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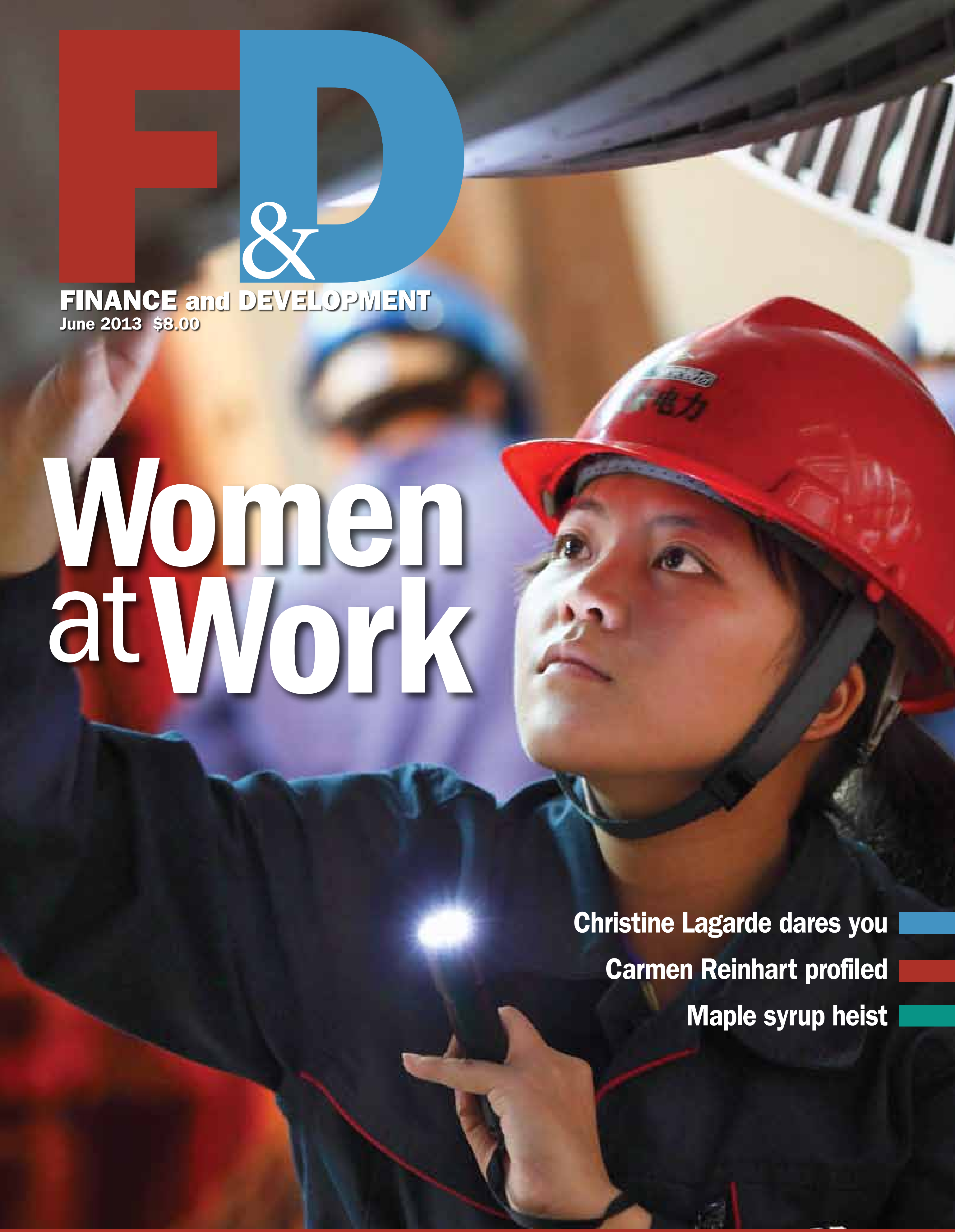

Women at Work

Christine Lagarde dares you

Carmen Reinhart profiled

Maple syrup heist

INTERNATIONAL MONETARY FUND

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FEATURES

A WOMAN'S WORLD

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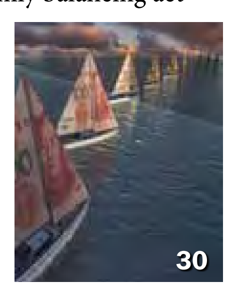

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FROM THE **EDITOR**

A Mother's Example

NAZARETH College was my second home. As a child, I spent countless evenings roaming the small liberal arts college in Rochester, N.Y., where my mother headed the office of graduate studies and continuing education.

Most of her students worked day jobs, attending class at night. For her, this made for late hours at the office—and for a complex juggling act: off to work in the morning to manage a staff, drop everything at 3 p.m. to rush home to fix dinner for the family, and then back to work around 5 p.m.—with me in tow—to staff the office until evening classes let out. Sleep and then repeat. This was the rhythm of my childhood.

I thought a lot about those days as we put together the special feature on women at work in this issue of *F&D*—about her example, and about the many women who share in her experience and the many who do not.

If there is one meta-theme in this issue, it's the diversity of women's work experience across the globe.

The world has seen tremendous progress in a relatively short time when it comes to women's participation in the workforce. Women work in all fields and professions, and women are a driving force in many economies.

At the same time, as IMF Managing Director Christine Lagarde points out in her Straight Talk column, for the past decade women's labor participation has been stuck at the same level, and women still lag men in many areas, especially in the developing world. What's more, in some places, labor market participation rates are the last thing on a woman's mind: safety, health, education—these concerns come first.

We kick off our look at women at work with an overview by IMF economist Janet Stotsky, whose trailblazing 2006 paper on gender and macroeconomic policy found improved gender equality could boost growth.

Her piece is followed by four articles, each providing a different insight into this complex subject: from the differing perceptions of men and women analysts on Wall Street, to the impact of India's practice of setting aside a third of village council seats for women, to rising entrepreneurship among African women. An article on how the rising proportion of women in economics has begun to alter the profession's views on a variety of policy questions rounds out the package.

Elsewhere in this issue we take up China's changing labor market, the outflow of private capital from emerging market economies, bank stress tests, and the emergence of borrowers in international capital markets in sub-Saharan Africa. We also offer a profile of economist Carmen Reinhart, whose 2010 paper with Kenneth Rogoff on debt and growth recently put her at the center of a media firestorm.

In short, this issue offers quite a mix. Pulling it together has been a juggling act that my mother—and many women—would appreciate.

Jeffrey Hayden
Editor-in-Chief

Construction project in Jiangsu, China.

Material world

The Asia-Pacific region has surpassed the rest of the world in its consumption of materials and will continue to dominate world material flows, according to a United Nations Environment Program report released in April.

The report, *Recent Trends in Material Flows and Resource Productivity in Asia and the Pacific*, says that the current rate of exploitation of Asia-Pacific's resource base is no longer sufficient to support the region's fast-growing economies and changing lifestyles. From 1970 to 2008, the consumption of construction minerals increased 13.4 times, metal ores and industrial minerals 8.6 times, fossil fuels 5.4 times, and biomass 2.7 times.

The report highlights the region's "material intensity"—that is, the consumption of materials per dollar of GDP—as a more serious concern, because it will increase pressure on the environment and exceed the region's rapid growth. Currently, material intensity in Asia-Pacific is three times that of the rest of the world.

Growing affluence—rather than population growth—is now the most important driver of environmental pressure from resource extraction in the region, the report says.

War against hunger

Governments have the primary responsibility for assuring the food security of their citizens, and action in this area is crucial, the United Nations Food and Agriculture Organization's director-general told a high-level meeting in April.

"The Millennium Development Goals have pushed us forward. But with 870 million people still suffering from hunger, the war against food insecurity is far from over," José Graziano da Silva said at the meeting, whose purpose was to discuss the UN's vision for a strategy against world hunger once the Millennium Development Goals expire in 2015.

"The only effective answer to food insecurity is political commitment at the national level," he said, adding that the world's attitude toward hunger has changed profoundly.

But despite the primary responsibility of national governments, today's globalized economy means that no country acts alone.

"Actions taken by one country or company may affect the food security of others," while conflicts can lead to instability in neighboring countries and regions, he said.

Public policies should also create opportunities for the most disadvantaged, including subsistence and small-scale producers, women, youth, and indigenous people, he stressed.

Financing growth

A new book published by the African Development Bank explores how structured finance techniques can mobilize African domestic capital to support economic infrastructure projects and economic growth.

Structured Finance: Conditions for Infrastructure Project Bonds in African Markets was officially launched by Charles Boamah, the African Development Bank's vice president for finance.

"Sound domestic capital markets are critical to the development of African countries," said Boamah. For this reason, the African Development Bank has, over the past few years, pursued initiatives to help raise the capacity of local capital markets, enabling Africa to tap more long-term finance for infrastructure development.

"This report is very timely, given the urgency to significantly scale up financing to address Africa's large and growing infrastructure deficit," said Boamah.

African countries have been growing at rates in excess of 5 percent, with 7 of the world's 10 fastest-growing countries located on the continent. This has created a growing middle class and an expanding financial sector.

The report elaborates on examples from other emerging markets, such as Brazil, Chile, Malaysia, and Peru, using project bonds to catalyze investors' interest in infrastructure projects. Such examples can serve as a template for African countries to develop their markets.

Events in 2013

June 17–18, Fermanagh, United Kingdom
Group of Eight Summit

September 5–6, St. Petersburg, Russia
Group of Twenty Summit

September 25–27, Sopot, Poland
European Forum for New Ideas

October 11–13, Washington, D.C.
Annual Meetings of the World Bank and the IMF

October 18–19, Panama City, Panama
Ibero-American Summit

November 7–8, Washington, D.C.
IMF Fourteenth Annual Jacques Polak Research Conference

November 13–14, Amsterdam, Netherlands
World Pension Summit

Steady cash flow

Remittances to Latin America and the Caribbean showed a slight increase in 2012 over the previous year, according to the latest report on remittances by the Multilateral Investment Fund (MIF), a member of the Inter-American Development Bank Group.

The report, "Remittances to Latin America and the Caribbean in 2012: Differing Behavior among Sub-regions," says that the region received a total of $61.3 billion in remittances last year. This amount represents a year-over-year increase of $300 million, a 0.6 percent increase since 2011. After a historic high of nearly $65 billion in 2008, and a 15 percent drop due to the financial crisis in 2009, money transfers to the region have stabilized, the report suggests.

Students in Guatemala City, Guatemala, where remittances help support education.

"The latest data show that migrants continue to provide critical financial support to millions of households across the region," said MIF General Manager Nancy Lee. "The development impact of remittances can be much greater if families have the option to save some of these flows rather than converting them all into cash upon receipt."

Remittance flows continue to represent an important source of foreign inflows in many countries in the region, and constitute more than 10 percent of GDP in several countries, including El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, and Nicaragua. These flows also represent an important source of income for the millions of families in the region that use the transfers for basic needs and to invest in education, health, housing, and small businesses.

Solving History's **Puzzles**

James L. Rowe Jr. **profiles Carmen M. Reinhart, who focuses on facts and history**

HAD Miami Dade College offered a concentration in fashion design, Carmen Reinhart might never have become an economist.

Reinhart—the world's most-cited female economist and coauthor of one of the most important economic books of the past decade—studied fashion merchandising instead.

"I like art a great deal, and I like drawing. And I thought that, well, I really didn't go to the right school to become a fashion designer. So, let me see whether I like fashion merchandising."

She didn't.

"Fashion merchandising is how to become a buyer. It has really little to do with any kind of design . . . the artistic part of it." She was convinced she'd made a poor choice.

But the merchandising curriculum required her to take a course on the principles of economics. Her instructor, "a crazy old Marxist," paired a standard textbook with Douglas F. Dowd's critique of U.S. capitalism, *The Twisted Dream*. "And I found it fascinating . . . . I didn't make a decision, 'Oh, I'm going to become an economist.' No, I made the decision that I was going to take more economics courses and see how I liked them. And I did."

That started Reinhart on a rise through the economics profession that included stints on Wall Street, the International Monetary Fund, and academia—including the University of Maryland and her current home, the Kennedy School at Harvard University, where she is Minos A. Zombanakis Professor of the International Financial System.

It was during her four years at the now-defunct investment bank Bear Stearns that she developed an interest in the issues that have dominated her research: banking and financial crises and their ripple effects (contagion); capital flows; indicators of world business cycles; and debt (sovereign and private). Mexico defaulted on its massive foreign debt only six months after Reinhart joined Bear Stearns in 1982. "And, boy, was that a learning experience, being in the financial markets and seeing the ripple effects, the contagion, the impact on banks, the volatility. . . . It had a real lasting impact on the things that I would be interested in."

Reinhart's path is not well worn by economists. In a profession dominated by theorists and model builders, she made her mark by finding, mining, and organizing data.

But she has been in the middle of a firestorm recently over how she and coauthor Kenneth S. Rogoff handled data in a paper that found that when the ratio of government debt to GDP exceeds 90 percent, it begins to become a drag on long-term economic growth. Economists had debated the finding since the paper was first presented in early 2010. But after several economists at the University of Massachusetts last

April said they had found calculation and methodological errors and "selective" data omissions in the paper, the academic dispute became a public controversy.

Reinhart and Rogoff acknowledged a calculation error but said it did not affect their overall results. They said the other critiques were off base and that their conclusions are solid.

Against the grain

Reinhart has a history of going against conventional wisdom. Her first well-known paper, in 1993—with fellow IMF economists Guillermo Calvo and Leonardo Leiderman—questioned the prevailing belief in the IMF and elsewhere that capital was flowing to Latin American countries because of their good economic policies. Instead, the economists postulated, external factors—including a benign global environment and low interest rates—sparked the investment flow, which could stop on a dime if conditions changed. Had they looked at Asia, they would have seen the same issues, Reinhart said. The trio were right: External conditions changed, and, starting with Mexico in 1994, emerging market economies—including in Asia in 1997, Russia in 1998, and Argentina in 2001—experienced a "sudden stop" in capital flows.

Several years later, Reinhart and fellow economist Graciela Kaminsky questioned the common belief that crises are spread from one country to another mainly via trade links. Instead, they found such contagion was rooted in then little-studied financial channels.

According to Calvo, now at Columbia University and one of the profession's foremost theoreticians, "Carmen does not fit the mold of the typical academic economist, who spends much of his or her time exploring pointless extensions of the dominant paradigm. She is an original, driven—first and foremost—by strong intuitions, which she then tests by going from a thorough search of available evidence to the application of state-of-the-art econometrics."

Reinhart said she never made a calculated decision to emphasize the empirical over the theoretical; it is just who she is. "Data is good. It is central to me. In the end, it is about solving puzzles, about solving mysteries. And the way I go about solving mysteries is [by] delving into data and looking for empirical regularities, for recurrences of patterns. . . . You know, when Sherlock Holmes says, 'The game is afoot.'"

It was that ability to unearth and organize economic data that enabled Reinhart and Rogoff in their 2009 best seller *This Time Is Different: Eight Centuries of Financial Folly* to provide a sweeping look at hundreds of economic crises—debt, banking, currency, and inflation—in 66 countries from as far back as the Middle Ages to today. The book—which like the rest of Reinhart's two decades of prolific research has not been caught up in the controversy over the 2010 paper—shows that serious economic crises are devastating but occur infrequently enough that, as economist Alan Taylor put it last year in the *Journal of Economic Literature*, "recent experience can be an unfaithful guide for scholars and statesmen alike"—the reason the warning signs of the five-year-old global financial crisis were largely ignored.

Reinhart and Rogoff's research (half the book is data, much of it assembled from painstaking searches of obscure sources) revealed the vast similarities over centuries in how economic crises build and how they unfold. But an indifference to, ignorance of, or disregard for historicity allows economists and policymakers to explain away time and again harbingers of bad times. Reinhart and Rogoff called it the "This Time Is Different Syndrome," which they said "is rooted in the firmly held belief that financial crises are things that happen to other people in other countries at other times; crises do not happen to us, here and now. We are doing things better, we are smarter, we have learned from past mistakes. The old rules of valuation no longer apply."

Beware of debt

One major implication of their research, Reinhart said, is that policymakers must "beware of debt cycles, beware of indebtedness cycles, beware of surges in credit, beware of surges in debt—private debt becomes public debt. Once you get stuck in a full-size banking crisis, you don't get out of it quickly." And it is here that she said their results "have not been really fully represented. . . . We make the point that when you're mired in a debt overhang—public, private, a combination of the two—seldom do you get out of it without some element of restructuring." And that goes not only for emerging markets but for advanced economies, too.

Their research was coming to fruition as the U.S. mortgage market was collapsing in 2007—the opening act in the global financial crisis that rivals the Great Depression of the 1930s. In a paper they presented to the annual meeting of the American Economic Association (AEA) in January 2008, Reinhart and Rogoff demonstrated that common economic indicators for the United States—inflation in asset prices, growing indebtedness, big current account deficits, slowing economic growth—signaled a country poised for a severe financial crisis.

"Some people dismissed the idea that a crisis like that could happen in the United States," she said, although others had their attention "piqued" by the paper titled "Is the U.S. Subprime Crisis That Different?" After the presentation, she said, she and Rogoff concluded that if no crisis occurred they might look foolish. "But, you know, it happened."

A year later—not long after the failure of investment bank Lehman Brothers, the seizing up of money markets, and the global spread of the financial crisis—the authors appeared at the January 2009 AEA meeting with another disquieting prognosis based on the massive historical record they had constructed. Their paper, "Aftermath of Financial Crises," made two points that invited skepticism at the time but later proved accurate. The first was that recessions that start in such crises "are very protracted and severe," she said. The other was that there would be a massive increase in government debt: Their analysis showed that debt had nearly doubled after adjustment for inflation in the three years following each major national crisis since World War II.

She said many economists and policymakers had called them alarmist for predicting that debt would grow so much, but in fact, she said, some countries have had much bigger increases.

It was the paper they presented at the January 2010 AEA meeting that was to prove more controversial. Many economists had been skeptical of the 90 percent tipping point—especially for countries like the United States that borrowed in their own currencies. Critics were also dubious about whether debt caused the growth slowdown or vice versa. In any event, the paper became part of the intense political debate over austerity versus stimulus—although it took no position on either—cited by politicians and others advocating reduction in government deficits.

The University of Massachusetts economists claimed the paper, "Growth in a Time of Debt," had analytical flaws and that it selectively excluded available data and used unconventional techniques to weight statistics. That touched off a severe round of criticism from those who support stimulus during this period of slow economic growth—including economic pundits, even late-night talk show hosts.

Reinhart and Rogoff acknowledged in several statements that they made a spreadsheet error, but said it did not affect most of their calculations nor their central finding: that high levels of debt become a drag on growth. They also said the statistical weighting techniques were not unconventional and bristled at the suggestion that they had omitted data to strengthen their argument. The missing data, they said, were not available or not fully vetted when they presented the first version of the paper, but had been added to the database on their website and to later iterations of the paper (including an article in the AEA's *Journal of Economic Perspectives* in 2012 that tracked the debt-growth relationship for 200 years). Their findings remained the same.

Fleeing Cuba

Reinhart called her early life a "typical American immigrant story." Born Carmen Castellanos, she and her parents fled what they perceived as an increasingly dangerous situation in Cuba in 1966. Initially, she said, her middle-class family had felt no immediate threat from the 1959 revolution led by Fidel Castro that overthrew dictator Fulgencio Batista.

But as time elapsed "what was a fairly chaotic initial period became more organized; it was clear that repression came hand in hand with greater organization."

Her brother, 11 years her senior, "got in trouble for saying something that was considered antirevolutionary" and left a year before the rest of the family. He eventually settled in Pasadena, California, where she and their parents joined him.

It was a rough initiation to a new land—their white-collar existence became decidedly blue collar. Her father, an accountant for a brewery in Cuba, traded an eyeshade for a hammer and became a carpenter. Her mother, who had not worked outside the home, became a seamstress "working on draperies—not clothing, but draperies. To this day I have a fascination with draperies. I can't walk into a room without noticing them," Reinhart said.

The move was particularly hard on the 10-year-old girl. Within 60 days of her arrival, Reinhart contracted rheumatic fever: "My whole left side was paralyzed . . . . I'm left-handed, so saying that the left-hand side was paralyzed is not trivial. And it took me a while to really overcome that. I lost a year in school, and between the trauma of all that and the fact that my English was virtually nonexistent, it wasn't exactly a smooth transition."

But she settled in, made friends, learned English, and began to do "really well in school," only to be uprooted again four years later when the family moved from Pasadena to south Florida to be closer to relatives who had recently emigrated from Cuba. The relocation permitted the encounter at Miami Dade that shifted her interest from fashion to finance and economics.

Reinhart moved on to Florida International University, where she met Peter Montiel, an instructor who was finishing up his Ph.D. from the Massachusetts Institute of Technology. Montiel, now an economics professor at Williams College, guided her through her course work. "It became clear to me I really wanted to continue in graduate school," Reinhart said.

What I really liked was getting my hands around an idea.

Montiel, who is also Cuban, said he returned to Miami to teach Cuban students who for cultural and family reasons usually did not leave home to study. Florida International was a public university full of such bright students who could have studied anywhere. And of them, Reinhart, he said, was the "star." Montiel remembered that she was "intellectually curious and had a great capacity for hard work. She did whatever she needed to do to learn."

She graduated in 1978 and headed to Columbia University—a decision driven as much by her mother's worries about her unmarried daughter leaving home as by Columbia's star-studded faculty. "I was sort of brought up in the style of fifteenth-century Spain," she noted. There were cousins in New York "who could keep an eye on me."

At Columbia she met her husband, Vincent R. Reinhart, who has held top positions at the Federal Reserve Board and is now chief economist at the giant financial services firm Morgan Stanley. They have collaborated on a number of papers over the years.

In 1982, after receiving two master's degrees in economics and completing the examinations required for a doctorate, Reinhart abandoned academia to become an economist at Bear Stearns, a midsize investment bank that a quarter century later became an early casualty of the global financial crisis. She had just gotten married and wanted to earn decent money, plus she had had a long fascination with financial markets. Within three years, she was chief economist.

But by 1986, she was frustrated, she said, and realized the life of an investment bank economist was not for her. "What I really liked was getting my hands around an idea—what one would call in our jargon a research topic—and then trying to do something with it." But on Wall Street, "you didn't really have time to go deeply because you had to move on to the next day's topic and the next day's topic and so on." So she returned to Columbia and quickly finished her dissertation under the guidance of Nobel Prize winner Robert Mundell.

Then it was on to the IMF. She had arrived at Bear Stearns just before the start of the Latin American sovereign debt crisis, and from there was fascinated by the IMF's role in trying to solve the years-long crisis. "I wanted to try policy." It was the first of two stints at the international financial institution, where she started as an economist in the Research Department.

She wrote several important papers, including the controversial Latin American capital flow analysis with Calvo and Leiderman in 1993. When judged by citations (as counted by Google Scholar), the paper that has had the most impact on the profession was one first drafted in 1995 with Kaminsky and published in the *American Economic Review* in 1999. "The Twin Crises: The Causes of Banking and Balance of Payments Crises" found that problems in a country's banking sector typically came before a currency crisis, which then made the banking crisis worse. And both came after a long economic boom that was "fueled by credit, capital inflows, and accompanied by an overvalued currency." The first draft was done just after the 1994 Mexican collapse. By the time the paper was published, several Asian countries had severe financial crises. The paper basically laid out "why a banking sector problem like what Thailand had [in 1997] will undermine the exchange rate and a banking crisis will morph into a currency crash," she said.

"Twin Crises" also explored the antecedents of a crash—indicators whose behavior might predict a crisis, which she and Rogoff would study more thoroughly in *This Time Is Different*. And it also sparked Kaminsky's and Reinhart's interest in contagion. Most researchers then believed that crises spread from one country to another via trade links. In their paper "On Crises, Contagion, and Confusion," "Graciela and I were saying, 'I think the finance links are the big story here, and the issue with common bank lenders.'" She said she saw a replay of the 1982 start of the Latin debt crisis, when banks (mostly U.S.) cut off lending not just to Mexico but to all Latin America borrowers. "It was the same story repeating itself in Asia," following Thailand's collapse, except the banks were Japanese. "They start rebalancing their portfolio risk, and pulled out of Korea, pulled out of Indonesia."

In 1996, Reinhart left the IMF and joined Calvo—then at the University of Maryland. It would be her academic home until 2010, when in quick succession she went to the Peterson Institute for International Economics and then to Harvard.

She returned to the IMF in 2001, enticed by Rogoff to be his deputy shortly after he was named chief economist and director of the Research Department. And it was at the IMF that the two hatched the idea for *This Time Is Different*. The thesis had a long gestation period—back as far as the 1993 paper with Calvo and Leiderman, when Reinhart first confronted the "This Time Is Different Syndrome." The three economists posited that capital flows were not a new phenomenon, were the result of external factors, and could be reversed quickly. "The pushback we would get was, you know, this time is different. . . . It's not like the late 1970s." It was the same in Asia several years later, when many scoffed at the threat of large external deficits and capital inflows. The general belief in Asia was that financial crises "do not happen here. They happen in Latin America," Reinhart said.

Their ideas were further crystallized in a paper she and Rogoff wrote in 2003 with IMF colleague Miguel A. Savastano. In "Debt Intolerance," they found that although debt problems and defaults were thought to be "the domain of emerging markets," advanced economies had a similar history "going back to the fifteenth century." Before they left the IMF in 2003, Reinhart and Rogoff decided that this line of work merited a book rather than a paper. But it was not until 2006 that they began to work in earnest to build on the research they'd done over the years.

Reinhart said her investigative efforts were three-pronged. "Day in and day out" she scoured "the Web for references and sources of data," including finding one price researcher who collected ancient information from a monastery's records. She constantly searched AbeBooks, an online font of rare and out-of-print books with sources in the United States, Great Britain, and Canada. "For a long time I'd have daily shipments arriving at my house." And she became a fixture at the library of the Federal Reserve, where her husband was director of the division of monetary affairs at the time. The Fed library was a repository of many obscure economic statistics.

Her husband "miraculously" put together from numerous sources a comprehensive set of almost all the economic data the League of Nations had published. It was her Valentine's Day present that year.

If finding data was painstaking, so was organizing it. "I can't overemphasize what challenges that poses." She recounted one 3 a.m. adventure "counting the number of zeros" in countries that had experienced hyperinflation. "It's a nightmare."

But the hard work paid off, resulting in *This Time Is Different*. The AEA papers in 2008 and 2009 had sparked so much interest that their publisher, Princeton University Press, pushed them to finish. As a result, the book came out in 2009, but with a thorough treatment only of banking and debt crises. They did not have enough time to do as complete as examination of "inflation crises, and currency crashes, and capital controls," she said. A fuller treatment of those issues is grist for another book Reinhart and Rogoff are planning.

That volume is likely to provide further evidence that the economics profession spent too much time theorizing based on data that were too narrow and too recent and, by giving history and data short shrift, in the main missed the most devastating economic crisis in 75 years. ■

James L. Rowe Jr. is a Senior Editor on the staff of Finance & Development.

Reference:

Taylor, Alan M., 2012, "Global Financial Stability and the Lessons of History: A Review of Carmen M. Reinhart and Kenneth S. Rogoff's This Time Is Different: Eight Centuries of Financial Folly," Journal of Economic Literature, *December, pp. 1092–105.*




Women at Work

Reductions in gender disparity don't translate to equal opportunity

Janet G. Stotsky

ONE of the most dramatic developments in the 20th century was the entry of women into economic and political spheres previously occupied almost exclusively by men. Although women are making progress in eliminating gender disparities, they still lag men in the workplace and in the halls of government. These gaps are found throughout the world, but are particularly pronounced in developing economies. So far, the greatest success has been in reducing education and health disparities and the least in increasing women's economic and political influence. Renowned scholars, leading institutions, global businesses, and a growing range of nongovernmental organizations stress the benefits of further reducing gender inequality to allow women to realize their full potential in economic activities and in civic life.

Getting the job done

This issue of *F&D* examines women at work. It analyzes various aspects of women's work experience—the gains that women have made in equalizing job opportunities and leadership roles and the challenges they still face to achieve genuine equality.

The first of the four feature articles, "Different Sight Lines," by Ann Mari May, shows how the rising proportion of women in economics may begin to alter the profession's views on policy questions. A survey of a random sample of male and female members of the American Economic Association who received doctoral training in the United States found that while these economists share core views on economic methodologies and principles, women economists are much more likely to favor government intervention to equalize income distribution in the United States and to link import openness to export partners' labor standards. May sees these findings as consistent with studies that show women in the general population are more supportive of aid for those who are poor, unemployed, and sick.

