress should be extended in three key areas: ending procyclical patterns of government expenditure—boosting spending too quickly or cutting taxes when times are good, which forces sharp spending cuts or tax increases when times are bad; allowing greater exchange rate flexibility; and tightening financial sector regulation and supervision.

For fiscal policy, the challenges are to ensure sustainability, but also to avoid excessive procyclical swings in government spending. Many countries have brought public debt down to more moderate levels. Countries with safer debt levels face another problem: how to manage cyclical swings in government revenue. Policy targets that hold the fiscal balance steady mean that expenditures can rise whenever more revenue comes in, regardless of whether the increase is transitory or permanent. Some countries would benefit more from targeting cyclically adjusted balances (as Chile does), which keep spending steady in the face of temporary revenue fluctuations. This is particularly true for countries where revenue is linked to commodity exports and temporary price booms can mask a weakening of the underlying fiscal position.

Many countries have benefited from allowing greater exchange rate flexibility, as a way not only to deal with external shocks but also to increase the freedom and effectiveness of their monetary policy in ensuring low inflation and output stability. Those that have moved their monetary policy all the way to inflation targeting have seen good results (see “Ending Instability” in this issue of *F&D*). Countries that have more recently begun allowing limited currency flexibility will likely benefit from continuing in that direction, which will help

reduce dollarization and improve monetary policy effectiveness. Those that have chosen fixed exchange rates will need to create alternative buffers against shocks, in particular on the fiscal policy side.

Despite the region’s recent relative success in avoiding banking crises, it has to move further ahead on financial policies. The lessons of the recent failures of regulation and supervision in advanced economies are broadly applicable to Latin America as well. Financial regulation and supervision should now look beyond the stability and solvency of individual institutions and also take a macroprudential approach, addressing systemic risk interconnectedness and excessive

Many of the commodity-exporting countries of Latin America are benefiting from high export prices and low global interest rates.

procyclicality of credit (the tendency of credit to grow too quickly during good times, only to crash later). This is a fairly new area, which will require a high level of coordination at both the country and global levels.

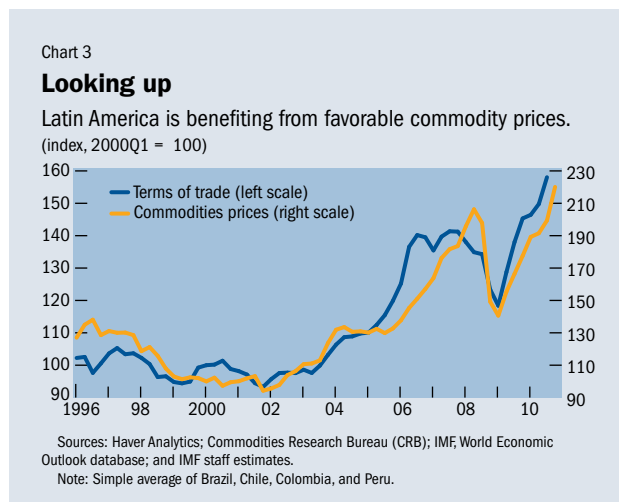
Beware today’s blessings

In addition to these underlying issues, Latin America also needs to be careful about complacency when things are going well. Currently, global conditions have combined to create two very strong tailwinds that are helping Latin America—easy external financing and strong commodity prices that imply a bonanza for the region. These twin tailwinds are a blessing in many ways, but they will not last forever, and they could even end abruptly. In the meantime, they can create risks for the future.

With extremely low interest rates in the major reserve currency countries, and the return of global investors’ risk appetite, foreign financing is now cheap and abundant for many of the region’s economies. But over time, interest rates will naturally rise from these low levels, as monetary policy normalizes in advanced economies.

On the commodity front, prices of many of the region’s key exports are now unusually high, thanks largely to strong growth of commodity demand, especially in emerging Asian economies. While some part of this windfall may be persistent or even permanent, the high markups on many commodities are expected to result in an expansion of their supply that will eventually take prices down.

Experience shows that these favorable external conditions can lead to an accumulation of risks, by overstimulating both domestic demand and credit. The near-term challenge for much of the region, therefore, centers on avoiding a boom-bust cycle by managing the current abundance to avoid trouble down the road. So policymakers will need to be alert to financial excesses and vulnerabilities and watch



out for excessive consumption and/or investment spending growth.

Such unbridled growth in demand could, in turn, lead to large and risky external current account deficits and higher inflation. Increased demand sustained by foreign capital inflows almost inevitably brings with it a stronger real exchange rate—whether from appreciation of the nominal exchange rate or, if that is suppressed, from higher inflation.

Boosting productivity and competitiveness remains the key policy challenge over the medium and longer term.

To manage these risks, policymakers can act on a range of fronts. A first step, already under way in varying degrees, is to remove the macroeconomic policy stimulus adopted during the crisis. It is especially important now to reverse the earlier easing of fiscal policy, to avoid excessive reliance on monetary policy tightening. Exchange rate flexibility—in this setting, allowing the currency to appreciate—is also important. Appreciation causes foreign investors to think twice about future exchange rate risk and this can help slow capital inflows.

Careful regulation and supervision of domestic financial developments is essential not only for financial system stability but also to prevent credit from growing excessively during good times—often associated with boom-bust behavior in the private sector. Several countries are already developing and applying new macroprudential policy approaches, and further experimentation will likely be needed (IMF, 2010). Capital controls could also be considered in some cases, though these cannot substitute for adequate policies in the other areas.

Sustaining strong and more equitable growth

Boosting productivity and competitiveness remains the key policy challenge over the medium and longer term. It is well documented that the region's subpar growth performance over the past 30 years is largely attributable to low productivity growth. Although the reasons for low productivity are complex (see "Face-to-Face with Productivity" in this issue of *F&D*), there is a need for progress on several fronts.

- **Public investment**, which is low relative to the more dynamic emerging economies, must be boosted from current levels to address the region's infrastructure gap. The development of human capital, through better schooling and training, is also essential.

- Improvements in the **business climate and overall governance** are also essential to harness private investment (including from Asia) and strengthen financial intermediation. This will likely require diverse efforts, ranging from trimming red tape to improving security and reducing crime to strengthening creditors' rights. Barriers to competition need to come down, and sectors that may be natural

monopolies—in such areas as water, electricity, and telecommunications—should be better regulated to ensure the quality, efficiency, and affordability of services.

- The region still has considerable room to benefit from expanding **external trade**. Trade with the faster-growing emerging economies can be deepened further, and exports can be diversified more generally to reduce over time the region's reliance on advanced economies and commodity exports. The region needs to harness the benefits of increased trade openness, such as from recent trade agreements. The development of better trade infrastructure, including through public investment, can help.

More progress is needed in ensuring that the benefits of growth are shared more broadly. Despite improvements over the past decade, poverty and inequality in the region remain high when compared with other regions and countries with similar living standards. Further efforts are needed to improve the targeting of government spending and effectiveness of social safety net programs. This is particularly critical in the current environment of rising food and energy prices: policies should aim to protect the poor, avoiding generalized subsidies that are costly and distort the allocation of resources (for example, by encouraging overconsumption of fuel). The region can learn from the success of conditional cash-transfer programs in Brazil (*Bolsa Familia*) and Mexico (*Oportunidades*), which grant payments to families in need, on conditions such as keeping their children in school. Countries will also need to accommodate the demands of a growing middle class and increased global competition by upgrading the quality of services in the areas of education, health, and public security.

Although the region's population is still young, public pension and health systems will require strengthening to meet the demands of a growing elderly population. These challenges must be met without compromising the sustainability of government finances: this will require boosting government revenue in some cases and being more careful about spending priorities, including cutting subsidies that are not targeted to the poor.

* * * * *

Despite its bumpy history, Latin America now has the potential to build on its new strength and resilience. Policymakers will need to carefully manage the generally stimulative global conditions to avoid a recurrence of the boom-bust cycles of the past, while making new efforts to cement conditions for stronger and more equitable growth.

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Ending Instability



How monetary policy reforms helped propel five major Latin American countries from recurrent crises to economic stability

Jorge Iván Canales-Krijlenko, Luis I. Jácome, Ali Alichí, and Ivan Luís de Oliveira Lima

ALITTLE over two decades ago, much of Latin America faced financial instability, currency crises, and even hyperinflation. These painful developments became recurrent and the social and economic impact was grave—production was disrupted and many people lost jobs and sometimes a lifetime’s worth of savings. Social frustration was high.

Today, though, things are different—especially in five of the biggest Latin American countries, which account for about 80 percent of the region’s gross domestic product. Brazil, Chile, Colombia, Mexico, and Peru—what we call the Latin American Five (LA5)—have set the pace for a region that has weathered the global financial crisis to become one of the strongest emerging markets. How did they manage to achieve this radical change that 20 years ago most would have thought unreachable?

Although many factors—including some luck—played a role, two crucial elements were central bank institutional reforms and changes to the monetary policy frameworks. These far-reaching reforms did not take place overnight and were effective mainly because for somewhat more than a decade the LA5 countries maintained responsible fiscal and financial policies that kept vulnerabilities to adverse developments in check. Together, those policies reinforced the ability of central banks to preserve price stability and build credibility—which in turn enhanced their capacity to guide the inflation expectations of citizens and businesses. This strengthening of the central bank role arose not only from a clear mandate to fight inflation, but also from the central banks’ increased autonomy and accountability, from better policies, and from enhanced communication and transparency. The improved policies helped insulate these economies from the worst effects of the global financial and economic crisis (see “Sustaining Latin America’s Transformation” in this issue of *F&D*).

Increased autonomy and accountability

In most cases, new laws gave LA5 central banks the primary mandate of preserving price stability. Central banks were granted broad autonomy to carry out their mandate and resist political and interest-group pressures. A milestone in the reform in most countries was the removal of the link

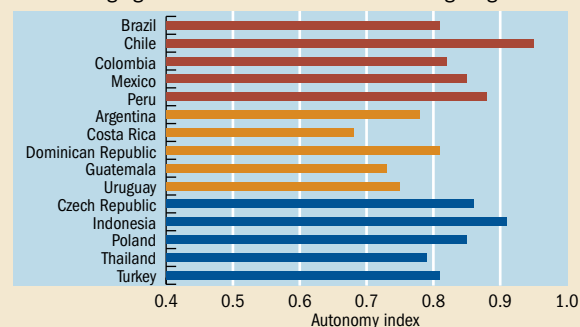
between monetary policy decisions and the political cycle—by creating central bank board member terms that exceeded, or overlapped, the presidential term. Other key legal provisions included vesting central banks with the power to manage the policy interest rate and forbidding or limiting direct lending to the government. In exchange for giving central banks this autonomy, the legislation strengthened central bank accountability to the markets and society at large by requiring them to disclose and explain their policies, goals, and results through frequent communication.

Today, LA5 central banks are among the most autonomous central banks in Latin America and are slightly better than many other important emerging market central banks (see Chart 1). But that does not mean there isn’t room for further change. For example, Brazil could enshrine central bank autonomy in legislation—although in practice the central bank has enjoyed *de facto* autonomy during the past 16 years. Central banks in Colombia and Peru could further insulate the selection of their central bank board members from the

Chart 1

Independence reigns

The LA5 central banks are among the most autonomous in Latin America and compare favorably with central banks in other emerging markets that also use inflation targeting.



Source: Canales-Krijlenko and others (2010).

Note: The autonomy index ranks a central bank’s independence from the political process using many criteria, including its legal mandate, how it formulates policy, whether it lends to the government, and its accountability to the society. The index ranges from zero to 1, with zero the least independent and 1 the most. Other Latin American countries are Argentina, Costa Rica, Dominican Republic, Guatemala, and Uruguay. Other emerging markets are the Czech Republic, Indonesia, Poland, Thailand, and Turkey.

political cycle, while Mexico and Chile could require governments to maintain adequate levels of central bank capital.

Better policies

With a clear mandate on price stability, the LA5 central banks adopted inflation targeting as the basis of their monetary policy—setting a rate of consumer price inflation as the primary goal. The new policy regime anchored inflation expectations and increased monetary policy flexibility, including on the exchange rate front. To deliver on their mandate more effectively, the LA5 central banks revamped their operational techniques. They all eventually chose a short-term interest rate (the “policy rate”) as their operational target to achieve the inflation goal. Central banks use the policy rate to signal changes in the stance of monetary policy, increasing the policy rate when inflation pressures build and decreasing it when they ease. LA5 central banks also expanded and refined their toolkits to conduct open market operations, which allowed them to keep demand and supply for domestic liquidity in equilibrium and market rates close to the policy rate. This required improving their capacity to forecast the main factors that affect domestic liquidity—such as demand for currency and government cash flows.

Enhanced transparency

These reforms and policy innovations benefited from enhanced communication and transparency. They proved to be critical to boosting the effectiveness and credibility of monetary policy. Over time, LA5 central banks got better at

explaining their policy strategy and individual policy decisions. For about a decade now, LA5 central banks have been preparing and publicly disclosing inflation or monetary policy reports three or four times a year. They decide the level of the policy rate during preannounced meetings and disclose the rationale behind their rate changes and other policy decisions; some publish the minutes of their board meetings. LA5 central banks also constantly communicate with the market and issue press releases as needed. Those central banks also make available data on market views about key macroeconomic variables—in particular, about expectations on inflation and economic activity—as well as their own forecasts. This ample availability of data has helped build public trust, because market participants can verify, at a reasonably low cost, that the monetary policy authorities are acting consistently with their stated objectives.

Together with far-reaching monetary reforms, significant improvement took place in government tax and spending policies and in banking supervision and regulation. Taking advantage of a commodity price boom and easy global financial conditions during 2003–07, the LA5 countries were able to build fiscal and external buffers—reducing the risk from public debt burdens and boosting international reserves—to provide a cushion against outside economic shocks. At the same time, the countries improved regulation and supervision with the aim of avoiding large bailouts of insolvent institutions. These changes contributed to reduced economic and financial vulnerabilities in the LA5 countries and helped central banks conduct consistently credible and flexible monetary policy.

Testing under fire

Then two major events hit the world back to back. In 2007 food and oil prices skyrocketed, and in September 2008 the global financial crisis began in earnest, after the failure of the Wall Street investment firm Lehman Brothers.

Soaring commodity prices in combination with demand pressures in some countries pushed inflation above targets. With the aim of limiting spillovers into core inflation (from which energy and food prices are removed), central banks tightened monetary policy by raising interest rates, which peaked by mid-2008. As a result of capital inflows and favorable terms of trade, domestic currencies tended to appreciate, which helped moderate inflation pressure by keeping import costs down. Official foreign exchange intervention and reserve accumulation varied across the LA5 countries.

In contrast, the global financial crisis came with a sharp increase in risk aversion, which caused a sudden stop in domestic and foreign investment. Global trade also collapsed and a worldwide recession ensued, reducing inflation pressures. In the past, such sudden stops associated with global recession and debt shedding fueled domestic currency and banking crises in Latin America. This time, the new monetary policy approaches—together with stronger overall economic conditions and better fiscal policies—enabled the LA5 central banks to maintain stability while handling the associated large swings in real exchange rates.

Tapping the war chests

When external financial conditions were favorable and export prices high, the LA5 central banks built up considerable international reserves.

When external conditions turned bad, the LA5 central banks used those reserves to smooth out depreciation of their currencies. Brazil and Mexico sold almost 10 percent of their international reserves, but they still experienced the largest currency depreciation—about 30 percent between August 2008 and February 2009. The central bank of Peru used close to 20 percent of its international reserves over a couple of months, letting its currency slide by only 11 percent.

In contrast, Chile and Colombia allowed their currencies to depreciate more than Peru’s and sold fewer international reserves. In addition, some LA5 central banks secured additional external support for their reserve positions for extra peace of mind given the uncertain magnitude of the global financial crisis. Colombia and Mexico got access to a new IMF facility, the Flexible Credit Line—reserved for countries with strong policies and institutional frameworks—which would allow them to borrow from the IMF if needed. Brazil and Mexico also had the ability to swap domestic currency with the U.S. Federal Reserve for up to \$30 billion.

The LA5 central banks used other techniques as well to improve foreign exchange availability in their economies, for example through foreign exchange swaps (Brazil and Chile).

Because of confidence in monetary policies, inflation expectations remained within target levels, which meant the LA5 countries could allow declines in the nominal exchange rate, to different degrees, to do much of the job of coping with the global crisis without worrying too much about the inflation effects. But they did not totally abandon exchange rates to the market. They maintained a trading presence so that markets did not get carried away, given the considerable uncertainty in global financial markets. The LA5 central banks sold in the foreign exchange market significant amounts of the international reserves they had built up, and reversed earlier measures to absorb foreign exchange liquidity (see box).

Despite sharp declines in exchange rates, which raised import prices, the public expected inflation to remain low. In particular, surveys showed that 12-month inflation expectations stayed within the target bands during most of the crisis period—even when actual inflation missed the target range (see Chart 2). This suggests that central banks' credibility led markets to distinguish between cyclical short-term inflation and long-term trends.

Softening the recession's blow

By early 2009, when the global financial crisis had become a global recession, LA5 central banks started to cut policy rates to help economic recovery. The pace of monetary policy loosening varied, depending on inflation projections and each country's position in the business cycle. Because policy rates were high before the Lehman failure, most LA5 central

Central banks' credibility led markets to distinguish between cyclical short-term inflation and long-term trends.

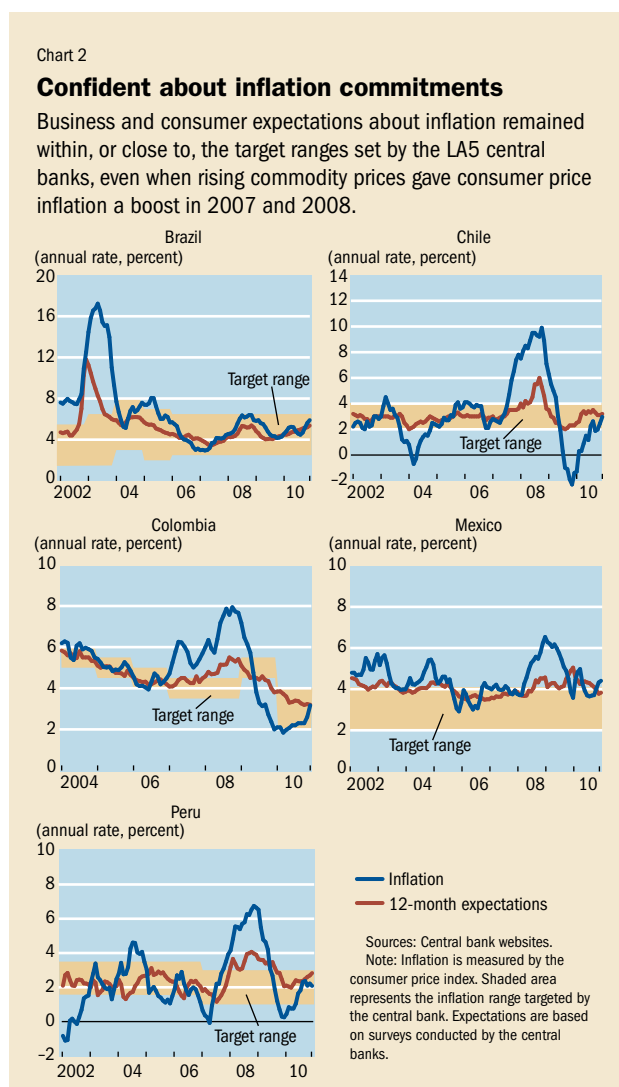
banks could cut them significantly—in contrast to advanced economies, where central banks had policy rates already close to zero. Like their counterparts in advanced economies, LA5 central banks adopted various measures to ease the shortage of cash in their economies, such as loosening access to central bank facilities for liquidity provision and cutting reserve requirements. On the other hand, considering the lagged effect of monetary policy, the high domestic interest rates before the (unexpected) global crisis could have exacerbated the recessions in these countries.

Communication was crucial. Central banks explained their policy decisions and goals to the markets. They stressed that prospects for low inflation and economic recession warranted an unusually aggressive cut in policy rates. They noted that expansionary monetary policies were needed to preserve normal liquidity conditions—an implicit reference to financial stability. Nevertheless, while explaining their decisions to ease monetary policy and ensure financial market functioning, LA5 central banks clearly delivered the message that, as soon as inflation pressures emerged, monetary policy tightening would start, which has happened in Brazil, Chile, and Peru.

Still, despite their recent success, there is no room for complacency. These countries are already facing another challenge. Having recovered smartly from the global downturn while advanced economies sputter, these economies are again among the darlings of foreign investors. How the LA5 deal with this new capital surge will be another test of how well they manage risks to financial and economic stability. ■

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Face-to-Face with Productivity

Grocery store in Chincheros, Peru.

Eduardo Lora and Carmen Pagés

It is not lack of investment but inefficient production that holds back Latin American incomes

MOST Latin American countries withstood the global financial crisis better than advanced economies. In 2010, Latin America experienced outstanding per capita income growth of more than 4 percent, with countries like Argentina, Brazil, and Peru roaring ahead at rates above 5 percent. But over the next few years, per capita growth is projected to moderate to no better than 2 to 3 percent a year. Sustaining growth at this rate would not be bad, but it won't allow the region to catch up quickly with the advanced economies—as such fast-growth economies as Japan and Korea have done or as China is doing now.

Moreover, because of a legacy of poor growth, the gap between Latin America and the developed world has actually increased during the past 50 years. The per capita income of a typical Latin American country was one-quarter that of the United States a half-century ago. Today it is one-sixth.

Despite frequent calls for more investment in the region, that's not the main reason for its flagging growth. Latin America's most serious problem is slow growth in productivity or, more precisely, in *total factor productivity* (TFP)—which is the ratio of the total goods and services an economy produces to

the factors of production—such as capital, labor, and human skills (see Chart 1).