In "Women in Charge," Rohini Pande and Petia Topalova focus on women's significantly smaller representation in political leadership positions compared with men and suggest ways to increase women's political voice and aspirations. They note that, not without controversy, many countries have sought to increase women's political leadership by instituting quotas for women's political participation. India is one such example, where, following a constitutional amendment in 1993, one-third of the seats at every level of government have been reserved for women. The authors interviewed a random sample of households in West Bengal, India, and found that repeated exposure to female leaders at the local level led to a dramatic improvement in voters' perceptions of their effectiveness. As a result of the quotas, women were better able to compete in village council elections in places that had been, but were no longer, reserved for women, suggesting that electoral change can come through changed perception of women's leadership potential. Their third finding was that




the presence of female leaders increases parents' aspirations for their daughters without diminishing their ambitions for their sons. Girls' aspirations also rose: they were more likely to seek a career and delay marriage.

The third article, "Ready to Bloom?" by Mark Blackden and Mary Hallward-Driemeier, highlights the role of entrepreneurship in allowing women in sub-Saharan Africa to grow their own businesses—and the remaining barriers to their economic success. The authors draw on two recent World Bank studies, which suggest that gender gaps in economic opportunities stem less from whether women work than from differences in the types of activities women and men pursue. African women are more likely to participate in the labor force and are more active in nonagricultural entrepreneurial activities than women elsewhere in the developing world. But they are much more likely than African men to work in the informal sector, in smaller enterprises, and in traditional women's industries, activities that tend to produce lower economic returns. They conclude that increasing economic opportunities for women entails enabling them to move into higher-return activities.

Lily Fang, in "Connections on Wall Street," highlights the stubbornly slow progress of women in the business world, which she attributes to women benefiting less from social connections than men. After examining a large sample of data from Wall Street on male and female analysts' performance, she finds that female analysts today are more likely to have graduated from an Ivy League college, are equally well connected in terms of sharing school ties with the senior officers in companies they cover, and are just as likely to become Wall Street "all-stars." For women, forecast accuracy is an important measure of their performance, while connections do not matter. For men, however, the opposite, holds. Fang concludes that while women are increasingly demonstrating their mastery of business skills, overcoming subjective barriers to top jobs remains slow.

Far from fair

These articles suggest that women are making progress in closing gender gaps in the economic and political spheres but that they are still far from achieving equity. These studies provide guidance for the design of policies to tap the full potential of women.

The increasing influence of female economists may help shape policy to emphasize a continued or even strengthened role for government to regulate business activities, redistribute income through fiscal policies, and provide a social safety net to the disadvantaged. Notwithstanding the success of the Indian experiment, women still often lack a voice in the political process. The proportion of seats held by women in their national parliaments is still less than 20 percent overall, and remains especially low in the Middle East and North Africa, an area undergoing change to more representative governments. However, the jury is still out on some fundamental issues. For example, current critical studies suggest that the relationship between gender inequality and economic growth is not as clear-cut as earlier analysis suggested and requires further investigation (for example, Duflo, 2012).

For international financial institutions, the advice they provide in surveillance and technical assistance and conditions they set in lending can draw an awareness of the benefits of closing gender gaps (see "Empowering Women Is Smart Economics," *F&D*, March 2012). There are many ways these institutions can offer support, be it through assistance in reforming tax and financial legislation to ensure equal rights for women; helping design a social safety net that factors in the disproportionate poverty of households headed by women, reflecting in part their relative lack of job opportunities; or simply ensuring that women's voices are heard (see "Budgeting with Women in Mind," *F&D*, June 2007).

This special issue of *F&D* also includes a Straight Talk column on women at work by IMF Managing Director Christine Lagarde—one of the most powerful women in the world, according to *Forbes* magazine—and short interviews with prominent women in economics and business from around the world on what led to their current success. ■

Janet G. Stotsky is an Advisor in the IMF's Office of Budget and Planning who has been researching the economics of gender since the mid-1990s.

Reference:

Duflo, Esther, 2012, "Women Empowerment and Economic Development," Journal of Economic Literature*, Vol. 50, No. 4, pp. 1051–79.*

Different Sight Lines

U.S. economists' views vary by gender, with potential implications for national policymaking

Ann Mari May

COMPANIES with female board members routinely outperform competitors whose boards include no women, according to a recent study by the Credit Suisse Research Institute. Growing interest in the subject of gender diversity on corporate boards and in governmental policymaking positions has produced a powerful and expanding literature and generated lively debate about the benefits of gender diversity.

How and why does providing gender balance in decision-making teams enhance group decision making and outcomes? Suggestions abound. Most compelling are the findings of Columbia University psychology professor Katherine Phillips and colleagues (2011), who examined the impact of greater diversity in teams and found that individuals are, on average, likely to do more preparation for any exercise if they know it will involve working with a diverse, rather than a homogenous, group. The researchers explain that a wider range of alternatives are likely to be debated in a diverse group, that diversity encourages people in the majority to think more critically about the issues on which they are working, and that a diverse group will more likely generate better results than a homogenous one.

Gender diversity is now not just an issue of fairness, but also one of performance and outcomes. The question is no longer whether gender diversity matters, but how it can be achieved.

Belief in the benefits of improved gender balance in economic policymaking is predicated, at least in part, on the notion that male and female economists may indeed hold different views on economic policy—an assertion largely untested until now.

Although studies of the economics profession have shown a fair degree of consensus on a variety of policy questions, the profession's demographics have been changing. Whereas women received only 19.8 percent of U.S. doctorates in economics in 1988, by 2011 women were awarded 34.4 percent of such degrees. Given these changes, gender differences in views on economic policy, if they exist, may begin to have significant implications for policymaking.

Core beliefs

We surveyed a random sample of male and female members of the American Economic Association who received doctoral training in the United States. After controlling for the decade in which subjects received their Ph.D. degrees and type of current employment, our survey found some similarities but also important differences in the views of these economists, breaking along gender lines. In fact, for most questions, gender was the only factor leading to a significant difference of opinion.

Perhaps not surprisingly, our statistical analysis showed a consensus in the views of male and female economists on economic methodology and core principles. Most economists agreed with the notion that individuals are utility maximizers and with the assumption of unlimited wants—two long-standing principles in economic doctrine—and that mathematical modeling should be an important part of economics.

A bit surprising was the finding that economists also agree that research on households should include intra-household decision making. This finding reflects the growing influence of research on household-bargaining models that explicitly recognize the potential for conflicting interests within a household.

Our conclusion? Male and female economists start from the same assumptions about how people behave and how to approach the study of economics, and the views of both groups have evolved to recognize both cooperative and competing interests within the household.

Divergent views

Despite shared academic training and similar views about core precepts and methodology, male and female economists showed significant differences in their support for market solutions rather than government intervention.

Economists as a group typically skew toward market solutions as an efficient means of allocating resources. Yet the male economists in our study were more likely, on average, than were the female economists to see government regulation in both the European Union and the United States as excessive. The men were also more likely to agree that parents should be given education vouchers for either public or private schools rather than having to rely on government-funded public schools.

We found rigorous statistical evidence of differences in the views of male and female economists regarding redistribution and other so-called compassion issues. Women showed far more support for making the distribution of income in the United States more equal and the U.S. tax structure more progressive. They also favored linking import openness to labor standards of export partners and were more likely to agree with the statement that employers in the United States should be required to provide health insurance to their full-time employees.

Overall, our findings are consistent with studies identifying gender gaps in the general population on compassion issues: aid to the poor, unemployed, and sick. But our results reveal a great deal about the economics profession as well. Women surveyed were more likely to accept government intervention to address social inequities, such as inadequate access to health care and poor labor standards, while male economists assigned greater weight to the dangers of government intervention, such as the potential for an increase in the minimum wage to raise unemployment rates among unskilled workers.

Most startling were the strongly divergent views among male and female economists surveyed on questions of gender equity in general and in the profession itself. Women were far more likely than men to disagree with the statement that job opportunities for men and women in the United States are approximately equal. When asked about the gender wage gap, men were far more likely than women to believe that it is explained by differences in human capital (training and skills) and voluntary occupational choices.

When evaluating gender equity in the economics profession, male economists were decidedly more sanguine than women. Asked if graduate education in the United States favors men over women, women were far more likely to believe that it does. Similarly divergent were the views of male and female economists about opportunities for economics faculty members. Women were far less likely to view the opportunities for women in economics as commensurate with those of their male colleagues.

Growing numbers of female economists will help shape policy debates in the years to come . . . and are also likely to change the dynamics of how we arrive at policy outcomes.

Economic policy

Growing numbers of female economists will help shape policy debates in the years to come. Not only will their views—the fact that they are less willing than their male peers to see inequities as inevitable and more likely to explore alternative mechanisms to shape public policy—affect policy. Women economists are also likely to change the dynamics of how we arrive at policy outcomes. The increasing presence of women economists is likely to contribute to an environment in which individuals expect differences in perspectives and work harder to assimilate different ideas.

As former U.S. President Bill Clinton said, "We make the best decisions when we talk to people who know things we don't and understand things differently." Ultimately, we hope our differences will result in better policy. ■

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This article is based on Ann Mari May, Mary G. McGarvey, and Robert Whaples, 2013, "Are Disagreements among Male and Female Economists Marginal at Best? A Survey of AEA Members and Their Views on Economics and Economic Policy," Contemporary Economic Policy. *doi: 10.1111/coep.12004.*

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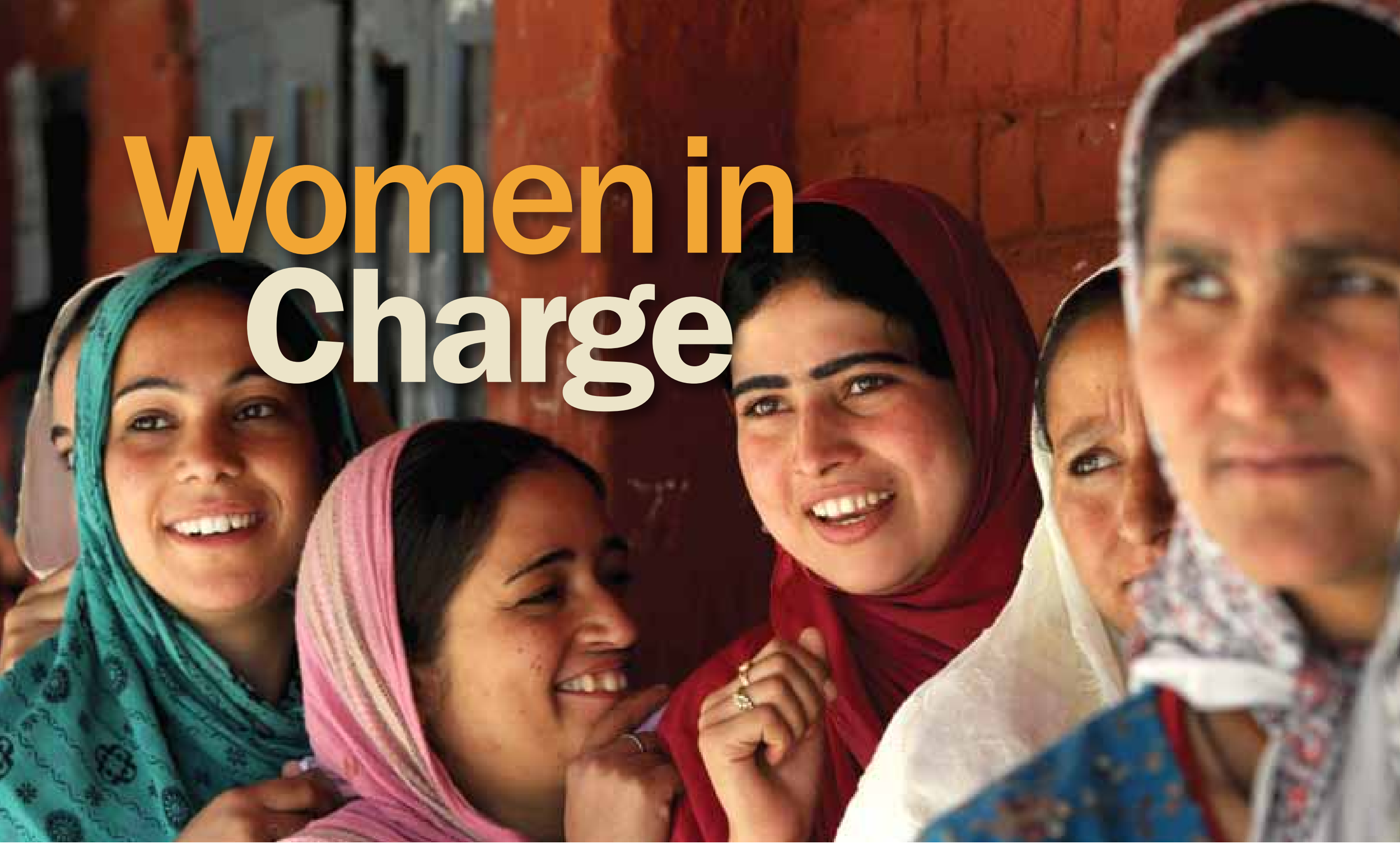
Women in Charge



Women line up to vote in local elections, Srinagar, India.

A policy experiment in India suggests that placing female leaders in positions of power can dramatically change public attitudes

Rohini Pande and Petia Topalova

IN her opening address to the United Nations Fourth World Conference on Women in 1995, Aung San Suu Kyi said: “There is an outmoded Burmese proverb still recited by men who wish to deny that women too can play a part in bringing necessary change and progress to their society: ‘The dawn rises only when the rooster crows.’ But Burmese people today are well aware of the scientific reasons behind the rising of dawn and the falling of dusk. And the intelligent rooster surely realizes that it is because dawn comes that it crows and not the other way round.”

The Conference resulted in the 1995 Beijing Platform for Action, compelling governments to enact legislation to include women at all levels of power and decision making, including parliaments.

A policy experiment in India did just that, dramatically increasing the political representation of women at the local government level through quotas. We examined this trial and concluded that once women are in charge, they can significantly change public attitudes and dispel the belief that the dawn doesn’t rise unless the rooster crows.

Gender gap

Although the World Economic Forum’s 2012 *Global Gender Gap Report* showed greater equality between the sexes in human capital investments and economic opportunities, female underrepresentation persists in political leadership positions and in the highest-paid jobs. UN Women (2011) reported that in 2011, only 19 percent of parliamentarians worldwide were women, and a woman headed the government in only 19 countries. The numbers are even lower in big business: on the Fortune 500 2012 list, women held 4.2 percent of chief executive officer (CEO) positions. (See Chart 1.)

Both supply- and demand-side explanations have been offered. Preexisting social norms and gender stereotypes serve to bias bosses and voters against appointing women as leaders (Huddy and Terkildsen, 1993; Eagly and Karau, 2002). Lack of exposure to female leaders, in turn, perpetuates biased perceptions of women’s effectiveness in leadership roles. Women themselves might not believe in their ability to lead, since they rarely see other women succeed in such positions. They may also leave high-power career tracks to have children (Bertrand, Goldin, and Katz, 2010).

Quota system

Today more than a hundred countries have chosen to respond to gender disparities in the political arena by instituting quotas for women, and a nascent movement in Norway has spread to other European countries, instituting quotas for women on corporate boards. Both initiatives have met with controversy. While debate over board membership is mainly about whether quotas will reduce efficiency, debate in the political arena focuses on concerns that quotas for women may actually crowd out other disadvantaged groups and that women's policy preferences, which may differ from those of men, may lead them to change the status quo, undermining the privileges of some groups.

Those who promote quotas see them as having societal benefits that justify some short-run distortions. They hope female leaders will bring about long-term changes in women's status in society by changing perceptions of their capabilities. The first women who become leaders may also shape parents' and children's beliefs about what women can achieve, helping to close the gender gap in other areas of life. Yet we still know very little about how effective quotas are. Can a public policy that forcibly changes the gender balance in leadership really influence voters' belief systems? Can it lead to an acceptance of women as leaders? And can it improve girls' confidence and increase their aspirations to study, have a career, and become a leader?

Policy experiment

In an unprecedented effort to increase women's political voice, India amended its constitution in 1993 to reserve for women one-third of the seats at every level of local government. The quota dramatically raised the number of women among local leaders, from fewer than 5 percent in 1992 to close to 40 percent in 2005. The way the quota was implemented allowed our research team to conduct a very clean evaluation of the system's effectiveness. We focused on West Bengal; there, as in most Indian states, one-third of village councils were randomly selected in every election to reserve the position of chief councilor, or *pradhan*, for a woman.

The fact that villages were selected randomly ensured that any difference observed across the reserved and unreserved councils after implementation could be confidently interpreted as the causal effect of having a female leader. Moreover, there were concurrent reservations for historically disadvantaged caste and ethnic groups. This meant that between the system's implementation in 1998 and our data collection in 2007, a village council could have been reserved for a female leader once (in 1998 or 2003), twice (in both 1998 *and* 2003), or never. This gave us the opportunity to study the impact of different lengths of exposure to a female leader.

Mandated exposure to female leaders helped voters understand that women can be competent leaders.

We surveyed households in 495 randomly selected villages in Birbhum, a largely rural and poor district about 200 kilometers from Kolkata. We interviewed separately one male adult, one female adult, and all adolescents (ages 11 to 15) in each of the roughly 7,000 sample households. We asked respondents detailed questions about their educational attainment and how they use their time. We also asked them to evaluate their pradhans and a set of hypothetical leaders. Parents had the chance to discuss the aspirations they held for their children, while adolescents reported their hopes for themselves. Along with the survey, we collected data on who was elected in May 2008 as pradhan in six districts in West Bengal and on those elected as village council members in our study district of Birbhum.

Changing perceptions

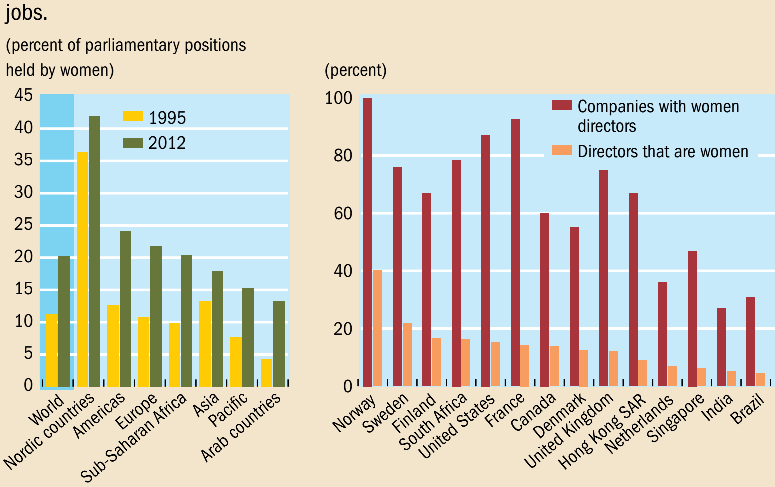
Our first finding was that female leaders dramatically changed voters' perceptions of the effectiveness of women in leadership roles; however, this change happened only after repeated exposure.

In a paper published with our coauthors in *The Quarterly Journal of Economics* (Beaman and others, 2009), we demonstrate that mandated exposure to female leaders helped voters understand that women can be competent leaders. To tease out voters' attitudes toward female leaders in general, we asked villagers to listen to a recorded speech delivered by a village councilor during a village meeting. Half of the respondents heard a female voice deliver the speech

Chart 1

Women leaders

Female underrepresentation persists in political leadership positions and high-paying jobs.



Sources: Inter-Parliamentary Union (2012), Table 2; and Corporate Women Directors International, 2010, "Accelerating Board Diversity," in Natividad (2010).

and the other half heard a male voice. We then asked the respondents to rate the pradhan based on the speech. We also read each respondent a vignette about a hypothetical leader making decisions about future investments and, again, varied randomly the gender of the leader depicted in the story.

There was a sizable gap in how voters perceived the effectiveness of a leader, based simply on the leader's gender. In villages that had never had a woman pradhan, the hypothetical female leaders were rated as significantly less effective than the males (see Chart 2). However, among male voters who had observed at least one female leader as a result of the quota system, this gap disappeared—in fact, if anything, these male villagers rated the hypothetical female leader *higher* than the identical male leader.

Survey data showed that voters' perception of their own leader followed a similar path. The first time villagers experienced a woman leader, they were more critical of her than of her male colleagues. This likely reflects the inherent prejudice against women in leadership roles, because along all objective measures, female leaders performed as well as men, if not better. By the time villagers were exposed to a woman pradhan for the second time, they rated her on par with her male counterparts.

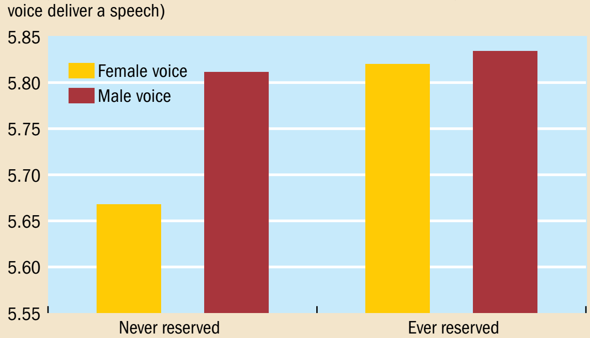
However, while voters' *beliefs about efficacy* were malleable, their *preferences for male leaders* were not. Applying a widely used tool in the social psychology literature, we conducted a series of computer-based Implicit Association Tests. We measured the extent of gender-related stereotypes for occupation, as well as the preference for leaders of different genders. Similarly to the results from the speech and vignette experiments, exposure to female leaders significantly reduced male villagers' gender stereotypes, as captured in the strength of their association of leadership activities with men. However, there was no effect on respondents' preference for their leader's gender. Men exhibited both implicit and explicit preferences for male leaders, and their distaste for female leaders did not lessen as a result of being exposed to women pradhans. Even

Chart 2

Changing minds

Indian voters perceive women leaders as less effective, but this bias diminishes with exposure to female leaders.

(rating of a *pradhan* on a scale of 1 to 10; after randomly hearing a female or male voice deliver a speech)



Source: Authors' calculations and Beaman and others (2009).

Note: "Never reserved" refers to villages that have never been reserved for a female pradhan. "Ever reserved" refers to villages that were reserved for a female pradhan in the 1998 and/or the 2003 local government elections.

a rooster who understands the science of dawn and dusk may still want to be the only one who crows.

Despite the lack of change in deep-seated social norms, women faced significantly better prospects in elections open to both genders as a result of the quotas. Women were much more likely to compete in 2008 village council elections in places where the pradhan position had been, but was no longer, reserved for women. Almost twice as many women ran for and won these positions where the pradhan seat had been reserved for women in the previous two elections, relative to councils that had never reserved seats. The share of female pradhans was 11 percent in councils where the pradhan position had never been reserved and 18.5 percent in councils that were continuously reserved for a woman pradhan between 1998 and 2007. These electoral results suggest that, even though deep preferences and social norms may be difficult to change, mandated exposure to female leaders helped voters understand that women can be competent leaders, and they then voted based on this changed perception rather than on preference.

Raising aspirations

Our third and perhaps most important finding was that female leaders raised the aspirations parents have for their girls and the aspirations teenage girls have for themselves.

We used survey questions to measure aspirations in four areas: desired educational attainment, desired age of marriage, preferred occupation at the age of 25, and desire to one day be elected pradhan. Our findings, published in *Science* (Beaman and others, 2012), show that in areas that were never exposed to a female leader, there was a large gap between what parents wanted for their boys and for their girls. For example, these parents were almost 50 percent less likely to state that they would like their girl to graduate or study beyond high school relative to their boy. However, in villages that had a female leader for two election cycles, the gender gap in aspirations decreased perceptibly (see Chart 3). Parental aspirations for boys did not change, so the entire decline in the gap is driven by greater hopes for girls. Similarly, the aspirations of adolescents themselves were affected by the presence of a female leader for a second cycle. In villages where positions for female leaders were not reserved, boys were more ambitious than girls, although the gender gap was less pronounced than among the parents. Repeated exposure to female leaders shrank this gap by raising the aspirations of girls. In villages that were reserved in both 1998 and 2003, adolescent girls were more likely to want a career and delay marriage.

This rise in aspirations for girls was accompanied by real-world improvements in educational attainment and time use. Boys began with a slight advantage relative to girls in terms of probability of attending school, ability to read, and grade completed; however, this gap was *entirely erased* in areas with female leaders for two electoral cycles. Girls also spent less time on household chores. In never-reserved villages, girls spent almost 80 minutes more than boys on domestic chores, whereas in villages reserved twice, the difference between girls and boys was one hour.

There are two possible channels through which female leaders can change the aspirations of girls: by undertaking policies that make it easier for women to succeed, or simply by providing a role model of a successful woman. It is very likely that these two effects coexist, and empirically it is almost impossible to distinguish between them. In the particular case of India, we find reasonable evidence to suggest that female pradhans did not have sufficient power to greatly influence the educational and career prospects of women in their villages. Therefore, the most important channel through which female leaders affected parents' and girls' aspirations is likely the role model effect.

Lessons learned

India's experience demonstrates that putting women in leadership positions can catalyze change. Although the first generation of women leaders may encounter significant prejudice, their presence causes voters to realize that women have the ability to lead effectively, thus paving the way for others to go farther. Also, female leaders' impact reaches beyond their ability to alter the situation through direct policy actions, into the realm of aspirations, which may lead to enduring change. Female leaders can serve as role models for future generations, shaping parents' and children's beliefs about what women can achieve. This role model effect can help close gender gaps in other realms because, as we've seen, higher aspirations translate into greater actual investments in girls by their parents and themselves.

Changing societal norms is not, however, a case of quickly showing that the rooster's crow doesn't raise the sun, and banishing a false belief forever. It took 10 years of mandated reservations for women to bring about the changes we saw. After one electoral cycle, some of these changes were nonexistent or barely perceptible. Policy that is not kept in place may lose its grip on a population, giving way to old biases. Our findings suggest that achieving gender equality in leadership—and, possibly, the workforce—will require sustained policy actions that favor women over a long time. ■

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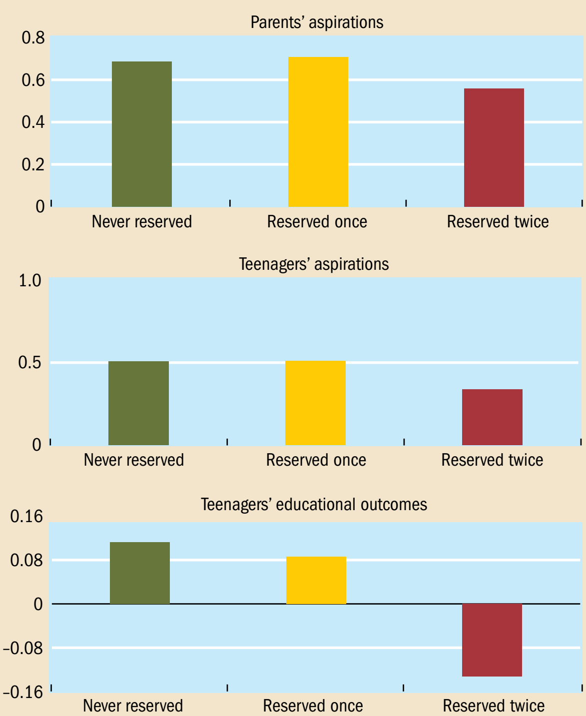
This article is based on research the authors conducted in collaboration with Lori Beaman, Raghab Chattopadhyay, and Esther Duflo (Beaman and others, 2009) and with Lori Beaman and Esther Duflo (Beaman and others, 2012).

Chart 3

Dreaming bigger

Exposure to female leaders boosts parents' and girls' aspirations and girls' achievements, reducing the difference between boys and girls.

(difference between aspirations/educational attainment of boys and girls, standard deviation)



Source: Beaman and others (2012).

Note: "Never reserved" refers to villages that have never been reserved for a female *pradhan*. "Reserved once" refers to villages that were reserved for a female pradhan either in the 1998 or the 2003 local government elections. "Reserved twice" refers to villages that were reserved for a female pradhan in both the 1998 and 2003 local government elections.

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Ready to Bloom?

Mark Blackden and Mary Hallward-Driemeier

Employment in high-return activities is the pathway to economic empowerment for African women

TANZANIAN businesswoman Dina Bina has been running and promoting Dina Flowers Company Ltd. for over a decade. She emphasizes customer care: "You should go out of your way to do something extra." It paid off for her when she was offered a contract to help do the landscaping at Dar es Salaam International Airport. When her husband, Mwita Bina, saw how the company was thriving, he left his own job to join Dina Flowers and is now its chief financial officer. "We went into the flower business because of Dina," he says. "She noticed an opportunity, because there were hardly any florists in town." Mwita's salary provided the start-up capital for Dina Flowers. Of his wife's success, Mwita says, "I suspect there are a lot of men who would be threatened. But I am not one of those. For us it's worked well in that we really complement each other."

As the story of Dina Flowers (Cutura, 2007) illustrates, women's success in business depends on the convergence of many factors, including a market opportunity, adequate financing, entrepreneurial and technical skills, and networking. These matter for men's businesses too, but evidence shows that women often face greater obstacles in accessing them. And, especially for women, family support can be critical. In fact in several countries, husbands can legally deny their wives permission to work, sign a contract, or even open a bank account.

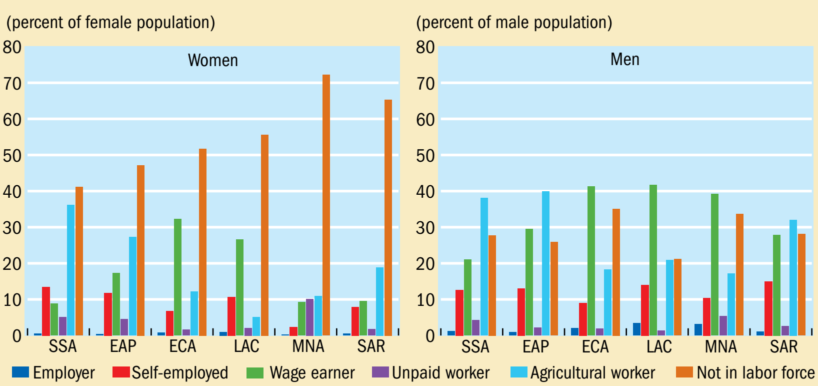
Two recent World Bank studies focusing on women's economic opportunities in sub-Saharan Africa examine where women and men work, how women's businesses perform compared with men's, and the economic and legal obstacles women must overcome if they are to expand their economic and entrepreneurial activity (Hallward-Driemeier and Hasan, 2013; Hallward-Driemeier, 2013).

These studies find that gender gaps in economic opportunity in the region stem less from whether or not women work than from differences in the types of activities women and men pursue. Women are much more likely to work in the informal sector, in smaller enterprises, and in traditional industries such as garment making and food preparation—all of which tend to pay lower returns. Expanding women's economic empowerment is about enabling more women to operate in activities

Chart 1

Where women and men work

Women are more likely to be working and to be entrepreneurs in sub-Saharan Africa than elsewhere in the world.



Source: Household and labor force surveys from 102 low- and middle-income countries, most recent year, 2000–10.
Note: SSA = sub-Saharan Africa, EAP = East Asia and the Pacific, ECA = Europe and central Asia, LAC = Latin America and the Caribbean, MNA = Middle East and North Africa, and SAR = South Asia.

that offer higher returns. This requires addressing constraints on women's access to assets, expanding women's financial and managerial training, and involving more women in the policy-making environment.

Women in sub-Saharan Africa work. Few can afford not to. Nationally representative labor force and household survey data from over 100 low- and middle-income countries show that women's labor force participation rates are higher in sub-Saharan Africa than in any other region (see Chart 1).

In sub-Saharan Africa, women are particularly active as entrepreneurs. However, they are disproportionately self-employed. Women make up 40 percent of the region's nonagricultural labor force, but account for nearly 50 percent of the self-employed (see Chart 2)—the highest share in any region. By contrast, women represent only one-fourth of the region's employers, a share that does not change much with a country's level of development and is mirrored in all other regions except the Middle East and North Africa, where there are even fewer women employers, about 12 percent. In general, as a country's income increases, women's share in wage employment rises dramatically.

Education and opportunity

The extent to which entrepreneurship represents opportunity varies with a country's level of development and an individual's education. Dina and Mwita Bina in Tanzania are both well educated, which facilitated their success in the business world.

One way to look at this is to compare the levels of education between different categories of employment. In virtually all countries, wage earners have more years of education on average than those who are self-employed (see Chart 3, which shows the pattern for women—a similar pattern is observed for men). The gap in education between wage earners and the self-employed is greatest in low-income countries and where self-employment is higher, namely in sub-Saharan Africa. This suggests that women's high level of self-employment in sub-Saharan Africa is less a reflection of strong opportunity in entrepreneurial activity than of lack of opportunity for wage employment.

In high-income countries, wage earners are generally less educated than employers (see Chart 3: most markers for rich countries are in the lower left quadrant), but in low-income countries the reverse is true (more markers in the upper right quadrant). Indeed, the education gap for female wage earners and employers is greater than for male wage earners and employers in low-income countries (blue circles above the 45-degree line). In low-income countries, few women work for wages, and those who do are relatively more educated than their male colleagues.

In low-income countries in sub-Saharan Africa, where men are three times more likely to be in wage employment than women, women's opportunities are concentrated in entrepreneurship. So to understand women's economic opportunities, it is useful to compare how women and men entrepreneurs perform, and how to expand the returns to this type of economic activity.

We find, on average, that women's businesses are less productive than men's, using "ownership" as the criterion for identifying "women's businesses" (see box). But once the sector of the enterprise, its formality, its size, and its capital intensity are taken into account, the gap disappears.

If a woman's enterprise is defined more narrowly as one in which a woman is the decision maker, there are wider performance gaps in productivity and profitability. But the effects of sector, formality, and size overwhelm gender differences. Where gender differences are significant is in determining where men and women work in the first place.

Sorting economic streams

The greater concentration of women in smaller firms, in the informal sector, and in traditional women's industries shapes women's opportunities and potential much more than any differences based on gender. Better understanding of why these gender-distinct patterns of economic participation persist is essential to building economic opportunity for all in Africa.

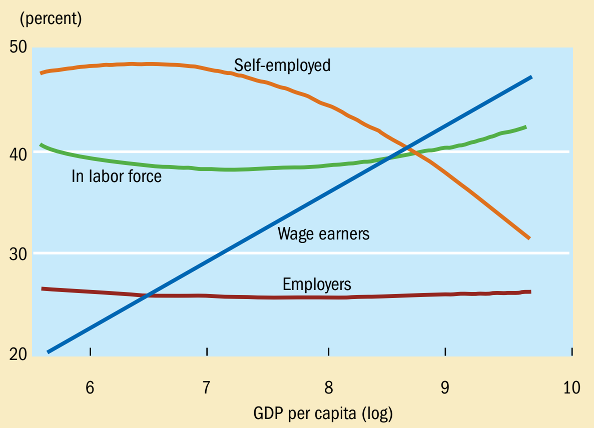
Owning or controlling

One challenge when looking at data is how to identify a "woman's" business—one that has female ownership or decision-making control. In the World Bank's Enterprise Surveys, respondents are asked whether "any of the principal owners" are women. In a follow-up survey, in six African countries, of companies that reported a woman among the principal owners, one-third did not consider her a decision maker, and fully half did not consider her the primary decision maker (Aterido and Hallward-Driemeier, 2011). A broad definition of ownership but not of control or decision-making power means that many enterprises are classified as women's businesses when men in fact run them. This can lead to comparisons that mute potential gender gaps in the constraints that entrepreneurs face.

Chart 2

Salary women

Women's share of wage work rises with income as women's representation in self-employment falls.



Source: Based on data from most recent household and labor force surveys on employment in nonagricultural activities in 102 low- and middle-income countries.

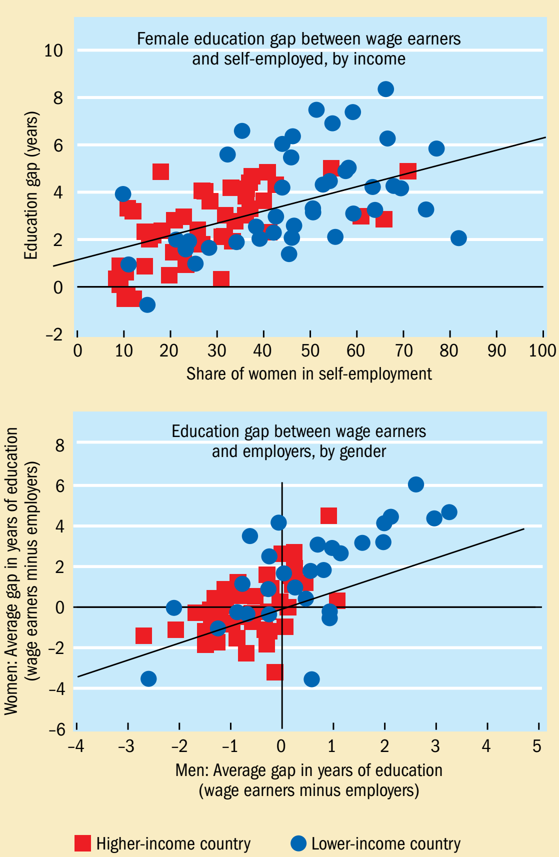
More opportunity for women is not about increasing their economic participation itself, but rather shifting the type of activities they undertake. To expand women's economic empowerment in sub-Saharan Africa, more women must move into higher-return activities.

The absence of significant gender-based barriers once businesses are operating does not mean that there are no gender-based obstacles to entrepreneurship. There is evidence that barriers to *entry* into entrepreneurship present greater obstacles for women than for men. Measures that improve access to markets and to finance for smaller firms and those in the informal sector would disproportionately help women entrepreneurs. The spread of information and communications technology, and of mobile phones in particular, is one such step: this technology provides information on prices, easier access to customers and suppliers, and access to mobile banking. However, women's access lags men's even in this area (GSMA, 2010). Other steps to reduce barriers include streamlining regulatory requirements (business registration, licensing), curbing corruption, and facilitating the formalization of small firms. But these steps will help women only if the legal protections afforded by the formal sector apply in equal measure to men's and women's businesses, which is by no means always the case.

Chart 3

Taking a chance

Entrepreneurship represents more of an opportunity for wealthier and more educated women than for their poorer, less-educated peers.



Source: Hallward-Driemeier (2013).

Equal rights

Equal access to and control of assets are critical. Without property rights or the ability to retain the returns of one's efforts, there is little ability—or incentive—to invest and work hard. Yet it is precisely in the areas of property rights and legal capacity that the law explicitly differentiates between women and men in many countries.

We analyzed provisions in constitutions, international conventions, and statutes that affect women's property rights and legal capacity in sub-Saharan African countries to map out where, and in which areas of the law, women have the same economic rights as men. We were surprised to find that gender gaps in economic rights are not correlated with a country's level of income. That means a country will not automatically become more equal as it grows; closing gender gaps requires deliberate actions.

If gender gaps in economic rights persist, they affect women's opportunities, even as incomes rise. In richer countries, more women move from self-employment to wage work, but not necessarily to becoming an employer. The share of women who are employers does not vary with income. However, regardless of income, the stronger women's economic rights, the greater the share of female employers. Controlling for income, women in countries with unequal property rights and legal capacity (for example, where a husband's permission is needed to work or enter into contracts or where customary law governs marital property and inheritance and is constitutionally exempt from principles of nondiscrimination) were one-third less likely to be employers (Hallward-Driemeier and Hasan, 2013). Addressing formal economic rights helps women rise and run larger companies.

The Women's Legal and Economic Empowerment Database for Africa (Hallward-Driemeier and others, 2013) documents where these gaps are—not only across countries, but also across sources of law and types of statutes. Business regulations rarely have gender-differentiated provisions. But these laws and regulations all presuppose that the parties can enter into contracts, move freely, and own property or control assets in their own name. It is family, inheritance, and land laws that define rights regarding legal capacity and property ownership. And it is precisely in these areas of the law that gender differences, including outright discrimination, are most apparent (see Hallward-Driemeier and others, 2013).

Dina Bina was fortunate that she did not need her husband's permission to set up her business and was able to obtain start-up capital through her husband. In countries where women do not have the same inheritance and land ownership rights as men, they may lack collateral for bank loans. Strengthening property rights thus improves women's access to finance, as do property registries that include movable property; credit registries that capture women's credit and repayment histories, especially in the area of microfinance; building human capital and financial literacy; and developing financial products and mechanisms that specifically address women's needs and constraints.

Gender gaps in years of schooling have been declining over time, though they remain a concern in many low-income countries. But beyond general education, specific management skills, including financial literacy and the ability to set and monitor performance goals, are important—for companies and employees. Women are less likely to learn these critical skills through formal programs or informal family networks (Aterido and Hallward-Driemeier, 2013). But they certainly benefit from such skills training. In the surveys we conducted, women who scored as well as men on tests of management skills ran businesses that were as successful as men's.

and knowledge, particularly about economic rights; strengthening advocacy for reforms by educating and influencing decision makers; and building partnerships among key stakeholders to share experiences and strategies and to amplify the voices of women in policymaking. Strengthening women's business associations is therefore a critical task, so that they can help their members improve their business practices and performance and also play a more active role in policy dialogue and lobbying for reforms.

Third, strengthening dialogue between the public and the private sectors in projects to improve the business environment is one of the best ways to ensure that policy reforms reflect the priorities of all stakeholders and will be implemented. To date, however, women's businesses and their associations have been largely absent from such dialogue. Gender inclusion can help ensure that women's voices are heard as investment reform priorities are developed and implemented.

More opportunity for women is not about increasing their economic participation itself, but rather shifting the types of activities they undertake.

It is critical for women to be active in business climate reform, not only because they themselves are strongly engaged as entrepreneurs, wage workers, and employers, but also because the obstacles and constraints they face—and their perspective—often are quite different from those of their male counterparts. Women tend to have different experiences of legal, regulatory, and administrative barriers to economic participation. At the same time, they are largely excluded from policymaking in the private sector and from dialogue between the public and private sectors. Consequently, women's presence in the private sector, as important economic actors in their own right, is not matched by their representation in private policy- and decision-making institutions. This exclusion is costly, not just to individual women and their businesses, but to the economy as a whole.

Women's greater engagement in business climate reforms can be supported in three key ways.

First, advocacy for policy reforms needs to be grounded in solid, country-focused analysis of opportunities and constraints in the business environment and, specifically, of how these differ for men and women. The importance of evidence-based research and analysis as the foundation for effective lobbying for policy change cannot be overstated. Some policymakers and practitioners still have to be persuaded that addressing women's issues in business is important in its own right and that doing so can have valuable payoffs for the business sector and the economy as a whole.

Second, women's involvement in business associations needs to be encouraged and strengthened. Such associations provide an important platform for advocacy, but many women are not involved in mainstream dialogue and advocacy and often lack the capacity and experience to undertake this work effectively. Women's business associations are at the intersection of three key mechanisms for improving women's business opportunities: providing and sharing information

Dina Bina's resume includes membership in various organizations, including the Tanzania Women's Chamber of Commerce, and she attributes part of her success to networking. "It is good to be part of an association, and I am encouraging young women to do it," she says. Her advice is an important first step: involving women in the creation of a business environment that is favorable to all, men and women. ■

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Connections on WALL STREET

Lily Fang

Are male and female analysts evaluated on the basis of different criteria?

SINCE the 1980s, women have outnumbered men among college graduates in OECD countries. Today, in the United States, even in law and medical schools, women account for about half of the class. Since 2010, women have been the majority of the U.S. workforce. Judging from these trends, women's advancement in education, labor participation, and economic empowerment is one of the past few decades' most significant social changes.

But this progress hides some stubborn facts. In particular, the ranks of women business leaders remain woefully thin, and women still face a glass ceiling in the corporate world.

Thin at the top

Just look at the statistics for the "C-suite"—top corporate jobs such as chief executive officer (CEO), chief operating officer (COO), and chief financial officer (CFO). In 2011, only 8 percent of CFOs and 1.5 percent of CEOs of large U.S. corporations were women, compared with 3 percent and 0.5 percent, respectively, in 1994. Yes, this is a huge increase over that period. But the percentages have not increased much over the past five years, and the low absolute figures contrast sharply with women's advancement in education and labor force participation.

The stubbornly low female presence in the C-suite reflects women's broader lack of progress in business. Even though women pulled ahead of men in entering medicine and law, female enrollment in master of business administration (MBA) programs has been stagnant: it has hovered around 35 percent for more than a decade and shows no sign of increasing. According to industry-matched compensation data compiled by *Bloomberg Businessweek*, female MBA graduates earned a smaller percentage of their male counterparts' salary in 2012 than in 2002. Women lost ground on pay in 8 of the 11 most popular industries: the average pay gap widened from just under 3 percent to almost 7 percent over the decade (Damast, 2013).

There are many explanations for gender differentials in the business world. The wage gap reflects in part the different types of jobs men and women do, even in the same industry: client-based work involving travel versus office-bound back-end work, for example. But the glaring difference between the number of women who graduate from college (and business school) and the number who eventually make it to the top of the business world reveals the glass ceiling women still face: women are promoted far less frequently than their male classmates.

Why is the business world still unfriendly to females, even after decades of promoting gender—and other forms of—diversity? Part of the answer lies in work-life balance and female attrition in the corporate world. Many promising young women quit work when they start to have children, and a large number find it difficult to regain the same position and momentum if and when they return. Some argue that women are not aggressive enough in self-promotion. Lois Frankel writes that "nice girls don't get the corner office" because they don't ask (Frankel, 2010). Sheryl Sandberg, COO of Facebook, argues that women don't "sit at the table" enough and don't raise their hands enough (Sandberg, 2010).

Frankel, Sandberg, and other powerful women argue their positions with eloquence. But these views implicitly suggest that women themselves are at least partly to blame for the problem: choices women make to drop out of the workforce or not seeking promotions have negative consequences for their career path—hence, the observed glass ceiling.

Patterns on Wall Street

But there might be another factor that has nothing to do with women's choices. It simply reflects the fact that women and men are evaluated—and promoted—by different criteria. I myself was surprised by this finding, after examining how stock analysts are evaluated and promoted on Wall Street.

Wall Street is a fascinating place to study gender and performance evaluation. First, although it is legendarily male dominated, after decades of promotion of gender diversity, women account for close to 20 percent of Wall Street analysts—a proportion much higher than the female presence in the corporate C-suite. Second, Wall Street is notoriously clubby. Thus, "who you know," or your social network, can make a big difference in performance and career outcomes. Third, Wall Street is highly competitive. The difference between success and failure is the difference between making millions of dollars and losing one's job.

With the help of my doctoral student, Sterling Huang, I examined male and female analysts' performance—how accurately they forecast companies' earnings and made stock recommendations—and their career outcomes. On Wall Street, one ultimate success indicator—and therefore the career outcome measure we looked at—is the "all-star" status awarded by the influential *Institutional Investor* magazine based on an annual survey of thousands of investment managers who are asked to vote for the best analysts of the year. The resulting all-star list has a huge influence on analyst pay: winners of the title, on average, make about three times what nonwinners do.

We were particularly interested in whether and how analysts' "connectedness" influences their career outcomes. We measured connectedness by whether analysts have an alumni tie to at least one director or senior officer of each company they cover. We found a number of interesting patterns in our sample of thousands of analysts spanning 17 years (1993–2009).

Female analysts are, on average, better educated than their male colleagues, at least as measured by the number with Ivy League degrees. Nearly 35 percent of the female population are Ivy Leaguers, compared with 25 percent of men. This figure is consistent with the idea that only the most competitive female graduates enter the Wall Street labor market.

Female analysts, on average, tend to cover slightly fewer firms than men. This is perhaps a reflection of the challenges for women in maintaining work-life balance.

Surprisingly, female analysts are, on average, just as connected as their male colleagues: they share a school tie with a senior officer or board member in about 25 percent of the firms they cover.

Finally, there is no overall gender bias in the odds of becoming an all-star analyst: women account for about 12 percent of the overall analyst sample and about 14 percent of the all-star sample. Not only is this good news because it indicates gender equality, but to economists it also means that the two samples are similar enough to yield meaningful inferences.

Different criteria

But this is where the symmetry ends. When we examine analysts' connectedness and its impact on their career advancement—that is, whether they are voted all-stars—we find an intriguing asymmetry.

For women, we find that performance forecast accuracy is important: making inaccurate forecasts hurts a female analyst's chance of being voted an all-star. We also find that Ivy League degrees and years of experience matter, and both contribute positively to the odds of being voted an all-star. After accounting for these factors, however, connections, per se, do not matter for female analysts.

For men, however, we find almost the opposite. Connectedness remains one of the strongest factors that enhance men's odds of being voted an all-star, even after accounting for forecast accuracy and Ivy League attendance. In fact, the latter two factors have no significant impact on men's odds of being voted an all-star.

The interesting thing about our finding is the *asymmetry* in the factors influencing men's versus women's likelihood of being voted an all-star. For women, forecast accuracy and education mattered. For men, neither was very important; rather, connections mattered. Interestingly, this is not an "Ivy League effect." If it were, women would have the upper hand: in our sample, more of them attend Ivy League schools than do men. Our results show that for women it is performance or demonstrated competence (proxied by high educational achievement) that matters, while for men it is soft information, such as their connections.

Our results show that for women it is performance or demonstrated competence that matters.

I am not a feminist nor an expert on gender issues. I stumbled on these findings virtually by accident as a result of my curiosity as a financial economist. But they have helped me understand a number of patterns.

For example, while 14 percent of Wall Street all-stars are women, virtually none of the top bosses in any of the big firms are. Where did all the highly educated, highly connected, and high-potential women go? They largely remain in analytical roles rather than being promoted into general management, which entails subjective evaluations.

There is slow progress, even in the C-suite. A recent Bloomberg article reported that in 2012, the number of women CFOs at Standard and Poor's 500 companies increased 35 percent, from 40 to 54, to a record high of 10.8 percent.

But moving to the top remains difficult. The proportion of women CEOs remained at 4 percent in 2012, also a record but one that has not changed for five years. The asymmetry in women's success at breaking these two C-suite glass ceilings is telling: it is far easier for women to demonstrate technical and measurable skills than to overcome potential bias in subjective qualitative evaluations. ■

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Dare the Difference

More women at work means good news for the global economy

Christine Lagarde

Christine Lagarde is the IMF's Managing Director.

THE world has changed in dramatic and sometimes unexpected ways since I was a girl. Plenty of changes have been for the better—improvements in technology or medicine for example. Others have not helped. In particular, I worry about inequality and the environment. The evolving situation of women at work is also very important to me. It is one area where there has been tremendous progress, yet not nearly enough. More troubling, progress appears to be faltering.

There are, of course, enormous differences in the condition of women around the world. Far too many are still fighting for the most fundamental of human rights—safety, health, education. These women are always on my mind and we should do all we can to support them.

For them, striving for gender balance at work or in business is far from the most pressing issue. However, whether it is the fight for fundamental rights or the fight for equal status in the workplace, I believe it is part of the same story. We are all trying to remove obstacles and create opportunities that will allow women to achieve their full potential and, in doing so, help lift us all to a higher economic growth plane.

Glass struggles

Despite overwhelming evidence that gender inclusion makes economic, business, and social sense, we are not closing gender gaps fast enough. Women still face glass ceilings, glass walls, and even glass cliffs.

I hear this again and again from women I meet when I visit IMF member countries: around the world there is still too big a gulf between the opportunities available to men and women. Put simply, women are less likely than men to join the job market, women still earn less than men, and women are much less likely to reach top management positions.

Women may be half the working-age population, but they represent less than one-third of the actual labor force. The bigger worry, as plenty of recent commentary points out, is that progress toward gender equality seems to have stalled. For a decade or more, women's participation in the workforce has been stuck at about 50 percent, whereas male participation has remained consistently—and comfortably—close to 80 percent.

These global averages mask wide regional variations. The situation is starkest in the Middle East and North Africa, for example, where about 80 percent of working-age women do not participate in the labor market.

Even when let into the labor market, women too often remain second-class citizens. Women in paid employment still earn less than their male colleagues—even when doing the same work. The gender pay gap is about 16 percent in the advanced and emerging market member countries of the Organization for Economic Cooperation and Development.

We also know that the share of women shrinks the further you go up the management ladder. For example, women hold fewer than 14 percent of corporate board seats in the European Union, and fewer than 10 percent of chief executive officer positions in Fortune 500 companies.

The global crisis has complicated this picture. The crisis has certainly taken a toll on both men and women, but some indicators point to further trouble for women at work. If precrisis employment trends had continued, there would have been nearly 29 million more people in the labor force in 2011. Falling participation among women accounts for two-thirds of this shortfall.

Unfinished business

That leaves us with a lot of unfinished business. We must do what we can to keep things moving in the right direction—and faster if possible.

As a matter of principle, embracing gender equality is the right thing to do. That should be reason enough. But there is also plenty of research that shows that gender balance is critical for the effectiveness of our work and our economies.

No matter what aspect the research focuses on—women's economic engagement, risk taking in business, management and leadership—the findings amount to the same thing. By not fully engaging half of the population, we all lose out.

Five hopes for the economy

So how can we turn lose-lose into win-win? Here are the five factors that I find most compelling.

1. Women help economic growth. In many countries, growth could be much higher if more women were in paid employment. In Japan, for example, raising female labor force participation to northern European levels would permanently raise per capita GDP by 8 percent. Increasing women's employment rates in line with those of men would boost the level of GDP: 4 percent in France and Germany by 2020, and up to 34 percent in Egypt.

2. Women bring a better balance of risk and reward in business and finance. I have joked that a "male" culture of reckless financial risk taking was at the heart of the global crisis. Studies back this up. Men trade more often—some say 45 percent more often—and risk taking can be mapped to trading room profits and losses. Mixing the genders can help. Companies with more women on their boards have higher sales, higher returns on equity, and higher profitability.

3. Women are the next "emerging markets." Globally, women control about two-thirds of discretionary consumer spending. In the United States, that figure is more than 80 percent. It is simply good business and good policy to understand the market.

4. Women invest more in future generations, creating a powerful ripple effect. Women are more likely to spend on health and education, building human capital to fuel future growth and savings to finance it.

5. Women are agents of change. Women naturally bring a different voice to the table. As managers, women tend to be more open to diverse perspectives, more likely to sponsor and develop new talent, and more inclined to encourage collaboration. We need more of this approach. We cannot simply revert to business as usual or policy as usual. Diversity—in all its forms—can create a cradle of ideas and innovation.

For all these reasons, women should not be afraid of thinking, speaking, or operating differently—I call it "daring the difference."

Women in the Fund

Improving the position of women in the economy may not be central to the IMF's business, but it is relevant.

The challenges of growth, job creation, and inclusion are closely interlinked. The IMF is in continuous dialogue with its member countries on how to achieve stability and growth—importantly, growth that is inclusive and generates jobs.

Growth and stability are necessary to give women the opportunities they need. It is, however, a two-way street. Women's participation in the labor market is also a part of the growth and stability equation.

There are many policy actions that can help women join the workforce or start businesses: better and more affordable child care, more flexible work arrangements, improved access to finance, and legislating equal rights for women to own property. IMF staff members are not the experts in many of these areas—nor should they be. Yet the macroeconomic implications of these policies make them of importance to the IMF, and we can identify relevant issues, drawing on the expertise of others.

We cannot afford to leave half our resources, half our talent, and half our ideas untapped.

In other areas the IMF does have expertise and can help. We can seek out gender-smart fiscal policies by examining how taxes and government spending affect gender equality and opportunities for women. For example, higher taxes on so-called second earners in the family can reduce the incentives for women to work. Rethinking issues like these can offer a huge opportunity, particularly because the female labor supply is far more responsive than the male labor supply to such incentives.

We also need to help our member countries plan for the future. We know, for example, that many countries will soon feel the fiscal and growth effects of aging populations—and dwindling workforces. Mobilizing the untapped female workforce can be part of the solution.

Japan, for example, has a ready-made workforce of smart, well-educated women. Why waste it? Removing *disincentives* and expanding *opportunities* for women to work are important, something that Japan's Prime Minister Abe signaled by making these issues an integral part of his country's growth strategy.

Dare to achieve a more balanced world

Today the world faces complex economic and financial challenges. The issues we confront will only get bigger—enormous demographic shifts, the sustainability of our planet, and inequality pressing at the seams of our social fabric.

The status quo of women in work and society will not be enough to meet these challenges. I am not advocating a women-only solution. Nor am I suggesting that gender balance is a silver bullet for achieving sustained growth and stability. But we cannot afford to leave half our resources, half our talent, and half our ideas untapped.