Paying attention to productivity

The price of failing to pay attention to productivity is high. Had TFP in Latin America grown at the same rate it did in the United States since 1960, per capita income today would be 54 percent higher—and relative per capita income would still be one-quarter that of the United States. (It is common to use the United States as a benchmark because of its diversified economy and its leading place in the world's income rankings since the early 20th century.)

Chile and Costa Rica are the two economies in the region that use their resources best, yet their TFP is about 75 percent that of the United States. If a typical country in the region achieved the same productive efficiency as the United States, its per capita income would double. Furthermore, more productivity would increase incentives to invest in human and physical capital, which would accelerate income convergence with advanced economies.

Achieving faster productivity growth is complex and entails more than fostering innovation and technological development. Low productivity is often the unintended

result of myriad market failures and bad policies, which tend to be more prevalent in developing economies—including in Latin America. These flaws weaken incentives for innovation, discourage competition, prevent efficient companies from growing, and promote the survival and expansion of less productive firms. Developing countries can improve the efficiency of their economies in a number of ways, including by promoting competition, deepening credit markets, and improving tax and social policies.

More than an industrial problem

Analysis of productivity and competitiveness often tends to concentrate on the industrial sector alone, missing the overall picture.

Agriculture, a sector that in 1970 accounted for 40 percent of employment in Latin America, has been the star performer in most countries of the region. Unlike what occurred in other sectors, the productivity of labor (the only input for which we have data at the sectoral level) grew steadily during the past 50 years, at rates of 2 percent a year or higher. This is in sharp contrast to the performance of the industrial, and particularly the service, sector, where labor productivity growth plummeted during the 1980s and remained stagnant for two decades (see Chart 2).

Industrialization and prosperity are usually linked for good reason: developed countries became rich after the industrial revolution shifted workers from agriculture and traditional crafts to the more productive industrial manufacturing sectors.

Latin American countries tried to follow this route to prosperity during the second half of the 20th century, with only partial success. High tariffs kept firms oriented toward domestic markets, which were in most cases too small to foster competition. Attempts to promote industrial policies and exports were in general insufficient to absorb a growing number of workers migrating to cities. Instead, those workers

entered the service sector, which today employs more than 60 percent of the labor force. Latin American economies leapfrogged the historical pattern by becoming service economies halfway along the road from poverty to prosperity.

Because the manufacturing sectors in Latin America employ barely 20 percent of the labor force, solving the problems of industrial competitiveness or technological backwardness in this sector will do too little to overcome underdevelopment. Raising manufacturing sector labor productivity growth to east Asia's levels would boost overall labor productivity growth from 1.5 percent to 1.8 percent per year. In contrast, aggregate productivity growth could more than double, to 3.1 percent a year if Latin America's service sector matched the productivity growth in east Asia. That would go a long way toward closing the 85 percent labor productivity gap vis-à-vis the United States in services—much larger than the 61 percent gap in manufacturing.

Too many small firms

Small and medium-sized firms outnumber large firms in every country, but Latin America has an overabundance of extremely small firms. In the United States, for example, 54 percent of firms have 10 or fewer workers. In Latin America the number of small firms is much greater: in Argentina, 84 percent of firms have 10 or fewer workers; in Mexico and Bolivia it is more than 90 percent.

Low productivity is much more common among smaller firms. In Mexico, manufacturing firms in the bottom 10 percent of the total factor productivity distribution require four times more capital and labor resources per unit of production than those in the top 10 percent. These gaps are much larger than in the United States or China. Mexico is not an isolated case in Latin America. In countries as different as El Salvador and Uruguay, productivity gaps between firms are high by world standards.

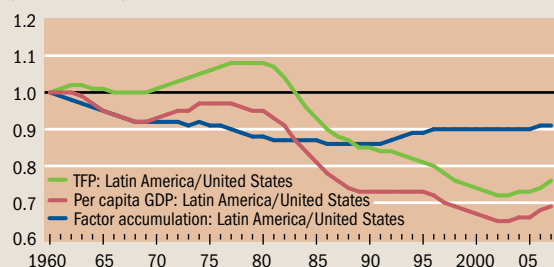
Firm size is only one reason for the poor allocation of resources in the region. Estimates suggest that large gains could be made in aggregate TFP if physical and human capital were allocated in a way that allowed more productive firms to grow and the least productive to shrink or disappear.

Chart 1

Lagging productivity, lagging income

Since 1960, total factor productivity (TFP) has grown substantially less in Latin America than in the United States, which accounts for most of the decline in per capital GDP relative to the United States.

(ratio, 1960 = 1)



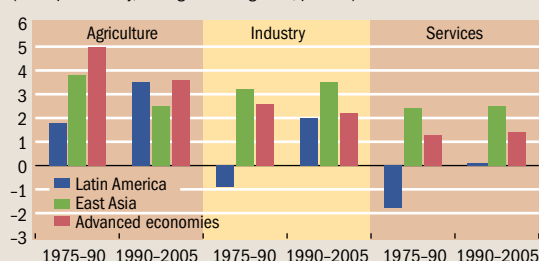
Source: Pagés (2010) based on Daude and Fernández-Arias (2010).

Note: Total factor productivity represents the ratio of the total amount of goods and services an economy produces to the factors of production—such as capital, labor, and human skills—used to produce the output. Factor accumulation represents essentially the growth in the stock of such inputs as capital, labor, and skills.

Chart 2

Up on the farm

Only in agriculture has the growth in Latin American labor productivity compared favorably with the rest of the world. (Labor productivity, average annual growth, percent)



Source: Pagés (2010) based on Timmer and de Vries (2007).

Note: Labor productivity represents the output per worker.

If resources moved from the least productive to the most productive firms, Mexico could double its industrial production; the typical gain for the rest of Latin America would be about 60 percent (estimates based on Hsieh and Klenow, 2009).

Outside the manufacturing sectors there seems to be even more room to improve productivity by reallocating resources. Productivity in retail trade has the potential for enormous increases. Millions of Latin American workers sought refuge in that sector because better jobs in manufacturing and in the modern service sectors, such as public utilities and financial services, were hard to come by. In Mexico and Brazil, retail labor productivity could rise from 15 percent to 54 percent of U.S. retail labor productivity if capital and labor were reallocated from less to more productive firms. Similar gains could be achieved in many other service industries.

Only companies with significant profit prospects find it worthwhile to expand beyond a certain level in Latin America.

Misallocation of resources results from myriad market and policy failures that create an uneven playing field for firms. This reduces productivity because it gives an inordinate market share to low-productivity firms, while restricting the growth of more productive ones—and is why reallocation of resources can yield such large gains.

Nowhere is this more apparent than in the service sector, where the norm is small, informal firms—that is, those that are unregistered, do not pay taxes, and do not abide by government regulations. Policies that tolerate evasion of taxes and social security levies can offset informal firms' lower productivity, allowing them to stay in business and absorb resources that formal firms could use more productively.

Latin American economies must face up to low productivity in the service sector. The industrial sectors of the region have few opportunities for growth—not only because China is becoming the producer for the world, but because capital inflows cause currency appreciation, which reduces the competitiveness of those sectors. As long as China—and other large emerging economies with fewer natural resources than Latin America—keep growing at a fast pace, the agriculture and raw materials sectors are sure to expand. However, that will not by itself generate the number and types of jobs needed for continued poverty reduction and a better quality of life for Latin Americans. Improving the productivity of the service sector is the most effective way to reach this goal for two reasons. First, the service sector employs the most workers and second, greater industrial competitiveness requires better productivity in such service sectors as logistics, transportation, distribution, and communications.

Many policy inadequacies have contributed to the dismal productivity levels and growth in Latin America. Trade, transportation, innovation, and industrial policies as well

as support programs for small and medium-sized firms all affect productivity (see Pagés, 2010). But financial and tax policies merit special attention because of their considerable influence on firms' productivity and on the ability of productive firms of all sizes to stagnate or grow.

Productivity needs credit

Latin American financial systems have fixed many of their inefficiencies, which stemmed from governments that intervened too much, regulated badly, and neglected oversight. Latin American banks' ability to weather the world financial crisis relatively unscathed is evidence of these improvements. But by international standards, Latin American credit systems remain small and offer too few products. Systems in many countries are shallower than in the early 1980s.

Scarce credit helps explain the uneven productivity, especially among small and medium-sized firms. Because they cannot borrow, many highly productive firms cannot expand and many low-productivity firms cannot make the technological changes and investments needed to increase their productivity. In Colombia, a 14 percent increase in the amount of credit received by small businesses over a decade produced TFP increases of 50 percent (Eslava and others, 2010).

Lack of credit also hurts productivity because it weakens incentives for compliance with tax and labor regulations—usually required to obtain bank credit—thus lowering the costs of informality. Greater credit availability can make a major contribution to formalizing employment, as became clear in Brazil between mid-2004 and the outbreak of the world financial crisis four years later (Catão, Pagés, and Rosales, 2009). During that period, credit to formal firms rose from 15 percent to 24 percent of gross domestic product, and the percentage of workers with formal employment contracts rose from 38 percent to 45 percent. This was not a coincidence. The sectors whose investment and cash flow needs made them most dependent on credit were those with the fastest rate of labor force formalization.

A stable supply of credit is needed to make productivity improvements sustainable. A sudden credit crunch can harm productivity in the long term in two ways. First, it delays needed investment in new technologies and, second, it can force productive but credit-constrained firms to close. A study of firms in Colombia shows that a small firm must be three and a half times more productive than a large one to have the same chance of surviving a credit drought, which strongly suggests that credit crunches hit smaller firms hard (Eslava and others, 2010). If credit crises are frequent, efficient small firms have fewer opportunities to survive and grow.

Although the Latin American economies survived the world financial earthquake relatively well, greater credit stability will take work. Better financial supervision and prudential regulation to protect the financial sector from shocks still has a way to go in most countries, especially those more dependent on external finance and more exposed to possible swings in commodity prices.

Most countries must also strengthen creditors' property rights, so that banks can lend with collateral to small and

medium-sized firms. This is perhaps the most difficult, but most necessary, step to get credit systems to contribute more to the growth of productivity.

Taxes and productivity

Along with insufficient credit, taxation is a major contributor to misallocation of resources, which leads to slower productivity and growth. According to the World Bank's *Doing Business*, Latin American companies spend an average 320 hours a year preparing their tax returns, compared with 177 hours in advanced economies. Colombian firms are relatively fortunate, spending less time on these tasks than their counterparts in the region. Even so, Colombian companies spend an average of 208 hours on tax matters. In Brazil, Bolivia, Ecuador, and Venezuela, companies waste between 600 and 2,600 working-hours on tax issues.

Because tax systems are so complex—and smaller companies contribute so little to tax collection—it seems reasonable to create simplified systems for them. Such regimes exist in 13 of 17 Latin American countries. In two other countries, the tax offices have exempted small companies from taxes.

But these systems have altered the natural incentives for firms to reach their optimal scale. For instance, although simplified tax regimes would seem to be good for productivity because they save small companies costly hours of bureaucratic work, in fact, they discourage small firms from growing beyond the sales or payroll threshold at which the benefits phase out and the higher taxes would cut into their profitability. Were a small Peruvian company to exceed the threshold, its profits would fall by half; the profits of an Argentine company would slide 25 percent. Only companies with significant profit prospects find it worthwhile to expand beyond a certain level in Latin America. That helps explain why there are so few medium-sized firms in the region and why many small, low-productivity companies can survive, using resources that would be more productively employed in larger companies.

Moreover, because tax authorities concentrate their collection efforts on large companies and because corporate taxes for large firms are high (an average of 20 percent compared with 16 percent in advanced economies), many companies with growth potential are reluctant to make investments that could increase their productivity, because they would not reap sufficient returns. The larger the company, the more investment decisions are affected by these tax concerns. And the more investment is concentrated in a few large companies, the greater the temptation of the political system and the tax administration to impose heavy taxes on their income.

The evasion of social security contributions adds to the harmful effects of unequal tax payments and enforcement. Only one in three workers is registered for social security in Latin America and the Caribbean. Evasion of social security taxes also subsidizes firms that fail to pay—which tend to be smaller and less productive than those that make employer contributions—and reduces small productive firms' incentives to grow for fear of showing up on the authorities' radar. As with tax systems, productivity problems can be made

worse by either promoting special social security regimes for microenterprises and small firms or by subsidizing the contributions of those in the informal sector. Expanding the reach of social security and social protection is justifiable, and vigorous social policy is essential in a region plagued by inequalities. But such well-intentioned but poorly conceived remedies increase incentives to work in the informal sector and hurt aggregate productivity.

Simplifying, unifying, and enforcing the tax provisions that apply to firms and expanding social security coverage in a way that does not encourage inefficient behavior could contribute greatly to productivity. Tax and social contribution regimes that vary by sector, company size, or for other reasons distort the allocation of resources, divert scarce managerial resources, and are an extra burden for public administration.

No substitute for productivity

Per capita income in Latin America and the Caribbean has trailed income in the rest of the world not because this region's citizens work or invest less, but because, in relative terms, productivity growth has plummeted. This can't continue. The cost of extracting some commodities and primary products is low compared with international prices for those products, which can raise the standard of living. However the past 50 years have shown that this strategy is not enough. There is no substitute for producing more effectively, innovating, training, adapting, changing, experimenting, reallocating, and using work, capital, and land with greater efficiency. In other words, productivity must grow. ■

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Spreading the Wealth

Poverty and inequality have declined in Latin America in recent years, but there is a lot more to do

Alicia Bárcena



Favela da Rocinha in Rio de Janeiro, Brazil.

THE years following the 2002 emerging market crisis have been good ones for Latin America. Economies grew smartly and there was a significant reduction in poverty and a slight improvement in income distribution—with only a small setback during the Great Recession that began in 2008. But even with these positive developments, poverty, inequality, and economic and social marginalization remain prevalent in many Latin American countries—which historically have had among the most skewed income distribution in the world.

The improvements reflect not only strong economic growth in the region, which averaged more than 4 percent during the period, but also better social policies and an increase in the number of workers toiling in the formal economy rather than the less-productive underground, so-called informal, economy, where wages and social protection are weaker.

Moreover, better monetary, spending, and tax policies—as well as strong demand for commodities key to the region's economies—enabled Latin American countries in the main to weather the global crisis better than advanced economies. In the past, worldwide downturns generally sent Latin American economies reeling—and poverty rates skyrocketing. This time the reduction in poverty recorded in the boom years before the crisis continued into 2010.

Despite sharp variation from country to country, poverty rates for the region as a whole dropped significantly between 2002 and 2008. On average, 44 percent of Latin American citizens were unable to satisfy basic nutritional and non-nutritional needs in 2002; by 2008 that number had fallen to 33 percent (see Chart 1). Moreover, indigence—the level below which people cannot satisfy their food needs—also declined markedly, from about 19 percent in 2002 to less than 13 percent in 2008.

Like poverty, income inequality has also declined in most countries in Latin America and the Caribbean during the early years of the 21st century. If the so-called Gini coefficient is used to measure how equally incomes are distributed, 15 out of 18 economies surveyed in the region—Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela—experienced improved income distribution (see Chart 2). In at least 11 of these economies

the improvement was larger than 5 percentage points. Only in Costa Rica, the Dominican Republic, and Guatemala did wealthier segments of society increase their share of total income. The Gini coefficient ranges between zero and 1. In an economy in which one person has all the income, the coefficient is 1. It is zero when everyone has the same income.

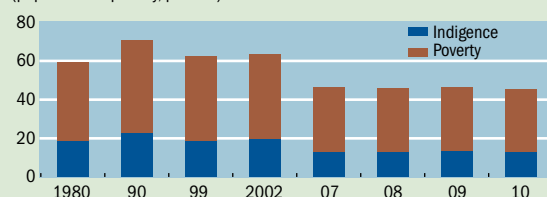
But income distribution in the region remains heavily skewed. The average per capita income of households in the upper 10 percent is about 17 times that of the poorest 40 percent, a slight improvement over 2002, when it was 20 times higher. So a number of households may have escaped poverty, but they are not benefiting much from economic growth. That should come as no surprise. Poverty, although endemic, responds much more to economic cycles than income distribution. Lack of income equity is a long-standing condition that reflects serious problems of social stratification and wealth inequality that have been handed down from generation to generation.

The improvements in poverty and income distribution are explained in large part by growth and government policies and the interaction between them. Many economies in the region have made significant efforts to increase the resources available to implement social policies. On average, social spending rose from 12.2 percent of gross domestic product (GDP) during 1990–91 to 18 percent of GDP during 2007–08.

Chart 1

Declining poverty

Since the last emerging market crisis in 2002, poverty in Latin American and Caribbean countries has declined, with only a tiny increase in 2009, at the height of the global recession. (population in poverty, percent)



Source: Economic Commission for Latin America and the Caribbean.

Note: A person is considered in poverty if his or her daily income is insufficient to buy a basket of basic goods and services. Indigence occurs when a person cannot meet his or her nutritional needs. The baskets and incomes are calculated on a country-by-country basis.



As a share of overall public spending, social programs grew from 45 percent to 65 percent.

Among key social policies, conditional transfer programs, which pay households that engage in socially useful behavior such as keeping children in school, have also helped improve income distribution and reduce poverty. Other important programs include unemployment insurance, recruitment subsidies, and job creation programs.

Latin America was largely untouched by the first phase of the global crisis, which severely roiled financial markets in Europe and the United States. But the financial crisis spread to the real economy—which produces goods and services—and world trade shriveled in late 2008 and early 2009. Latin American output, as measured by GDP, fell 1.9 percent in 2009—the biggest annual contraction in two decades. But unlike during previous crises, many governments were able to undertake policies to mitigate the effects of the downturn on their citizens. Social policies became part of the effort—along with countercyclical taxing, spending, and monetary policies—that governments in the region took to soften the negative economic and social effects of the global crisis.

The generalized recovery in 2010 for most Latin American and Caribbean countries—led to a great extent by the adoption of countercyclical policies combined with improving conditions in the global economy—is expected to improve social conditions further. According to the latest estimates by the Economic Commission for Latin America and the Caribbean (ECLAC), the region's poverty rate rose a tiny bit (from 33 percent to 33.1 percent) in 2009 and is expected to have declined a full percentage point in 2010, to 32.1 percent. Extreme poverty, which rose 0.4 percentage point in 2009, is expected to have fallen back to its 2008 level of 12.9 percent.

In addition to economic growth and better social policies, changes in labor markets helped reduce poverty and income

inequality. In many countries jobs in the formal sector increased, which, together with rising hourly wages, helped lower-income households relatively more than better-off households.

As encouraging as the improvements were, structural constraints could significantly hamper future improvements in overall economic welfare.

- Despite the recent movement of some workers from the informal to the formal sector, informal employment remains prevalent. Informal jobs, by their nature, are designed to remain out of sight and are seldom as productive as jobs in the formal sector. The productivity gap between the formal and informal sectors leads to wage differentials and inequality. Moreover, because informal employers often do not pay social security taxes, their workers usually are not as well protected as workers in the formal sector, leaving many people with inadequate health insurance and old-age protection.

- The unequal distribution of financial assets and real assets means that much of Latin American society is poorly equipped to weather economic and social instability.

- Less access to health and education by poorer people makes it harder to even out income distribution.

All these problems contribute to the region's continued structural productivity gaps—both within countries and compared with the rest of the world (see “Face-to-Face with Productivity” in this issue of *F&D*). That pervasive lagging productivity translates into low-paying employment and transmits poverty and inequality from generation to generation in a vicious cycle that is hard to break.

To deal with these structural issues, ECLAC has proposed a comprehensive development strategy to eradicate poverty and inequality. It places equality at the center of development. It establishes a vital role for government and calls for public-private partnership in the setting of economic and social policies.

ECLAC identifies three interlinked policies in its approach to production: industrial policy that focuses on the most innovative sectors, technology policy that increases and disseminates know-how, and policies to support small and medium-sized enterprises.

Employment, social, and education policies are at the core of the equality agenda. Labor policy alone does not generate employment, but it can help countries adapt to new conditions in the global market with fiscally and socially responsible economic protection for workers.

Social equality and economic growth are not necessarily at odds: the great challenge is to find ways they can reinforce each other. ■

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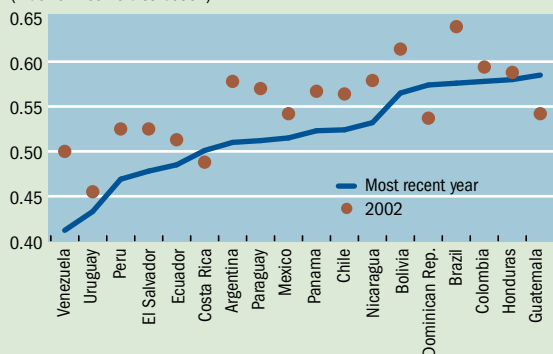
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Chart 2

Sharing the bounty

Income distribution in most Latin American countries has improved since 2002, when the last emerging market economic crisis occurred.

(index of income distribution)



Source: Economic Commission for Latin America and the Caribbean

Note: Income distribution is measured by the Gini coefficient. The coefficient ranges from 1, when one individual earns all the income in society, to zero, when every individual earns the same income.

Great Expectations

Brazil's economic success has raised the bar for that country, at home and abroad

Mário Mesquita

Brazilian National Congress in Brasilia, Brazil.

BRAZIL has been in the spotlight recently, with the rags-to-riches fame of its popular former president, Luiz Inácio Lula da Silva; its lead role as one of the emerging market darlings of the postcrisis economy; and winning bids to host the 2014 soccer World Cup and the 2016 Olympics in Rio de Janeiro.