Our future depends on a fundamentally different worldview that we can achieve only by fully including both men and women. The values, voice, and contributions of women can make a world of difference. Put simply, we cannot afford not to dare the difference. ■

Secrets of Their Success

Five women leaders share the stories of how they got ahead

ACROSS the globe, few women make it to top executive positions. Even as universities in many parts of the world are turning out more female than male graduates, there is still a troubling gender gap among those in positions of power. According to a 2009 study by the *Harvard Business Review*, only 1.5 percent of the chief executive officers of the world's top performing companies that year were women.

It's all the more interesting, then, to take a closer look at the few who have managed to beat the odds. *F&D* spoke with five women leaders to see what they consider the crucial ingredients of their success.

Some credit their parents with instilling sound values in them and serving as their inspiration. Others cite diligence, intellectual curiosity, and a tendency to question conventional wisdom as traits that set them apart. And unlike most people, these women rarely let obstacles deter them from achieving their goals. On the contrary, as one pointed out, adversity can be a source of motivation and strength.

Here are their stories.

MARIA DAS GRAÇAS SILVA FOSTER

CEO of Petrobras, Brazil

Looking out the window of her school bus on the way to high school, Maria das Graças Silva Foster gazed curiously at the Petrobras oil refinery and research center—one of many factories along an industrial corridor in Rio de Janeiro, Brazil—and felt the first spark of interest in a career in oil. After high school, she continued to pass the corridor on her way to engineering college, that initial seed having taken root in her choice of career.

She got her foot in the door at Petrobras by interning as an engineering student in that very research center, along the way earning degrees in chemical engineering and nuclear engineering as well as an MBA, all from Brazil's leading universities. She has stayed on for some 33 years, becoming its first female chief executive officer in February 2012. Graça Foster is one of only nine female CEOs among the heads of Latin America's top 500 companies.

Petrobras is an oil and energy giant. The company, Brazil's largest, has been in existence for more than 58 years. It is expected to double its 2012 production of more than 2 million barrels of oil and gas a day to about 4.2 million in 2020. Graça Foster is certain that this leap in production will also help fuel growth in the Brazilian economy, and she sees her role as CEO as helping to shape the country's development. Prior to serving as CEO, Graça Foster became the first female on Petrobras's executive board when she was appointed director of its Gas and Energy Division in 2007, a significant achievement in a company that hired few women as engineers as late as the 1970s.

Graça Foster credits that high school dream as the inspiration for her success in a largely male-dominated world of oil and gas. The key to advancement, she believes, is "being well prepared, studying hard, and having the necessary knowledge and courage to take decisions."

It's also vital for executives to keep their fingers on the pulse of the organizations they lead. "Great leaders are men and women who understand their employees, and are strong and supportive," she said. "Solidarity with peers—and a thorough knowledge of your company's operations—are two very important ingredients for effective leadership."

Reflecting on what advice she would give to other women who also have their eyes on the top prize, she observes that a leader "does not balk at difficulties, but uses them to build motivation and strength."

Niccole Braynen-Kimani

BARBARA STOCKING

Former chief executive, Oxfam Great Britain

From her days as a teenager in Rugby, England, Barbara Stocking began asking the questions that would eventually lead her to a career in international development. It was there that she caught a first glimpse of societal distinctions and class structure. "The difference in resources between my state school and the private school made me think about inequality, and I began to ask why things were this way," she says. Inspired by inequalities near and far from home—and also by parents who worked hard and gave back to the community—her eventual career path would reflect in roughly equal measure these influences from her formative years.

After studying natural sciences at Cambridge University in the 1970s, Stocking moved to the United States to work as a scientific researcher before getting a taste of international development work as part of a World Health Organization project in West Africa. In many ways, she saw the jump as a perfectly natural one, allowing her to apply her science and health knowledge directly in the developing world.

Back in the United Kingdom, she would eventually head up the international development and relief services agency, Oxfam—a post that she only very recently left after 12 years. Preparing her for the role as Oxfam's chief executive were her various leadership roles in Britain's National Health Service. "In many ways, my time with the health authority was very challenging—it seemed I needed to prove a woman could do the job as well as a man," she recalls. "At Oxfam, I felt far more comfortable, where it wasn't a surprise to have a woman in the role of chief executive—even if I was the first woman to hold the position."

It was at Oxfam that people outside Britain began to take note of her accomplishments, as Stocking reestablished the organization as one of the leading water, sanitation, and public health agencies in humanitarian response, including being at the forefront on gender, environmental, and accountability issues.

Still, she recalls times when her own gender seemed to be an issue: "I was attending the World Economic Forum annual meeting in Davos one year, and someone introduced me as head of Oxfam to the CEO of a large company, but he looked right through me as though looking for a man."

In July, she returns to Cambridge University as president of Murray Edwards College, one of two women's colleges at Cambridge. Stocking herself is a product of the college, back when it was known as New Hall. "It's such a privilege to take up the presidency of a college that puts a genuine emphasis on seeing women grow and develop to achieve their full potential and exceed even their own expectations."

Glenn Gottselig

DAMBISA MOYO

Economist and author

Zambian-born economist and author Dambisa Moyo is a bit of a star in the economics and business world. She has been recognized as one of the "top influential people" by *TIME* magazine, a "remarkable visionary" by Oprah Winfrey, and one of the "women who shake the world" by the *Daily Beast*.

Moyo is perhaps best known as an outspoken critic of international aid. In her 2009 bestselling book *Dead Aid: Why Aid Is Not Working and How There Is a Better Way for Africa,* she argues that Western aid efforts have done more harm than good, serving only to stifle development and perpetuate corruption. Since then, Moyo has published another two thought-provoking books—*Winner Take All*, about geopolitical shifts and developing trends in commodity market, and *How the West Was Lost*, which posits that the world's most advanced economies are squandering their economic lead.

Moyo's writings stir controversy in part because her credentials are as strong as her assertions. Born in 1969 in Lusaka, during one of the most turbulent times in Zambia's history, Moyo came to the United States to study at Harvard University and American University. She went on to work at the World Bank for two years before moving to the United Kingdom to pursue a Ph.D. in economics at Oxford. She spent the following decade working at Goldman Sachs.

Moyo's parents always placed a premium on education and, growing up, politics and economics were often debated at home, she says. As a result, she learned to question conventional wisdom at a young age.

What has been the driving force behind her many achievements? The acclaimed author credits her "insatiable curiosity about the world" as the prime reason for her successful career. "To my mind, the ability to learn, question, aspire, and improve oneself has been made significantly easier in a world where information is easily available," she says. "I try to take advantage of the remarkable period in which we live."

Moyo recognizes that a growing number of women like her are rising to key decision-making roles in government, business, and public policy, but she believes there is still a long way to go. "The representation of women at these levels remains woefully inadequate," she says.

It is clear that some progress has been made, she said, but more can be done to prepare future generations of women to assume more influential positions in all spheres of life.

As for the person who most influenced her path in life, she points to Nelson Mandela. "His approach for arguing for universal suffrage in South Africa was to focus on logic and evidence, and not merely to rely on the moral and emotional case," she says.

Lika Gueye

SUNGJOO KIM

Chief executive officer, Sungjoo Group

Sungjoo Kim is the founder, chief executive officer, and self-described "Chief Visionary Officer" of the Sungjoo Group, a prominent and popular fashion company in South Korea, which in 2012 boasted revenue of $396 million.

The youngest daughter of an energy tycoon, Kim could easily have married into another prominent Korean family and never worked a day in her life. Highly driven, however, she wanted to make her own way in the world.

After taking a degree in theology from Yonsei University in Seoul, Kim decided to attend Amherst College in Massachusetts despite strong opposition from her father, who wanted her to remain closer to home. Kim then pursued studies at the London School of Economics and at Harvard University, where she met her future husband, a British-Canadian.

Kim's decision to marry the man of her choosing was the last straw for her father, and for a while the two were estranged. Through the help of an acquaintance, she landed her first job at Bloomingdale's department store in Manhattan, working directly under the supervision of chairman Marvin Traub. There, she learned all she could about the fashion industry.

About five years later, Kim reconnected with her father, helping him out with negotiations he was leading in the United States. Having proved her business savvy, she convinced him to give her $300,000 to start the Sungjoo Group.

Her father's investment has paid off. Since the early 1990s, Kim's company has introduced a number of high-end Western brands to Asia by licensing such labels as Gucci, Yves Saint Laurent, and Marks & Spencer. Kim is now widely recognized as a business wizard in her own right, making *Forbes Asia's* 2013 "Women in the Mix" list of the continent's 50 most influential women in business.

But while Kim credits her father with giving her an "entrepreneur's DNA," she attributes her strength of character to her mother.

"The guiding light of my success is my mother," Kim says. "She's a woman who never fails to see the positive side. Even if a situation was very bleak, she always encouraged me to view it with gratitude and not to allow myself to become emotionally overwhelmed."

During the Asian financial crisis in 1997, when her company was forced to shut stores, Kim says, the lessons learned from her mother helped her to take charge of the situation and overcome the problem.

Since becoming a successful businesswoman, and in a bid to promote the role of women in business, Kim set up the Sungjoo Foundation, a global leadership program focused on discovering and developing female talent.

"A woman from a devout Christian family, my mom held deeply rooted values of stewardship," says Kim. "She dedicated herself to serving others, and that has worked as a strategy for me in my business." The Sungjoo Foundation is part of that service ethos, she noted.

Kim observes that her mother's use of her wealth and time to help others highlighted the difference between men's and women's contributions to the world. "Women have stronger emotional intelligence than men, and we tend to look at community first before pursuing our own success," she says.

Yusun Lee

SOPHIE VANDEBROEK

Chief technology officer, Xerox Corporation

"I'll never forget the day that Neil Armstrong set foot on the moon," says Sophie Vandebroek. She recalls being transfixed before the television early that July morning in 1969, watching the historic event that sparked her interest in science. "At that moment, I had this dream: I wanted to see my footprints in moondust," she says.

Fast-forward 44 years. Vandebroek never made it to the moon, but she has become the chief technology officer (CTO) of Xerox, one of the world's iconic companies. The holder of 13 U.S. patents, she also serves as president of the Xerox Innovation Group, overseeing the company's research centers in Europe, Asia, Canada, and the United States.

Born in Leuven, Belgium, to an engineer and an artist, Vandebroek was encouraged early on to aim high. After earning a master's degree in electromechanical engineering from KU Leuven University in Belgium, she moved to the United States in 1986 to obtain a Ph.D. in electrical engineering from Cornell University.

But the path to the top has not been easy. Vandebroek joined Xerox in 1991, and five years later, her husband died suddenly, leaving her to raise their three small children. Abruptly, she was forced to adjust to her new status as a single parent and find ways to be as efficient as possible. "Delegate, simplify, and leverage IT" became Vandebroek's mantra, according to a 2006 profile of her in *Fast Company* magazine.

Vandebroek persevered, earning the CTO title in 2006 just as Xerox was experiencing a turnaround. (The company turned a net income loss of $300 million in 2000 into a $1.1 billion profit in 2007, owing in part to an innovation revival.)

Vandebroek credits Xerox with creating a supportive environment for women.

"I'm lucky to be at a company where I don't have to be a trailblazer," she said at her 2011 induction into the Women in Technology International Hall of Fame, referring to the cluster of women in Xerox's top management—most notably Ursula Burns, the chief executive officer.

But industry-wide, women leaders in science and technology are the exception, and Vandebroek would like to see that change. "One of my passions is to understand how we can attract more girls and minorities into these fields," she says. She has a few ideas: if kids experienced early on how much fun science is, that would help; so would teaching engineering in middle and high school so younger students get a taste of what it's all about.

"The number of jobs in the U.S. economy that require engineering and science degrees is growing, while the number of people—both U.S. citizens and immigrants—prepared to fill these jobs is shrinking," Vandebroek says. "We should care deeply that the technology profession is so disproportionate by gender and that we're not making kids—both boys and girls—sufficiently excited about science, technology, and math."

Maureen Burke

Equal Treatment

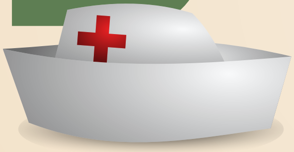
Closing the gender gap would boost economic growth in OECD countries

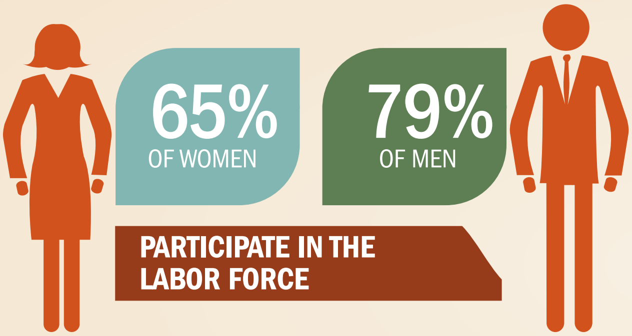
MANY countries have made significant progress toward gender equality in education. Girls today outperform boys in some areas of education and are less likely to drop out of school. But women are also less likely to work for pay than are men, and they continue to earn less. Furthermore, they are less likely to make it to the top of the career ladder and are more likely to spend their final years in poverty.

FEMALE SHARE OF UNIVERSITY GRADUATES IN:

ENGINEERING MANUFACTURING CONSTRUCTION
27%

HEALTH & WELFARE
74%



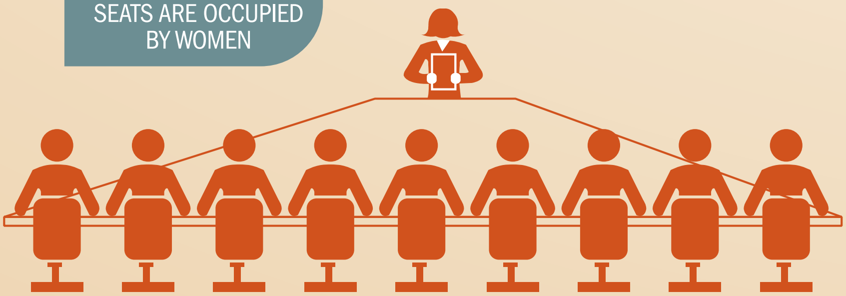


65% OF WOMEN

79% OF MEN

PARTICIPATE IN THE LABOR FORCE

ONLY
10%
OF CORPORATE BOARD SEATS ARE OCCUPIED BY WOMEN



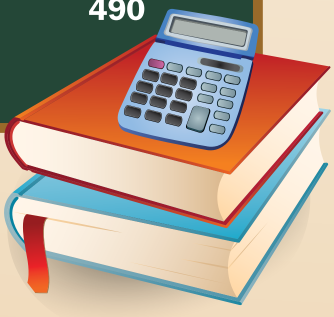
STUDENT PERFORMANCE AT AGE 15

READING SCORES

BOYS	**474**
GIRLS	**513**

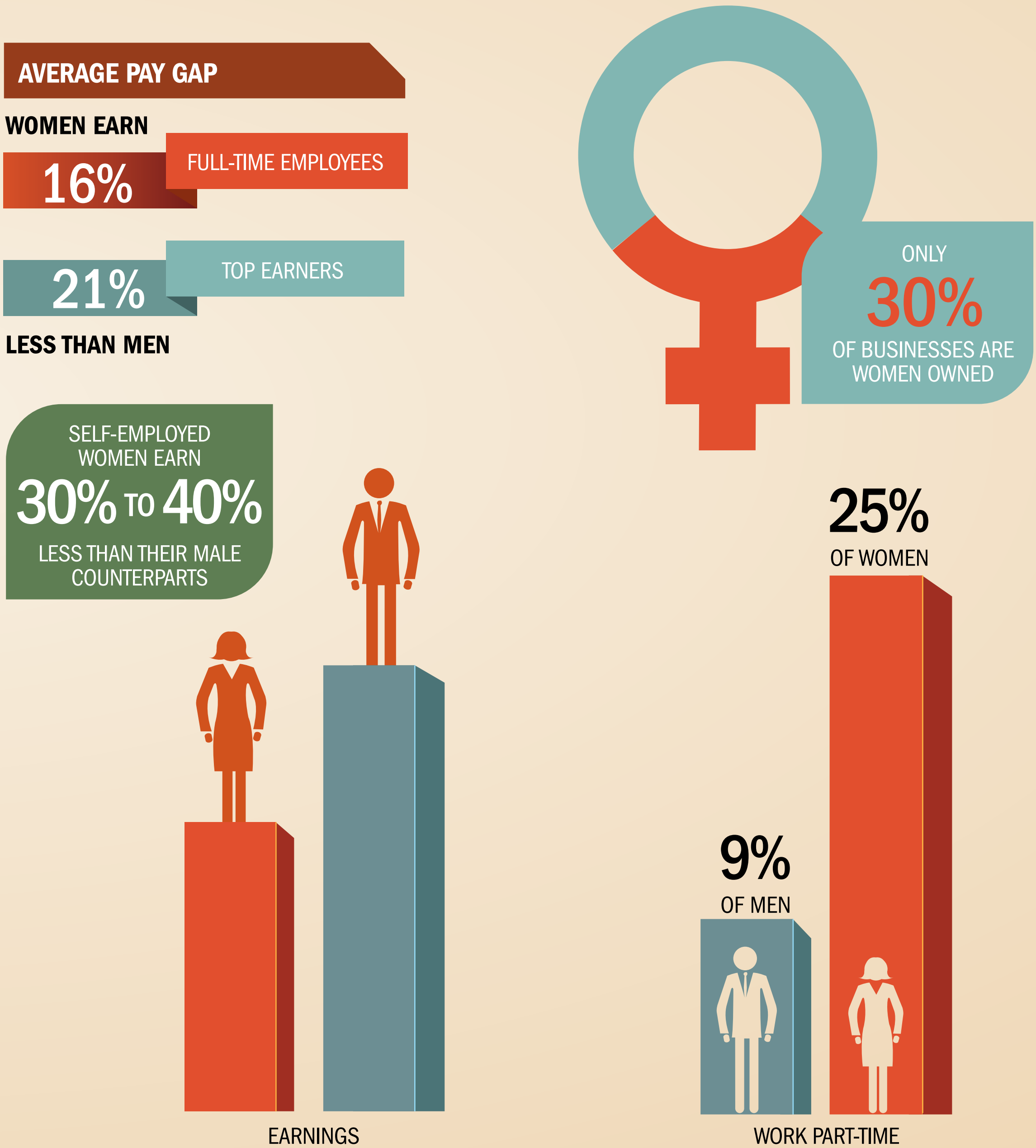
MATH SCORES

BOYS	**501**
GIRLS	**490**



A new report from the Organization for Economic Cooperation and Development (OECD) on closing the gender gap argues that greater gender equality in education, employment, and entrepreneurship has a strong positive effect on growth. For example, if OECD countries were able to close the gender gap in labor force participation rates completely by 2030, the total increase in GDP over that time would be 12 percent.

According to the report, governments can do a lot to advance gender equality and mainstreaming, such as introducing policies like paid parental leave and child care support to help parents reconcile work and family life. Businesses, too, should offer more family-friendly workplace benefits and flexible working arrangements. Countries should also make sure that young people understand the likely consequences of education choices on career and earnings prospects.



Prepared by Natalie Ramírez-Djumena. Text and charts are based on Closing the Gender Gap*, published by the OECD in December 2012. The report is available at www.oecd.org/gender/closingthegap.htm*

The Coming Wave

Private investors from emerging market economies increasingly put their funds in overseas assets

G. Andrew Karolyi, David T. Ng, and Eswar S. Prasad

AS emerging market economies become increasingly important players in the global economy, their share of the global cross-border flows of financial assets is also rising. Because of their strong growth prospects, emerging market economies have attracted foreign investors in search of higher returns, especially at a time of very low interest rates in advanced economies. And flows have also gone in the other direction, as the governments of emerging market economies have built up their foreign exchange reserves by investing heavily in advanced economies.

Recently, another phenomenon has gradually gained momentum: the outflow of private capital from emerging market economies as their investors seek overseas opportunities.

Understanding the volumes and patterns of the various outflows—sovereign and private—and analyzing what influences them will shed light on how the landscape of international capital flows is likely to change as emerging market economies become more integrated into global financial markets. We look at the types of capital outflows from emerging markets and describe some preliminary results from our ongoing research, which shows that the direction of portfolio outflows—relatively small now, but with a large potential to expand—is heavily influenced by proximity and familiarity.

Exporting capital

Led by China, emerging markets added about $6 trillion to their foreign exchange reserves between 2000 and 2012—with nearly all of it invested in securities issued by the major reserve currency economies, mainly the United States. It is likely that these emerging market economies will accumulate foreign exchange reserves at a much slower pace in coming years because most have put away sufficient stocks of foreign reserves to help buffer any future capital flow volatility.

As reserve accumulation subsides, we anticipate a rapid expansion of private capital outflows from these economies. In fact, such outflows are now matching the increase in official reserve accumulation (see Chart 1). China is, of course, an important driver of these private flows as well, and when China is removed from the picture, the overall numbers are less impressive. But for the emerging markets excluding China, private capital outflows are now greater than those that represent reserve accumulation (see Chart 2).

There are many reasons to expect private outflows to increase. As households in emerging market economies become richer and achieve higher levels of savings, they will seek opportunities abroad to diversify their portfolios. Institutional investors, such as mutual funds and pension funds, are already becoming important conduits for these outflows. Corporations and financial institutions are also likely to continue to seek foreign investment opportunities as they expand their operational bases internationally and reach into foreign markets.

China shifts

Changes in the structure of capital flows in China, the world's second-largest economy, provide a good illustration of these trends. China has been a big net exporter of capital to the rest of the globe for the past decade. It has run a trade surplus, exporting more goods and services than it imports, as well as a capital account surplus, which reflects inflows of private capital. During this period, China has run an overall surplus on its current account, indicating that

China is, on net, exporting capital to the rest of the world. These capital exports have largely taken the form of foreign exchange reserve accumulation by the People's Bank of China, its central bank; the reserves are managed by its State Administration of Foreign Exchange (SAFE). This accumulation is the result of foreign exchange market intervention by the central bank, which buys dollars to limit the appreciation of the Chinese currency (the renminbi) to avoid any loss in China's export competitiveness. China invests a significant proportion of those dollars in foreign securities, such as U.S. Treasury bills and bonds. China's official holdings of U.S. Treasury securities were $1.26 trillion as of January 2013, according to data from the U.S. Treasury.

Given the pressures on its currency and worries that capital inflows could fuel inflation and sharp increases in asset prices, China has been cautious about letting in foreign capital. Foreign investors are restricted from investing extensively in China's equity market, although some channels have been opened up—such as the greatly expanded quotas of the Qualified Foreign Institutional Investor (QFII) scheme. Chinese bond markets remain relatively underdeveloped. Consequently, most of the inflows to China have been in the form of foreign direct investment (FDI), which generally involves acquiring a controlling interest in a business. Gross FDI inflows into China averaged $260 billion a year during 2010–12, according to IMF data. (These figures are consistent with data from SAFE, but China's Ministry of Commerce indicates inflows of only $110 billion a year during that period.)

More interestingly, though, private capital outflows from China have increased significantly in recent years. China had maintained tight controls on outflows but has relaxed them over time. From 2004 to 2012, FDI outflows from China went from essentially zero to more than $100 billion according to IMF data. (Data from SAFE show lower outflows of $62 billion in 2012; the Ministry of Commerce does not report data on outflows.)

In fact, China has been encouraging not only its corporations but also institutional investors—such as mutual funds and pension companies—to invest abroad. In 2006, it even set up the Qualified Domestic Institutional Investor scheme, a parallel to its QFII program, to sanction investments abroad up to specified limits. As a result of such measures, other forms of outflows have been rapidly catching up to official outflows for currency reserves (see Chart 3). Preliminary data for 2012 show that reserve accumulation fell sharply even as other outflows continued to increase, a trend that is likely to continue.

These developments have raised concerns that rising capital outflows reflect worries among domestic investors about China's growth prospects. In reality, these outflows may simply reflect a maturing economy that is allowing capital to flow out (and in) more freely. As China becomes a richer economy and as its financial markets become more developed, providing more opportunities for investors to diversify their portfolios, private outflows are likely to increase further. Other emerging markets are likely to follow a similar path.

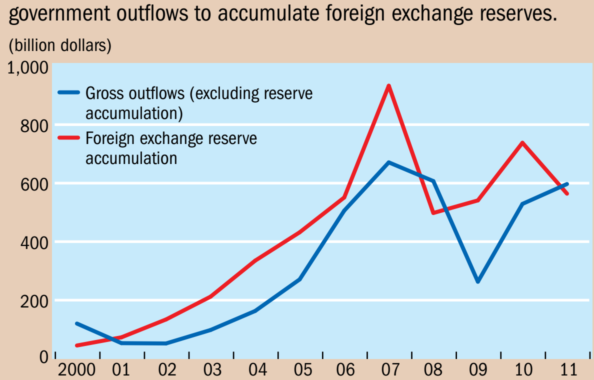
Changing composition of outflows

The composition of private outflows from an emerging market economy is determined by capital controls imposed by government authorities and the level of financial market development. Fears that surges in outflows could destabilize domestic financial systems have led many of these economies to restrict private outflows. Still, some have become increasingly willing to allow their corporations to invest abroad. Mergers and acquisitions by emerging market economies have increased sharply in recent years. Sometimes they involve a firm in one emerging market economy buying a firm in another emerging market; sometimes an entity in an emerging market economy acquires a firm in an advanced economy. There are many potential drivers of this activity, including the desire of emerging market firms to diversify their production bases and increase their penetration

Chart 1

Pulling abreast

Private capital outflows from emerging markets now exceed government outflows to accumulate foreign exchange reserves.

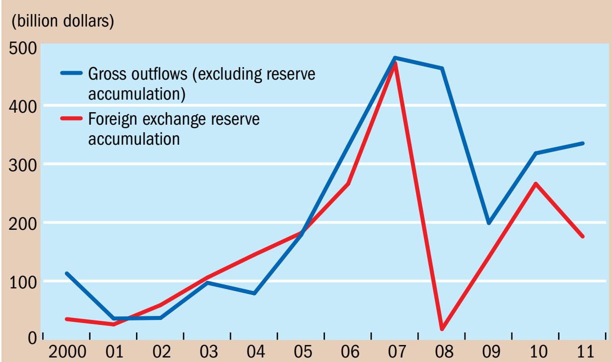


Source: IMF, *Balance of Payments Statistics*.
Note: The red line shows the change in foreign exchange reserves held by emerging markets from the end of one year to the end of the next.

Chart 2

Outflows change

When China is excluded, private capital outflows from emerging markets exceed foreign exchange reserve accumulation by more than $100 billion.



Source: IMF, *Balance of Payments Statistics*.
Note: The red line shows the change in foreign exchange reserves held by emerging markets from the end of one year to the end of the next.

of other markets. Purchases of foreign firms can also help them acquire technology that domestic firms can then use to upgrade their production capabilities. There has been a noteworthy increase in FDI outflows from these economies since the middle of the past decade (see Chart 4).

Limited financial market development in emerging market economies is an important constraint on outward portfolio investments by households. China and India, for example, now allow individuals to take a large amount of wealth abroad each year ($50,000 in the case of China; $200,000 in the case of India). However, financial markets in these countries are underdeveloped, so most households do not have easy access to such investment vehicles as mutual funds that would allow them to buy foreign equities or bonds. The rapid development of financial markets in these countries—along with the growing prominence of institutional investors, such as pension funds, insurance companies, and even mutual funds—is likely to create more channels for portfolio outflows.

Why should investors in emerging markets want to invest abroad when their economies are growing much faster than those of the advanced economies? In theory, international investments offer retail investors in emerging market economies an opportunity to diversify the risk in their portfolios. Moreover, in some of these countries, financial systems are still dominated by banks, which traditionally pay relatively low interest rates on savings deposits (especially after inflation is taken into account). Stock markets in some emerging economies are still relatively small, less liquid than those in advanced economies, and valuations are often highly volatile. All of these factors drive institutional investors, such as pension funds, mutual funds, and insurance companies, to invest abroad—and influence portfolio equity flows.

Portfolio equity flows

Because of their strong growth potential and the rapid opening up of their equity markets to international investors, emerging market economies have become important destinations for global portfolio equity flows (including from other emerging markets). For instance, in 2000, emerging market economies accounted for 3 percent of the global stock of foreign portfolio equity investments. By 2010, that share had risen to 16 percent. Consequently, there is a burgeoning academic literature that looks at patterns and determinants of foreign investment flows into emerging market countries. Far less attention has been paid to a more modest but growing phenomenon: investment in foreign securities by emerging market investors.

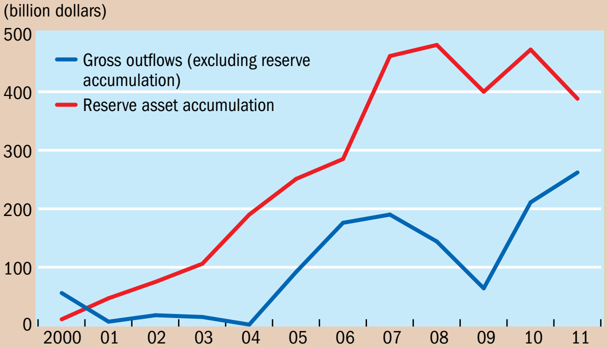
One indicator of the relative importance of emerging markets in international finance is their share in global external portfolio equity assets—this share rose from 1 percent in 2000 to 5 percent in 2010. In absolute amounts, this reflects an increase in the external portfolio equity assets of emerging market investors from $67 billion to $643 billion. Inflows from emerging markets are playing an increasingly important role in external portfolio liabilities of even major advanced economies. Consider, for instance, the relative importance of emerging markets in foreign portfolio investments into the United States. The share of foreign holdings of U.S. equities accounted for by emerging market investors rose from 2 percent in 2002 to 7 percent in 2011, according to data from the IMF's Coordinated Portfolio Investment Survey. Data from the U.S. Treasury paint a similar picture.

These data suggest an increasingly prominent role for emerging markets in cross-border portfolio flows, a phenomenon that is likely to intensify as emerging markets grow richer, open their capital accounts, and develop their financial markets. How much foreign investment outflow is likely to emanate from emerging markets? Finance theory provides one way of thinking about the optimal level of foreign investment: To maximize diversification benefits and obtain a superior risk-return trade-off, rather than investing just in their domestic stock market, investors should, in principle, hold a broadly diversified international portfolio in which the weights are

Chart 3

Chinese private investment grows

In recent years, China has encouraged its companies to invest abroad and, as a result, private capital outflows are catching up to sovereign reserve accumulation.

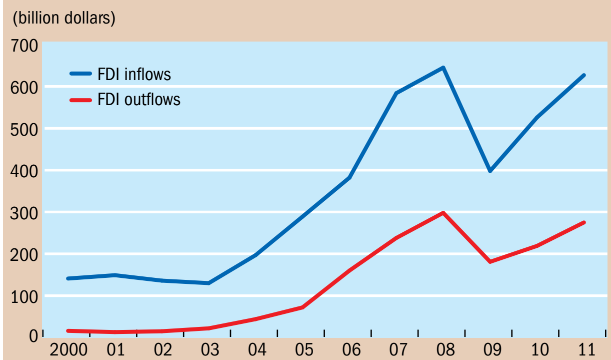


Source: IMF, *Balance of Payments Statistics*.

Chart 4

Direct investment flows

Outward foreign direct investment from emerging market economies has increased since the middle of the past decade.



Source: IMF, *Balance of Payments Statistics*.
Note: FDI = foreign direct investment.

based on the market capitalization of each relevant country's stock market. Given that emerging markets still constitute only 8 percent of the world's market capitalization, their investors should, in principle, hold a significantly larger share of their investments in advanced economy stock markets.

In reality, investors do not diversify anywhere close to the extent suggested by standard models. Investors in virtually every country, including those with open capital accounts and sophisticated financial markets, tend to exhibit a high degree of *home bias* (investing disproportionately in domestic stock markets). Explanations for home bias include information asymmetries (investors know more about domestic stocks than foreign ones), trading costs, and financial market underdevelopment. Given the enormous increase in cross-border equity flows over the past decade and the attenuation of barriers such as information asymmetries and trading costs, home bias is expected to decline. Studies indicate, however, that the bias has not abated much over the past decade.

Nevertheless, as global financial markets become more integrated and informational barriers shrink, other related biases could be affected by expanding portfolio diversification. For example, nondomestic portfolio allocations have been shown to be subject to a *regional foreign bias* (disproportionately large investments in stock markets of neighboring countries). Investors also place funds disproportionately in countries with which their nation trades heavily, or countries with which they are familiar because of colonial heritage or similar languages. Other factors, such as political stability, could also influence these decisions. Theory does not provide strong guidance about how some of these variables should drive portfolio allocations. For instance, a country with poor governance should be less attractive to international investors, but similarities in corporate governance between host and recipient countries could, in fact, increase bilateral flows due to a "familiarity" effect. Theory also fails to guide us on whether and how these foreign biases would disappear with expanded capital flows. These issues must be resolved through empirical analysis.

Focusing on actions of institutional investors

We examined total outward portfolio equity investment from emerging markets and then analyzed in more detail outflows mediated through mutual funds and other institutional investors. Our analysis is based on a broad empirical exercise covering the period from 2000 to 2011 and uses standard portfolio theory to guide our interpretation of the results; we do not test a specific theoretical model of portfolio allocations.

We use two data sets in our analysis. The first one is based on the IMF's Coordinated Portfolio Investment Survey, which contains bilateral cross-border portfolio equity holdings (stocks rather than flows). We also use a database of individual institutional investors in both advanced and emerging market economies to provide more disaggregated evidence on what drives cross-border portfolio equity flows.

In our preliminary research, one interesting conclusion is that "gravity" variables (so called because they contain elements of mass and distance to mimic the gravitational interactions in Newtonian physics)—which capture "closeness" or "proximity" in terms of geographic distance, common language, colonial heritage, and common free trade zone—are important determinants of cross-border portfolio equity flows. The importance of these factors has already been established in the literature looking at investors in advanced economies; we find that emerging market investors seem to base their foreign investments on similar considerations. One possibility is that these variables, which have been found to play an important role in influencing patterns of cross-border trade flows, are simply capturing the fact that financial flows are linked to trade flows. However, we find that the importance of gravity variables in explaining bilateral portfolio equity flows is unaffected when we directly control for bilateral trade relationships. One implication of our preliminary results is that portfolio outflows from emerging markets are going to lead to greater regional financial integration, at least in the initial phases of the expansion of these outflows.

For the emerging markets excluding China, private capital outflows are now greater than those that represent reserve accumulation.

Rising outward flows

One important, but little-studied, aspect of the growing prominence of emerging market economies is outward investment flows from these economies. While these outflows are still relatively modest, they are increasing at a rapid rate. As these economies become richer, develop their financial markets, and liberalize cross-border capital flows, retail and institutional investors from these economies will increasingly seek investment opportunities abroad for diversification purposes. Preliminary evidence suggests that investors in these economies seem to display home and foreign biases related to geographic proximity and familiarity similar to those of advanced economy investors. This could impel greater regional integration of financial markets and generate increasing portfolio equity flows among emerging markets themselves. ■

Andrew Karolyi is a professor at the Johnson School of Management, Cornell University. David Ng and Eswar S. Prasad are an associate professor and professor, respectively, at the Dyson School of Applied Economics and Management, Cornell University. Ng was a visiting fellow at the Hong Kong Institute for Monetary Research. Prasad is also a senior fellow at the Brookings Institution.

China's working-age population is poised to decline, with big implications for China and the rest of the world

Worker in yarn factory, Huaibei, Anhui, China.

Mitali Das and Papa N'Diaye

FAST-rising wages, worker activism, and intermittent labor shortages suggest that China, whose economic rise has depended on a vast supply of low-cost labor, is about to enter a period of widespread labor shortages.

As China crosses the line from being an economy with plentiful low-cost labor to one with higher-cost workers, the implications for both China and the global economy could be far reaching.

For China, the transformation will likely mean that its extensive growth model—which relies heavily on increasing the number of workers involved in production (called factor input accumulation)—cannot be sustained. As a result, the world's second largest economy will likely change to an intensive growth model that uses resources more efficiently and would rebalance growth away from investment and toward private consumption. Successful rebalancing in China would, in turn, have significant positive global effects—including increasing output in commodity exporters and in the regional economies that now are part of China's supply chain. Even advanced economies would benefit (IMF, 2011). Importantly, rising labor costs—which would affect prices, incomes, and corporate profits in China—would have implications for trade, employment, and price developments in key trading partners. For instance, foreign manufacturers may find it increasingly less profitable to produce in China, raising their domestic employment; Chinese goods could become less competitive in global markets, potentially raising export shares elsewhere; and rising Chinese prices could pass through to trading partners that rely heavily on imports from China.

The future of cheap labor

Recent developments in the Chinese labor market seem somewhat contradictory. On the one hand, aggregate wage growth has remained about 15 percent during the past decade, and corporate profits have remained high. Wage

The Lewis Turning Point

In Sir Arthur Lewis's seminal work (1954), developing economies are characterized by two sectors: a low-productivity sector with excess labor (agriculture, in China's case) and a high-productivity sector (manufacturing in China). The high-productivity sector is profitable, in part, because of the surplus of labor it can employ cheaply because of the low wages prevalent in the low-productivity sector. Because productivity increases faster than wages, the high-productivity sector is more profitable than it would be if the economy were at full employment. It also promotes higher capital formation, which drives economic growth. As the number of surplus workers dwindles, however, wages in the high-productivity sector begin to rise, that sector's profits are squeezed, and investment falls. At that point, the economy is said to have crossed the Lewis Turning Point.

THE END of Cheap Labor

growth lags productivity, resulting in rising profits, which suggests that China has not reached the so-called Lewis Turning Point (see box), at which an economy moves from one with abundant labor to one with labor shortages. At the same time, though, since the financial crisis began, industry has increasingly relocated from the coast to the interior, where the large reserve of rural labor resides. As a result, previously large gaps between the demand for and supply of registered city workers have progressively narrowed, and worker demand for higher wages and better working conditions has risen—suggesting the onset of a structural tightening in the Chinese labor market.

Demographic developments, on the other hand, are not ambiguous. They portend an imminent transition to a labor-short economy. The United Nations projects that aging and declining fertility will result in a smaller working-age (15–64) population in less than a decade (see Chart 1). The core group of industrial workers (ages 25–39, born at the start of the restriction of couples to one child) will shrink even faster, and the rapidly aging population will reverse a more than half-century decline in the dependency ratio—that is, the number of people younger than 15 or older than 64 divided by the working-age population (see Chart 2).

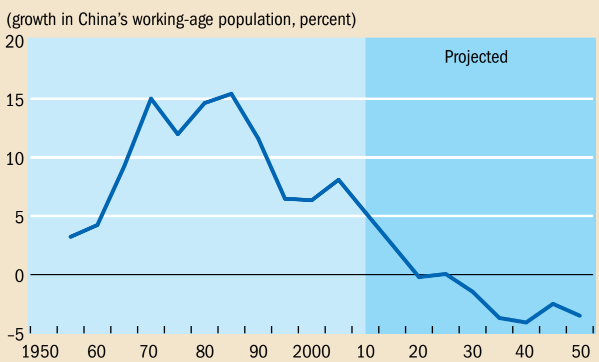
The looming demographic changes are large, irreversible, and inevitable; they will be key to the future evolution of surplus labor in China. But other factors could slow, or accelerate, this process. More changes in the household registration system, which identifies a person as a resident of a specific region—the so-called *hukou* reform—could accelerate the move of workers from rural areas to cities. Training workers to meet the skill requirements of industrial jobs could decongest urban labor bottlenecks. Higher fertility rates would likely delay the depletion of surplus labor, but it would take a generation. Although the Chinese primary sector (farming, mining, and other natural resource activities) holds nearly a third of the labor force, agricultural value added was only about one-tenth of 2011 GDP. Increasing agricultural productivity—by raising mechanization to the level in similar countries, for

The looming demographic changes are large, irreversible, and inevitable.

Chart 1

Shrinking workforce

Growth in China's working-age (15–64) population has slowed, and the population will begin to shrink around 2020.

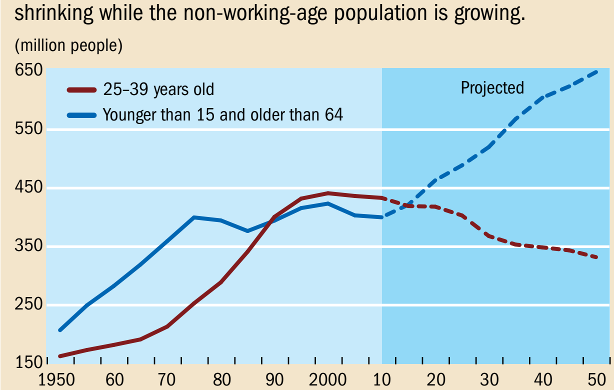


Source: United Nations.

Chart 2

Population pressure

The core group of industrial workers (age 25–39) in China is shrinking while the non-working-age population is growing.



Sources: United Nations; and IMF staff estimates.

instance—could free up rural workers to offset shortfalls in urban labor demand. By implementing such policies, China could buy some time. The question is how much.

Onset of a turning point

By our estimates, China has had an excess supply of labor—including both unemployed and underemployed workers—for the better part of two decades (see Chart 3). This pool of surplus labor has persisted even though tens of millions of jobs have been created since 1992, and uncounted millions in the previous decade. The number of excess workers rose gradually until 2000, then surged between 2000 and 2004, coinciding with state-owned-enterprise reforms that resulted in large-scale job shedding. After that, though, the pool of unemployed and underemployed workers was reduced by steadily declining growth in the working-age population and strong demand for labor along the rapidly expanding industrial coast. But things reversed again after 2008, with the onset of the global financial crisis. Demand for Chinese labor declined and the number of surplus workers rose abruptly in 2009–10. We estimate that surplus labor was in the range of 150 million workers during those two years.

Even so, demographics virtually guarantee that China will cross the Lewis Turning Point—almost certainly before 2025.

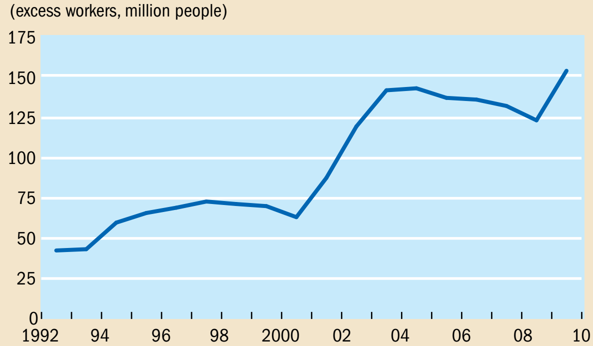
Our baseline scenario estimates the likely course of excess labor, assuming that both market conditions—which affect unemployment, real wage adjustment, total factor productivity, and GDP growth in trading partners, among others—and demographics follow current trends. The scenario also assumes unchanged social and economic policies, such as the hukou reform, the family planning policy that restricts urban couples to one child, and financial reforms that permit market-set interest rates. Currently, authorities set the rates, with a ceiling on deposit rates that is lower than the floor on lending rates.

Chart 3

Shrinking surplus

China's supply of excess workers began to decline in 2004, rose abruptly during the global financial crisis in 2009 and 2010, and is projected to decline again.

(excess workers, million people)



Source: Authors' calculations.
Note: Excess workers include unemployed people (without a job but actively seeking one) and those underemployed (working part-time but who want full-time employment).

Under that scenario, we estimate that China's excess supply of labor already peaked in 2010 and is on the verge of a sharp decline: from 151 million in 2010, to 57 million in 2015, to 33 million in 2020. China is expected to reach the Lewis Turning Point between 2020 and 2025—that is, sometime in that five-year period, demand for Chinese labor will exceed supply. The rapid rate of decline in the excess supply of workers closely follows the projected path of the dependency ratio, which reached its historical trough in 2010 and is projected to rise rapidly hereafter.

Not etched in stone

It is conceivable, however, that the significant demographic transition, rising social needs, and changing external environment could spur Chinese authorities to undertake policy changes, or that market responses could alter the structure of the economy.

For example, in anticipation of tighter labor markets, producers might decide to hasten the transition to more capital-intensive production. Or the government could accelerate hukou reform as part of a larger effort to change the social insurance and pension program—currently, those who work outside their hukou do not automatically qualify for a range of benefits, such as pensions and health care, which has impeded the movement of rural workers to the cities.

Indeed, a number of initiatives to improve urbanization, income distribution, and the technological mix of industry that were outlined in the 12th Five-Year Plan (adopted in 2011) could affect the Lewis Turning Point by shifting either the supply or demand for labor—for example, shifting to more capital-intensive production would likely lower the demand for labor.

Policies like these could delay China's transition to a labor-short economy. On the other hand, some policy initiatives designed to improve the livelihood of the Chinese people could have the unintended consequence of accelerating the depletion of labor, although this would occur in an environment in which Chinese savers and workers would get higher remuneration. A number of alternative scenarios are possible.

Relaxing the one-child rule: China's 2010 fertility rate of 1.6 births per woman was among the lowest in the world and much lower than the fertility rate in emerging Asia. Relaxing the one-child policy to increase the fertility rate in line with the UN high-fertility population projections could delay the turning point in China relative to the baseline. However, the potential effects are small: in 2020 the excess supply of labor would rise to 36 million from the 33 million in the baseline estimate, while in 2025 the labor shortfall would be 16 million, compared with 27 million in the baseline estimate. The turning point would still happen between 2020 and 2025. This result is unsurprising: first, higher fertility increases the size of the potential labor force, but with a delay; second, the UN high-fertility variant is a modest increase that lifts China's fertility rate from 1.6 to just around the replacement-level fertility of 2.1 (see Chart 4).

Raising the labor force participation rate: The percentage of the Chinese working-age population that is either employed or actively seeking employment is high relative to similar countries. But the rate has declined since the mid-1990s—from 0.87 in 1995 to 0.82 in 2010—because of underlying conditions in the economy. Given the disposition toward hiring younger workers, especially among migrants from rural to urban areas, and a relatively low retirement

One method of increasing the participation rate would be to ease the ability of workers in the provinces to move to the cities.

age, this decline reflects the growing share of older workers in the labor force. One method of increasing the participation rate would be to ease the ability of workers in the provinces to move to the cities—that is, to accelerate the part of hukou reform that allows workers to take their benefits with them when they move. Raising the participation rate to 0.85, the average rate of the past two decades, would significantly affect excess surplus labor, causing it to persist beyond 2025 and delaying the Lewis Turning Point five years—to between 2025 and 2030. This is because, unlike fertility, higher participation has an immediate impact on the size of the potential labor force and thus on the supply of labor.

Financial sector reform: Liberalizing interest rates would lift deposit rates, raising the return on the stock of wealth while lowering the flow into wealth. That is because with higher rates on their deposits, households would be able to meet their saving targets more easily (Nabar, 2011). Therefore, households would want to work less and the economy would cross the Lewis Turning Point sooner. In the baseline scenario, the excess supply of labor in 2020 would be in the range of 30 million. A liberalization in the setting of interest rates would likely result in higher rates and would reduce this excess to about 10 million. The turning point would occur shortly after 2020.

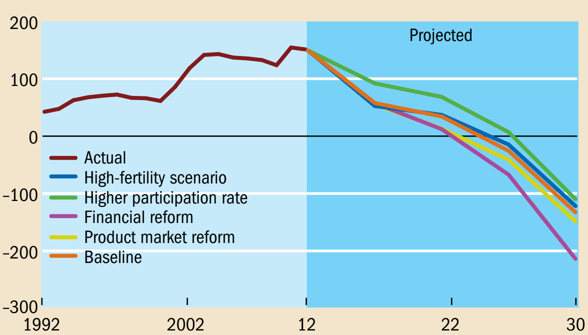
Product market reform: Product market reform that raises total factor productivity—roughly, the effect on output changes not attributable to changes in inputs—would raise firms' profitability and thus the demand for labor. The contribution of total factor productivity (the result of such things as technology, innovation, and improved education) to output growth in China has been positive for the past two decades, but its growth has slowed in recent years. Many of the policies in the 12th Five-Year plan should raise total factor productivity, including those promoting greater competition in the service sector, investment in higher-value-added activities, and innovation. An increase in total factor productivity growth to the average level of the past two decades would have an impact on the timing of the Lewis Turning Point similar to that of financial reform. The difference would be that financial reform would reduce the labor supply, whereas product market reform would increase the demand for labor relative to that projected in the baseline scenario.

Chart 4

Surplus labor lost

Under any economic or policy scenario, excess labor ends and labor shortages begin by 2025 in China.

(million people)



Sources: CEIC; World Bank, World Development Indicators database; United Nations; and IMF staff calculations.

Demographics dominate

China is on the verge of a major demographic shift. Within a few years, the working-age population will reach a historical peak and then begin a sharp decline. When this happens, the vast pool of low-cost workers—a core engine of China's growth model in its recent history—will disappear, leaving behind a profoundly altered economic and social landscape. Estimates of the timing of the Lewis Turning Point are inherently uncertain, and the scenarios we have painted aim to illustrate the various developments that could hasten or delay the inevitable. But the change in China's labor picture is inescapable. Market and policy responses to declining surplus labor will be largely peripheral to accelerating or delaying the onset of the Lewis Turning Point, because China's demographics will play the dominant role in the country's imminent transition to a labor-short economy. ■

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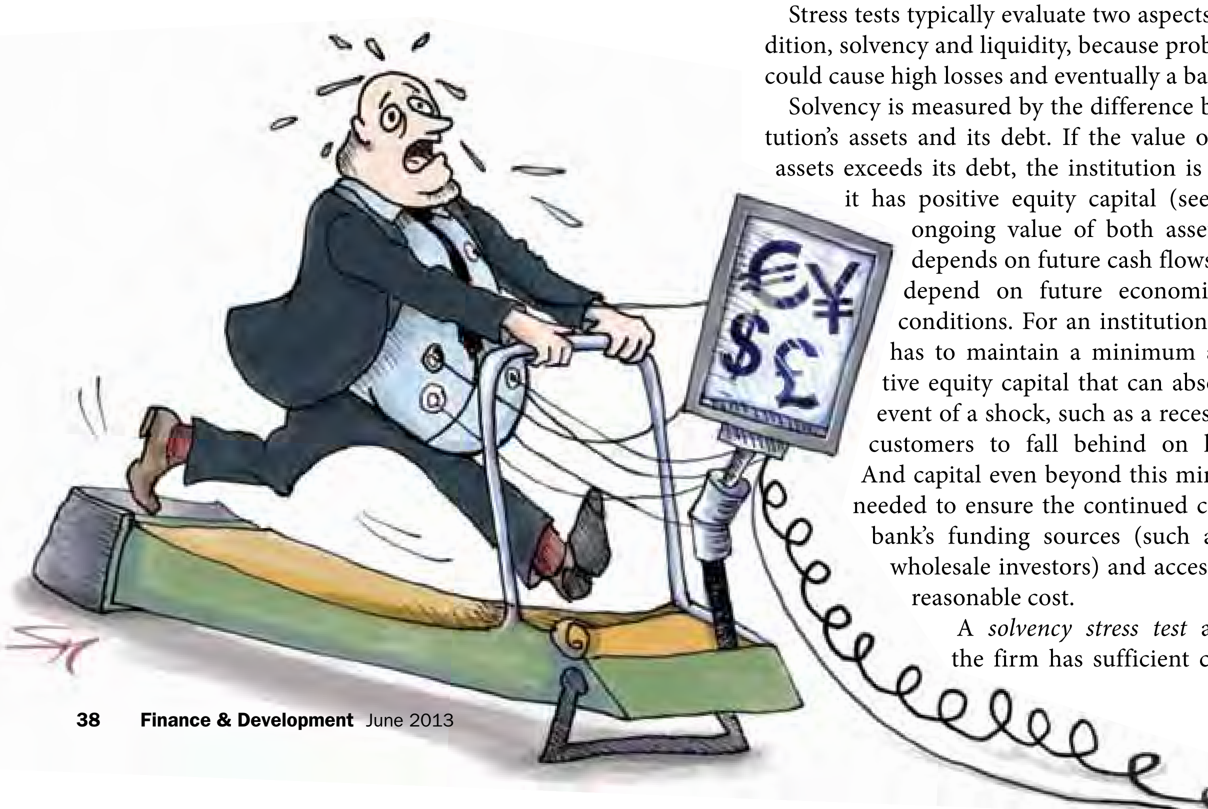
BANKS on the Treadmill

Stress tests assess banks' strength by simulating their performance in extreme economic scenarios

Hiroko Oura and Liliana Schumacher

A VISIT to a cardiologist often includes a stress test. Monitoring routine activities is not enough to determine a patient's health; the doctor makes the patient walk or run on a treadmill or pedal a stationary bike until he or she is out of breath, because some heart problems are easier to diagnose when the heart is working harder and beating faster. The patient may not have any signs or symptoms of disease when at rest, but the heart has to work harder during exercise and therefore requires more blood and oxygen. If the heart indicates that it is not getting enough blood or oxygen, then this can help the doctor identify potential problems.

Something similar occurs when economists conduct stress tests on banks, which are key to the functioning of the economy. The goal of the tests is to find and fix any banks with problems, to reduce the chance of a banking crisis. A banking crisis—when several banks become insolvent or are unable to make payments on time—disrupts the economy by limiting access to long-term loans or liquidity needed for production and distribution of goods and services. This, in turn, affects growth, employment, and—in the end—people's livelihoods.



To minimize the risk of a disruptive banking crisis, bank vulnerabilities need to be found while there is still time to correct them. But, as in the case of the human heart, vulnerabilities of financial institutions may not be visible by just looking at past performance when the economy is running smoothly and there are no overwhelming problems. To assess banks' health properly, stress tests perform hypothetical exercises to measure the performance of banks under extreme macroeconomic and financial scenarios—such as a severe recession or a drying up of funding markets.

Stress tests typically evaluate two aspects of a bank's condition, solvency and liquidity, because problems with either could cause high losses and eventually a banking crisis.

Solvency is measured by the difference between an institution's assets and its debt. If the value of an institution's assets exceeds its debt, the institution is solvent—that is, it has positive equity capital (see table). But the ongoing value of both assets and liabilities depends on future cash flows, which, in turn, depend on future economic and financial conditions. For an institution to be solvent, it has to maintain a minimum amount of positive equity capital that can absorb losses in the event of a shock, such as a recession, that causes customers to fall behind on loan repayment. And capital even beyond this minimum might be needed to ensure the continued confidence of the bank's funding sources (such as depositors or wholesale investors) and access to funding at a reasonable cost.

A *solvency stress test* assesses whether the firm has sufficient capital to remain

Simplified bank balance sheet

Assets		Liabilities	
Cash and cash equivalent		Central bank loans	
Money market assets	Interbank lending	Money market liabilities	Interbank borrowing
	Repurchase agreements (repos)		Repurchase agreements (repos)
	Certificates of deposit		Certificates of deposit
Securities	Held for trading	Customer deposits (financial institutions, public sector, corporate, and household)	
	Available for sale (AFS) equities and debt	Long-term borrowing	
	Held to maturity (HTM) securities	Debt instruments	
Loans to customers (financial institutions, public sector, corporate, and household)		Derivatives	
Derivatives		Other borrowing	
Other assets		Equity capital	

Off-balance-sheet items

Derivatives
Contingent claims (credit lines, guarantees, (implicit) guarantees to special purpose vehicles)
Securitization, resecuritization exposures

solvent in a hypothetically challenging macroeconomic and financial environment. It estimates the bank's profit, losses, and changes in the value of the bank's assets under the adverse scenario. Typical risk factors are potential losses from borrowers' default (credit risk); losses from securities due to changes in market prices, such as interest rates, exchange rates, and equity prices (market risk); and higher funding costs due to lack of investor confidence in the quality of a bank's assets (liquidity risk).

Solvency is measured by various capital ratios, typically based on regulatory requirements. Individual institutions or the system as a whole is said to pass or fail the test depending on whether the capital ratio remains above a predetermined threshold, called the hurdle rate, during the stress scenario. Hurdle rates are often set at the current minimum regulatory requirement, but they can be set at different values if circumstances warrant. (For example, the hurdle rate might be the minimum capital required for a bank to keep its current credit rating and maintain access to funding; this is called the market-based hurdle rate.)