Lula inherited solid macroeconomic policies from his predecessor Fernando Henrique Cardoso and managed to strengthen Brazil's economy despite a crisis of confidence in 2002 and the 2008 global crisis.

Brazil—one of the world's top ten economies, and the largest in Latin America—now governed by President Dilma Rousseff, has gained confidence and international influence, which could expand if it builds on recent success. But it must now act to increase economic growth and deliver on its potential. Better performance means increased expectations for the country from its citizens—including its newly expanded middle class—and outside observers.

Three pillars of stability

Success means focusing on the pillars of Brazil's macroeconomic policy: inflation targeting, a floating exchange rate, and maintenance of a primary fiscal surplus—that is, taking in more revenue than it spends, before interest payments.

Decades of runaway inflation were finally tamed by the implementation by then-finance minister Cardoso's currency reforms in 1994, followed by the introduction of inflation targeting (see "Ending Instability," in this issue of *F&D*) in 1999. Since 2005, consumer inflation has been within 2 percentage points of the government-set target of 4.5 percent. Brazil was one of the few emerging economies to maintain inflation roughly in line with its targets throughout the 2008–09 commodity price boom and bust. But it failed to take the opportunity offered by the generally disinflationary global environment in 2009 to lower its inflation target, and thus entrench lower inflation expectations.

Monetary policy has been successful, but fiscal performance has been mixed. Despite primary surpluses and a stable ratio of net government debt to gross domestic product (GDP) at a little over 40 percent, gross debt exceeds 65 per-

cent of GDP. Expansion of spending has not been held in check: central government primary spending, before interest payments and revenues, rose by 23 percent of GDP between 2002 and 2010. Nor has the country lowered the overall tax burden, including on states and municipalities, which at 34.5 percent of GDP is very high by emerging market standards and deters private sector investment.

Moreover, government spending accelerated in 2009—an appropriately anticyclical response to the global crisis—but it continued to rise in 2010, when the Brazilian economy was already recovering, which contributed to economic overheating—as shown by higher inflation and a wider current account deficit.

Brazil's trade environment has benefited from rising demand for commodities from Asia—China is now Brazil's largest trading partner—which led Brazilian export prices to record highs. And the government has taken steps to turn this external boom's temporary positive shocks into lasting improvements.

One of the main achievements of the Lula administration was its prudent reaction to the opportunities of a positive economic environment. In January 2004 the central bank established a program—still in place—to increase external reserves from \$48 billion to \$300 billion. This was combined with the gradual retirement of domestic foreign exchange-linked debt. Such a policy entails costs—namely, the difference between interest on government debt and the financial returns on the reserves. But it also yields important and widespread benefits.

First, by increasing reserves and becoming a net creditor economy, Brazil was finally able to reach investment-grade status, which should help lower the costs of funding for both the public and private sector. Reserves exceeded external debt by \$33 billion at the end of 2010. While the public sector bears the financial costs of carrying the reserves, the benefits will accrue to the whole economy.

Brazil has sizable net external liabilities, including portfolio and foreign direct investment inflows. Still, compared with early in the century, these liabilities are now mostly in the form of equity rather than debt, which means the interest paid on them correlates better with domestic economic

conditions. This speeds up current account adjustment in moments of stress, as in late 2008 and early 2009.

By amassing large reserves, the public sector bet on its ability to shield Brazil from negative global developments. So when the crisis came along at the end of 2008 and the Brazilian currency—the real—depreciated, government finances enjoyed a windfall gain in the value of its external assets in domestic currency: the net debt-to-GDP ratio fell from 44 percent to 38.5 percent between May and December of that year. That, in turn, enabled the public sector to adopt expansionary policies in support of domestic demand. This contrasted with the cut-backs the government often had to make in the past when the economy was hit by negative external shocks.

The benefits of having safeguarded monetary stability in the run-up to the crisis on the one hand and having built a comfortable reserve buffer on the other paid off clearly in the aftermath of the collapse of investment firm Lehman Brothers. Brazil's economy rebounded rapidly, which mitigated the impact of the crisis on the labor market and kept inflation under control.

Moving ahead

The performance of Brazil's economy after the crisis highlights the challenges it still faces. As soon as it overcame the effects of the global recession, by late 2009 and early 2010, the economy began experiencing typical signs of overheating—similar to those just before the crisis hit in late 2008.

This overheating occurred because Brazil still does not save enough. Gross savings averaged 17 percent of GDP during 2005–09, low compared with the 24 percent seen in Chile and Mexico. As long as Brazil saves so little, increases in investment will weigh on domestic resources, leading to inflation pressures (which the central bank must counteract); increased use of external savings, through rising imports and the current account deficit; or both.

Despite its progress over the past decade, Brazil's economy has room for improvement. In particular, it appears the Brazilian economy's speed limit—how fast it can grow without inflation and/or external deficits increasing—is still considerably lower than in some of the more dynamic emerging economies, although it seems higher than a decade ago. Raising this speed limit should be the key economic policy challenge for the new Rousseff administration. A faster-growing economy would help the government achieve its stated primary goal of ending extreme poverty in Brazil—for instance, by creating conditions for increased investment in human capital.

After an initial burst of reforms during 2003–04, the Lula government seemed to lose its appetite for tackling issues like the social security deficit, which remains relatively high; the high cost of the civil service; and red tape, dubbed the “*custo Brasil*.” Fiscal and structural policy did not improve as much as they could have, given the broadly favorable external conditions.

One important step for the new administration will be reforms to increase the saving rate and impose better discipline on fiscal spending.

Private sector saving could also be encouraged by increased rewards for deferring consumption, with tax breaks for

longer-dated investments and by linking interest rates on savings accounts—a popular investment vehicle—to the policy interest rate set by the central bank.

Doing so would strengthen the effectiveness of monetary policy and could help the central bank achieve its inflation target with lower interest rates. Brazil has long had quite high interest rates by international standards: they dropped into the single digits only briefly during a rare recession period in 2009. High interest rates, very favorable terms of trade, and relatively good growth prospects have attracted substantial capital inflows, which account for the relative strength of the real. But its increased value clouds the outlook for less competitive segments of the manufacturing sector.

There is little the Brazilian government can or should do about its terms of trade or relative attractiveness to foreign investors, but it can help bring domestic interest rates in line with global standards. It should start by strengthening fiscal policy, protecting fiscal responsibility, and improving transparency, while also tackling social security reform—the overall deficit remains close to 4 percent of GDP, despite still-favorable demographics, two-thirds of which stems from the public sector—as well as increasing spending flexibility, including on personnel. Ultimately Brazil should follow Chile's example of cyclically neutral fiscal targets (tighter when growth is strong, easier when it slows).

Brazil also must make changes in its monetary policy institutions. Its high inflation target sets an elevated benchmark for nominal and real interest rates and fosters indexation. Moreover, the central bank lacks legal autonomy, which means that, albeit less than in the past, short-term inflation shocks tend to have more pronounced and persistent effects than in countries where the monetary authorities' ability to defend price stability is not repeatedly in question. Brazil also must reduce the high level of subsidized credit—about a third—in areas as diverse as agriculture, housing, and manufacturing investment. Subsidized credit undermines the effectiveness of conventional monetary policy.

On the external front, robust reserves and a floating exchange rate should allow Brazil to integrate more fully into the global economy, reducing its high import tariffs and increasing openness.

The Cardoso and Lula administrations managed to steady the economy. The next step is to increase potential growth and close the gap between Brazil and faster-growing economies with similar middle-income levels. Meeting that challenge will hinge on strengthening the pillars of macroeconomic policy and designing and implementing an ambitious reform agenda—something that is always easier to do at the beginning of a presidential term.

If Brazil can do this, it will stand a better chance of achieving its economic potential as well as meeting its global aspirations. ■

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Rising Prices on the Menu

Higher food prices may be here to stay

Customers await bread at bakery in Cairo, Egypt.

Thomas Helbling and Shaun Roache

AROUND the world, poor weather has reduced harvests and driven up food prices, fueling inflation risks and hitting the most vulnerable. Floods in Australia, Pakistan, and parts of India have helped push up the cost of food, as have droughts in China, Argentina, and Eastern Europe. Energy prices are again on the rise, with likely knock-on effects for food.

Many countries—especially developing and emerging economies—are struggling with the implications of high food prices, given their effects on poverty, inflation, and, for importing countries, the balance of payments. Higher food prices may also have contributed to social unrest in the Middle East and North Africa.

International food prices were broadly stable through the first half of 2010, but they surged in the second half of 2010, and have continued rising in 2011 (see Chart 1). The IMF's food price index (see box) is now close to the previous spike in June 2008.

The increase in food prices is, of course, bad news for all consumers. But the poor—as well as consumers in developing and emerging economies in general—are hit harder by higher food costs because food represents a much larger share of their overall spending (IMF, 2011). At the same time, rapidly rising food prices pose important macroeconomic policy challenges for decision makers in emerging and developing economies.

International food markets

Food, more than perhaps any other product, is laden with both symbolic and practical value. Concerns about food security, sufficient domestic production, and relative incomes in agriculture mean that food is not traded as readily as manufactured goods, because of protectionist agricultural policies. Despite these trade barriers, some major food items—especially major grains and oilseeds—are traded internationally. In this article we focus on the international prices of such products. Much food is not traded, so international food prices are only one determinant of domestic food inflation.

The world grew accustomed to relatively low international food prices in the 1980s and the 1990s, when prices adjusted for inflation were below those recorded during the Great Depression (see Chart 2). But since the turn of the century, food prices have been rising steadily—except for declines during the global financial crisis in late 2008 and early 2009—and this suggests that these increases are a trend and don't just reflect temporary factors.

Expensive tastes

Perhaps the most important explanation for the trend increase in food prices is that consumers in emerging and developing economies are becoming richer and changing their diet as a result. In particular, consumers in these economies are eating more high-protein foods such as meat, dairy products, edible



oils, fruits and vegetables, and seafood. These products are more “income elastic” than staple grains. In other words, as people get richer, they demand more of these high-protein foods, whereas their consumption of grains may grow more slowly or even decline.

This increases the demand for scarce agricultural resources—for example, more land might be devoted to cattle grazing instead of crop planting, while more crops are used for animal feed. Reflecting these changes, emerging and developing economies have accounted for about three-quarters of the total growth in global demand for major crops since the early 2000s.

Food and fuel

Another influence on the markets for food products over the past decade has been the boom in biofuels. High oil prices and policy support have boosted demand for biofuels, which are used as supplements in transportation fuels, particularly in the advanced economies and also in some emerging economies, including Brazil. This demand, in turn,

has buoyed the demand for feedstock crops. In 2010, for example, the production of corn-based ethanol absorbed some 15 percent of the global corn crop. Other crops whose demand is correlated with that of biofuels are cane sugar, palm kernels, and rapeseed.

In addition to these indirect effects, high oil prices also have a direct effect on the cost of producing food because fuel—including natural gas—is used to produce inputs, such as fertilizers. Fuel is also used in all stages of the agricultural production cycle—from sowing to harvesting to distribution. Food prices are partly dependent on oil prices, and biofuels have likely strengthened this link.

Yielding crops

With the structural increases in the demand for many crops and other foods, prices can only remain stable over the medium term if there is a matching structural increase in supply. In other words, average prices have to increase to provide the incentives for increased supply. While farmers have responded to the opportunities from rising demand, their response has only been gradual. The interplay between productivity and acreage growth is key to understanding the supply response. Traditionally, rapid productivity growth in agriculture helped drive down food prices. But over the past decade, global productivity growth—as measured by the amount of crop produced per hectare—has fallen for rice and wheat compared with the 1980s and 1990s and has been broadly stagnant for corn and soybeans. Less productivity growth means higher prices, everything else being equal.

With lower yield growth, production increases have had to be achieved by using more land. But increasing the amount of land devoted to producing more of a crop comes at a cost, which is reflected in higher prices. The higher cost is due to two main factors.

Chart 1

The dinner index

Food prices surged in 2010 and are still rising.
(real price in constant dollars, 2005 = 100)

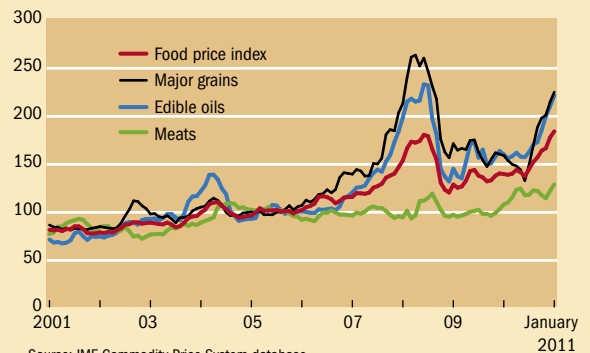
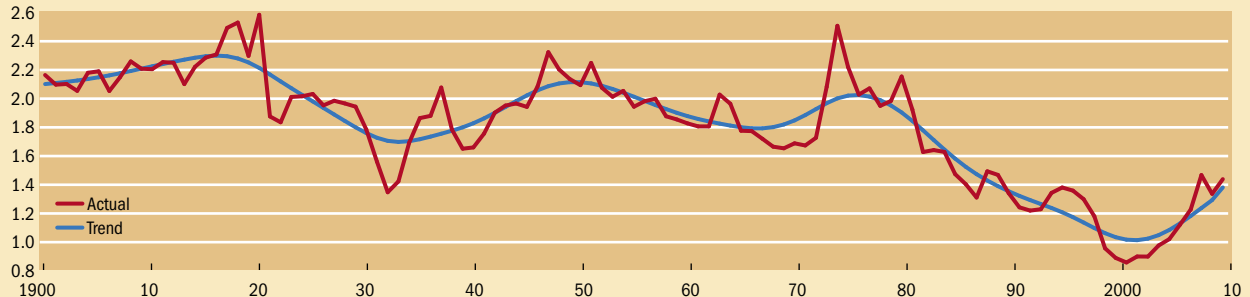


Chart 2

Eat up

The real price of food is on an upward trend but is still at its lowest since the Great Depression.
(natural logarithm of an index in constant U.S. dollars, 1977-79 = 100)



Tracking food

The IMF food price index tracks the spot prices of the 22 most commonly internationally traded agricultural food items.

These include major grains—wheat, rice, and corn; oil seeds—soybeans; edible oils—palm oil; basic meats—beef carcasses; some basic seafood items—fish meal; some tropical fruits—bananas; and sugar.

The index was created to facilitate assessment of food market developments and prospects for the IMF's *World Economic Outlook*. The commodities it follows are those with the largest shares in international trade, and those shares determine the weight of each commodity in the index. These items generally have an international reference price—for example, the price of U.S. corn exports at Gulf of Mexico ports.

First, crops compete for land. Since there are geographical limits to where crops can be produced, higher acreage for one crop often means lower acreage for another. Farmers decide what to plant depending on crops' relative prices. Second, because demand for many crops has been rising at the same time, overall acreage also had to increase. To encourage farmers to plant and harvest more acreage, particularly on marginal land that is less productive, crop prices need to rise.

From a longer-term perspective, the recent decline in yield growth is worrying. It means that continued growth in demand for food will require further increases in acreage. But some of the additional land will be less productive than that now being used, whether due to lack of irrigation in arid areas, poor infrastructure, or simply lower soil fertility. In areas with rapid urbanization, fertile land is being used for purposes other than agriculture. And soil degradation and climate change have hampered yield growth.

Low yield growth and limited land availability amid rapid demand growth in an economy can lead to shifts in international trade patterns. In China, for example, rising demand for animal feed has turned that country into a net importer of corn and soybeans. Because international food markets are still relatively shallow—that is, only a small share of global production is exported, as most production is consumed locally—such developments can have large effects on world prices.

Weathering production cuts

The ongoing structural change in international food markets is clearly one factor behind the trend increase in food prices. But trends usually don't result in abrupt price movements. To really understand recent price surges, we have to look at other factors. Indeed, the catalyst of the food price surge since mid-2010 has been a series of weather-related supply shocks. The sequence of events is well known by now.

First, drought and wildfires caused a decline in wheat production in Russia, Ukraine, and Kazakhstan. As a result, the global wheat harvest for the current crop year is now estimated to have declined by over 5 percent (see Chart 3). Then, a hot and wet summer led to a lower-than-expected corn

harvest in the United States. Finally, starting in fall 2010, one of the strongest La Niña weather episodes in the past 50 years began to hit harvests—including rice—in Asia. The damage to harvests in Asia not only caused rises in the price of international food commodities but also affected local food markets, notably through the negative impact on local fruit and vegetable production.

The global price response to a supply shortfall depends not only on the size of the shortfall but also on other factors. One amplifying factor was the imposition of grain export restrictions in Russia and Ukraine. This helps to keep domestic prices low and stable but leads to higher world prices. A pattern of protectionist trade policy responses to supply shocks have also been observed during past price surges for food commodities, including in the 1973–74 and the 2006–08 booms (see Martin and Anderson, 2011).

Stocking up

Food prices are also affected by the level of stocks. Many of the major food commodities—as opposed to perishable food—are storable and, when there are harvest shortfalls, stocks can add to supply. The lower stocks are relative to consumption—the so-called stock-use ratio—the more reluctant inventory holders will be to release parts of their stocks at any given price, assuming they are maintaining them partly to protect against future shortages. So the effect of supply shocks on prices goes up as stock-use ratios fall.

Low stock-use ratios have amplified the effects on prices of recent supply disappointments and have contributed to an uptick in food price volatility. Stock levels relative to consumption decreased substantially over the past decade. At the previous food price peak in 2008, they had reached a low comparable to that recorded during the 1973–74 commodity and food price boom (see Chart 4). Favorable harvest outcomes in the second half of 2008 and early 2009 allowed for only minor rebuilding of stocks. So when supply shocks started to hit in mid-2010, food markets were still vulnerable.

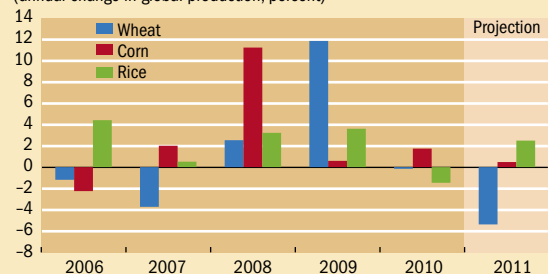
The effects of supply shocks tend to be short lived. Crop production usually returns to trend quickly as weather nor-

Chart 3

Breaking bread

Bad weather around the world in 2010 has slammed grain harvests.

(annual change in global production, percent)



Source: U.S. Department of Agriculture.

malizes. Indeed, periods with production shortfalls and large price spikes are usually bracketed by long periods of relative price stability (Deaton and Laroque, 1992, among others, have emphasized this pattern). In the absence of further weather disturbances, the recent food price surge can be expected to ease when the new Northern Hemisphere crop season begins later this year. But the upward trend in prices is unlikely to reverse soon because the supply adjustment to the structural increases in demand for major food commodities will take time.

Impact

The surge in international food prices has already caused higher domestic food inflation and headline consumer price inflation as of early 2011 in many economies. Such direct effects are referred to as “first-round,” and are part of the normal pass-through of prices. As in 2007–08, these effects have been greater in emerging and developing economies, where the share of food items in the consumer basket is higher than in advanced economies (IMF, 2008).

Just as poorer countries and households spend a higher proportion of their budget on food, so too the actual cost of food makes up a larger proportion of the cost of food products in poor countries than in rich countries, where the cost of labor, transportation, marketing, and packaging add value that are not in the form of calories.

But if international food prices stabilize, the first-round effects fade unless underlying, or core, inflation is affected. Economists call these indirect or “second-round” effects and they occur if the food price increases affected expectations of future inflation. If people expect food to continue to go up in price, they begin to demand higher wages, leading to increased core inflation.

The experience of the past two decades has been that risks of a pass-through from rising food prices to core inflation are low for advanced economies, but are significant for emerging and developing economies.

The main reasons for this difference are twofold (IMF, 2008). First, with the much larger expenditure shares for

food and larger cost shares of raw food in the latter group of countries, food price spikes are more likely to unhinge inflation expectations and trigger increases in wage demands. Second, monetary policy credibility in emerging and developing economies remains lower despite recent improvements, implying that economic actors will be less confident in a strong central bank response to emerging inflation pressures and will thus be more likely to adjust their medium-term inflation expectations.

The IMF has traditionally advised countries to accommodate the first-round, direct effects of rising commodity prices on inflation, but to be prepared to tighten monetary policy to avoid second-round effects. At the same time, such policies have to be complemented by measures that strengthen social safety nets and protect the poor from the ravages of rising grocery bills.

Higher food prices—here to stay?

The world may need to get used to higher food prices. A large part of the recent surge is related to temporary factors, such as the weather. Nevertheless, the main reasons for rising demand for food reflect structural changes in the global economy that will not be reversed.

Over time, supply growth can be expected to respond to higher prices, as it has in previous decades, easing pressures on food markets, but this will take time counted in years rather than months. There is also the prospect that the world may face increasing scarcity in inputs important for food production, including land, water, and energy. Technology and higher yield growth could compensate for such scarcity.

In the meantime, policymakers—particularly in emerging and developing economies—will likely have to continue confronting the challenges posed by food prices that are both higher and more volatile than the world has been used to. ■

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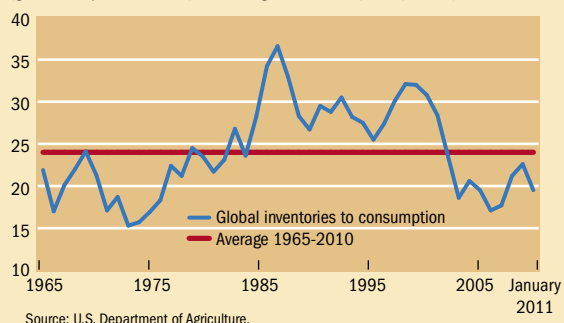
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Chart 4

Stocking up

Global grain inventories have been below average for the past decade.