A *liquidity stress test* assesses whether an institution can make its payments on time during adverse market conditions by using cash, selling liquid assets, or refinancing its obligations. Adverse market conditions are characterized by the inability to sell liquid assets at a reasonable price and speed (market liquidity problems) or failure to refinance obligations or obtain additional funding (funding liquidity). The ability to quickly pledge assets as collateral is often critical to a bank's ability to remain liquid in times of stress. Financial intermediaries, particularly banks, have, by the nature of their business, a maturity mismatch in their balance sheet. Most of their liabilities, such as deposits or borrowing from money markets, are much shorter term than the assets, such as loans, that a bank finances with those liabilities. If a large amount of deposits is withdrawn or not renewed suddenly or if a bank finds it impossible to obtain money in wholesale funding markets, the bank might face a liquidity shortage even if it is otherwise solvent. A consumer who has a house worth, say, $200,000 but little cash would be in a similar situation if presented with a big bill that had to be paid promptly.

Liquidity and solvency stress events are often closely related and hard to disentangle. A liquidity shortage, for example, may turn into a solvency problem if assets cannot be sold or can be sold only at a loss—called a fire sale, perhaps reducing the value of assets below that of liabilities. Higher funding costs during a liquidity stress event could translate into solvency stress by raising the cost of liabilities. In turn, market perceptions of solvency problems may create a liquidity shortage because depositors or investors lose confidence or demand higher interest rates from the bank.

A key aspect of stress testing is to assess whether solvency or liquidity problems at one institution could end up causing a systemwide banking crisis. This is determined by assessing which institutions are systemically important (that is, those whose failure or liquidity shortage would cause problems in many other institutions) and by replicating the channels of risk transmission as part of the stress testing exercise. The latter is a particularly complex task on which further research is ongoing and needed.

Looking back

The IMF started to use stress tests as a surveillance tool in 1999. But stress tests were little known among the general public until the global financial crisis, when they were used to restore market confidence.

Banks began to use stress tests in the mid-1990s as an internal risk management tool, though it is now a more overarching risk assessment tool. One of the early adopters was JPMorgan Chase & Co., which used value at risk (VaR) to measure market risk. VaR measured potential daily changes in the value of a portfolio of securities in the event of a rare and negative shock to asset prices that could occur in only 1 percent (or less) of all possible scenarios. These early stress tests covered limited risk factors and exposures and were not well integrated with firms overall risk management and business and capital planning.

Over the past two decades, many country authorities have started using macroprudential stress tests, which analyze systemwide risks in addition to institution-specific risks (which was the sole purpose of VaR). The results are often reported in countries' Financial Stability Assessment Reports. The IMF has also regularly included macroprudential stress testing as part of its Financial Sector Assessment Programs since they began in 1999.

The global financial crisis drew public attention to stress tests on financial institutions. They had a mixed reception. On the one hand, stress tests were criticized for missing many of the vulnerabilities that led to the crisis. On the other hand, after the onset of the crisis, they were given a new role as crisis management tools to guide bank recapitalization and help restore confidence.

Crisis management stress tests allowed countries to assess whether key financial institutions needed additional capital, possibly from public funds. In particular, the U.S. Supervisory Capital Assessment Program exercise and the exercises organized by the Committee for European Banking Supervisors and by the European Banking Authority in 2010 and 2011 attracted attention because they used stress tests to determine whether banks needed to recapitalize, and the detailed methodology and individual banks' results were published to restore public confidence in the financial system.

Best practices

Current stress testing practices are not based on a systematic and comprehensive set of principles but have emerged from trial and error and often reflect limitations in human, technical, and data capabilities. To improve the implementation of stress tests, the IMF recently proposed seven "best practice" principles for stress testing (see box) and has provided operational guidance on how to implement them. These guidelines can be used by IMF staff or by financial stability authorities around the world.

The first three principles highlight the importance of acquiring a good knowledge of the risks, business models, and channels of risk propagation faced by the institution or system under review before beginning the stress tests. They require inclusion in the stress test exercises of all institutions whose failure could significantly harm the economy (so-called systemically important financial institutions) and replication of the potential spillovers and feedback mechanisms that can aggravate an initial shock. Replication is achieved by using economic models that simulate the interaction among different risk factors (such as credit, foreign exchange, or liquidity risks) or among different banks.

Principle 4 underlines the importance of complementing stress test design with features reflecting market requirements as well as the traditional regulatory requirements. This principle acknowledges the market discipline banks face with increasing reliance on wholesale funding sources (that is, lenders other than depositors that are not covered by deposit insurance and that typically lend in large denominations). In the past decade, many international banks started to rely more on uninsured short-term wholesale funding and less on insured deposits.

During the recent crisis, these lenders—concerned about asset values and uncertain about banks' holdings and valuation practices—triggered liquidity shocks because they were reluctant to lend, which, in turn, caused major bank distress. Delays in recognizing lenders' concerns along with political difficulties in finding solutions to address them made the crisis longer and deeper.

The operational implication of Principle 4 is that market views should be used to complement stress tests based on regulatory and accounting standards. There are several ways to do this. One is the use of hurdle, or passing, rates based on targeted funding costs. Hurdle rates based on regulatory ratios reflect what regulators consider an adequate solvency ratio, but market assessment of a bank's solvency may be different. In a world where markets are able to impose discipline on banks by refusing to fund them, markets may demand—and banks have an incentive to target—capital ratios that enable them to attain a certain risk rating or to keep their funding costs under a particular ceiling.

The potential impact of market behavior on financial institutions' health is also key to understanding Principle 5: smart

Stress testing is only one of many tools to assess key risks and vulnerabilities in financial institutions or entire systems.

Stress testing principles proposed by the IMF

Principle 1	Define appropriately the institutional perimeter for the tests.
Principle 2	Identify all relevant channels of risk propagation.
Principle 3	Include all material risks and buffers.
Principle 4	Make use of the investor's viewpoint in the design of stress tests.
Principle 5	When communicating stress test results, speak smarter, not louder.
Principle 6	Focus on tail risks.
Principle 7	Beware the black swan.

publication of stress tests. "Smart" means stress tests that are candid assessments of risk and explicit about the coverage and limitations, and results that are announced along with measures that convincingly address any vulnerabilities unveiled by the stress tests—including, but not necessarily limited to, capital injections. In this way, publishing stress test results can alleviate problems of incomplete information during periods of uncertainty and restore market confidence. Even in the case of stress tests undertaken for surveillance purposes during non-crisis periods, communication of their results can raise awareness of risks, promote more realistic risk pricing, and enhance market discipline during good times—which, in turn, should stave off future sudden reversals of investors' mood.

Principle 6 is technical: it recommends the stress tester use statistical and econometric techniques specifically suited to identifying extreme scenarios, which are typically characterized by many risks materializing at the same time.

No matter how refined the analytical model, how severe the shocks incorporated in stress tests, and how careful a communications strategy, there is always the risk that the "unthinkable" will materialize, as Principle 7 cautions. The stress tester must always keep in mind the risk of a "black swan"—that is, a highly unlikely outcome.

Because stress test results are outcomes that will not always happen as predicted, they should be used with other tools that can also provide information about potential threats to financial stability. These tools include qualitative and quantitative bank risk analysis, early warning indicators, models of debt sustainability, and informed dialogue with supervisors and market participants. Conclusions about the resilience of an institution or system should draw on all these sources and not just on stress tests.

While improvements in stress test design are welcome and encouraged, stress testing is only one of many tools to assess key risks and vulnerabilities in financial institutions or entire systems. Stress tests attempt to identify possible future developments. No matter how much a tester tries, stress tests always have margins of error. Their results will almost always turn out to be optimistic or pessimistic. And there will always be model risk (that the model doesn't capture key features of the underlying reality), imperfect data access, or underestimation of the severity of the shock.

Just as a stress test in the cardiologist's office is one of many tools used to assess a patient's health, stress tests of banks are but one important input to help authorities diagnose and prevent a potential financial crisis. ■

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What Is Shadow Banking?

Many financial institutions that act like banks are not supervised like banks

Laura E. Kodres

IF it looks like a duck, quacks like a duck, and acts like a duck, then it is a duck—or so the saying goes. But what about an institution that looks like a bank and acts like a bank? Often it is not a bank—it is a shadow bank.

Shadow banking, in fact, symbolizes one of the many failings of the financial system leading up to the global crisis. The term "shadow bank" was coined by economist Paul McCulley in a 2007 speech at the annual financial symposium hosted by the Kansas City Federal Reserve Bank in Jackson Hole, Wyoming. In McCulley's talk, shadow banking had a distinctly U.S. focus and referred mainly to nonbank financial institutions that engaged in what economists call *maturity transformation*. Commercial banks engage in maturity transformation when they use deposits, which are normally short term, to fund loans that are longer term. Shadow banks do something similar. They raise (that is, mostly borrow) short-term funds in the money markets and use those funds to buy assets with longer-term maturities. But because they are not subject to traditional bank regulation, they cannot—as banks can—borrow in an emergency from the Federal Reserve (the U.S. central bank) and do not have traditional depositors whose funds are covered by insurance; they are in the "shadows."

Home mortgages

Shadow banks first caught the attention of many experts because of their growing role in turning home mortgages into securities. The "securitization chain" started with the origination of a mortgage that then was bought and sold by one or more financial entities until it ended up part of a package of mortgage loans used to back a security that was sold to investors. The value of the security was related to the value of the mortgage loans in the package, and the interest on a mortgage-backed security was paid from the interest and principal homeowners paid on their mortgage loans. Almost every step from creation of the mortgage to sale of the security took place outside the direct view of regulators.

The Financial Stability Board (FSB), an organization of financial and supervisory authorities from major economies and international financial institutions, developed a broader definition of shadow banks that includes all entities outside the regulated banking system that perform the core banking function, credit intermediation (that is, taking money from savers and lending it to borrowers). The four key aspects of intermediation are

maturity transformation: obtaining short-term funds to invest in longer-term assets;

liquidity transformation: a concept similar to maturity transformation that entails using cash-like liabilities to buy harder-to-sell assets such as loans;

leverage: employing techniques such as borrowing money to buy fixed assets to magnify the potential gains (or losses) on an investment;

credit risk transfer: taking the risk of a borrower's default and transferring it from the originator of the loan to another party.

Under this definition shadow banks would include broker-dealers that fund their assets using repurchase agreements (repos). In a repurchase agreement an entity in need of funds sells a security to raise those funds and promises to buy the security back (that is, repay the borrowing) at a specified price on a specified date.

Money market mutual funds that pool investors' funds to purchase commercial paper (corporate IOUs) or mortgage-backed securities are also considered shadow banks. So are financial entities that sell commercial paper and use the proceeds to extend credit to households (called finance companies in many countries).

Why there is a problem

As long as investors understand what is going on and such activities do not pose undue risk to the financial system, there is nothing inherently shadowy about obtaining funds from various investors who might want their money back within a short period and investing those funds in assets with longer-term maturities. Problems arose during the recent global financial crisis, however, when investors became skittish about what those longer-term assets were really worth and many decided to withdraw their funds at once. To repay these investors, shadow banks had to sell assets. These "fire sales" generally reduced the value of those assets, forcing other shadow banking entities (and some banks) with similar assets to reduce the value of those assets on their books to reflect the lower market price, creating further uncertainty about their health. At the peak of the crisis, so many investors withdrew or would not roll over (reinvest) their funds that many financial institutions—banks and nonbanks—ran into serious difficulty.

Had this taken place outside the banking system, it could possibly have been isolated and those entities could have been closed in an orderly manner. But real banks were caught in the shadows, too. Some shadow banks were controlled by commercial banks and for reputational reasons were salvaged by their stronger bank parent. In other cases, the connections were at arm's length, but because shadow banks had to withdraw from other markets—including those in which banks sold commercial paper and other short-term debt—these sources of funding to banks were also impaired. And because there was so little transparency, it often was unclear who owed (or would owe later) what to whom.

In short, the shadow banking entities were characterized by a lack of disclosure and information about the value of their assets (or sometimes even what the assets were); opaque governance and ownership structures between banks and shadow banks; little regulatory or supervisory oversight of the type associated with traditional banks; virtually no loss-absorbing capital or cash for redemptions; and a lack of access to formal liquidity support to help prevent fire sales.

Issues continue

Shadows can be frightening because they obscure the shapes and sizes of objects within them. The same is true for shadow banks. Estimating the size of the shadow banking system is particularly difficult because many of its entities do not report to government regulators. The shadow banking system appears to be largest in the United States, but nonbank credit intermediation is present in other countries—and growing. In May 2010, the Federal Reserve began collecting and publishing data on the part of the shadow banking system that deals in some types of repo lending. In 2012, the FSB conducted its second "global" monitoring exercise to examine all nonbank credit intermediation in 25 jurisdictions and the euro area, which was mandated by the Group of 20 major advanced and emerging market economies. The results are rough because they use a catch-all category of "other financial institutions," but they do show that the U.S. shadow banking system is still the largest, though it has declined from 44 percent of the sampled countries' total to 35 percent. Across the jurisdictions contributing to the FSB exercise, the global shadow system peaked at $62 trillion in 2007, declined to $59 trillion during the crisis, and rebounded to $67 trillion at the end of 2011. The shadow banking system's share of total financial intermediation was about 25 percent in 2009–11, down from 27 percent in 2007.

But the FSB exercise, which is based on measures of where funds come from and where they go, does not gauge the risks that shadow banking poses to the financial system. The FSB also does not measure the amount of debt used to purchase assets (often called leverage), the degree to which the system can amplify problems, or the channels through which problems move from one sector to another. There are plans to combine the original "macro mapping" exercise with information gathered from regulatory and supervisory reports and information gleaned from the markets about new trends, instruments, and linkages. The FSB plans to use what it learns about shadow banks and link that information to the four shadow banking activities (maturity and liquidity transformation, credit risk transfer, and leverage) to devise a "systemic risk map" to determine which activities, if any, may pose a systemic risk.

Shadow banks first caught the attention of many experts because of their growing role in turning home mortgages into securities.

The first FSB survey suggested that homegrown shadow banking activity is not significant in most jurisdictions, although it did not take into account cross-border activities. Nor was it able to show how the activities might be connected across different types of entities. For example, finance companies in some countries seem to be extending their reach and their credit intermediation role. As yet, the true risks of these activities and whether they are systemically important are undetermined.

Authorities engage

The official sector is collecting more and better information and searching for hidden vulnerabilities. Banking supervisors also are examining the exposure of traditional banks to shadow banks and trying to contain it through such avenues as capital and liquidity regulations—because this exposure allowed shadow banks to affect the traditional financial sector and the economy more generally. Moreover, because many shadow banking entities were either lightly regulated or outside the purview of regulators, the authorities are contemplating expanding the scope of information reporting and regulation—of both entities and the markets they use. And the authorities are making sure that all potential shadow banking entities or activities are overseen in a way that discourages shadow banks from tailoring their behavior to come under the supervision of the weakest (or of no) regulators—domestically or globally.

The authorities are making progress, but they work in the shadows themselves—trying to piece together disparate and incomplete data to see what, if any, systemic risks are associated with the various activities, entities, and instruments that comprise the shadow banking system. ■

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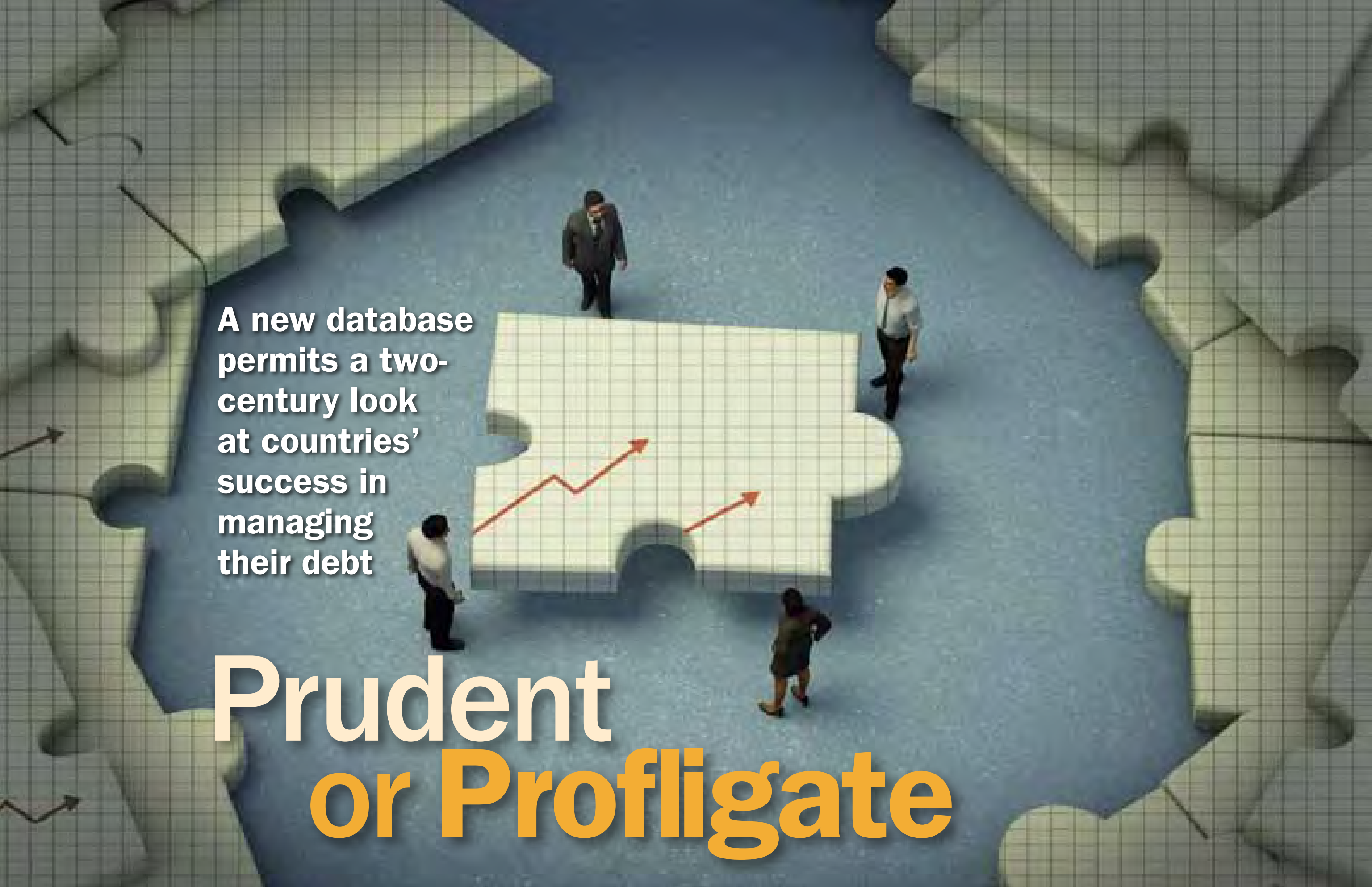


A new database permits a two-century look at countries' success in managing their debt

Prudent or Profligate

Paolo Mauro, Rafael Romeu, Ariel Binder, and Asad Zaman

WHETHER governments are taking sufficient measures to ensure the sustainability of public debt has become an important public policy question as sovereign debt has risen to unprecedented peacetime levels. Political realities and weak economic growth often call for delayed expenditure cuts or tax increases, but a high or potentially rising interest burden would argue for the opposite—fiscal adjustment—by raising revenues, trimming spending, or both.

Are countries doing enough to reduce their deficits in response to increases in their debt-to-GDP ratios? Are fiscal (tax and spending) policies sufficiently prudent, or are countries behaving in a profligate manner? And how can fiscal "prudence" or "profligacy" be assessed empirically? Answers to these questions cannot be based on data for only one or even a few years. Rather, they require a longer-term perspective and call for delving into some fascinating economic history.

Economists have increasingly drawn on historical data to analyze fiscal issues. For example, in *This Time Is Different*, Harvard professors Carmen M. Reinhart (see People in Economics in this issue of *F&D*) and Kenneth S. Rogoff look back at eight centuries of public debt and fiscal crises. In a recent study we examined 55 countries' fiscal policy decisions during 1800–2011 (Mauro and others, 2013), using the most comprehensive cross-country data set assembled to date (see box).

We found, for example, that the authorities often mistake a persistent decline in economic growth for a temporary slowdown and, because of this misperception, respond inappropriately. We also found that when governments face high borrowing costs they tend to become more prudent. And the data show that the global economic and financial crisis that began in 2008 resulted in the largest peacetime government deficits in history.

Enabling better analysis

The availability of data not only on fiscal *stocks* (say, the amount of debt at any given time) but also on fiscal *flows* (deficits, which change the stock of debt) and, crucially, on their subcomponents (revenues, noninterest expenditures, and the interest bill) makes it possible to apply modern tests of fiscal sustainability. These typically focus on the primary fiscal balance (the difference between a government's revenues and its noninterest expenditures), which is the most accurate reflection of fiscal policy decisions within government control.

Longer data series and a wider array of countries make additional econometric methods feasible. The study gauges the degree of fiscal prudence or profligacy for each country over the course of its history. It also identifies the factors underlying changes in the degree of fiscal prudence or profligacy.

Drawing on historical series of fiscal data, it is possible to study the evolution of *fiscal prudence* and *fiscal profligacy*—terms often used, somewhat loosely, to denote whether government budget policies are sustainable or unsustainable. Sustainability is judged by whether the expected value of all future budget surpluses is sufficient to pay off the public debt (whether the *intertemporal budget constraint* is met). In practice, prudence and profligacy are medium-term concepts. Neither is built up overnight: one or even a few years of budget deficits do not necessarily cause a fiscal crisis, given a strong initial position. Still, a few years of persistent deficits could well suggest the need for a correction to avoid passing on an unbearable debt to future generations. Thus, judgments regarding whether prudence or profligacy prevails are necessarily made over several years. Moreover, a country's degree of prudence is not constant. It will change over time, as governments, citizens' attitudes, and economic circumstances (such as interest rates and long-run economic growth) change.

Tests of fiscal policy sustainability ask whether projected policies are adequate to stabilize the debt-to-GDP ratio. In academia, a test of fiscal policy sustainability developed by Henning Bohn (1998) has gained popularity. It measures the extent to which policymakers respond to increases in debt with decisions that lead to an improved primary balance. When this response is positive and statistically significant, the country's fiscal policy is judged sustainable.

One challenge of using these tests is that they require many years of country-specific historical data. Because of this limitation, earlier research has focused on a few countries with easily available long-term data. Now, thanks to the availability of data that go back a long time, we can identify periods of prudence and profligacy for each of the 55 countries in the sample. Our use of the terms "prudence" and "profligacy" is technical, not judgmental. For example, a fiscal stimulus that leads the primary balance to deteriorate at a time when the debt-to-GDP ratio is rising (profligate behavior) may well be justified as an effort to avoid a deep and prolonged recession.

Our analysis uncovers some important economic factors that drive changes in prudent behavior. Such factors include unexpected changes in long-term economic growth and changes in real interest rates. The evidence suggests that countries tend to become more profligate when their long-term real GDP growth is lower than anticipated. That is, when long-term growth (assessed by researchers in hindsight) declined compared with policymakers' expectations based on data available to them at the time, those policymakers were likely to perceive the GDP slowdown as temporary and tended to respond with fiscal loosening (lower taxes, increased spending, or both). In such cases, the outcome is often fiscal profligacy. In addition, higher real interest rates (long-term government rates adjusted for inflation) are found to increase prudence. As one might expect, when real borrowing costs increase, governments save more and borrow less.

Historical periods

The historical periods covered in these data can be broadly divided into the mid-19th century (1850–80), the first period of globalization (1880–1913), the period between the world wars (1919–39), the postwar period (1950–2007), and the global financial crisis (2008–11).

The effect on fiscal prudence of long-term growth shocks can be seen both in the mid-19th century period and, more recently, in the 1970–2000 period. Chart 2 tracks the average primary

The history of public finances

The IMF's new database, Public Finances in Modern History (IMF), documents 200 years of budget deficits and government debt. The data cover 55 countries—24 of them considered advanced economies. Half of the observations are drawn from historical publications that cover many countries; the other half were collected from country-specific sources such as government publications or economic histories that include public finance statistics. The data set consists of both fiscal *stocks* (such as the level of government debt at a particular moment) and *flows* (such as spending and revenue collection), which makes it possible to document the primary balance of governments far back in history.

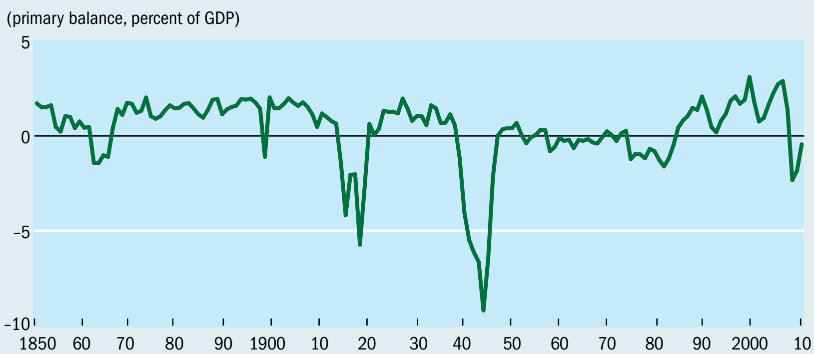
The data begin in the early 1800s for a handful of countries (for example, Sweden, United Kingdom, United States), and the coverage gradually increases—to more than 20 countries by 1880 (a geographically diverse group that includes Argentina, India, and Japan). By the 1920s the coverage reaches about 30 countries (including several "emerging markets").

Chart 1 illustrates the breadth of the data set. It presents the GDP-weighted average of the historical primary balance for the countries in the sample over the past century and a half. It is apparent, for example, that the worsening in the primary balance experienced during the global economic and financial crisis that began in 2008 is exceeded only by that associated with the two world wars.

Chart 1

Only worse in war

Countries ran the biggest peacetime deficits ever in their primary balances during the global financial crisis that began in 2008.



Source: IMF, Public Finances in Modern History database.
Note: The primary balance is the average of revenues minus noninterest expenses for all countries in the sample.

balance (red line) against the average growth surprise (green line). A negative growth surprise (that is, when the green line is below zero) indicates that actual long-term growth turned out lower than policymakers would have anticipated based on the data available to them in real time. This is not the result of lower cyclical growth on so-called automatic stabilizers, such as revenues that fall when the economy slows, and cyclically sensitive expenditures such as unemployment benefits. Rather, it is the result of policymakers erroneously perceiving a long-term downturn in growth as a cyclical slowdown and responding to it with fiscal loosening or insufficient tightening.

In the 1860s and mid-1870s (see Chart 2, top panel), negative growth surprises coincided with civil or unification wars (for example, in the United States and Italy), strong emigration from parts of Europe (for example, Sweden), and financial panics. The financial crisis of 1873 led to a prolonged recession that was at the time considered the most difficult economic period ever. The deficit in average primary balances tracked these growth surprises closely.

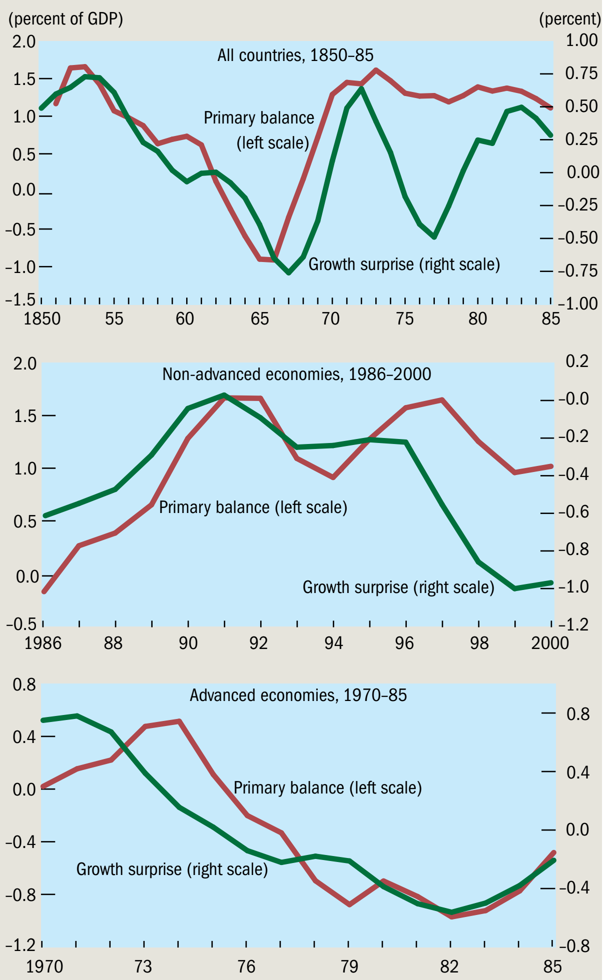
Similarly, in the 1970s (see Chart 2, bottom panel), negative growth surprises from the sudden rise in oil prices turned out to be associated with a deterioration in primary balances. This effect is most apparent in Japan, where economic growth slowed significantly in the mid-1970s, after a period of rapid economic growth. Policymakers there seem to have based their fiscal policy decisions on optimistic forecasts of long-run economic growth, and a belief that the unexpected growth slowdown was temporary. That misperception may have led to fiscal decisions that, in hindsight, look profligate—resulting in rising debt and primary deficits in the late 1970s and early 1980s. A similar sequence of events occurred in Japan in the late 1990s with the bursting of what in hindsight was an asset price bubble.