(global end-year stocks in percent of global consumption, percent)



150 —

A History of World Debt

How public debt has changed since 1880

120 —

THE global financial crisis has taken its toll on the world economy, especially on the public finances of advanced economies. As a share of GDP public debt has grown sharply in recent years—from 70 percent in 2000 to close to 100 percent in 2009. That sounds large. But how does it compare with debt levels over time? A new database from the International Monetary Fund—starting in 1880 for most advanced economies—offers a historical perspective.

(Public debt in advanced G-20 economies, percent of GDP, PPP-weighted average)

90 —

60 —

30 —



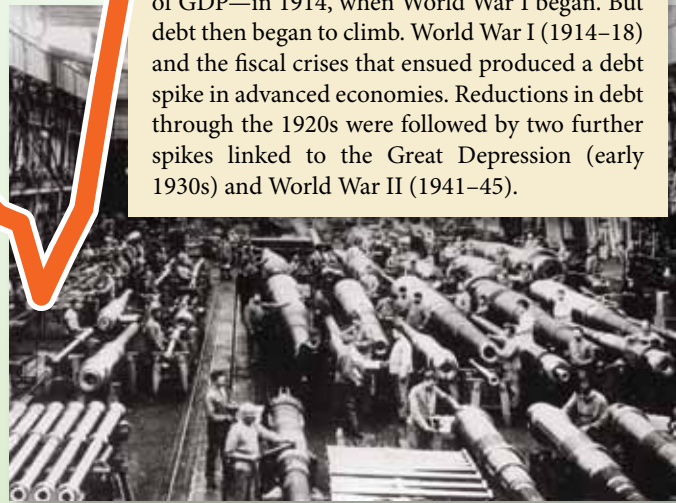
Ford auto assembly line in Michigan, United States, c. 1913.



Bread line in New York City, United States, 1930.

World Wars and the Great Depression

Debt reached its lowest ratio ever—23 percent of GDP—in 1914, when World War I began. But debt then began to climb. World War I (1914–18) and the fiscal crises that ensued produced a debt spike in advanced economies. Reductions in debt through the 1920s were followed by two further spikes linked to the Great Depression (early 1930s) and World War II (1941–45).



Arms manufacture in Germany, 1909.

The early period

During the first era of financial globalization (1880–1913), debt ratios in the advanced economies decreased—from 45 percent of GDP in 1880 to 29 percent of GDP in 1913. The gold standard that prevailed during this period was associated with unprecedented private capital inflows and trade flows, which spurred growth while lowering public debt ratios.

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1880

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1890

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1900

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1910

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1920

I
1930

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1940

The 'Great Peak'

During the Great Depression, the debt ratio peaked at 80 percent of GDP in 1932 following several episodes of banking and currency crises. The end of the Great Depression in the mid- to late 1930s was accompanied by debt reduction, but the start of World War II put an end to the deleveraging. With many countries borrowing extensively to finance war expenses, advanced economy indebtedness rose to the highest level recorded in the database: almost 150 percent of GDP in 1946.



Billboard in New York City, United States, 2008.

World debt during the Depression

(public debt, percent of GDP, 1932)

1932



World debt now

(public debt, percent of GDP, 2009)

2009



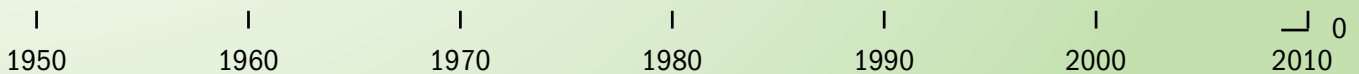
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Note: Country sizes are proportional to their 2009 GDP level (in PPP terms).

The recent crisis

While the impact on growth of the recent crisis is less dramatic than that of the Great Depression, the implications for public debt appear to be graver. That's because the advanced economies were weaker at the outset of the current episode—with debt ratios 20 percentage points of GDP higher in advanced G-20 economies in 2007 than in 1928. In addition, the sharp drop in revenues (due to the collapse in economic activity, asset prices, and financial sector profits) and the cost of providing stimulus and financial sector support hit debt ratios harder during the recent crisis than during the Depression.

Prepared by S. Ali Abbas, Nazim Belhocine, Asmaa El-Ganainy, and Mark Horton of the IMF's Fiscal Affairs Department. Text and graphics are based on A Historical Public Debt Database, published by the IMF in 2010. The underlying data are from The Historical Public Debt Database—which covers gross government debt-to-GDP ratios for 174 IMF member countries—available at www.imf.org/external/ns/cs.aspx?id=262





Gyrations in Financial Markets

Stijn Claessens, M. Ayhan Kose, and Marco E. Terrones

Financial cycles tend to be long and deep and often interact in ways that can cause booms or busts

ECONOMIC developments over the past two decades vividly show that gyrations in financial markets have greatly influenced real activity around the world. Following the largest housing bubble in its modern history, Japan experienced a massive asset market crash in the early 1990s, which marked the start of its “Lost Decade.” After prolonged credit booms, many emerging economies in Asia faced deep financial crises in the second half of the 1990s. The equity market booms of the late 1990s in a number of advanced economies ended with simultaneous busts and recessions.

The recent global financial crisis was similar to the earlier episodes. However, the so-called Great Recession was truly seismic, as severe credit crunches and asset price busts led to the deepest global recession since the Great Depression of the 1930s.

The recent crisis has not only been a painful reminder of the importance of financial cycles, but it has also exposed our limited understanding of these episodes. Previous research has been based mostly on historical narratives, rather than a systematic analysis of financial cycles. Consequently, many questions have been left unanswered: What are the main features of cycles in financial mar-

kets? How synchronized are they? And what happens when cycles in different financial markets coincide?

To answer these questions, we applied the traditional methods of business cycle analysis to a comprehensive database of financial cycles in credit, housing, and equity markets (Claessens, Kose, and Terrones, 2011a). Our study reveals a number of facts about financial cycles. First, financial cycles can be protracted and costly episodes. Second, they can feed off each other and worsen, becoming financial crises. Third, they tend to have a significant global component, as they are highly synchronized across countries. Finally, when they take place in tandem in many countries, they often lead to more costly outcomes. These findings, combined with the results of recent research, have important implications for the design of macroeconomic and financial sector policies.

Identifying financial cycles

It is useful to draw some parallels between the phases of cyclical fluctuations in the financial markets we identify and the fluctuations in output associated with business cycles. A complete business cycle has two phases, the *recession phase* (from peak to

trough) and the *expansion phase* (from trough to the next peak). In addition to these two phases, recoveries from recessions have also been widely studied. The recovery phase is the early part of the expansion phase and is usually defined as the time it takes output to return from its low point to the level it reached just before the decline began.

We use a similar approach to defining a financial cycle. We call the recovery phase of a financial cycle the *upturn* and the contraction phase the *downturn*. For the recovery phase, we consider both the time it took to return to the previous peak (say, the high point of housing prices) and how much the financial variable increased within the first year after its trough. We exclude the rest of the expansion phase, which is typically much longer and can be affected by many structural factors (such as the level of financial sector development and institutions).

When studying business cycles, it is clear what variable should be used: an aggregate measure of economic activity such as gross domestic product (GDP). But it is not so clear when analyzing financial cycles, as it is possible to consider many variables. Given that they constitute the core of financial intermediation—the process that matches up savers with borrowers—we concentrate on cycles in three distinct but interdependent market segments: credit, housing, and equities.

Specifically, we focus on credit volume, house prices, and equity prices for 21 advanced economies—members of the Organization for Economic Cooperation and Development—between 1960 and 2007. We exclude from our analysis the years following the recent crisis because a number of financial cycle episodes associated with the crisis are still ongoing. Our credit volume corresponds to aggregate claims on the private sector by deposit-taking banks; house price series refer to various measures of indices of house or land prices, depending on the source country; and equity prices are share price indices weighted with the market value of outstanding shares. We use quarterly data, seasonally adjusted whenever necessary, and in constant (that is, inflation-adjusted) prices.

Booms, busts, and crunches

We also examine the more intense forms of financial cycles—*disruptions and booms*—because large movements in financial variables are often associated with highly volatile fluctuations in economic activity. To identify these, we rank the changes in each variable during downturns and upturns. We then classify an episode as a financial disruption if the change in the variable—say, equity prices—during the downturn falls into the bottom quartile of all changes. We call these disruptions either *crunches* or *busts*, depending on the variable (that is, credit crunch; house or equity price bust). We classify a movement as a boom if the change in the variable during the upturn falls into the top quartile—that is, we have credit, house, and equity price booms.

There were nearly 500 episodes of financial cycles between the first quarter of 1960 and the final quarter of 2007 across the 23 countries and three variables. We identify 114 down-

turns in credit, 114 in house prices (house price data begin in 1970 or later for most countries), and 245 in equity prices. Correspondingly, the sample includes 115 upturns in credit, 114 in house prices, and 251 in equity prices. House price cycles are comparable in number to business cycles over this period, while equity cycles are more frequent because of their highly volatile nature. One-fourth of these episodes are disruptions (crunches or busts) or booms.

Long and deep

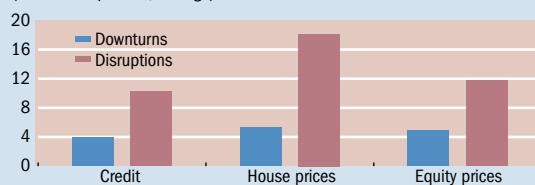
Financial disruptions are often much longer than normal downturns (see Chart 1). The average duration of disruptions ranges between 10 and 18 quarters, with house price busts lasting the longest. House price busts, at 18 quarters or so, last, on average, almost four times longer than garden-variety housing downturns. In contrast, booms in financial markets tend to be shorter than standard upturns. Credit market booms are the shortest, about 4½ quarters, compared with the average duration of other credit upturns of about 9 quarters, while housing booms are often the longest. A boom in housing lasts about 13 quarters.

Financial cycles tend to be intense episodes as measured by their amplitude—that is, the decline in housing prices, equity prices, or credit volume from peak to trough during downturns and the change in each financial variable during the first four quarters of an upturn (see Chart 2). Credit crunches and house price busts are much more dramatic than other credit and house price downturns. Credit crunches are about four times deeper than the average credit downturn, while house price busts are seven times bigger than the average house price downturn. Equity busts are about twice as large. But in absolute terms, the most severe fluctuations take place in equity markets—where prices during a typical boom register about

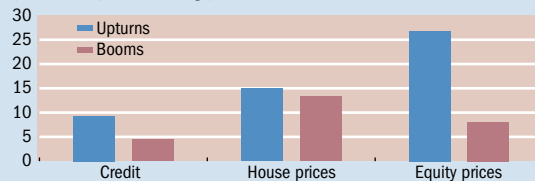
Chart 1

Booms and busts

Disruptions can last a long time . . .
(number of quarters, average)



. . . whereas booms tend to have a shorter life.
(number of quarters, average)



Source: Claessens, Kose, and Terrones (2011a).

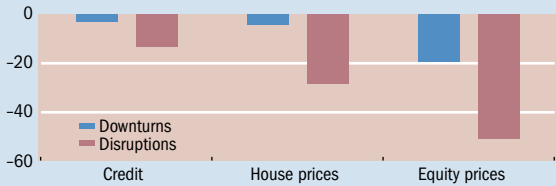
Note: The duration of downturns is the number of quarters between the peak and trough. For upturns it is the time it takes to go from the trough to the peak reached before the downturn. A disruption is one of the worst 25 percent of downturns; a boom is an upturn that is among the best 25 percent of upturns. The data represent averages of nearly 500 financial cycles between 1960 and 2007.

Chart 2

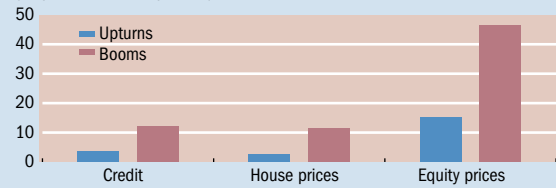
Intense times

The most severe fluctuations occur in equity markets. Housing booms are often less pronounced than housing busts.

(amplitude, median, percent)



(amplitude, median, percent)



Source: Claessens, Kose, and Terrones (2011a).
 Note: The downturns measure the decline from peak to trough; the upturns measure the change during the first year after a trough.

a 45 percent increase and a slightly larger decline during a bust episode. In the case of housing markets, swings are typically more asymmetric across the two phases of the cycle: an increase of 11 percent during booms and a decline of 29 percent during busts.

Reinforcing each other

What is at play when domestic financial markets are in roughly the same phase of the cycle? Is it more than coincidence? To answer this question, we employ a simple timing rule. Specifically, we consider a downturn in one financial variable to be associated with a disruption in another if the downturn starts at the same time or shortly after the disruption in the other variable. We employ a similar approach with upturns.

An association between the movements in two variables, of course, does not necessarily indicate that one caused the other. However, our results show the presence of strong interactions—between credit and housing markets, for example. Credit downturns that overlap with house price busts are longer and deeper than other credit downturns (see Chart 3). Similarly, when credit upturns coincide with episodes of housing booms, they tend to be longer and stronger. For example, a credit upturn becomes 25 percent longer and 40 percent larger when it coincides with a housing boom. This finding is suggestive of the important role that mortgage lending plays in many economies.

Credit cycles appear to behave differently when they coincide with cycles in equity markets. Although credit downturns accompanied by equity price downturns are not significantly longer, they tend to be more severe than others. Interestingly, equity cycles seem to be little affected when they are associated with cycles in other financial markets, probably because of the idiosyncratic nature of factors driving fluctuations in equity markets.

The strong linkages between the credit and asset price cycles we document are consistent with the mechanisms described in various economic models. For example, models featuring the so-called *financial accelerator* mechanism emphasize that there are feedback effects between financial markets and the real economy and among various financial sector segments. These models suggest, for example, that a decline in net worth, induced perhaps by a fall in asset prices, leads borrowers to reduce their credit demand, spending, and investment. This in turn causes the output of goods and services to shrink further in what can become a self-reinforcing cycle of falling output and falling asset prices.

Models that operate on the *supply side of finance* also suggest strong linkages among various segments of financial markets. They focus on the balance sheets of financial intermediaries (such as banks, which take in deposits and make loans) as an indication of their ability to provide credit and other external financing. They stress that conditions in credit markets can influence asset prices (and real activity) and vice versa. For example, when banks increase their leverage by accumulating debt, they tend to extend a larger volume of credit, which in turn can lead to an increase in asset prices. Conversely, a decrease in leverage can prompt a decline in asset prices.

Highly synchronized across countries

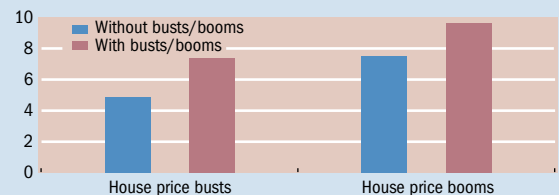
Financial cycles also often occur simultaneously across countries—suggesting that the global nature of the recent crisis is not unusual. We examine the degree of synchronization of cycles using a so-called *concordance index*, which measures the percentage of time two countries are in the same phase of a respective financial cycle.

Chart 3

Reinforcing each other

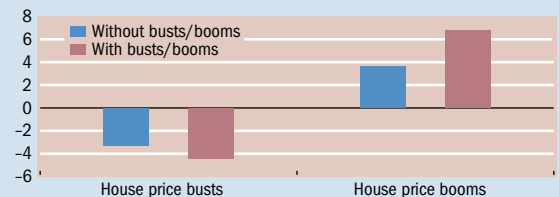
Credit cycles accompanied by housing cycles typically last longer . . .

(credit downturns/upturns, number of quarters, average)



. . . and are stronger.

(credit downturns/upturns, amplitude, percent change, median)



Source: Claessens, Kose, and Terrones (2011a).

Note: The panels display the duration and amplitude of credit downturns/upturns when they are associated with housing busts/booms. A credit downturn is considered accompanied by a housing bust if it starts at the same time or after the housing decline. Similarly a credit upturn is considered accompanied by a housing boom if credit growth starts at the same time or the beginning of the housing climb.

Credit and equity cycles display the highest degree of synchronization across countries (see Chart 4, top panel). These cycles tend to be in the same phase about 75 percent of the time. Although houses are nontradable assets, the extent of synchronization of housing cycles across countries is still high—about 60 percent. This finding partly reflects the important role played by global factors—including the world interest rate, the global business cycle, and commodity prices—in explaining house price movements around the world. The degree of synchronization in the case of housing and equity markets has actually increased over time, probably due to the expansion of cross-border trade and financial flows.

And when financial cycles are highly synchronized across countries, they tend to be more severe (see Chart 4, lower panel). In the case of highly synchronized equity downturns, for example, prices drop by about 30 percent, compared with some 18 percent for other downturns. Similarly, synchronized financial upturns are often more buoyant.

Rethinking cycles and policies

The main lessons from our extensive study of financial cycles are sobering. First, *financial cycles can be long and deep*, especially those in housing and equity markets. Second, *financial cycles accentuate each other* and become magnified during coincident downturns in credit and housing markets. Third, *they are highly synchronized across countries*, and the extent of such synchronization has been increasing over time, possibly because of the forces of globalization. Finally, *globally synchronized downturns tend to*

be associated with more costly episodes, especially in credit and equity cycles.

Economists have long studied the interactions between different types of cycles, and that research has had important policy implications. For example, the extensive study of the linkages between business cycles and inflation cycles has led economists to warn of the risk of higher inflation if monetary policy is lax and the economy is producing more goods and services than its potential. Conversely, they warn of deflation if monetary policy is tight and the level of economic activity is below its potential.

The recent global financial crisis has led to an extensive debate about the formulation of monetary and financial sector policies. This debate has emphasized not just the link between inflation and business cycles, but also the impact of cycles in financial markets on business cycles.

Combined with the results from earlier research (see “When Crises Collide,” *F&D*, December 2008), our findings on financial cycles provide useful input into these ongoing policy debates. In light of the multidimensional interactions between financial and business cycles, the observations we document suggest that close monitoring of cycles in financial markets should be an integral part of macroeconomic surveillance and policy design (Claessens, Kose, Terrones, 2011b). For example, in addition to the linkages between the inflation and business cycles, policymakers might want to take into account the state of cycles in financial markets when they formulate monetary policies.

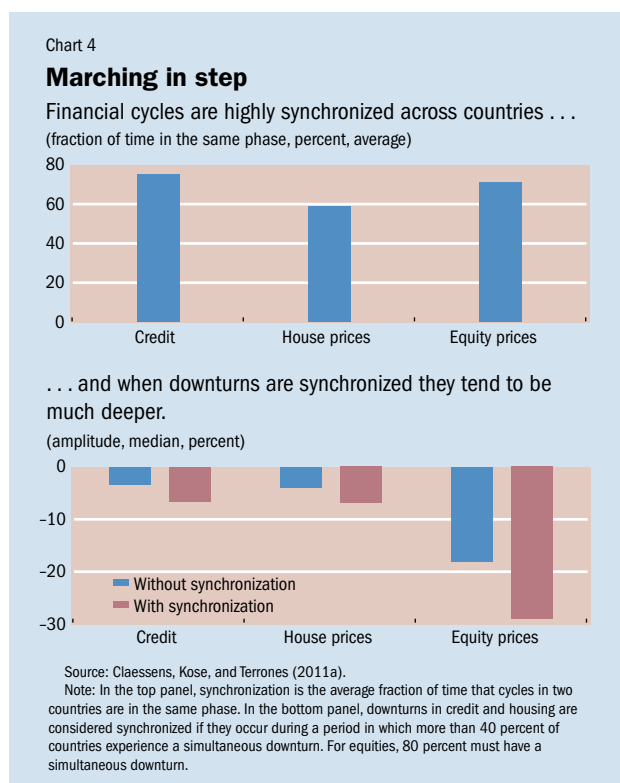
Our analysis also suggests that it is important to account for the interactions among financial cycles when designing regulatory policies to ensure the health of the overall system. For example, if both credit and housing prices rapidly are growing it might be necessary to employ stricter rules and lending standards for mortgage lending as well as larger countercyclical buffers to moderate fluctuations in banks’ capital positions, because cycles in credit and housing markets tend to enhance each other. More generally, the design of macroprudential rules must account for the linkages among cycles in different financial market segments.

Because financial cycles are often synchronized internationally, it is imperative to consider the global aspects of financial regulation and surveillance policies. However, such global policies might need to be adaptive and flexible, because financial systems operate differently in different countries. ■

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Investing in Growth

Highway interchange construction in Johannesburg, South Africa.

Serkan Arslanalp, Fabian Bornhorst, and Sanjeev Gupta

Revisiting the debate over whether public investment in infrastructure is productive

POLICYMAKERS in developing countries often point to insufficient infrastructure—inadequate highways, airports, maritime facilities, and the like—as a constraint on their countries’ growth prospects. So it’s not surprising that these policymakers seek ways to find room in their budgets for greater public investment in infrastructure without saddling their country with unsustainable debt.

But they can find this difficult to achieve. For various political reasons, these countries are often unable to cut less productive current spending—for example, on general subsidies for fuel—to increase public investment. They can seek funds from external sources, but may face limits on how much their country can borrow—particularly if it has benefited from debt relief in recent years or if additional borrowing is available only on nonconcessional terms. Moreover, a long legacy of failed public projects in a number of countries further complicates decisions about external borrowing.

But more important than whether a country can expand its public investment in infrastructure is whether it should. Underlying the debate over increasing public capital is the question of the productivity of public investment—whether it aids economic growth. If public investment is productive, it is easier to justify external borrowing to support it. Unfortunately, the results of studies on public investment’s impact on growth are unclear, leading many to conclude that it is unproductive. However,

some recent studies—for example, by the World Bank (2007)—conclude that public spending on infrastructure, education, and health yields positive effects on growth. The report from the Commission on Growth and Development (2008) notes that fast-growing countries are characterized by high public investment, defined as 7 percent of gross domestic product (GDP) or more.

This article revisits this debate and, using estimates of the total amount, or stock, of public capital (be it bridges or highways), it studies the impact on economic growth for 48 advanced and developing economies during 1960–2001. It finds that public investment generally has a positive impact on growth.

Mixed results

Some of the discrepancy in existing findings relates to what is being measured. Many studies look at the investment rate—the percentage of GDP devoted to adding to the capital stock. We find that the more important focus is the rate of growth of the capital stock itself. The discrepancy between the two suggests at least three reasons for the mixed evidence on the relationship between public investment and overall economic growth:

- Public investment and public capital can grow at different rates, depending on the initial level of capital stock. For example, public investment in a given year may not be large enough to replace the depreciated capital stock—the amount of capital “used up,” say by the wear and tear on a highway or a bridge from automobile and truck traffic. One can-

not expect public investment to have a positive impact on growth if it is not big enough to keep the country's capital stock from declining.

- There is a two-way relationship between public investment and growth that makes it difficult to isolate the effect of one on the other: public investment affects growth, but it is also affected by growth. For example, public investment may fall during an economic downturn simply because of a lack of resources, which is typical in many countries.

- Most studies do not take into account that governments face a budget constraint—they must finance higher investment spending either by raising taxes or borrowing or by cutting other spending. Higher taxation to finance public spending could introduce distortions in the economy and offset some of the productivity gains from public investment.

Economic theory suggests that the level of output is determined by the capital *stock* employed in production, rather than the annual investment *flow*. Although the two variables are closely linked, the capital stock—together with other production factors, such as labor and technology—determines an economy's production potential. The investment *flow* in any given period, by contrast, determines how much capital is accumulated and therefore available for production in the subsequent period.

Focus on public capital growth

As a result, we focus on the growth effect of *public capital*—the stock variable that corresponds to public investment. In particular, we developed a production function (see box) that includes inputs of labor, private capital, and public capital to determine the total output of an economy. We modified the production function to allow the productivity of public investment to vary, depending on the initial amount (stock) of public capital. For example, maintaining and/or expanding the existing capital stock may require higher tax rates, which could be distortionary—that is, discourage some good economic activities—and lead to lower growth. In our specification, we indirectly allow for the effect of such financing constraints.

The production function approach

In economic theory, an aggregate production function is a formal depiction of how inputs are transformed into output. In the standard model, the level of output depends on just two inputs, labor and capital, and on the available technology. This relationship is commonly specified as a Cobb-Douglas function, named after the mathematician Charles Cobb and Paul Douglas, an economist, who later became a U.S. senator from the state of Illinois. When tested empirically, the Cobb-Douglas function yields estimates of the responsiveness of output to a variation in inputs. In a first step, we extended this basic specification by dividing capital into private capital (provided by firms) and public capital (such as infrastructure provided by the government) and estimated the importance of the latter on output. In the second step, we allowed the responsiveness of output to public capital to vary with the level of public capital itself and found the relationship depicted in Chart 3.

To test our model, we needed estimates of public and private capital stock. But such estimates are difficult to obtain. Some are available for advanced economies, but there are few for developing economies. In our study, we filled this gap by estimating the public and private capital stock for a group of middle- and low-income countries during 1960–2001 using a methodology proposed by Kamps (2006). Our data set is novel in several ways: it combines capital stock estimates for both advanced and developing economies, differentiates between public and private capital, and applies depreciation rates that vary by time and by the economy's income level to capture the nature of the underlying public and private assets.

Specifically, the value of the capital stock is calculated using the *perpetual inventory* method. In this method, the net capital stock—public and private—is determined by adding gross investment flows from the current period to the depreciated capital stock of the previous period. As a result, the stock data account for the wear and tear on assets. The choice of depreciation rates presents perhaps the biggest challenge to tallying the capital stock data—mainly because country-specific estimates of depreciation rates (how much of the capital stock is used up in a period) are typically not available. Instead of applying a uniform rate to all countries, we differentiate the assumed depreciation by groups of countries reflecting different types of assets typically available in those countries. These assets have different life spans, resulting in different depreciation rates. For example, concrete structures are typically estimated to last longer than assets related to technology, whose investment life may be only a few years. As countries become richer, the share of assets with shorter life spans rises, thereby raising the overall depreciation rate.

The U.S. Bureau of Economic Analysis estimates that overall depreciation rates for public capital in the United States were about 2½ percent per year in 1960 and 4 percent in 2001 (Bureau of Economic Analysis, 2010). We extended this assumption to the public capital stock estimates for all advanced economies in our sample. For middle-income countries, we used a time-varying profile in which the depreciation rate starts at 2½ percent in 1960 and reaches 3½ percent by 2001. We assumed a constant rate of depreciation of 2½ percent for low-income countries throughout the sample period. We confirmed our findings using other plausible depreciation rates.

To construct the capital stock data set we used internationally comparable investment series from the Penn World Tables (PWT—Heston, Summers, and Aten, 2006) combined with the IMF's World Economic Outlook (WEO) database. The PWT provide data on output and investment based on national accounts and adjusted for purchasing power parity. One drawback of the PWT is that they do not break down investment into its public and private components, an essential ingredient for our analysis. For that, we turned to the WEO database, whose data are broken down according to public and private investment. We used this share of public and private investment in total investment to split the PWT investment series into public and private components.

Public investment and capital stock divergence

On average, GDP grew by 3.4 percent in advanced economies and 4.4 percent—1 percentage point more—in developing economies from 1960 to 2000 (see table). Despite the higher growth in developing economies, the average public investment rates in advanced and developing economies were similar during this period. In particular, average public investment was 3.6 percent of GDP for advanced economies and 3.9 percent for developing economies. Although the investment rates were similar, the capital stock itself grew almost twice as fast in developing economies as in advanced economies during 1960–2000, because much of the investment in advanced economies replaced worn-out capital stock. This difference in capital stock accumulation helps explain much of the long-term growth differential across countries.

Chart 1 shows a scatter plot of the average GDP growth, public investment rate, and public capital growth during 1960–2000 for all countries in the sample. It shows that cross-country differences in public capital growth explain much of the difference in long-term GDP growth during this period. In particular, the correlation between average public capital growth and average GDP growth is much higher than between the average public investment rate and GDP growth.

How economies grew

Although developing economies invested only slightly more of their GDP in public capital than did advanced economies, growth of the capital stock was far greater in developing economies.

	Advanced economies	Developing economies
Real GDP growth (percent)	3.4	4.4
Public investment (percent of GDP)	3.6	3.9
Public capital stock growth (percent)	3.3	5.7

Sources: Heston, Summers, and Aten, 2006; Kamps, 2006; and authors' calculations.

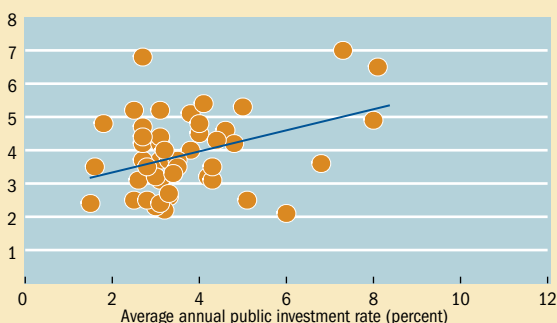
Chart 2 plots the average GDP growth, public investment rate, and public capital stock for advanced and developing economies from 1960 to 2000. It shows that the public investment rate has been on a downward trend since the early 1970s in advanced economies. In contrast, the public investment rate increased significantly in developing countries in the 1970s, although it returned to its earlier levels in the 1980s. Public capital stock, as a percent of GDP, peaked for advanced economies in 1983 and for developing economies in 1985. The peak levels were 60 percent of GDP for advanced economies and 61 percent of GDP for developing economies. The bottom panel of the chart shows the behav-

Chart 1

Public investment and growth

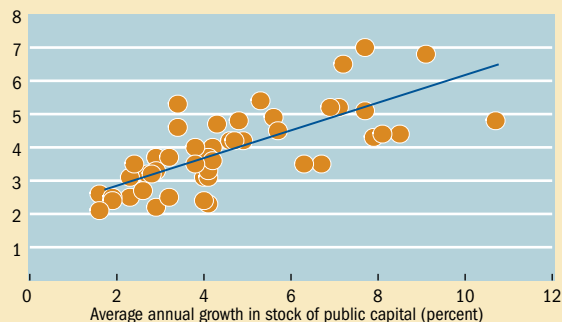
There is a weak relationship between real growth and the percentage of GDP invested annually.

(average real GDP growth, percent)



The relationship between growth and the annual capital stock increase is much stronger.

(average real GDP growth, percent)



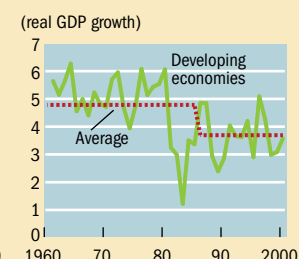
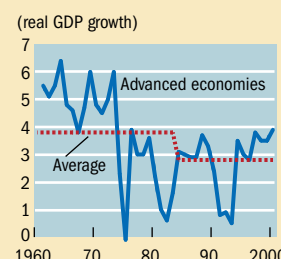
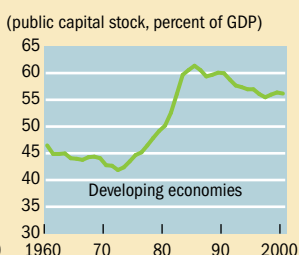
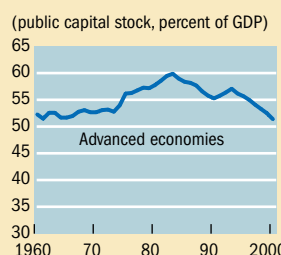
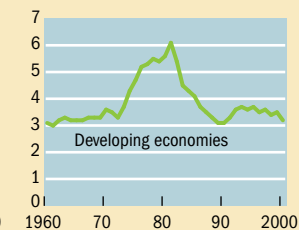
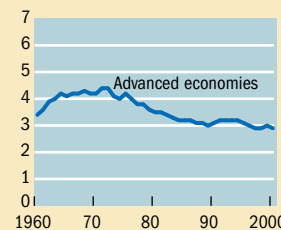
Sources: Heston, Summers, and Aten (2006); Kamps (2006); and authors' calculations. Note: The data are for 48 advanced and developing countries between 1960 and 2001.

Chart 2

Slowing down

As public investment and the size of the capital stock have declined, so has real GDP growth.

(public investment rate, percent of GDP) (public investment rate, percent of GDP)



Sources: Heston, Summers, and Aten (2006); Kamps (2006); and authors' calculations.

ior of real GDP growth during this period. In both advanced and developing economies, there was a downward shift in real growth of almost 1 percentage point on average around the time capital stock peaked.

Growth impact of public capital varies

We first tested a production function that relies on investment flows instead of capital stock. As argued above, the *net* capital stock is the key determinant of productivity, and investment flows do not provide any information on the share of investment required to replace depreciating capital stock. Unsurprisingly, then, these models do not demonstrate a relationship between investment flows and growth.

But when we tested a production function that relies on capital stock, we found that public capital has a positive effect on growth. We then found that the growth impact of capital stock varies with the level of public capital in the economy. In countries with public capital stock valued at less than 60 percent of GDP, an additional unit of public capital has the highest impact on growth (Chart 3). The effect diminishes thereafter, and for countries with very high public capital stock the growth effect is close to zero, possibly reflecting the inefficiencies that arise from financing public capital, such as high taxation. These results are robust under a variety of assumptions and with the inclusion or exclusion of outlier countries.

We also explored public capital's growth impact over time intervals. Long-term effects of public capital accumulation on growth may not be captured sufficiently in annual data. For example, some public investment may take more than a year to complete, and even when completed, the payoff may accrue over a longer period. Hence, longer time horizons, such as five-year intervals, may be better suited to capture the lumpiness of investment and lags in its effectiveness. We found that in advanced economies, the effects of public capital on growth, although significant over the short term, diminish over long time horizons. For developing countries, on the other hand, the effect increases as the time horizon

lengthens, and is largest for five-year intervals. These results suggest that some developing countries may not be able to handle significantly higher capital investment immediately because of their limited capacity to absorb investment and/or their slow implementation of investment projects. Furthermore, the results indicate that advanced economies use public investment more as a demand management tool—to counter the business cycle—than do emerging and developing economies, where it is more likely used to boost long-term growth.

Policy implications

Increases in public capital stock are associated with higher growth, especially after controlling for the initial level of public capital. The short-term effects are stronger for advanced economies, the long-term effects stronger for developing economies. These findings help explain why previous studies that focus on the investment rate as the explanatory variable produced mixed results. At the same time, we found that in some countries the positive impact of public capital on output is partially or wholly offset if the initial capital stock in relation to GDP is high. However, these considerations do not seem to matter in countries with relatively low public capital stock.

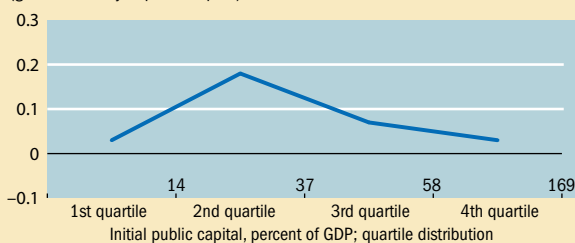
These results suggest two broad policy implications. First, debate over how much additional debt a country can take on has centered on creating room in the budget for higher public investment, but our results show that certain types of constraints—for example, financing—can limit higher capital stock's benefits on growth. Second, developing countries can gain from nonconcessional foreign borrowing to finance new investment; however, the benefits from such investment may accrue only over time. ■

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Chart 3

Growing in tandem

How GDP growth responds to an increase in public capital (growth elasticity) depends on the initial level of public capital. (growth elasticity of public capital)



Source: Authors' calculations.

Note: In the quartile distribution, the first 25 percent (1st quartile) of countries had an initial public capital of 14 percent of GDP or less. In the second quartile it was 15 percent to 37 percent. In the third quartile it was 38 percent to 58 percent and in the fourth quartile it was between 59 percent and 169 percent.

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Up or Down

Some have predicted postcrisis deflation in advanced economies, others high inflation. Worries about either are probably exaggerated.

André Meier

ALTHOUGH the world is recovering from the global financial crisis, that recovery will likely be relatively slow in many advanced economies, with demand for goods and services in the euro area, Japan, and the United States falling short of potential supply for several more years (IMF, 2010).

Many economists and policymakers are concerned that if an economy operates well below capacity for an extended period—with accompanying high unemployment and idle factories—one consequence could be very low growth of prices and wages. Indeed, economic theory suggests that spare capacity will push down inflation rates (disinflation) or even cause overall price levels to fall (deflation). That, in turn, could extend the economic malaise as consumers, anticipating lower prices, postpone spending and borrowers suffer an increasingly heavy real debt burden.

But that is hardly a universal view. In fact, some observers have voiced exactly the opposite concern, predicting a period of sustained high price increases. They argue that any disinflationary effect from spare capacity will be overwhelmed by the inflationary consequences of the policies employed to fight the global recession. In this view, policymakers have sown the seeds of inflation by running high fiscal deficits and adopting unconventional monetary policies. The ongoing debate, then, is not so much over different cyclical assessments—most observers agree that there is still sizable slack in many advanced economies—as over the moderating impact such slack has on inflation.

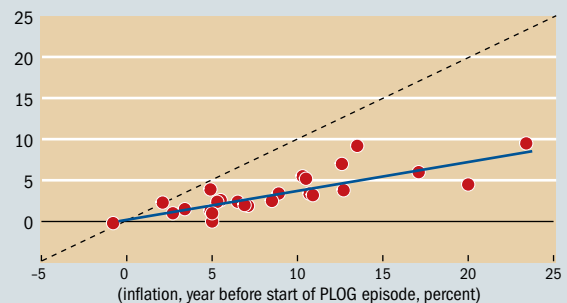
To shed some light on this issue, I studied consumer price index (CPI) inflation dynamics in advanced economies during past periods in which output remained at least 1.5 percent below potential for more than eight consecutive quarters. Those situations are similar to what is thought to have occurred since

Chart 1

Inflation conquered

Inflation declined during almost all of 25 serious recession episodes in advanced economies between 1970 and 2007. The two times inflation rose, it did so from very low rates and the increases were negligible.

(inflation, final year of PLOG episode, percent)



Source: Meier (2010).

Note: A persistent large output gap (PLOG) episode is a period in which output remained at least 1.5 percent below potential for more than eight consecutive quarters. There were 25 PLOG episodes in 14 advanced economies. Inflation is measured by changes in the consumer price index at a seasonally adjusted annual rate.

late 2008 in most advanced economies. Although the historical sample can be only a rough guide to the present, it provides a broad empirical perspective on inflation outcomes during episodes of persistent large output gaps (PLOGs).

Tracing inflation

I analyzed 25 PLOG episodes in 14 advanced economies over the period 1970–2007 using data from the Organization for Economic Cooperation and Development (OECD, 2009). Among the key findings:

- There is a clear and pervasive pattern of disinflation during PLOG episodes, with the rate of inflation falling during the overwhelming majority. Moreover, in the two cases where inflation failed to decline, the increases were negligible and started from exceptionally low rates of inflation (see Chart 1).
- The disinflation appears to be supported by weak labor markets, with high and/or rising unemployment and falling nominal wages and real unit labor costs. This pattern points to the expected relationship between spare capacity and diminished cost pressures facing firms.
- In several cases, falling oil prices further helped the decline in inflation. Nominal exchange rates showed no uniform trend during PLOG episodes, but in economies with appreciating currencies, disinflation tended to be faster. Perhaps surprisingly, the growth rate of broad monetary aggregates (cash and bank deposits) appears unrelated to the strength of disinflation across episodes.

- Overall, the relationship between initial and final inflation rates seems roughly proportional, suggesting that countries with high initial rates of inflation experience greater disinflation in absolute, but not relative, terms. That finding continues to hold when we adjust for the different length of individual PLOG episodes by considering annualized changes in inflation rates.

Differing dynamics

Still, the dynamics differ somewhat across time periods (see Chart 2). During episodes before 1990, which were marked by relatively high initial inflation, disinflation tended to proceed rather steadily throughout the episode. But during the more recent episodes, when initial inflation was more mod-

Inflation generally stopped falling, and instead stabilized or even increased, once it had reached a low positive rate.

erate, most of the disinflation occurred early on, followed by a bottoming-out of inflation at a new lower rate. Indeed, inflation generally stopped falling, and instead stabilized or even increased, once it had reached a low positive rate.

Why might disinflation peter out at low positive rates of inflation rather than evolving into outright deflation? Two explanations, in particular, come to mind.

First, the literature has emphasized *the enhanced credibility of central banks* in preserving price stability in recent years. Such credibility would be apparent not only in low average rates of inflation, but also in a strong anchoring of inflation expectations. If the public trusts the central bank's commitment to price stability, short-term variation in the cost of production should have little effect on general price-setting behavior. The result would be a weaker relationship between output gaps and inflation in general that some studies have documented (for example, Kleibergen and Mavroeidis, 2009).

Second, disinflation might run out of steam at near-zero rates if there are strong *formal or informal barriers to outright wage or price declines*. Such downward rigidities appear to be common in the labor market, where nominal wages do not normally fall even during bad years (for example, Akerlof, Dickens, and Perry, 1996; and Benigno and Ricci, 2010). Labor accounts for the largest share of production costs, so any resistance to nominal cuts in wages may also explain the scarcity of sustained CPI declines in the sample. It apparently takes truly exceptional circumstances—perhaps epitomized by Japan's experience during the past two decades—to turn disinflation into outright deflation.

What does it all mean for today?

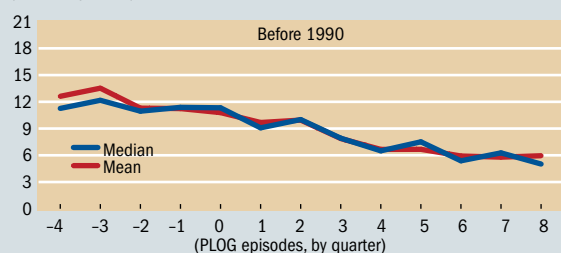
The historical evidence points to a clear disinflationary effect from persistent large output gaps, at least until inflation has declined to very low positive rates. For countries currently facing protracted economic slack, this would suggest limited

Chart 2

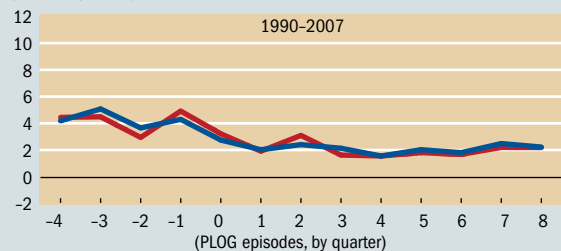
Differing decades

Inflation was relatively high at the beginning of PLOG episodes before 1990, and price increases slowed steadily throughout the episodes. More recently, initial inflation was more moderate, and most disinflation occurred early in the PLOG episode.

(inflation, percent)



(inflation, percent)



Source: Meier (2010).

Note: A persistent large output gap (PLOG) episode is a period in which output remained at least 1.5 percent below potential for more than eight consecutive quarters. There were 25 PLOG episodes in 14 advanced economies between 1970 and 2007. Inflation is measured by changes in the consumer price index at a seasonally adjusted annual rate. Zero on the horizontal axis represents the start of a PLOG episode.

upside inflation risk. However, such a conclusion must be taken with a bit of caution, mainly for three reasons.