In emerging markets, sizable adverse shocks to long-run growth occurred in the late 1980s and, especially, the late 1990s, and during both periods those countries' primary fiscal balances worsened considerably (see Chart 2, middle panel).

Chart 2

Shocking behavior

Changes in the size of the primary balances (revenues minus noninterest expenditures) often have been closely related to unanticipated changes in economic growth.



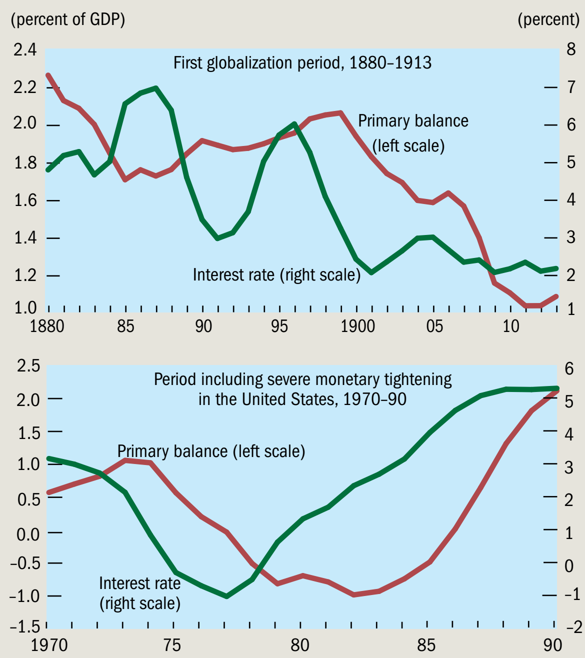
Source: IMF, Public Finances in Modern History database.

Note: The primary balance (red line) is a five-year moving average of revenues minus noninterest expenses. The green line reflects a five-year moving average of changes in economic growth that were not anticipated by policymakers. Non-advanced economies include both emerging market economies and developing economies.

Chart 3

Interest disciplines behavior

High long-term interest rates prompt prudent behavior (primary balances grow) and lower rates result in profligate behavior (primary balances shrink).



Source: IMF, Public Finances in Modern History database.

Note: The primary balance (red line) is a five-year moving average of revenues minus noninterest expenses. The green line reflects the five-year moving average of real long-term interest rates on government bonds in secondary markets.

High borrowing costs and growth slowdowns

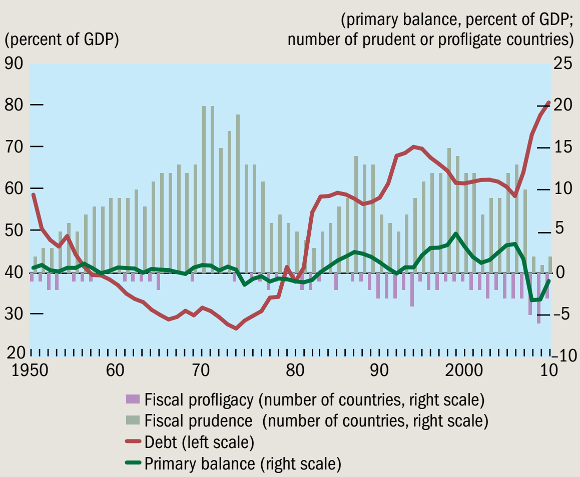
Greater fiscal prudence as a result of higher interest rates is evident in Chart 3. During the first period of globalization from 1880 to 1913 (top panel), sizable primary surpluses at first coincided with high real long-term interest rates. Lower rates after 1900 were associated with a reduction in the average primary fiscal balance. During 1970–90 (bottom panel), the increase in long-term real interest rates associated with the severe monetary tightening in the United States was followed by an improvement in the primary balances.

Consistent with the impact of worldwide developments on long-term growth surprises and interest rates, some periods in history are characterized by large numbers of relatively prudent or profligate countries. Chart 4 provides a broad overview of the post–World War II period, showing the number of fiscally profligate advanced economies each year alongside their weighted average government debt and primary balance (in percent of GDP). During the 1950s and 1960s, advanced economies lowered their debt levels by maintaining moderate primary surpluses (and benefiting from rapid economic growth and moderate interest rates). The degree of prudence improved as the effects of World War II faded. The decline in long-term growth triggered by the oil shocks of the 1970s then reduced the number of prudent countries and increased the number of profligate countries. During the 1980s and 1990s, fiscal adjustment efforts—prompted in part by higher global interest rates—were associated with stronger primary balances and an increase in the number of countries found to be prudent.

Chart 4

Laying on debt

Advanced economies gradually brought down debt after World War II, but by the mid-1970s it began to grow again and has risen dramatically since the start of the global crisis.



Source: IMF, Public Finances in Modern History database.
Note: The right scale is in percent of GDP terms for the primary balance and in actual numbers for countries considered prudent or profligate. The number of profligate countries is displayed below the horizontal axis; prudent ones are above. The chart counts only those identifiably profligate or prudent.

The global financial and economic crisis that started in 2008 brought about the largest and most pervasive peacetime deterioration of fiscal balances in history. The number of prudent countries declined sharply. Indeed, the data suggest that for countries found to be generally fiscally prudent until the onset of the Great Recession (including the United States and Spain), the fiscal response to the crisis—which included more government spending and lower tax receipts—tipped

A given country is not forever prudent or profligate.

the balance to profligacy (during 2009–11 for the United States and in 2010 for Spain). For others—such as France and Japan—that were profligate before 2008, the response to the crisis worsened their primary balances while debt grew.

The new database also demonstrates that behavior changes. A given country is not forever prudent or profligate. Just as countries change—as a result of political, social, institutional, or economic developments—so does their degree of fiscal prudence or profligacy. This simple observation implies that policymakers and the public at large should not take a long-established tradition of fiscal prudence for granted; conversely, countries are not doomed to remain fiscally profligate if they take appropriate corrective measures.

The lesson countries can take away from these findings is clear: the policy decisions they make in the near future will have a lasting effect on their long-term fiscal posture. Most advanced economies face major fiscal challenges. High borrowing costs have already prompted some to undertake major fiscal adjustment. Others are adjusting more slowly to support a tentative recovery while trying to preserve market confidence in their long-term commitment to fiscal prudence. Whether these countries are judged prudent or profligate a few years from now will depend on fiscal policy decisions as well as on the extent to which long-lasting economic growth resumes. ■

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Liquid GOLD

Jacqueline Deslauriers

What an $18 million maple syrup heist tells us about the economics of supply management

IT was a heist the Pink Panther would have been proud of: over several months, a gang of thieves surreptitiously siphoned off hundreds of thousands of gallons of maple syrup worth more than $18 million from Canada's global strategic maple syrup reserve.

That's right: a global strategic maple syrup reserve. If you have never heard of it, you are not alone. Few had until the 2012 theft became public knowledge. The reserve is a Canadian cartel: something of a one-nation version of OPEC for maple syrup.

Maple syrup, like grain and milk, is an agricultural product subject to public policies on food and farming. Although its value to the Canadian economy may pale in comparison with, say, wheat or soybeans, maple syrup trumps the vast wheat fields of Manitoba and Saskatchewan when it comes to Canadian cultural identity. It is for good reason that the maple leaf is Canada's best-known symbol. Canadians' deep attachment to this exotic food shapes their attitude toward protecting the price farmers receive for producing maple syrup.

Governments the world over choose to control the price of certain commodities for any number of reasons—and by many different means. The maple syrup reserve is merely one Canadian manifestation of this phenomenon. Such government intervention in agriculture creates winners—usually the producers. Most economists contend that it also creates losers—mainly consumers. And because prices are kept artificially high, cartels can be threatened by those who do not participate in the cartel but sell the same (or virtually the same) product at a lower price. Seldom, though, are those competitors thieves.

Supply and demand

As a product, maple syrup lends itself to cartelization. Cartels work best when there are only a handful of producers (firms or countries). The product must be tradable and not easily replaced with a similar product.

What cartels do is manage the supply of the underlying product—and, by extension, the price. The ultimate goal is long-run profit maximization for the producers—which can include keeping the price from rising so much that consumers either seek substitutes or reduce consumption or both.

Maple trees, the source of maple syrup, grow naturally in eastern North America. Canada produces 80 percent of the world's supply of maple syrup, and the province of Quebec, where the heist took place, accounts for 90 percent of Canada's production, according to Paul Rouillard, deputy director of the Federation of Quebec Maple Syrup Producers. The United States accounts for the remaining 20 percent—nearly all of it from the states of Vermont and New Hampshire.

Maple syrup is a natural product derived from maple tree sap, which begins to run in the spring. Historically farmers inserted spouts into the trees (a process called tapping) and collected the sap—clear, watery, and sweet—in buckets affixed to the trees below the spout. Many still use this age-old technique, although in modern operations farmers use hoses to deliver the sap to a centralized processing point rather than

Maple syrup farmer, Rigaud, Quebec, Canada.

Drums of maple syrup, International Strategic Reserve warehouse, Quebec, Canada.

collecting it bucket by bucket. Farmers then heat the sap, evaporating much of it. What remains is maple syrup. It takes about 43 gallons of sap to produce one gallon of maple syrup. The production season is short—roughly six weeks—during which a tree produces between 10 and 20 gallons. Sap output depends on a number of variables, including weather. Trees are most productive when there is some snow on the ground, nights are cool, and days are warm and sunny.

The final product is easily stored and does not deteriorate over time. Because of that long shelf life, maple syrup is an easily exportable item. Quebec producers have found major markets in the United States, Japan, and Germany and are expanding sales in China, India, and South Korea, according to Rouillard.

Unlike milk or chickens, two other products whose price many countries regulate through supply management, maple syrup is not, for most people at least, an essential or staple food, and many will do without if the price gets too high. The cartel must cope with that possibility when managing the supply of maple syrup.

The OPEC of maple syrup

The Federation of Quebec Maple Syrup Producers was set up in 1966 to represent and advocate for producers—most of them dairy farmers who supplemented their income by tapping maple trees. By the 1990s, maple syrup output had grown rapidly, and by 2000 the industry was producing a surplus of between 1.3 and 2 million gallons (Gagné, 2008) a year. Because maple syrup is so easily stored, in bumper years the 80 licensed maple syrup buyers from Canada and three U.S.-based buyers stocked up at low prices, and bought less during lean years when prices tended to be higher. By and large, farmers were at the mercy of the buyers. Although the buyers were able to modulate their costs by adapting purchases to market conditions, the farmers faced wild gyrations in their income.

Things changed in 2001, when a bumper crop of almost 8.2 million gallons of maple syrup sent prices plunging (Canadian Business, 2013). That prompted producers to change the federation from an advocacy group to a marketing board that could negotiate better prices with the buyers. The producers turned to a provincial law governing the marketing of agricultural products that allowed them to set production and marketing terms for their product as long as they were organized formally as a federation or syndicate (Gagné, 2008).

Maple syrup trumps the vast wheat fields of Manitoba and Saskatchewan when it comes to Canadian cultural identity.

The new-look federation also began to store surplus production to keep prices from plunging. Initially, individual farmers were free to produce as much as they wanted. But another bumper crop in 2003 resulted in so much syrup, much of which had to be stored, that the industry decided to control production by imposing quotas on individual producers.

The cartel based the quota for each of Quebec's 7,400 maple syrup farmers on their two best years of production between 1998 and 2004, the year the industry adopted the quota system, according to Rouillard. In 2004, the cartel determined that farmers would be allowed to sell 75 percent of what they produced. That percentage varies over time. Because production has been lean in the past few years, producers currently can sell 100 percent of their quota. If there are a few bumper crop years, the cartel can reduce the amount that farmers are permitted to sell.

Any output that cannot be sold must be transferred to the federation's reserve. Producers do not receive payment for this excess production until the federation sells it. The syrup is stored in barrels, each of which is tagged and identified. When barrels from the reserve are sold (more of them in lean production years, fewer when the sap runs bountifully), the farmer is paid. The reserve is financed entirely by the producers, although the cartel is lobbying Quebec's provincial government for a portion of the financing, said Rouillard.

Maple syrup is sold from the reserve when current production does not meet the demand from authorized buyers. In 2009, after four dismal years of production, the global maple syrup reserve ran dry. Since then production has bounced back and the reserve is overflowing.

The cartel sits down with the buyers every year to determine the price of maple syrup. The two sides consider such factors as the level of the reserve and expected global consumption of maple syrup, said Rouillard. If the cartel and buyers cannot agree on a price, the province's quasigovernmental administrative tribunal, which oversees collective agricultural industries, determines the price.

If producers try to sell more than their quota, they risk punishment by the tribunal.

The sticky side of supply management

This supply management system and its quotas have smoothed production of maple syrup and kept prices high and steady—as any cartel aims to do—to increase producer power and raise producer income. Critics say cartels are purely a means to transfer income from consumers to producers by supporting higher prices than the market would otherwise allow. They also say cartels stifle competition and innovation. Typically, higher prices attract new producers and/or new techniques. But quotas are a major barrier to new entrants, as well as a deterrent to innovation, because a producer cannot snag a larger market share.

Supply management systems to regulate agricultural production and prices exist in a number of economies besides Canada. Japan restricts rice output with supply quotas; Vietnam increases rice production and exports with output quotas. The United States does not widely use the supply management approach to raise farmer income. The European Union uses supply quotas, but is phasing them out as part of a move toward whole-farm payment, which is a direct cash transfer to a farmer merely for being in the business of farming.

Critics of supply management argue that if governments abolished this practice it would mean lower prices, because the law of supply and demand, not cartels, would set prices. But that is not always the case.

Take Australia as an example. The country was a pioneer in supply management in the 1920s, and Canada followed suit when it set up its own supply management system for agriculture, particularly dairy products (Findlay, 2012). Government agencies in Australia had a monopoly on marketing milk. Prices were set higher than what farmers could get if they exported the product, a quota

Supply management systems are costly when used to raise farm income or stimulate the output of a particular commodity.

system was established, and the quotas were tradable between producers. Australia did away with the system entirely by 2001. The price of milk dropped in the year after the government ended the supply management system, but then rose steadily and sometimes steeply between 2002 and 2008. It has since dropped, and in the past year has been on the rise again. Since Australia abolished its supply management system for milk, prices have risen more than they did under the previous quota system (Dairy Australia).

Government supply management systems may be designed to reduce or expand production and typically use a system of quotas to do so. Vietnam's supply management system for rice requires farmers to produce more than they wanted to so there would be enough rice for the domestic and export markets.

Like many economists, Will Martin, research manager for Agriculture and Rural Development at the World Bank, believes supply management systems are costly when used to raise farm income or stimulate the output of a particular commodity.

But Martin said they can be useful in addressing an underlying market failure—say in the case of open-access fisheries. Such a failure happened in the Canadian province of Newfoundland in 1992 when cod were so overfished that they virtually disappeared from Newfoundland waters. The government had to declare a moratorium on cod fishing. But there can be unintended consequences to the use of quotas to address such a market failure. (In this case, the unlimited catch by individual fishers led to the destruction of the market.) The moratorium permitted the fishery to recover, but it ruined the industry that supported cod fishing, which had been a major source of revenue for the region.

An argument often made in support of supply management is that it helps producers. That is likely true, Martin said, for producers that are in business when a supply management system is imposed—say, for example, the Quebec farmers who were tapping maple trees in 2004. But the benefits of higher prices associated with quotas are typically greater for larger producers than for smaller ones. Moreover, quotas make it hard for new producers to enter the industry because new entrants typically must purchase a right to produce from the farmers that already own the quotas.

Of course, thieves in Canada found a new way to get into the maple syrup business. Instead of buying a quota from farmers, the thieves simply made off with the syrup those farmers produced—much as rustlers in the United States stole cattle in the Old West.

The $18 million theft was from one of three warehouses the federation uses to stash excess production and was discovered in mid–2012 during an audit of the warehouse contents. The warehouse, about 60 miles southwest of provincial capital Quebec City, was lightly guarded—in retrospect, perhaps, too lightly guarded. The thieves set up shop nearby, and over the course of a year, according to police, made off with roughly 10,000 barrels of maple syrup—about 323,000 gallons, or about 10 percent of the reserve (Canadian Business, 2013). Because one gallon of Quebec maple syrup looks like any other gallon of the product, consumers had no way of distinguishing the federation-approved product from stolen syrup. And some buyers may not have cared.

It appears the thieves attempted to unload their booty to buyers in other Canadian provinces and the United States. Officers from the Royal Canadian Mounted Police, the Canada Border Services Agency, and U.S. Immigration and Customs Enforcement helped the Quebec provincial police with their investigation (Canadian Press, 2012). Police arrested three suspects in December 2012 and 15 more soon thereafter (Canadian Broadcasting Corporation, 2012). Those arrested faced charges of theft, conspiracy, fraud, and trafficking in stolen goods. Police have recovered two-thirds of the stolen syrup.

The old adage is that crime doesn't pay. That may be true, but the guaranteed high and stable prices established by the maple syrup cartel gave the thieves $18 million worth of reasons to prove that familiar saying wrong. ■

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FirstBorrow

A growing number of countries in sub-Saharan Africa are tapping international capital markets

Amadou N.R. Sy

MOST sub-Saharan African countries long have had to rely on foreign assistance or loans from international financial institutions to supply part of their foreign currency needs. But now for the first time many of them are able to borrow in international financial markets, selling so-called Eurobonds, which are usually denominated in dollars or euros.

This sudden surge in borrowing by countries in a region that contains some of the world's poorest nations is due to a variety of factors—including rapid growth and better economic policies in the region, low global interest rates, and continued economic stress in many major advanced economies, especially in Europe. In several cases, African countries have been able to sell bonds at lower interest rates than troubled European economies such as Greece and Portugal could.

Whether the rash of borrowing by sub-Saharan governments (as well as a handful of corporate entities in the region) is sustainable over the medium-to-long term, however, is open to question. The low interest rate environment is likely to change at some point—both raising borrowing costs for the countries and reducing investor interest—and heady economic growth may not continue, which would make it harder for countries to service their loans. Moreover, political instability in some countries could also make it more difficult for borrowers and lenders alike.

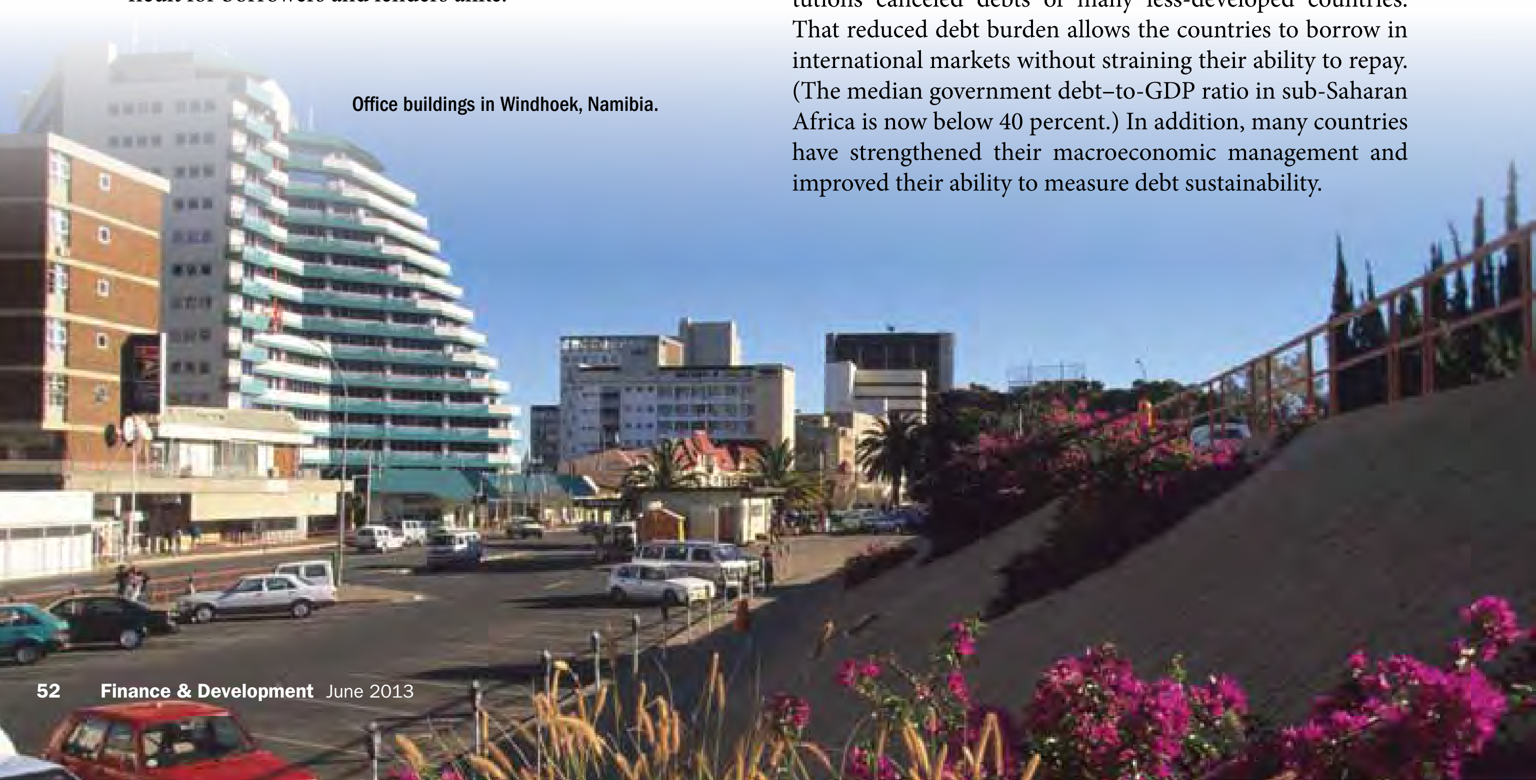
Joining the crowd

South Africa has issued Eurobonds for a number of years. But more recently, such countries as Angola, Côte d'Ivoire, Gabon, Ghana, Namibia, Nigeria, Rwanda, Senegal, Seychelles, and Zambia have been able to raise funds in international debt markets (see Chart 1). Kenya, Tanzania, and Uganda are expected to issue Eurobonds in the near future. In total, more than 20 percent of the 48 countries in sub-Saharan Africa have sold Eurobonds.

Moreover, a few corporate entities in sub-Saharan Africa have also successfully issued Eurobonds (Guarantee Trust Bank in Nigeria raised $500 million in a five-year bond offering in 2011, and Ghana Telecom issued $300 million in five-year bonds in 2007).

Among the factors propelling the sales are the following:

- ***Changes in the institutional environment:*** Since 2009, the IMF limit on borrowing at unsubsidized (nonconcessional) rates for low-income countries under IMF programs has become more flexible. It is based on a country's capacity and the extent of its debt vulnerabilities. As of December 2011, there were only seven sub-Saharan African countries with limited or no room for nonconcessional borrowing.
- ***Reduced debt burdens:*** The IMF revised its policy after many donor countries and major multilateral financial institutions canceled debts of many less-developed countries. That reduced debt burden allows the countries to borrow in international markets without straining their ability to repay. (The median government debt–to-GDP ratio in sub-Saharan Africa is now below 40 percent.) In addition, many countries have strengthened their macroeconomic management and improved their ability to measure debt sustainability.



Office buildings in Windhoek, Namibia.

• ***Large borrowing needs:*** Many sub-Saharan African countries have significant infrastructure requirements—such as electricity generation and distribution, roads, airports, ports, and railroads. Eurobond proceeds can be crucial to financing infrastructure projects, which often require resources that exceed aid flows and domestic savings.

• ***Low borrowing costs:*** In recent years, sub-Saharan African countries have been able to borrow at historically low yields—at times even lower than those of euro area crisis countries—and under favorable conditions, such as longer repayment periods (see Chart 2). Although borrowing costs are historically low, yields of Eurobonds from sub-Saharan Africa are high enough to attract foreign investors.

Sub-Saharan African countries are not the only ones taking advantage of the prevailing low yields to issue Eurobonds for the first time; some Latin American countries are, too. Bolivia recently tapped international markets for the first time in 90 years. Paraguay recently made an initial offering, and Honduras sold Eurobonds in early March 2013.

Can it continue?

To assess whether the favorable climate for bond issuance is likely to persist, it is useful to focus on factors that drive the cost of borrowing and determine the direction of capital flows. So-called *push* factors affect the general climate for bond sales to international investors; *pull* factors are country-specific and depend to a degree on a country's policies. Gueye and Sy (2010 and 2013) studied these factors in 120 countries between 2000 and 2009.

Among the important push factors were the federal funds rate (the overnight interest rate U.S. banks charge each other to borrow excess reserves); liquidity measured by reserve money (currency in circulation and commercial bank deposits at the central banks for the euro area, Japan, the United Kingdom, and the United States); the price of oil; measures of investors' risk appetite; the ratio of U.S. short-term interest rates to long-term rates (the slope of the yield curve); and U.S. high-yield corporate spreads.

The factors that pull in funds include a country's GDP per capita; the sustainability of its external financial operations, including the current account (which measures what a country spends abroad offset by what foreigners spend in that country) and the ratio of external debt to exports; and macroeconomic stability (mainly measured by inflation performance). Sovereign credit ratings, which are a good proxy for the creditworthiness of a country, capture most of these pull factors.

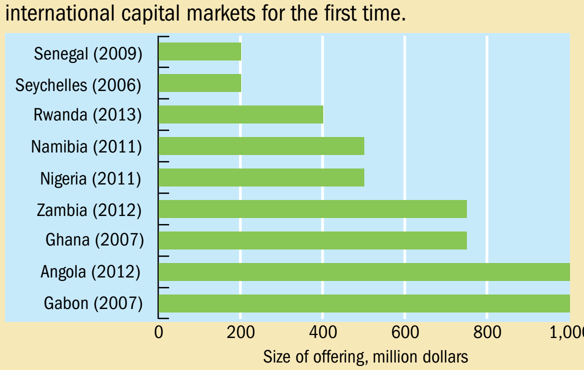
Push factors indicate that the capital inflows driving the purchase of Eurobonds issued by sub-Saharan African countries are sustainable only in the short term. One reason is that the record-low interest rates that prevail in the United States are likely to increase in the medium term. The other is a change in the risk appetite of foreign investors, which has been increasing as they search for higher yields than they can get in the United States and other safe havens. That favors Eurobonds from sub-Saharan Africa. But when global interest rates increase and concerns about the global financial crisis abate, governments in sub-Saharan Africa will have to compete with other issuers for funding.

Pull factors also indicate that capital inflows are sustainable in the short run. Whether they will pull in capital over the long run depends on the ability of policymakers in sub-Saharan Africa to strengthen them. According to IMF projections, the near-term outlook for the region remains broadly positive, and growth is projected to be 5.4 percent in 2013 (IMF, 2013). But downside risks have intensified, mostly stemming from the uncertain global economic environment, which would affect mostly several middle-income countries with trade links to Europe, including South Africa (IMF, 2012). The strength of projected growth in the region is helped in part by supply-side factors, including expanding natural resource sectors. But low-income countries in sub-Saharan Africa have also been

Chart 1

Joining the party

A number of countries in sub-Saharan Africa have sold bonds in international capital markets for the first time.

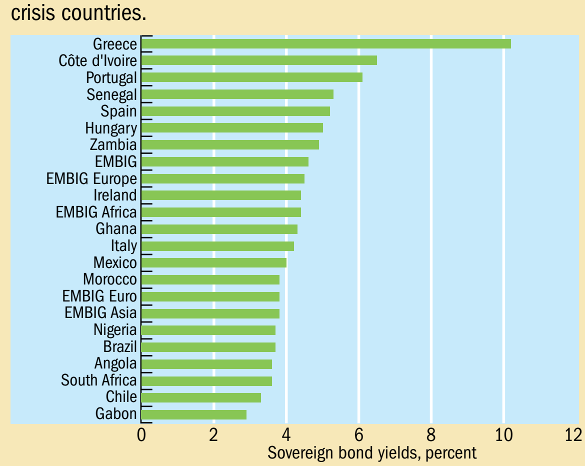


Source: Author's calculations.
Note: Data are through the end of January 2013. Year in parentheses is date of first sale.