First, historical experience, especially from the 1970s, shows that *real-time assessments of spare capacity may be subject to large revisions down the pike*. Similarly, economists might be overestimating the extent of slack in advanced economies today. It is worth noting, however, that economists are keenly aware of the lessons of the 1970s. For example, typical assessments of spare capacity today allow for the possibility that the global financial crisis not only depressed demand, but also curtailed potential supply.

Inflation expectations have shown no signs of being unhinged by quantitative easing.

Second, stable relationships are scarce in macroeconomics, and even patterns reliably documented in the past might not persist. Those who worry about high inflation today often cite the exceptional policy responses to the recent crisis as a game changer. Indeed, with policy rates essentially at zero, several central banks have resorted to such unconventional policies as quantitative easing—that is, issuing central bank reserves to buy bonds (Meier, 2009). Yet it is important to recognize that there is no mechanical link between these policies and high inflation. The popular argument that more reserve money must cause runaway inflation is at odds with theory, as central banks have several tools to rein in the effect of excess liquidity. It also disregards the experience of Japan, where inflation has stayed close to zero despite massive expansions of reserve money since 2001.

Third, although PLOGs clearly appear to bear down on inflation, they are not the only influence at play. The historical pattern shows, in particular, that changes in oil prices and exchange rates can cause significant fluctuations in overall (so-called headline) inflation rates. Still, to the extent that economic slack keeps wage increases in check, higher import prices per se need not lead to generalized inflation pressure.

The most significant, if low-probability, risk concerns an extreme scenario in which unconventional monetary policy interacts with fears about high public debt to the point of undermining trust in the currency. To alleviate this risk, policymakers in many countries have already laid out plans to reduce public deficits and restore fiscal sustainability. As a result, in the period ahead, fiscal policy appears likely to support, rather than counteract, disinflation in most advanced economies. Meanwhile, inflation expectations have shown no signs of being unhinged by quantitative easing.

Recent inflation trends

With these considerations in mind, it is worth turning to the empirical evidence of the present. Indeed, actual inflation trends through the end of 2010 are not very different from the historical pattern. Applying the same criteria I used for the historical sample, I identified 15 ongoing PLOG episodes

in advanced economies, based on more recent OECD data (OECD, 2010). Most of these episodes started as the global crisis worsened in the last quarter of 2008 and are expected to extend at least through the end of 2011.

Compared with the historical episodes, the decline in output is unusually large this time, although labor markets have held up better in relative terms. In fact, widespread labor hoarding—companies were reluctant to lay off workers despite the sharp downturn—initially drove up average unit labor cost in many countries, even as nominal wage growth started easing. Another striking feature is the roller-coaster ride of oil (and other commodity) prices, which first fell precipitously, but then recovered much of the lost ground. These swings had a considerable impact on headline inflation, including in recent months. Nonetheless, a general decline from precrisis rates is apparent (see Chart 3).

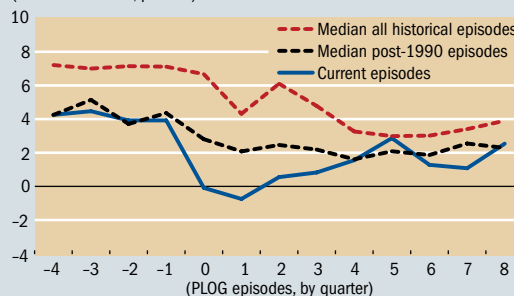
When food and energy prices are stripped from the CPI, the decline in inflation rates appears steadier but relatively modest. Yet this stickiness is actually consistent with the historical pattern. Core inflation started from a relatively low base in the latest PLOG episodes, at just about 2 percent on

Chart 3

Past is prologue

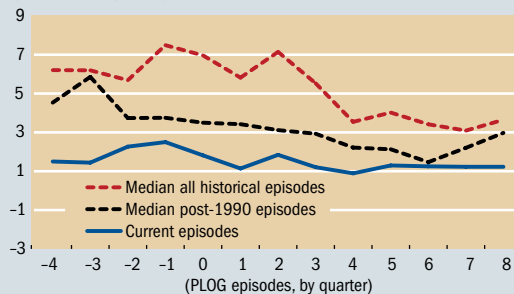
Inflation has behaved more erratically during the 15 ongoing PLOG episodes in advanced economies, reflecting the roller-coaster ride of commodity prices. Still, a general downtrend is apparent.

(headline inflation, percent)



When food and energy prices are stripped out, core inflation shows a steady if modest decline that is consistent with the historical pattern in which disinflation tends to peter out at low positive inflation rates.

(core inflation, percent)



Source: Meier (2010).

Note: A period of a persistent large output gap (PLOG) is one in which output remained at least 1.5 percent below potential for more than eight consecutive quarters. There were 25 PLOG episodes in 14 advanced economies between 1970 and 2007 and there are 15 ongoing. Inflation is measured by changes in the consumer price index at a seasonally adjusted annual rate. Zero on the horizontal axis represents the start of a PLOG episode.

average. Since then, it has generally fallen by about 0.4 percentage point annually (or some 20 percent of the initial annual rate), matching the *relative* pace of disinflation in earlier PLOG episodes. Cross-sectional data confirm, moreover, that the extent of disinflation across countries remains closely correlated with the rise in unemployment.

The bottom line

Historical episodes of persistent large output gaps in advanced economies show a clear pattern of disinflation, supported by weak labor markets and low wage growth. However, declines in inflation appear to become more modest when the initial rate of inflation is already quite low, suggesting some combination of better-anchored inflation expectations and downward nominal rigidities, such as resistance to outright wage cuts. Moreover, fluctuations in oil prices and exchange rates can introduce significant short-term volatility in inflation outturns.

Developments since the beginning of the global financial crisis are consistent with this pattern. Despite large swings in headline rates, underlying inflation in advanced economies has generally declined, with many core measures reaching the very low rates at which disinflation typically petered out during past PLOG episodes. Thus, while upside inflation risks should be limited in countries facing continued economic slack, a slide into outright deflation does not seem very likely either. ■

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Korean medical workers waiting for flu vaccination.

Healing

Health Care Finances

Benedict Clements, David Coady, Baoping Shang, and Justin Tyson

Health care presents a daunting fiscal challenge, but reforms can help manage the growth of spending fairly and efficiently

HEALTH care reform is tricky. Access to affordable health care is of paramount importance, but paying for it can put enormous pressure on government budgets. Fortunately, a number of reform options are available to countries that face those pressures or seek to avoid them in the future.

Experience in advanced economies shows that a combination of tighter budget controls and efficiency-enhancing reforms of health care systems can help preserve access to high-quality health care while keeping public

spending in check. In emerging economies, improving efficiency is also important, but some can afford further increases in public spending. All countries should ensure equitable access to basic health care services and spend more efficiently on public health.

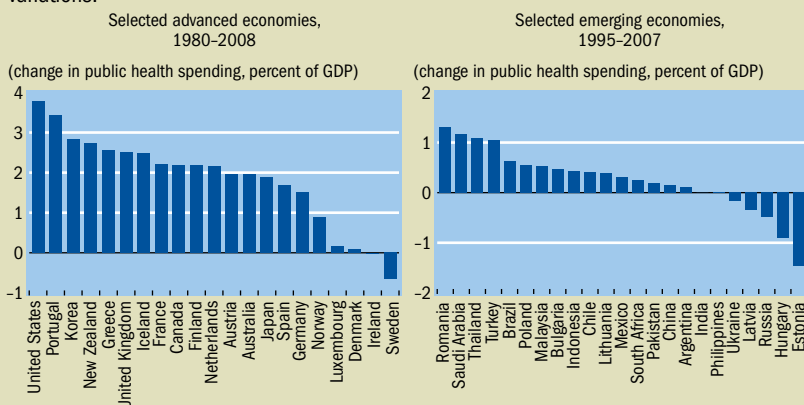
Sharp increases in the past

Total health care spending in advanced and emerging economies rose markedly in recent decades, largely because of aging populations and technological advances. Real per capita health spending has quadrupled in advanced economies since 1970, with two-thirds of this increase a result of public spending. Public health spending rose by 4 percent of gross domestic product (GDP), accounting for half the rise in total government spending. In emerging economies, total health spending over the same period rose, but more moderately—from less than 3 percent of GDP to about 5 percent—with about half the increase attributable to public outlays. The lower ratios in the emerging economies reflect a combination of competing expenditure needs and constrained revenue-raising capacity. Public spending ratios were lower in emerging Asia than in emerging Europe and Latin America, because public insurance

Chart 1

Rising share

Public health spending as a percent of GDP has increased in most countries, but with great variations.



Sources: OECD Health Database; WHO Health Database; Sivard (1974-96); and IMF staff estimates.
Note: Only countries for which the data series are complete for the given period are included.



coverage and benefit packages are less extensive in Asia.

The increase in public health spending over recent decades varied substantially across countries (see Chart 1). Among the 21 advanced economies for which data were available, between 1980 and 2008 public health spending increases exceeded 2.5 percent of GDP in 6 countries and were less than 1.5 percent of GDP in another 6. Among the 23 emerging economies, the public health spending ratio increased by

more than 1 percent in 4 countries between 1995 and 2007 and actually fell in 6.

Stressing the system

Public health spending ratios are projected to increase over the next two decades (see Chart 2). For the advanced economies, our projections are based on analysis of country spending trends between 1980 and 2008; for emerging economies, we assumed costs would grow as they had on average between 1995 and 2007. We also incorporated the effect of demographic changes on future health care spending in the projections for both advanced and emerging economies.

Public health spending ratios in advanced economies are projected to continue climbing, rising on average by 3 percent of GDP over the next 20 years. Spending is projected to increase by more than 2 percent of GDP in 14 of the 27 advanced economies, at a time when countries will need to reduce budget deficits and public debt ratios in the wake of the global financial crisis. The outlook is particularly grim in the United States, where public health spending is projected to rise by about 5 percent of GDP over the next 20 years, the highest among advanced economies. And in Europe, public health spending is expected to rise by 2 percent of GDP on average—and more than 3 percent in seven countries.

In emerging economies, public health spending is projected to rise by 1 percent of GDP over the next 20 years, one-third of advanced economies' projected increase. Consistent with past trends, spending is projected to rise by 1½ percent of GDP in both emerging Europe and Latin America; in emerging Asia, increases are expected to be about half that amount, reflecting in part low initial levels of spending in these countries.

Containing public spending

Recent health care reforms in advanced economies are unlikely to alter long-term public health spending trends. In the United States, the Patient Protection and Affordable Care Act of 2010 introduces a sweeping reform that will expand health insurance coverage but is expected to reduce the budget deficit, primarily through increased payroll taxes on individuals and families with relatively high incomes and an

excise tax on generous health care plans. While these reforms can expand access, the envisaged savings on health care spending are small and remain highly uncertain. In Europe, plans to cut government employment and compensation could reduce health care spending in the short term, but their long-term effect is uncertain.

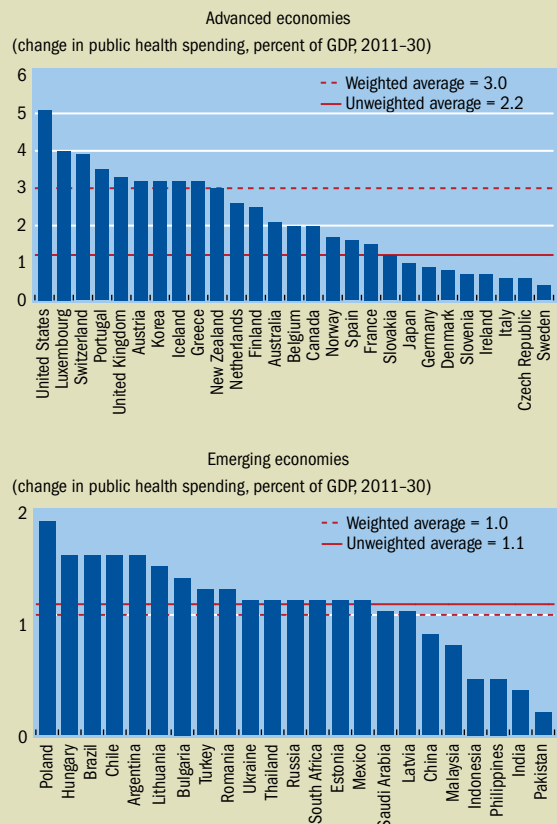
The most promising strategies to contain spending in advanced economies involve a mix of instruments to contain costs and reforms to improve spending efficiency:

- **Budget caps with central oversight** are a powerful tool for restraining expenditures. Among the countries with the lowest public spending increases in the past, Italy, Japan, and Sweden rely more on budget caps. Setting budgets for hospitals and other health care institutions based on reasonable and objective expenditure projections, as opposed to simply reimbursing all spending, can help contain spending growth. Such targets are most effective when applied broadly: partial constraints encourage expenditure increases in areas without caps. For example, if only inpatient hospital spending is limited, expenditures on outpatient clinics may increase.

Chart 2

Under pressure

Public health care spending is projected to rise by 3 percent of GDP in advanced economies, and by 1 percent of GDP in emerging economies, with regional variations.



Source: IMF staff estimates.

- **Public management and coordination of health care services** help control health care costs by screening out unnecessary services. For example, gatekeeping, through which a primary care physician manages a patient's health care services and coordinates referrals to specialists, is widely considered crucial to constraining the growth of costly hospital treatment. Countries with low spending growth that make extensive use of gatekeeping include Denmark and Italy.

- **Local and state government involvement in key health resource decisions** can help tailor services to local conditions, increasing spending efficiency. It can also help control

The large inefficiencies in spending in many countries suggest there is much room to contain cost increases without compromising health.

growth in expenditures when coupled with increased responsibility, so that local governments bear the cost of health care inefficiencies or overruns. Canada and Sweden have combined extensive local government involvement with low-cost growth.

- **The use of market mechanisms** in the health care system—increasing patient choice of insurers, allowing greater competition between insurers and providers, and relying on more private services—can help reduce costs by improving the efficiency of the health care system. Germany and Japan score relatively high in this area and have enjoyed low spending growth in the past. Moving away from simple reimbursement of provider costs toward more sophisticated management and contracting systems that include built-in incentives for providers to minimize waste and improve services also enhances spending efficiency. Examples of such contracting reforms include payment for health services based on “diagnostic related groups,” which specify treatment protocols for a given set of medical conditions and provide an associated price schedule. These have been used with relative success in Germany and Italy.

- **Reforms that increase the share of costs borne by patients**, through either higher copayments or expanded private insurance, have also been successful in containing the growth of public health spending. Australia, Canada, and France rely heavily on private insurance for services not covered by the public package. In all countries, cost-sharing policies raise concerns about fairness and must be accompanied by measures to ensure that the poor and chronically ill retain access to basic health services.

- **Restricting the supply of health inputs or outputs**—for example, by rationing high-technology equipment—can, to some extent, reduce the growth of public health spending. Canada and France rely on such controls and are among the countries with low spending growth. But supplier responses can erode direct price controls on medical inputs or outputs (such as drugs or wages of health care providers): for

example, primary care providers may direct patients to more expensive hospital care in response to price or quantity controls. In practice, therefore, price controls have often proved ineffective in containing health care costs. And while giving users more information about the quality and price of particular health care services may increase the quality of medical services, it has not helped contain spending.

Potential impact

We used various techniques, including case studies and regression analysis, to examine the potential for health care reforms to contain rising costs. The case studies provide country-specific examples of successful reforms, and regression analysis helped quantify the impact.

Our analysis shows that such reforms could significantly reduce the fiscal burden of health care over the next 20 years (see Chart 3). We assume countries that now score below the mean on the health system characteristics that reduce spending—such as the use of budget caps—are raised to the mean. The results suggest that the introduction of market mechanisms can be powerful, yielding savings of about ½ percent of GDP. Improving public management and coordination can reduce spending by only a slightly lower amount. The analysis also underscores the importance of tighter budget controls and greater central oversight, which can reduce spending by ¼ percent of GDP. Finally, the simulated impacts of demand-side reforms, such as the use of cost sharing, are small but not negligible. The relative importance and desirability of each of these reforms will vary across countries, depending on their current health care system.

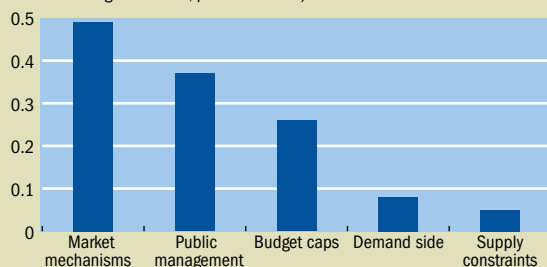
The impact on people's health will of course be an important consideration as policymakers grapple with the challenges of health care reform. Fortunately, most of the promising strategies we describe above can increase the health care system's responsiveness to patients' needs while taming spending. The large inefficiencies in spending in many countries suggest there is much room to contain cost increases without compromising health.

Chart 3

Taming the beast

Health care reforms could help offset projected expenditure increases.

(decrease in projected healthcare spending relative to baseline in 2030 as a result of given reform, percent of GDP)



Sources: OECD Health Database; and IMF staff estimates.
Note: Unweighted averages of the impact of reforms.

Health care reform requires continuous monitoring and refinement based on current data about the behavior of providers and patients, if costs are to be contained over the long term. Successful cost-cutting calls for continuous tweaking and reformulation of reform initiatives as players adapt to the new rules of the game and find ways around them. Reforms' effectiveness must be watched carefully to ensure that providers, insurers, and patients are responding as expected to cost-cutting incentives.

Complementary policies

Greater emphasis on preventive care could also help slow the growth of health care spending. Health is affected by factors other than public health spending, including individuals' income and personal habits. Governments can play an important role in promoting good health habits by encouraging people to stop smoking, use alcohol in moderation, eat better, exercise more, and drive carefully. Market mechanisms can also have an impact. For example, linking cost sharing or insurance premiums to obligatory regular check-ups can reinforce preventive care and help contain spending.

While the estimated impact of the proposed reforms is substantial, it may not be enough to stabilize ratios of public spending to GDP, especially in countries where large spending increases are projected. In that case, additional efforts (beyond a movement to the mean performance on these health system characteristics) would be needed to stabilize public spending ratios, including spending cuts in other, non-health-care, areas or increases in revenue.

Diverse challenges in emerging economies

Emerging economies, where average life expectancy is lower and infant mortality higher, face different public health spending challenges than advanced economies. Emerging economies can learn valuable lessons from the experience of advanced economies, and should aim to expand their health care systems while avoiding the inefficiencies and resulting high costs that plague many advanced economies.

In emerging Europe, spending is relatively high by emerging economy standards, because of nearly universal coverage and, as in advanced economies, a pattern of diseases that is expensive to treat (such as diabetes and heart disease). In most countries in emerging Europe, overall health is relatively poor compared with advanced economies, and funds to improve health are limited. These countries will need to rely more on efficiency-enhancing reforms to improve health outcomes.

Emerging economies in Asia and Latin America have less-extensive health coverage than emerging Europe, but more scope to expand spending. To ensure coverage for as many people as possible, at an affordable cost, public health systems should focus first on providing the most essential health services. There should be greater emphasis on preventive and primary care, which will require a change in financial incentives for health care providers. And governments should allocate a larger share of their health care spending to infectious disease control and better care in poor rural areas.

Some of the experiences of the advanced economies as they expanded health care coverage offer important lessons for emerging economies. In particular, Taiwan Province of China and Korea undertook important reforms to better align incentives for health providers, promote primary and preventive care, and improve public management and coordination. Taiwan Province of China, for example, introduced a fee-for-outcome program, with physicians receiving bonus payments based on clinical outcomes.

In emerging economies, expanding basic services to a broader segment of the population is the best recipe for improving health in a fiscally sustainable manner.

Social insurance systems can help contain the fiscal burden of health spending by linking eligibility for health benefits with contributions. But in many emerging economies there is a large informal labor market whose workers may not be making social insurance contributions. So if the goal is to expand coverage in emerging economies, tax-financed provision of universal basic health care (such as in Thailand) may be the best starting point.

Social insurance-based systems could be expanded in countries where the informal labor market figures less prominently and revenue administration is of high quality. Chile's experience suggests that health care financing can be sustained by a combination of mandatory contributions in the formal labor market, individual cost-sharing through copayments, and supplementary government budget financing (especially when subsidies are necessary and in the public interest).

Health care reform will continue to be a key fiscal policy challenge for policymakers in advanced and emerging economies alike. The lessons of the past suggest that a judicious mix of reforms can help contain spending growth in advanced economies while preserving equity and efficiency. In emerging economies, expanding basic services to a broader segment of the population is the best recipe for improving health in a fiscally sustainable manner. ■

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What Are Financial Services?

How consumers and businesses acquire financial goods such as loans and insurance

Irena Asmundson

IN the aftermath of the global crisis, there has been a call for tighter regulation of financial services. But what is a financial service?

Among the things money can buy, there is a distinction between a good (something tangible that lasts, whether for a long or short time) and a service (a task that someone performs for you). A financial service is not the financial good itself—say a mortgage loan to buy a house or a car insurance policy—but something that is best described as the process of acquiring the financial good. In other words, it involves the transaction required to obtain the financial good. The financial sector covers many different types of transactions in such areas as real estate, consumer finance, banking, and insurance. It also covers a broad spectrum of investment funding, including securities (see box).

But distinctions within the financial sector are not neat. For example, someone who works in the real estate industry, such as a mortgage broker, might provide a service by helping customers find a house loan with a maturity and interest rate structure that suits their circumstances. But those customers could also borrow on their credit cards or from a commercial bank. A commercial bank takes deposits from customers and lends out the money to generate higher returns than it pays for those deposits. An investment bank helps firms raise money. Insurance companies take in premiums from customers who buy policies against the risk that a covered event—such as an automobile accident or a house fire—will happen.

Intermediation

At its heart, the financial sector intermediates. It channels money from savers to borrowers, and it matches people who want to lower risk with those willing to take on that risk. People saving for retirement, for example, might benefit from intermediation. The higher the return future retirees earn on their money, the less they need to save to achieve their target retirement income and account for inflation. To earn that return requires lending to someone who will pay for the use of the money (interest). Lending and collecting payments are complicated and risky, and savers often don't have the expertise or time to do so. Finding an intermediary can be a better route.

Some savers deposit their savings in a commercial bank, one of the oldest types of financial service providers. A commercial bank takes in deposits from a variety of sources and pays interest to the depositors. The bank earns the money to pay that interest by lending to individuals or businesses. The loans could be to a person trying to buy a house, to a business making an investment or needing cash to meet a payroll, or to a government.

The bank provides a variety of services as part of its daily business. The service to depositors is the care the bank takes in gauging the appropriate interest rate to charge on loans and the assurance that deposits can be withdrawn at any time. The service to the mortgage borrower is the ability to buy a house and pay for it over time. The same goes for businesses and governments, which can go to the bank to meet any number of financial needs. The bank's payment for providing these services is the difference between the interest rates it charges for the loans and the amount it must pay depositors.

Another type of intermediation is insurance. People could save to cover unexpected expenses just as they save for retirement. But retirement is a more likely possibility than events such as sickness and auto accidents. People who want to cover such risks are generally better off buying an insurance policy that pays out in the event of a covered event. The insurance intermediary pools the payments (called premiums) of policy buyers and assumes the risk of paying those who get sick or have an accident from the premiums plus whatever money the company can earn by investing them.

Providers of financial services, then, help channel cash from savers to borrowers and redistribute risk. They can add value for the investor by aggregating savers' money, monitoring investments, and pooling risk to keep it manageable for individual members. In many cases the intermediation includes both risk and money. Banks, after all, take on the risk that borrowers won't repay, allowing depositors to shed that risk. By having lots of borrowers, they are not crippled if one or two don't pay. And insurance companies pool cash that is then used to pay policy holders whose risk is realized. People could handle many financial services themselves, but it can be more cost effective to pay someone else to do it.

Cost of services

How people pay for financial services can vary widely, and the costs are not always transparent. For relatively simple transactions, compensation can be on a flat-rate basis (say, \$100 in return for filing an application). Charges can also be fixed (\$20 an hour to process loan payments), based on a commission (say, 1 percent of the value of the mortgage sold), or based on profits (the difference between loan and deposit rates, for example). The incentives are different for each type of compensation, and whether they are appropriate depends on the situation.

Regulation

Financial services are crucial to the functioning of an economy. Without them, individuals with money to save might have trouble finding those who need to borrow, and vice versa. And without financial services, people would be so intent on saving to cover risk that they might not buy very many goods and services.

Moreover, even relatively simple financial goods can be complex, and there are often long lags between the purchase of a service and the date the provider has to deliver the service. The market for services depends a great deal on trust. Customers (both savers and borrowers) must have confidence in the advice and information they are receiving. For

What do they do?

These are some of the foremost among the myriad financial services.

Insurance and related services

- *Direct insurers* pool payments (premiums) from those seeking to cover risk and make payments to those who experience a covered personal or business-related event, such as an automobile accident or the sinking of a ship.

- *Reinsurers*, which can be companies or wealthy individuals, agree, for a price, to cover some of the risks assumed by a direct insurer.

- *Insurance intermediaries*, such as agencies and brokers, match up those seeking to pay to cover risk with those willing to assume it for a price.

Banks and other financial service providers

- *Accept deposits and repayable funds and make loans:* Providers pay those who give them money, which they in turn lend or invest with the goal of making a profit on the difference between what they pay depositors and the amount they receive from borrowers.

- *Administer payment systems:* Providers make it possible to transfer funds from payers to recipients and facilitate transactions and settlement of accounts through credit and debit cards, bank drafts such as checks, and electronic funds transfer.

- *Trade:* Providers help companies buy and sell securities, foreign exchange, and derivatives.

- *Issue securities:* Providers help borrowers raise funds by selling shares in businesses or issuing bonds.

- *Manage assets:* Providers offer advice or invest funds on behalf of clients, who pay for their expertise.

example, purchasers of life insurance count on the insurance company being around when they die. They expect there will be enough money to pay the designated beneficiaries and that the insurance company won't cheat the heirs.

The importance of financial services to the economy and the need to foster trust among providers and consumers are among the reasons governments oversee the provision of many financial services. This oversight involves licensing, regulation, and supervision, which vary by country. In the United States, there are a number of agencies—some state, some federal—that supervise and regulate different parts of the market. In the United Kingdom, the Financial Services Authority oversees the entire financial sector, from banks to insurance companies.

Financial sector supervisors enforce rules and license financial service providers. Supervision can include regular reporting and examination of accounts and providers, inspections, and investigation of complaints. It can also include enforcement of consumer protection laws, such as limits on credit card interest rates and checking account overdraft charges. However, the recent sudden growth in the financial sector, especially as a result of new financial instruments, can tax the ability of regulators and supervisors to rein in risk. Regulations and enforcement efforts cannot always prevent failures—regulations may not cover new activities, and wrongdoing sometimes escapes enforcement. Because of these failures, supervisors often have the authority to take over a financial institution when necessary.

The role of mortgage-backed securities in the recent crisis is an example of new financial instruments leading to unexpected consequences. In this case, financial firms looking for steady income streams bought mortgages from the originating banks and then allocated payments to various bonds, which paid according to the mortgages' underlying performance. Banks benefited by selling the mortgages in return for more cash to make additional loans, but because the loan makers did not keep the loans, their incentive to check borrowers' creditworthiness eroded. The mortgages were riskier than the financial firms that bought them anticipated, and the bonds did not pay as much as expected. Borrowers were more likely to default because of their lower income, which reduced the amount bondholders took in—both of which hurt gross domestic product growth. Mortgage-backed securities were initially intended to help mitigate risk (and could have done so under the right circumstances), but they ended up increasing it.

Productive uses

Financial services help put money to productive use. Instead of stashing money under their mattresses, consumers can give their savings to intermediaries who might invest them in the next great technology or allow someone to buy a house. The mechanisms that intermediate these flows can be complicated, and most countries rely on regulation to protect borrowers and lenders and help preserve the trust that underpins all financial services. ■

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Free Governments, Good Policies

Voter line in Transkei during South Africa's first post-apartheid election in 1994.

Paola Giuliano, Prachi Mishra, and Antonio Spilimbergo

Economic reforms may scare politicians, but democracy and economic liberalization generally go hand in hand

THE global financial crisis has underscored the need for countries to undertake structural reforms to increase income and make their economies more stable. By removing impediments to growth, properly implemented structural reforms—such as trade liberalization, privatization, and regulation of monopolies—increase potential output and in the long term benefit everybody.

Even so, structural reforms often affect powerful interests and can be difficult to implement. As Luxembourg Prime Minister Jean-Claude Juncker noted: “We all know what to do, but we don’t know how to get reelected once we have done it” (*The Economist*, 2007). Why is that the case? Are some institutional settings more conducive than others to reforms? Certainly one of the oldest, and still unanswered, questions in

economics and political science is whether political freedom is an essential ingredient—or an impediment—to structural reforms. There are good theoretical arguments and numerous examples to support all positions on this question.

Those who believe less democratic regimes are good for economic liberalization can cite the important reforms undertaken in Chile under the virtual dictatorship of Augusto Pinochet in the 1970s and ’80s and in South Korea under the autocratic rule of Park Chung-hee in the 1960s and ’70s. Many contemporary industrialized countries were not democracies when they took off. In east Asia, for example, a great deal of development took place under undemocratic regimes.

Theoretically, there are also compelling reasons autocratic regimes may favor economic reforms and growth. A fully demo-



cratic regime can fall prey to interest groups that put their goals before society's general well-being. Sometimes, capitalists entrenched in their rent-seeking positions are the main opponents of economic reforms. In a newly independent country, it may take a "benevolent dictator" to shelter institutions, prevent the government from falling captive to interest groups, and allow the state to function efficiently. In particular, interest groups can block reforms if there is uncertainty about the distribution of benefits (Fernandez and Rodrik, 1991). Democracy can also lead to excessive private and public consumption and insufficient investment (Huntington, 1968), whereas dictatorial regimes can increase the domestic saving rate through financial repression. Wages are typically higher under democracy (Rodrik, 1999). Several countries, including those of the former Soviet Union and many in east Asia, increased savings, and ultimately achieved high economic growth, thanks to a repressive political system and an attendant highly regulated financial system.

Do these historical examples and the theoretical arguments make a compelling case against democracy's role in economic reform? No. Strong theoretical arguments and solid empirical evidence support the contention that democracy often accompanies economic reforms. These are some of the theoretical arguments:

- Dictators' preferences can change over time. Because those preference changes cannot be constrained by law, dictators cannot credibly commit to reforms (McGuire and Olson, 1996).
- Autocratic rulers tend to be predatory, disrupting economic activity and making reform efforts meaningless.
- Autocratic regimes have an interest in postponing reforms and restricting rent-generating activities to their supporters. Democratic rulers, conversely, are generally more sensitive to the interests of the public and are more willing to implement reforms that break up monopolies in favor of the public interest.
- Secured property rights, as guaranteed by a democracy, are key to economic development.

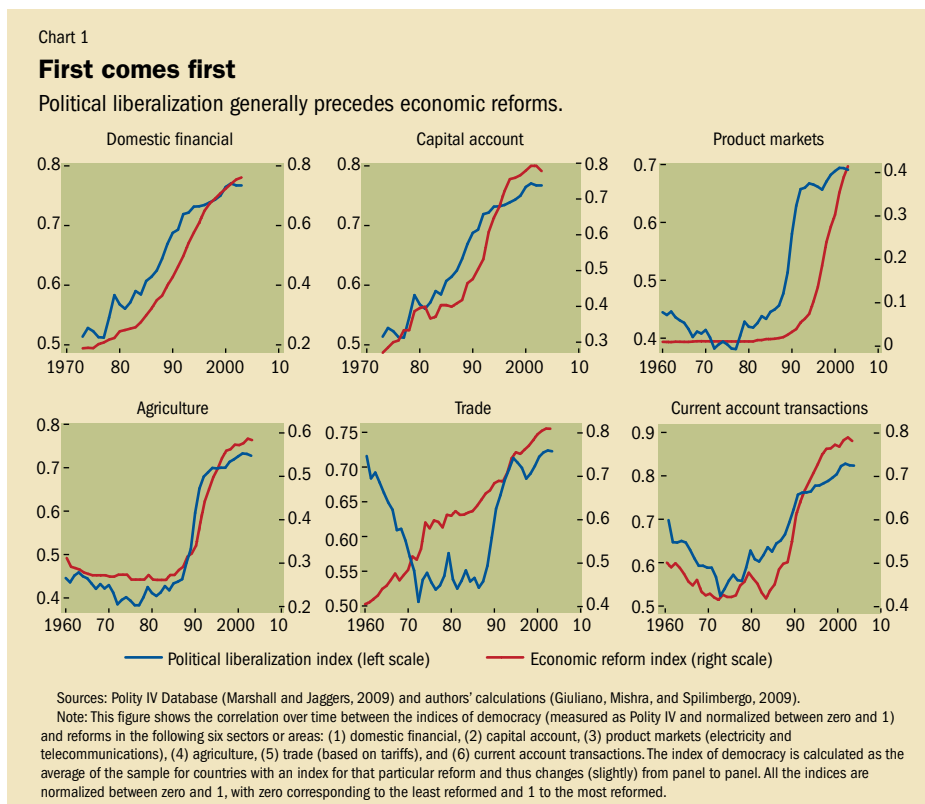
There is also much empirical evidence that reforms and democracy go hand in hand. The correlation between democracy and economic reforms is very strong both across time and countries. Chart 1 shows the correlation between indices of political freedom and indices of reform over time. The indices of political freedom are based on criteria established by the Polity IV database (Marshall

and Jagers, 2009)—with zero the most authoritarian and 1 the most democratic. Reforms are measured over time in six areas—domestic financial, capital account, product markets (electricity and telecommunications), agriculture, trade, and current account transactions (see box). Again, the index ranges from zero to 1, with zero corresponding to the least reformed and 1 to the most reformed. Reforms in all six areas show a strong correlation to democracy, with democracy usually preceding the deregulation process. Chart 2 shows this strong correlation for a cross section of countries.

The correlation between democracy and economic reforms is very strong.

Countries that are more democratic are also more reformed, but correlation does not indicate that democracy is necessarily the cause of economic reform. The relationship could be the other way around, or both democracy and economic reforms could be driven by a common third factor. The question of democracy's effect on economic reform is largely unanswered.

To determine whether democracy is the cause of reform, we used a novel data set that covers almost 150 countries and 6 sectors and spans more than 40 years (Giuliano, Mishra, and Spilimbergo, 2009). We found that improvement in democratic institutions (as measured by Polity IV) correlates significantly with the adoption of economic reforms. Moving from an autocratic regime to a complete democracy is associ-



The structural reform data set

Our analysis is based on a new and extensive data set, compiled by the IMF's Research Department that describes the degree of regulation in 150 industrial and developing countries (see Ostry, Prati, and Spilimbergo, 2009). Six reform indicators cover both the financial and real sectors. Financial sector indicators include reforms pertaining to domestic financial markets and the external capital account; real sector structural reform indicators include measures of product and agricultural markets, trade, and current account reforms. Each indicator contains subindices that summarize dimensions of the regulatory environment in each sector. The subindices are aggregated into indices and constructed so that all measures of reform fall between zero and 1, with higher values representing greater liberalization.

ated with a 25 percent increase in the index of reform. We also found no feedback effect—that is, economic liberalization does not spark political liberalization. This finding will disappoint those who believe that economic engagement with autocracies will spark political change.

How do we square the finding that democracy is good for reform with Juncker's observation that voters tend to punish politicians who implement reforms? It turns out that the evidence does not support Juncker's worries. Buti, Turrini, and van den Noord (2008) report that politicians who implement reforms do not lose subsequent elections, especially in countries with a high level of financial development. The same is true for the political consequences of large budget deficit

reductions. Alesina, Carloni, and Lecce (2010)—in a 1975–2008 sample of 19 Organization for Economic Cooperation and Development countries—find no evidence of governments systematically voted out of office after quick reductions of budget deficits.

The bottom line is that democracy is good for structural reforms, but the reverse is not true—economic liberalization introduced by autocracies does not cause a move to democracy. Moreover, there is no foundation for politicians' fear that voters will punish policymakers who implement financial sector reforms or reduce fiscal deficits. ■

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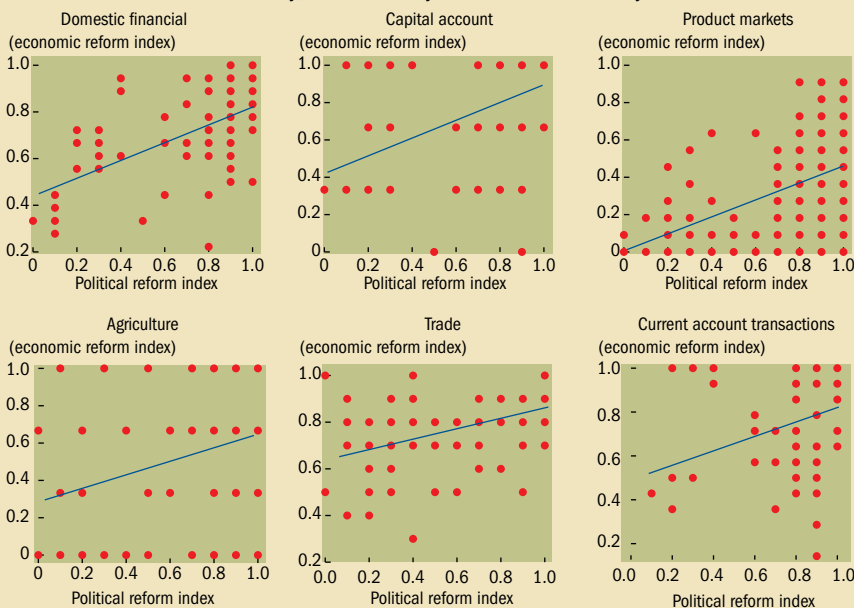
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Chart 2

Marching in tandem

The more democratic the country, the more likely it is to be economically reformed.



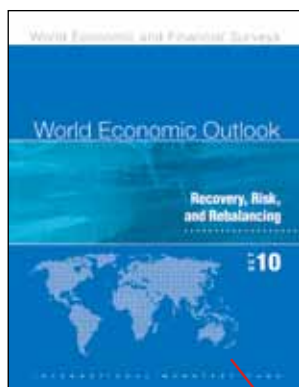
Sources: Polity IV Database (Marshall and Jagers, 2009) and authors' calculations (Giuliano, Mishra, and Spilimbergo, 2009).

Note: This chart shows the correlation in the year 2000 between indexes of democracy measured by the Polity IV database (0 is least democratic, 1 the most reformed) and indexes of economic reform (0 is the least reformed, 1 is the most reformed) in six economic sectors.

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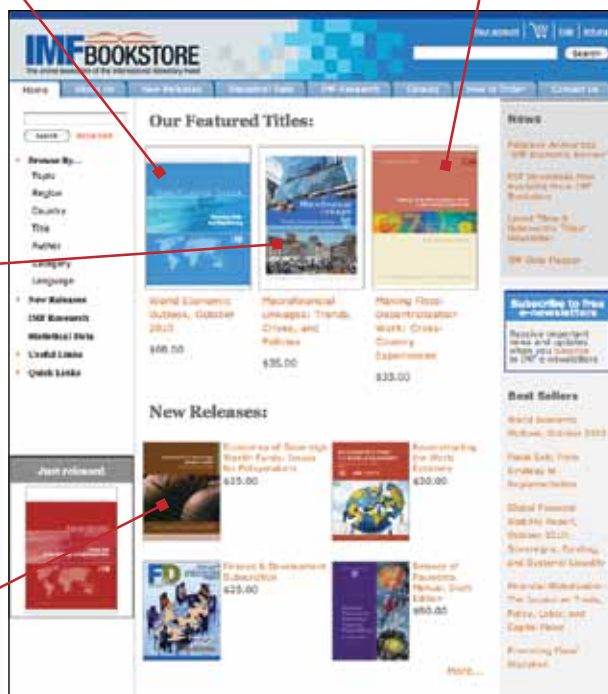
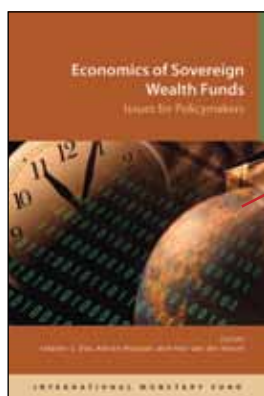
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Veterans of the System

Ideas for strengthening the international monetary system

A GROUP of former senior policymakers and global luminaries were intent on seeing something good rise from the ashes of the global financial crisis. The crisis was an opportunity to advance the reform agenda and, according to former IMF Managing Director Michel Camdessus, secure the international monetary system against similar future crises and distribute the potential benefits of globalization more equitably.

Together with Alexandre Lamfalussy and Tommaso Padoa-Schioppa (who passed away in late 2010), Camdessus convened the high-level group behind the Palais-Royal Initiative. Camdessus spoke to F&D about the group's report on reform of the international monetary system, which was released in February.

F&D: What is the idea of the Palais-Royal Initiative?

CAMDESSUS: The global financial crisis led those with some experience of international cooperation to think twice about what's going on and, in particular, to ask if and to what degree the international monetary system—or non-system—was the origin of the crisis. If so, the crisis could be an opportunity to put in place a system that is able to avoid a similar event in the future and ensure that the potential benefits of globalization become durable and more equitably distributed.

All these questions were in our minds. And, when I say “we,” I speak about many of the veterans of the system. We were excited to see that the Group of Twenty (G-20) had put reform



of the system back on its agenda this year, after having concentrated in the previous years on other aspects of the crisis.

The idea came to a few of us that we should put our experience of previous crises at the disposal of those who are now in charge. We decided to see if, together, we could come to a common understanding of the problem—the key weaknesses of the system and that it allows formidable imbalances to continue developing—and what could be done to establish more solidity, discipline in the system.

We established a group of 18 persons and distributed among ourselves the task of producing papers. We asked for informal support from the IMF, Bank for International Settlements (BIS), central banks, and others. We put all these papers on the table on the occasion of our meetings in the Palais Royal in Paris—for which the initiative is named—and we put in writing a set of proposals. I had the honor of bringing our initial report to the president of the G-20, [French] President Nicolas Sarkozy, on January 21.

The origin of this initiative is totally private. It does not commit any country: our credibility as individuals is the only thing at stake. We hope our report will be a source of inspiration and show that when you sit together—and here we have 15 countries represented in the group—in a real spirit of cooperation, then you can create the basis for more cooperative coordination of economic policies.

F&D: Why are the reforms already initiated—including by the G-20—not enough to address risks in the international monetary system?

CAMDESSUS: We value very much the work that has been developed so far, but we must go several extra miles if we want to be sure the system is made safer. There are still many risks that are not answered sufficiently by what has been done so far, and several ideas have been considered and, for the time being, rejected. As private individuals, we thought it would be worth revisiting a few of those ideas that have so far been left aside.

Box 1

Members of the Palais-Royal Initiative

The group was convened by Michel Camdessus, former IMF Managing Director; Alexandre Lamfalussy, former General Manager, Bank for International Settlements (BIS); and the late Tommaso Padoa-Schioppa, former Minister of Finance, Italy. Other members include Sergey Aleksashenko, former Deputy Governor, Central Bank of Russia; Hamad Al Sayari, former Governor, Saudi Arabian Monetary Agency; Jack T. Boorman, former senior IMF official; Andrew Crockett, former BIS General Manager; Guillermo de la Dehesa, former State Secretary of Economy and Finance, Spain; Arminio Fraga, former Governor, Central Bank of Brazil; Toyoo Gyohten, former Vice Finance Minister, Japan; Xiaolian Hu, Vice President of China Society of Finance and Banking; André Icard, former BIS Deputy General Manager; Horst Köhler, former IMF Managing Director; Guillermo Ortiz, former Governor, Banco de México; Maria Ramos, former Treasury Director General, South Africa; Y. Venugopal Reddy, former Governor, Reserve Bank of India; Edwin M. Truman, former Assistant Secretary, U.S. Treasury; and Paul A. Volcker, former U.S. Federal Reserve Board Chairman.

We don't want to see the world economy retreating into a fragmented economic system, vulnerable to protectionist pressures. We don't want the move toward an open and competitive global market to be at risk as it is now. We also know that the years immediately following a crisis are fraught with dangers. The comprehensive measures adopted by the G-20 will deliver positive effects only after several years due to the inevitable delays in implementation.

And you have other risks. The strong, but resistible, temptation to return to business as usual. We see it in the banking industry, but also in international institutions. There is also the risk that the changes adopted are too small and too late, leaving the system vulnerable to unexpected crises and not allowing globalization to deliver all its potential and positive contribution to a better world.

Nobody believes that these risks would gently disappear by muddling through. Without completing bold changes, this could leave us with a more unstable world. So we cannot rest on our laurels.

F&D: Why might the recommended IMF reforms—including some that have been suggested in the past—have more traction today?

CAMDESSUS: The question is whether they are necessary or not. Not to have adopted them has contributed at least partly to the mess in which we are. We were wrong in postponing these changes or to water down many suggestions. Now we know what has been the cost of procrastination and hesitations. Now it's time for change. Now or never.

F&D: What IMF reforms should have the highest priority?

CAMDESSUS: It is a package of measures. You cannot say, "Here you have something which is important, let's do that

and then we'll see." No. A bold overhaul of the system is needed. We must recognize that the IMF has new and powerful partners emerging who will want full-fledged responsibilities in the system.

We need a much broader scope of surveillance by the IMF, not only the current account and monetary dimensions, but the full monetary and financial sphere. The ultimate goal is to have better surveillance and more efficient prevention of crises, and an IMF with stronger instruments for doing its job. In that regard, we propose new obligations for IMF member countries, and that is described in full detail in the report.

I believe that it's time now—it should have been done earlier—to merge the G-20 ministers of finance and the IMFC [International Monetary and Financial Committee] within the Council as is provided for in the IMF's Articles of Agreement.

All these reforms must go hand in hand and be adopted soon. The next crisis may not be far away if we don't move.

F&D: How would the proposed new global governance structure change the system?

CAMDESSUS: Well, I don't see many changes. First, creation of the Council, as I mentioned earlier, is long overdue. Second, we suggest that the G-20 organize itself with a system of constituencies. This would allow each country to be actively part of the system, to be consulted prior to meetings, and to receive direct reports from members of the G-20 about the decision-taking at the supreme level.

F&D: You suggest an expanded role for the IMF's Special Drawing Right (SDR). What was the group's thinking?

CAMDESSUS: It's interesting to observe that this group, which has taken very diverse positions in the past on the future of the SDR, recognizes that it has demonstrated it could be a useful instrument—even more useful in the next few years and, possibly, even more important in a longer-term perspective. You could see a kind of revival of the SDR if you give the IMF a status akin to lender of last resort.

F&D: The report calls for improved measurement and monitoring of changes in global liquidity. How can this be done in a way that will stand the test of time?

CAMDESSUS: I believe this should have been done earlier, and I regret not taking the initiative when I was in the IMF. The tradition was that there was a distribution of tasks between the BIS and IMF; as the issue has become so central, we only suggest that the IMF and BIS work closely together to this end. We are certain that what these two institutions will do jointly will stand the test of time.

Now, we must have proper surveillance of global liquidity. IMF and BIS staff will have to work together to define properly what we are talking about—which definition of liquidity we must adopt, what kind of data we must collect, and then how to analyze the data. Together they must track much more closely developments in the global economy and be able to play the alert role, which is indispensable. ■

Box 2

Key suggestions in the report

The Palais-Royal Initiative's more detailed February report included 18 suggestions, with several focusing on surveillance and cooperation and governance of the international monetary system.

On *surveillance and cooperation*, the IMF should develop and adopt "norms" for members' policies, including globally consistent exchange rate norms. Persistent breaches of a norm or norms would trigger a consultation and, if needed, remedial action. For systemically important countries whose policies do not appear to meet the norms, compliance should be assessed by a relevant body within the IMF. Each country would be expected to refrain from policies that push or keep its exchange rate away from its norm. Macroprudential policies in systemically relevant economies should take into account the need for broadly appropriate global liquidity conditions.

Governance of the international monetary system should be based on a single three-level structure, with all countries represented through a system of constituencies. This could include a global advisory committee of eminent independent individuals.

Playing Catch-up



Michael Spence

The Next Convergence

The Future of Economic Growth in a Multispeed World

Farrar, Straus & Giroux, New York, May 2011, 320 pp., \$27.00 (paper).

We may be standing on the hinges of economic history. If so, we will be witnesses to an extraordinary event,

one that has happened only twice since the beginning of mankind. For thousands of years, living standards displayed no truly long-term trends, nor any great variation from country to country. Then, in the 1700s, came the first sudden swing in the course of economic history. The Industrial Revolution propelled a remarkable and sustained rise in living standards, first in Britain, then elsewhere. But this transformation occurred only in a few places, essentially in Europe, nations of European descent, and Japan. The rest of the world, more than four-fifths of humanity, remained mired in the agricultural past. By 1950, the world was a profoundly unequal place.

Then the course of history suddenly swung again. After 1950, some countries, mainly in Asia, that had been lagging behind started growing at unprecedented rates, about 7 percent per year, enabling them to start closing the gap with the advanced economies.

More recently, the two most populous countries—China and India—began to grow at rates close to 10 percent. If these trends continue, we will witness, in our lifetimes, a third historical swing: a renewed convergence of living standards. What was once the privilege of a favored few will become commonplace for many. This potentially epochal process is the subject of Michael Spence's remarkable new book, *The Next Convergence*.

The basic arithmetic behind convergence is simple. It is known as the rule of 72. This rule says that you can calculate the number of years it will take to double living standards by dividing 72 by the average growth rate. So if a country is growing at 10 percent, its standard of living will double in about 7 years. This means that if a country starts off with per capita income of \$500, and grows by about 10 percent a year, incomes can reach \$16,000 in just about 35 years. A few years after that,

Easy Money

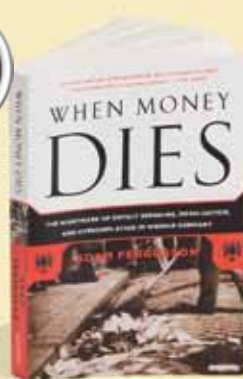
Adam Ferguson

When Money Dies

The Nightmare of Deficit Spending, Devaluation, and Hyperinflation in Weimar Germany

PublicAffairs, New York, 2010, 288 pp., \$14.95 (paper)

When *Money Dies* is not a new book, but a reprint. Although it first appeared in the United Kingdom in 1975, it has only recently been published in the United States. This relatively obscure volume achieved something of a cult status among financiers after reports that Warren Buffett, the billionaire investor, advised a Dutch financier to read the book as an illustration of what could happen today if European governments attempted to spend their way out of the downturn. Whether the exchange between the two men really took place or not, the rumor helped push the asking price of secondhand copies of the



book over \$1,000. A U.S. publisher responded by rushing out a paperback version.

So the book has now gained a degree of topicality as governments use “quantitative easing” as a tool to stimulate the economy following the recent financial crises. It recounts the dire effects of hyperinflation in Germany in the early 1920s when the German central bank—the Reichsbank—financed the public deficit by simply printing more money. This, despite the fact that the country had already experienced one

bout of inflation after World War I.

The author, Adam Ferguson—a one-time advisor to U.K. Chancellor of the Exchequer, or Finance Minister, Geoffrey Howe—writes powerfully of the corrosive effect of inflation as he describes the seeds of the hyperinflation that would grip Germany following World War I.

“Inflation aggravated every evil, ruined every chance of national revival or individual success, and eventually produced precisely the conditions in which extremists of Right and Left could raise the mob against the State, set class against class, race against race, family against family, husband against wife, trade against trade, town against country. It undermined national resolution when simple want or need might have bolstered it. Partly because of its unfairly discriminatory nature, it brought out the worst in everybody—industrialist and worker, farmer and peasant, banker and shopkeeper, politician and civil servant, housewife, soldier, merchant, trades-

incomes will be at advanced economy levels. Provided, of course, the country continues to grow at the same pace.

In fact, that proviso is a big one. For growth is a mysterious process. Only 13 countries have managed to grow at even 7 percent on average for a 25-year period. And of those lucky

Growth is a mysterious process [and] catch-up is far from inevitable.

13, only half have continued on to advanced economy levels. In other words, catch-up is far from inevitable.

For that reason, Spence eschews speculation about what a converged world would look like. Instead, he focuses on a more practical matter: what countries need to do to get there.

What are the keys to success? No one truly knows. But economists have some ideas—particularly, Spence. Not only is he a Nobel laureate, but he has thought long and hard about these issues in his capacity as Chairman of the Commission on Growth and Development, launched in part by the World Bank. The current book is the fruit of those years of research and thinking.

Spence argues that poor countries grow through two primary mechanisms. First, they acquire knowledge from rich countries. Second, they specialize in producing goods that are demanded by other countries, so that they can sidestep limited domestic purchasing power and the divergence between what locals demand and what the country is good at producing. Put simply, success requires that countries educate their populations and integrate into the global economy.

Spence makes one further key point. Too many countries, he points

out, find a successful formula, such as labor-intensive exports, and then try to stick with it, most notably by preventing their exchange rates from appreciating. But sustained growth requires structural change, with labor-intensive manufacturing giving way to advanced manufacturing and services as skills and income rise.

The Next Convergence considers a range of such issues, including the structural problems of China and India and doubts about appropriate economic models in the wake of the 2008 global crisis. In all of these cases, Spence explains complex issues in remarkably clear and concise language. His concision and range occasionally come at the expense of the richness and variety of growth experiences. But you will not find a better introduction to today's most critical global economic debates.

Josh Felman
Assistant Director
IMF Research Department

man, miner, moneylender, pensioner, doctor, trade union leader, student, tourist—especially the tourist.”

Despite the burden of war reparations, in the face of opposition from increasingly powerful right-wing political parties in the country, the government of the Weimar Republic—established in 1919—dared not raise taxes against heavy industry and other manufacturers who had profited from the war. As a result, in Germany, only 14 percent of war expenditure was financed by taxes compared with 30 percent in Great Britain. The rest was financed by loans or directly by the Reichsbank.

As a consequence, the Weimar Republic inherited an enormous public debt on which it was forced to pay high rates and huge amounts of interest. Despite other difficulties and obligations, the Weimar Republic continued to finance a part of its annual deficits directly with the help of the Reichsbank. German inflation then ran out of control completely when French

troops occupied the “Ruhrgebiet” region. A general strike ensued and the German government responded by agreeing to pay the salaries of the workers. Without any understanding of the consequences, the Reichsbank's president decided to finance this commitment by allowing the Reichsbank to print all the paper money “needed” by the enterprises and the people. Inflation rapidly led to hyperinflation, accompanied by a massive devaluation of the Reichsmark and astronomical rises in the price of goods.

The author draws on first-hand accounts to describe the devastating effects of the ever-deeper economic spiral and its social impact: “Frau von Pustau explained that one house was sold because the couple living there had had both sons killed in the war, had no one to care for them, had had their life savings devalued, and so had gassed themselves. ‘Our times,’ she went on, ‘made us cynical.’”

Fergusson's book depicts the desperation and helplessness felt by large

swathes of the population and the difficult political situation in Germany that drove the Reichsbank's decisions, but the author fails to discuss in any detail the relationship between inflation and the devaluation of the Reichsmark. Nor does he offer any theoretical explanation for the traumatic events that took place in Germany, including the conditions under which the printing of money leads to high, accelerating, or hyper-inflation.

The book contains many data references, but there are no tables or figures to back up these facts and so readers are likely to find it difficult to fill in this gap for themselves. Also missing is any weighing of the pros and cons of moderate inflation against the available alternatives. It is a powerful historical account, but the book is of limited use in helping us draw lessons for our current situation.

Jürgen Kromphardt
Professor of Economics at the
Technische Universität Berlin and
a former member of the German
Council of Economic Experts

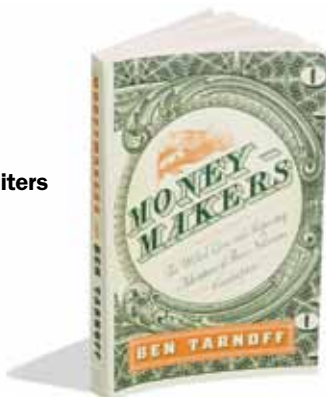
The Trials of Counterfeiting a Cow

Ben Tarnoff

Moneymakers

The Wicked Lives and Surprising Adventures of Three Notorious Counterfeiters

The Penguin Press, New York, 2011, 370 pp., \$27.95 (cloth).



Sometime later this spring, those lucky enough to have fairly well furnished wallets will start to acquire from their ATMs or their paymasters a brand-new kind of hundred dollar bill. These new notes had initially been due to enter circulation in February, but so complex is their design; so sophisticated their dog's breakfast of watermarks, metal strips, and color-changing intaglios; and so unpredictable the behavior of the paper on which everything is printed (test versions apparently creased badly under the harsh impress of the printing rollers) that it will now be several more weeks before our pockets and billfolds are graced with them.

The U.S. government has said sorry, but has intimated that all should in fact have faith in the delay, since if those in Washington find these new bills so agonizingly tricky to print, then surely the legions of fakers out there will find them even more difficult to forge.

And such, of course, is the eternally expressed hope of the Fed and other central banks: that our worldwide system of money, fashioned only from inherently valueless pieces of paper, doesn't utterly collapse because of the ceaseless efforts of the equally worldwide community of counterfeiters.

Such a risk has been recognized for 300 years and more—maybe longer, since it was the Chinese, inevitably, who first used paper money well over a thousand years ago. We in the stripling West have employed notes of exchange—worthless in themselves, but ultimately backed by an all-too-fragile public faith—for only a mod-

est three centuries (the Swedes being the first, in the late 1660s). Until then, the entities we used generally possessed inherent value, and fakery of them was both well-nigh impossible and ultimately pointless. For who would ever wish to try to fake a cow

(the word “pecuniary,” with its roots in the Latin word for cattle, tells of a time when cows were indeed negotiable instruments, in Italy), or copy a camel or a cowrie shell, or forge a woodpecker scalp or a brick of tea—or even an ingot of gold, if perhaps by the magic of alchemy? All manner of things of value have been employed as mediums of exchange, and though most of them have proved inconvenient to trade or store or lug about, they did, by and large, have the signal advantage of being exceptionally difficult to copy.

Not so with paper, though. Everything changed in the Americas once the Massachusetts Bay Colony began to print its own money in the late 1690s—for, as Ben Tarnoff makes clear in this most entertaining romp through the anarchic monetary universe of early America, within moments of the first appearance of printed bills, entrepreneurs with an abundance of artistic ability, a moiety of cunning and chutzpah, and a willingness to take the considerable risk of jail, exile, or death began copying or forging them as a means to easy riches.

Tarnoff first came across the three counterfeiters on which he has chosen to focus two years ago, while he was working on the “Money” issue of the admirable new journal *Lapham's Quarterly*. They were the relatively obscure pair of Owen Sullivan in colonial New England and David Lewis in early 19th century Pennsylvania, and the heroically infamous patriot Samuel Upham, who forged Confederate bills from his perfume shop in downtown

Philadelphia. Tarnoff tells each of their stories with clarity and brio—stories of printing presses hidden in caves, of gunfights in darkened bars, of posse chases through mountain ranges and across snow-covered cornfields. There are tales of embezzlement, derring-do, and chicanery on the one hand and, on the other, fascinating accounts of the growing authority and acumen of those bank agents and the Secret Service investigators who then tried, and usually ultimately succeeded, in tracking the miscreants down.

But there is a great deal more. Besides also explaining very well the philosophical complexities behind the meaning of value in money—making his book as instructive as it is entertaining—Tarnoff turns out also to be a past master of the diverting tangent and brilliantly adept at creating atmosphere and suspense. One can almost see the screenplay here, can feel the hot breath of the interest from such as the Coen brothers, can imagine just who (Steve Buscemi? Jeff Bridges?) might most suitably play the villains.

For in truth, all three of his men turn out to be the most amiable of rogues, to be somewhat lovable Robin Hoods—the kinds of figures who, even two centuries on, win our sympathy. After all, they were merely trying to hoodwink the very bankers who have been hoodwinking the rest of us for far too long.

Given our current view of the financial community, the publication of Tarnoff's most amusing book could scarcely have been better timed. And so, when Washington has solved its printing problems, it is probably well worth handing over one of these fancy new one hundred dollar bills for a copy of the book. Take good care, however, to examine very closely the quality of the paper money that you are handed back in change. It has no worth. It could also—if you appreciate the difference—turn out to be quite worthless.

Simon Winchester

Author of several books, including Atlantic and the forthcoming The Alice Behind Wonderland

Branching Out



Access to basic financial services in low-income countries is growing

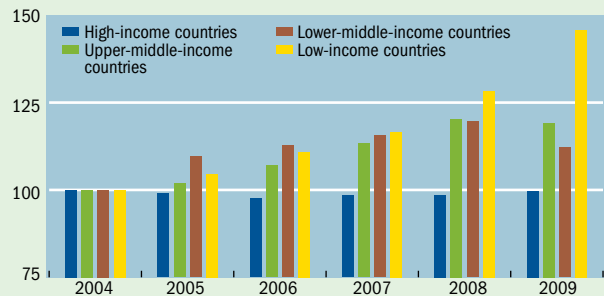
THE vast majority of the adult population in advanced economies has access to basic financial services—deposit accounts via bank branches and automated teller machines (ATMs). In contrast, the availability of such financial services in developing economies (that is, low-income, lower-middle-income, and upper-middle-income countries) is much more limited. This more limited access to financial services impedes economic growth and development. However, over the past five years financial services have been expanding in the developing world.

According to the IMF’s new Financial Access Survey, as of 2009, high-income countries had an average of 85 ATMs and 45 bank branches per 100,000 adults, compared with an average of just 3 ATMs and 6 bank branches per 100,000 adults in low-income countries. Although the gap remains large, the survey shows that access to financial services in developing countries is making strong and steady progress.

middle-income countries outpaced that of brick-and-mortar branches from 2004 to 2009. This trend illustrates the shift in technological changes that allow increased access to financial services at low cost.

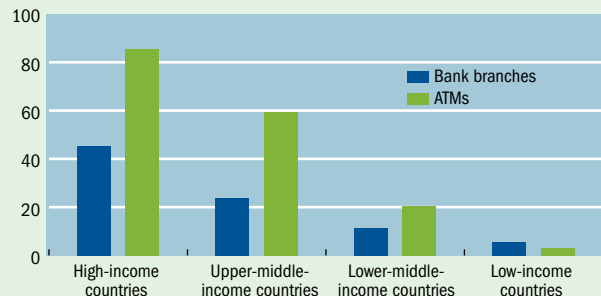
In recent years, the number of brick-and-mortar bank branches in low-income countries has risen.

(Bank branches per 100,000 adults, cumulative growth, 2004=100)



The financial access gap between the developing world and the developed world remains large.

(Number per 100,000 adults, 2009)

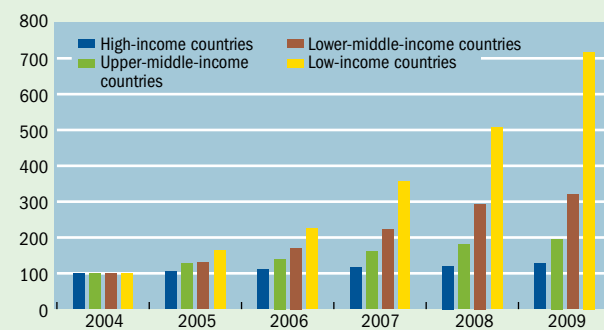


In low-income countries, the average number of bank branches per 100,000 adults increased by about 45 percent between 2004 and 2009; over the same period, bank branches in advanced economies experienced minimal growth. Furthermore, the average number of ATMs per 100,000 adults in low-income countries grew sevenfold between 2004 and 2009, whereas in high-income countries the number increased by about 28 percent during this period.

Given the low access levels in developing countries, each new ATM or bank branch has a strong impact. Technological advances have played a big role in these developments. The numbers show that the growth rate of ATMs in low- and

The availability of ATMs in low-income countries has increased significantly, outpacing that of bank branches.

(ATMs per 100,000 adults, cumulative growth, 2004=100)



About the database

The data are from the IMF’s Financial Access Survey, which was launched June 30, 2010. The survey collects annual data on access to basic consumer financial services for 138 countries from 2004 to 2009, including the number of depositors and borrowers, the volume of outstanding deposits and loans, and other related indicators. The database is available at fas.imf.org and will be updated June 30, 2011, with the results of the 2011 survey.

Prepared by Atsushi Oshima and James A. Chan of the IMF’s Statistics Department.

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