Chart 2

Bargain rates

Yields on Eurobonds issued by sub-Saharan African countries are historically low—at times even lower than those of euro area crisis countries.



Source: Bloomberg L.P.
Note: Bond yields as of Jan. 30, 2013, in the secondary market. Eurobonds are bonds issued in a foreign currency, usually dollars or euros. EMBIG is the J.P. Morgan Emerging Market Bond Index Global.

helped by stronger policy frameworks, improved governance, favorable commodity price trends, and sharply reduced external debt burdens (at least for now). Natural resource wealth presents challenges that must be addressed, including how to ensure the efficiency of public spending that arises from such wealth (see Arezki, Gylfason, and Sy, 2011).

Conventional policies

Recent sovereign defaults in sub-Saharan Africa illustrate the importance of strengthening pull factors. The Seychelles defaulted on a $230 million Eurobond in October 2008, following a sharp fall in tourism revenues during the global financial crisis as well as years of excess government spending. The default led to debt restructuring and government spending cuts. Following election disputes, Côte d'Ivoire missed a $29 million interest payment, which led to a default in 2011 on a bond that was issued in 2010.

In several cases, African countries have been able to sell bonds at lower interest rates than troubled European economies.

Other questions about a country's policies arise when external debt is cheaper than domestic debt. Ghana's experience is a case in point. In January 2013, its government could pay about 4.3 percent on a 10-year borrowing in dollars (reflected in secondary market yields on the offering). However, when the government borrows in local currency domestically, the interest rate is at least 23 percent on three-month treasury bills. After inflation differentials are taken into account, the difference between the U.S. dollar and local currency borrowing costs reaches 10.6 percentage points (5.4 percentage points, taking into account currency depreciation). This difference is due in part to changes in the policy environment—monetary policy was tightened in 2012 and the fiscal deficit increased to about 10 to 11 percent of GDP. But the difference is also due to a low external cost that reflects foreign investors' search for yield, their confidence in Ghana's willingness to repay its debt obligations, and its ability to do so because of its positive growth prospects (it is an oil-producing economy). The difference also reflects underdeveloped domestic debt markets with an investor base dominated by banks—which raises domestic borrowing costs—and probably the effects of restricting foreign investors from buying domestic government securities with a maturity of less than three years.

The spate of international borrowing by sub-Saharan African countries at rates sometimes below what many euro area countries are paying is probably unsustainable in the long run unless these countries are able to generate high and sustainable economic growth and further reduce macroeconomic volatility.

Policy actions are therefore important. Short-term policy actions must continue to focus on achieving macroeconomic stability, maintaining debt sustainability, ensuring adequate use of proceeds from financing and investing in projects with high economic "multipliers," avoiding the buildup of balance sheet vulnerabilities from currency and maturity mismatches, and managing the risk of significant slowdown or reversal. Long-term policy actions should focus on developing domestic capital markets and institutions and adequately sequencing the liberalization of the capital account.

Unconventional policies

But countries also must consider the net benefits of unconventional policies because conventional policies will take time to develop and implement.

For example, developing a well-functioning domestic bond market to attract domestic and foreign savings—especially over the long term—is not easy. To that end, conventional advice is that countries must improve macroeconomic policies; debt management; and the regulatory, legal, and market infrastructure—as well as develop an investor base. Money markets are the cornerstone of capital markets and a natural place to start reforms. Commercial banks are typically the largest investors, and a well-functioning interbank market is key. Ensuring the liquidity of domestic markets should also be a priority.

But implementing these conventional policies takes time. Taking examples from a variety of countries, African policymakers could aim for successful second-best policies and then progress to the best ones. For instance, Malaysia has been able to develop the third-largest bond market in Asia (after Japan and Korea) by developing its Islamic capital markets. By strengthening common institutions, the governments in the West African Economic and Monetary Union are increasingly able to mobilize domestic savings from banks and other investors in the eight countries of the union and separately issue treasury bills and bonds. Ethiopia, Ghana, and India have tapped savings from nonresident nationals by issuing diaspora bonds. Finally, the Canadian province of Quebec and Morocco have relied on French-inspired public financial institutions called *Caisses de Dépôts* to develop their domestic capital markets. Learning from experiences of other countries could be a useful way forward in sub-Saharan Africa. ■

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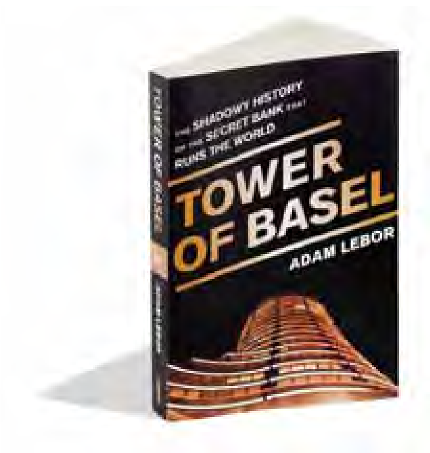
The BIS Gets the Once-over



Adam LeBor

Tower of Basel

The Shadowy History of the Secret Bank That Runs the World

PublicAffairs, New York, 2013, 336 pp., $28.99 (cloth).

BIS is an obscure abbreviation for anyone other than a banker. But readers of the financial pages are all too familiar with the Swiss city of Basel in the context of international standards on banks' capital adequacy and other prudential recommendations by the Basel Committee on Banking Supervision, whose secretariat is at the Bank for International Settlements—or BIS. Adam LeBor, a journalist and author on European current affairs, has written a well-researched 300-plus-page book about this little-known international bank headquartered in a modernistic office tower in Basel.

The book is described on the back cover as the "first investigative history of the world's most secretive global financial institution." I found it an informative—albeit emotional—piece of serious journalism by an author who has read a large body of literature, talked to numerous people, and studied archives. But this is not a disinterested history book. The title itself deems the book the "shadowy history of the secret bank that runs the world."

LeBor has a good eye for issues worth investigating: the story of the BIS is such a topic. Since its inception in 1930 its history has been rich in dramatic turns, and a thorough yet accessible book on this curious institution is long overdue. The BIS has always been special in the complex world of high finance. Even the raison d'être and the present functions of the bank are hard to describe in plain language. It was established after World War I with a delicate mandate: to settle war reparation payments imposed on defeated Germany by the Treaty of Versailles. Technicalities such as collection, administration, and distribution of the funds payable certainly called for a financial institution. Thus the BIS (BIZ in German) was established—an admittedly distinctive institution whose founding owners included not only the central banks of the victors (Belgium, France, Italy, United Kingdom) but also those of Germany, Japan, and—strangely—a consortium of three U.S. banks on behalf of the Federal Reserve. Soon the central banks of Austria, Czechoslovakia, Hungary, and other small European countries joined the bank that was to fill a niche for financial transactions between central banks and for professional contacts. History soon took a sharp turn: German reparations were suspended. Yet the BIS resumed its activities: the unusual mix of shareholders did not prevent the bank from functioning even during the terrible war years.

LeBor believes that the BIS was far from neutral before and during World War II, that it became a de facto German-controlled bank, even though its chairmen, presidents, and key staff were not German. He dwells on the life and activity of a number of key players—Hjalmar Schacht, the president of the Reichsbank; Montagu Norman, the governor of the Bank of England; and the American Thomas McKittrick, BIS president during the war—and accuses the latter two of crimes bordering on treason. The author exposes the reader to the diplomatic, financial, and political complexities of the war years through life histories of important personalities of the age: Allen Dulles, the Swiss director of the U.S. Office of Strategic Services; Henry Morgenthau, the treasury secretary, and his assistant, Harry Dexter White; and Ludwig Erhard, considered the architect of the West German "economic miracle."

LeBor has a good eye for issues worth investigating.

The personal stories, written in a lively essayistic manner, are provocative, but I feel that these mini-essays do not do justice to some of the protagonists, and the book ignores the reasons and drivers behind the bank's successful evolution after World War II into the BIS we know today. In light of my positive personal experience dating to the early 1990s (as Governor of the Hungarian Central Bank, attending the monthly governors' meetings at the BIS), I find the author's conclusion that the ". . . BIS is an opaque, elitist, and anti-democratic institution, out of step with the twenty-first century" (p. 256) harsh and unjustified.

The BIS is an international institution that has had to assume new roles under drastically changing global conditions. Collecting banking data, conducting high-quality research, and providing prudential advice are its vital contribution to the proper functioning of modern finance. The common European currency and the foundation of the European Central Bank presented the BIS with new challenges, as does the growing importance of the so-called BRICS (Brazil, Russia, India, China, South Africa) and other emerging economies, whose central banks want to be heard and taken into account. The BIS will continue and prosper if it keeps reacting as innovatively and efficiently to the objective demands of international high finance as it has throughout its existence.

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Lament for a Textile Town

Edoardo Nesi

Story of My People

Random House, New York, 2013, 163 pp., $19.95 (cloth).

They say that history is written by the winners. It's a cynical saying, and it's also sometimes untrue. The preeminent history of Rome's victory over ancient Israel was written by Josephus, a general from the losing side. Some of the classic—but by no means uncontested—accounts of India's independence were written by British historians. And now we have another classic by someone on the wrong end of history: *Story of My People*, Edoardo Nesi's book about how Chinese competition devastated the Italian textile industry.

So perhaps the claim needs to be revised. Perhaps one should say that readers prefer histories where the authors can claim virtue for their side, even in defeat. Think of all those books about Athens in the Peloponnesian Wars. But even that argument does not apply in this case. Nesi never claims the moral high ground for Italy. To the contrary, he readily acknowledges that the country was lucky from the 1950s through the 1990s, when any artisan prepared to work hard could succeed. That golden era has ended. It is now the turn of other nations to have their moment in the sun.

Nesi is not bitter about this. Rather, he is sad. So he has written a book that falls into a third, rare, and beautiful category: an elegy on a lost way of life. A people (specifically, the people of the textile-producing city of Prato) whose creativity was prized the world over has found that its skills are no longer in demand. The free market that once gave them prosperity and purpose has now taken both away. Formerly tireless workers now spin out their empty days, feeling exhausted though they've done no work, feeling ashamed though they've done nothing wrong.

The story of Prato's demise is lyrically written and deeply moving. This is somewhat unusual for a book about business. But Nesi is not a typical businessman. Although he inherited his firm from his parents (and grandparents), he always wanted to be a writer. And since he had to sell his firm, he has been free to write, which he has done with extraordinary success. The result is a book that spends more time exploring the impact of failure on people than describing the textile business. There is hardly a number to be found.

A people whose creativity was prized the world over has found that its skills are no longer in demand.

That's not to say the book lacks an argument. Nesi lays out a clear diagnosis of Prato's predicament. The biggest problem was the dismantling of the international clothing regime, which allowed cheap Chinese textiles to flood into Europe. At the time, economists predicted that Italian firms would in return be able to sell their high-priced textiles to China. But this promise proved a chimera, except for a few firms with famous names.

The second main factor was more subtle. The Italian government, aiming to stamp out tax evasion, levied a tax on firms' revenue. That meant that even as profits turned to losses, firms were still liable for taxes. Instead, they just decided to shut down.

Nesi feels strongly that something should be done to help preserve Prato. But he doesn't know what. Instead, he suggests that economists, having given poor policy advice, now have to come up with solutions.

Can they? The answer is unclear. Standard economics says that the benefits from reducing tariffs—lower prices and better products for consumers—exceed the costs. That creates gains from trade, which the winners can share with the losers, for example by training them for new jobs.

But this book argues that such schemes cannot compensate for the loss of a way of life. Instead, governments should limit the process of "creative destruction," or at least slow it down to make it more manageable. This can indeed be done, but at a cost to the rest of society. Britain tried this approach in the 1970s, and found that the costs—the subsidies, the damage to innovation and growth—eventually swelled to the point that society could no longer accept them. There followed an adjustment under Margaret Thatcher that proved all the more painful for having been deferred for so long.

Still, it is impossible to read this book without feeling that something must be done. Some economists agree and have taken up the research challenge. The results of their investigations will come too late for Prato. But other places could benefit, even those—especially those—that are now enjoying their golden eras. For if this book makes one thing clear, it is that golden eras do not last forever.

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The World's Largest Debate Club

Jagdish Bhagwati and Arvind Panagariya

Why Growth Matters

How Economic Growth in India Reduced Poverty and the Lessons for Other Developing Countries

PublicAffairs, New York, 2013, 304 pp., $28.99 (cloth).

Over the past few decades, India's development story has garnered increasing attention. Following independence, but especially in the 1960s and 1970s, restrictions on foreign trade and capital flows and measures to raise government oversight of, and involvement in, the economy were ratcheted up. The Indian government nationalized banks, coal mines, and insurance and oil companies; created a strict regulatory environment, reining in large companies and favoring small-scale enterprises; tightened labor market regulation; and curtailed foreign investment.

Growth gradually ground to a near halt, until this tightly controlled and closed economy began to loosen and open up in the 1980s. The process accelerated dramatically after a balance of payments crisis in 1991. Since then, India has become a fast-growing economy with world-class corporations and increasingly important global connections.

This story led to debate—in the world's largest democracy it seems almost everything leads to debate—over whether those reforms actually fueled growth, whether growth reduced poverty and income inequality, and whether the lives of the poor improved. These questions matter. India still has hundreds of millions of poor people by any count: What does India's success tell us about which policies make their lives better?

In *Why Growth Matters,* Jagdish Bhagwati and Arvind Panagariya forcefully defend the past two decades of reform, dismantling step-by-step various myths about Indian economic and social policy from independence to the present day, and issue a call for additional reforms to bolster growth and further improve the lives of Indians.

Start with the myths about Indian growth. Were the 1991 reforms, which among other things dismantled industrial licensing and opened India to foreign trade and capital flows, the reason growth accelerated? Have these reforms widened income inequality and led to a new Gilded Age? Bhagwati and Panagariya cite extensive evidence supporting their claim that it is the 1991 reforms, rather than earlier, more minor reforms, that underlie India's accelerated growth and that these reforms have led to less poverty in India—without a significant increase in income inequality.

The authors go on to address the frequent claim that social progress in India, especially in health and nutrition, lags that of other countries. They dig deeply into studies that either ignore India's initial conditions or define various social indicators in a way that may make India look worse than comparator countries. The overall thrust of these claims is convincing: certainly, the 1991 reforms ushered in a new period of optimism and macroeconomic stability. A lower percentage of the Indian population is poor, and a higher percentage literate, than at any time in the past. These are indisputable. Other points—such as denial that the 1991 reforms led to increased corruption—are stated clearly and convincingly. Still others, however, such as those on malnutrition and infant mortality, are set forth with equally stentorian certainty but somewhat less convincing evidence.

Bhagwati and Panagariya also make a valuable contribution in presenting a reform agenda to extend India's recent growth record and make it more inclusive. The authors usefully divide progrowth reforms into two tracks: those that support growth immediately—for example, less regulation and more investment in infrastructure—and those aimed at more effective and inclusive growth—such as better elementary education and implementation of social programs.

Although the list of reforms is familiar to many people who follow India—the need for broader access to higher education and better roads is clear—the authors go a step further and lay out clearly and insightfully the specific difficulties that could arise if these reforms are implemented in an Indian context. Conditional cash transfers, which have been quite successful in Latin America and have been mooted in the Indian context, should be undertaken with care, given India's challenging governance environment.

Similarly, expanding higher education is an important goal, but the reasons such expansion has not already taken place—ranging from limited funds to the need to confront the entrenched interests of market occupants in skilled fields—are sometimes counterintuitive, and the discussion of how to address these roadblocks is useful.

Those unfamiliar with India and its complicated federal system will find some of this discussion—and the debates over India's pre-1985 economic policy and source data for household survey–based research—arcane. But for those who have followed India's recent growth story, *Why Growth Matters* is a useful summary of both the history of economic reform in India and of the controversies these reforms have generated, as well as a detailed and practical explication of what is necessary for the future.

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Can WOMEN Save JAPAN (and ASIA Too)?

Chad Steinberg

Government policies that support women in their work-family balancing act would help Japan remain a player in the global economy

"IT is very difficult for women in Japan to balance raising children and working full-time," says Naomi Nakamura, a 35-year-old physical therapist from Yokohama who is now on maternity leave looking after her four-month-old baby girl. "Many companies do not allow shorter working hours, and even if they do, female employees are often reluctant to work part-time because of the atmosphere at work," explains Nakamura, who also has a three-year-old son.

For Nakamura, work, child rearing, and home are literally a balancing act. After her son was born, Nakamura was lucky to find a day care center near her job, but she still had a 20-minute bike ride to work with her son on the back. She tried to find an educational day care center for her son but, with none available, she had to put him in a center that provides only child care. She shopped for her groceries on her way home, putting the groceries in a basket at the front of her bike and her son in a seat on the back.

Like most Japanese fathers, Nakamura's husband works late every night, so she feeds the children, bathes them, and puts them to bed herself. She then cooks dinner for herself and her husband. They eat late at night and go to bed exhausted.

She struggled to find a child care center for her son and felt uncomfortable leaving the office early if the center called because he was sick. Before she went on maternity leave, her husband usually took their son to the center in the morning and she picked him up in the evening. But when her husband was on a business trip, which happened quite often, both tasks fell to Nakamura. "I feel very sorry for my colleagues who have to do extra work when I have to leave the office," she says.

Still, Nakamura feels lucky compared with her friends because her job skills are in demand. Many of her friends are being told they cannot have their old jobs back or are struggling to find part-time work because employers look askance at someone who may have to take leave to care for a sick child.

Nakamura's story is common to many women across Japan and in parts of Asia. Their daily struggles balancing work and home are so daunting that many feel they have to choose between raising children and building a career.

As a result, in many Asian economies fewer women work outside the home than in comparator economies. The female labor participation rate in Japan is 24 percentage points lower than that of males, and in Korea it is nearly 22 percentage points lower (see Chart 1). In certain emerging market Asian economies, such as Malaysia and Indonesia, the gap is even higher. In China and Vietnam, in contrast, the differences are less pronounced, due in part to societal preferences.

In our research on differences in female labor participation both across and within countries over time, we find that both demographic shifts and government policy are important factors in explaining the difference in participation rates. We also find that Japan (and other Asian countries) can do much to remove barriers to increase women's labor force participation and thereby help mitigate the impact of an aging population on national income.

Feminine trends

Participation rates in countries that are members of the Organization for Economic Cooperation and Development (OECD) increased on average from 61 percent to 77 percent between 1985 and 2005 (see Chart 2). Participation rates have also started to converge: countries that started out with lower participation rates are catching up to those with more evenly balanced workforces. These changes have largely come hand in hand with increased social acceptance of women in the workplace. But two other factors also stand out.

First, more women are now attaining higher education than in the past, which increases their potential lifetime earnings and strengthens their attachment to the labor market. In fact, in many countries women are now, on average, more educated than their male counterparts. At Seoul National University, for example, the ratio of female undergraduates increased from about one-fourth of the student body to about one-half just in the past decade. This increase in female education has put more women in the workplace and made them less willing to focus on caring for children to the exclusion of a career.

Second, women around the world are getting married later in life and are choosing to have fewer children. As a result, many women have established careers before they have to make a choice about whether to stay home. And fewer children means the demands of maintaining a household and child rearing are less daunting, allowing women more choice about work–home life balance—choices not available to them in the past.

Still, demographics do not explain all the variation across countries. Policies also make a difference.

A look at the relationship between fertility rates and female labor participation across countries in recent years shows the importance of policy. Although lower fertility rates might be expected to accompany higher female labor participation, the relationship is actually much more complicated (see Chart 3). This suggests—as is substantiated by our empirical analysis—that government policy matters too. Indeed, the countries with the most generous child-rearing policies have some of the highest fertility rates (excluding countries with high immigration) and the highest rates of female labor market participation. Government policies with a positive impact include expenditures on child care, parental leave, and the removal of dated tax codes that penalize the income of second earners.

Flexible environment

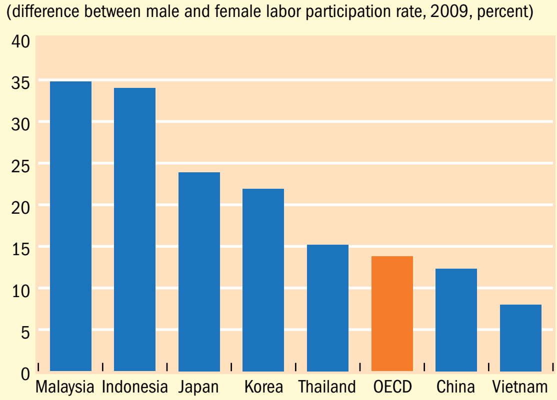
Nakamura finds it difficult to balance work and child-rearing responsibilities. She says it would be impossible for her to raise her two children and work if she could not count on her mother, who lives an hour and a half away, to take care of her children when she has day care problems but has to work. It is difficult in Japan to hire babysitters or nannies.

Chart 1

Fewer Asian women in jobs

Japan and many other Asian economies face a gender gap in labor participation.

(difference between male and female labor participation rate, 2009, percent)



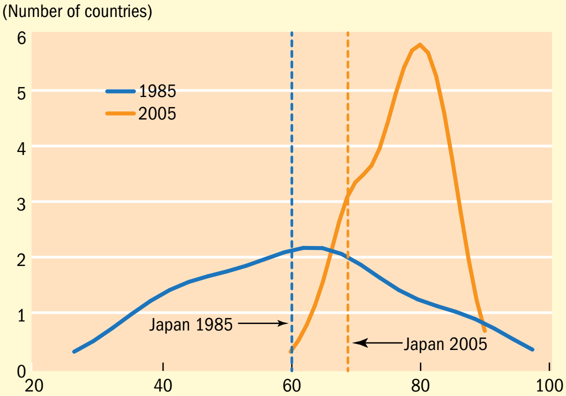
Sources: United Nations Development Programme; and IMF staff calculations.
Note: OECD = Organization for Economic Cooperation and Development.

Chart 2

More women working worldwide

OECD female participation rates have increased over time and have become more similar.

(Number of countries)



Source: Organization for Economic Cooperation and Development (OECD).

In a 2010 survey of Japanese women by the Ministry of Internal Affairs and Communication, 34 percent of respondents cited housework and 14 percent working hours as the primary reason they were not participating in the workforce. A similar survey in Korea, by the Ministry of Labor in 2007, found that for 60 percent of the women surveyed, child rearing was the biggest obstacle to participating in the labor force. The difficulties of this balancing act are reflected in the sharp drop-off in labor participation rates of women in their late twenties and early thirties. This is particularly true in Japan, even though its labor participation rate for women at the start of their careers is as high as in comparator countries.

Government policy has made a difference in many northern European countries. In Sweden, for example, the government has established a comprehensive parental leave policy, a highly subsidized child care system, and a strict policy of shorter working hours for women. These systems have resulted in high rates—over 90 percent—of women returning to the workforce following childbirth. In the Netherlands, meanwhile, the emphasis has been on making part-time work as attractive as full-time work, with comparable hourly wages, benefits, and employment protection. This is an important lesson for Japan and Korea, where the increasing prevalence of dual labor markets—favoring insiders over new participants—could be discouraging potential part-time workers, who tend to be women with family responsibilities, from entering the labor force.

The importance of government policy is further confirmed by our empirical work; perhaps unsurprisingly we find that parental leave policies and government expenditures on child care, among other supportive policies, are strongly correlated with high female labor participation. In Asia, however, governments tend to provide much fewer such benefits (see Chart 4). In part, this reflects Asian countries' level of economic development, but even in Asia's most advanced economies, there is a benefit gap. Sweden's expenditures on child care are three times higher than Japan's and five times higher than Korea's.

Model behavior

The other striking aspect for Asia's women is the paucity of female managers in Japan and Korea (only 9 percent), relative to 43 percent in the United States (see Chart 5). Indonesia and China do not fare much better, at 14 and 17 percent, respectively. Thailand, on the other hand, performs relatively well, with 29 percent female managers, just below the OECD average.

The lack of female managers is due not only to low female labor participation rates, but also to a system—in some countries—that discourages women from entering career-stream positions. In Japan, for example, only 6 percent of career-track employees are female. Nakamura knew at an early age that she wanted to work as well as have children, and so she began carefully planning her career while still in high school. She decided to acquire a profession specialization (with a license or certificate) that would allow her to compete equally with men. But, she says, some women might like to have a choice between a full-time professional position and a less stressful non-career-oriented job.

Self-selection into non-career-track positions is another possible reason for the small number of women managers. This process appears to start early on, with gender ratios in top universities already showing divergence. At the University of Tokyo, for example, where entrance is based on test outcomes, less than 20 percent of the student body is female.

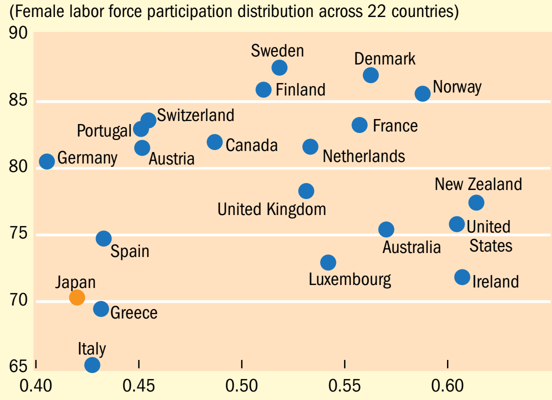
Raising the number of women in high-profile positions would encourage others to mirror that behavior by choosing career-track jobs. There are some signs that things are changing: the Bank of Japan appointed its first female branch manager in 2010; Daiwa Securities placed four women on its board of about 50 members in 2009; and in 2010, Shiseido set a goal

Chart 3

Children with work

Female labor participation does not automatically rise when women have fewer children.

(Female labor force participation distribution across 22 countries)



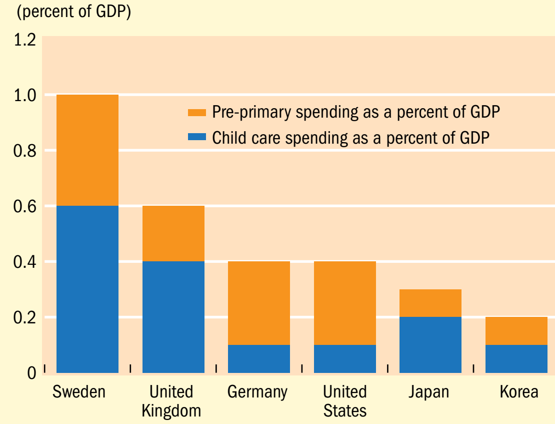
Source: Organization for Economic Cooperation and Development.

Chart 4

Child support

Public expenditure on child care and pre-primary school is much less in Asia than in other advanced economies.

(percent of GDP)



Source: Organization for Economic Cooperation and Development.

of 30 percent female managers by 2013. Politicians in Korea have considered establishing laws on the minimum proportion of female directors that must serve on corporate boards, as is now under consideration in the European Union.

Women to the rescue

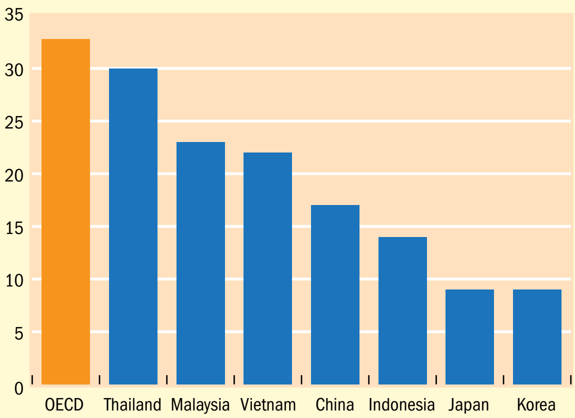
Raising female labor participation rates not only improves gender equality but also helps boost and maintain growth rates across Asia. Societies around the world are increasingly struggling with the consequences of population aging (see "Wising Up to the Cost of Aging," in the June 2011 issue of *F&D*). As a result, countries will need to make the best use of limited resources, including their own citizens. In Japan, the size of the working-age population, ages 15–64 is projected to fall from its peak of 87 million in 1995 to about 55 million in 2050—approximately the same size as the Japanese workforce at the end of World War II (see Chart 6). This decline in the labor force is sharpest among advanced economies, though other Asian economies are not far behind; steep declines are predicted soon in Korea and China too.

Chart 5

Who's in charge?

Japan and Korea have far fewer women managers than most advanced economies.

(as percent of total)



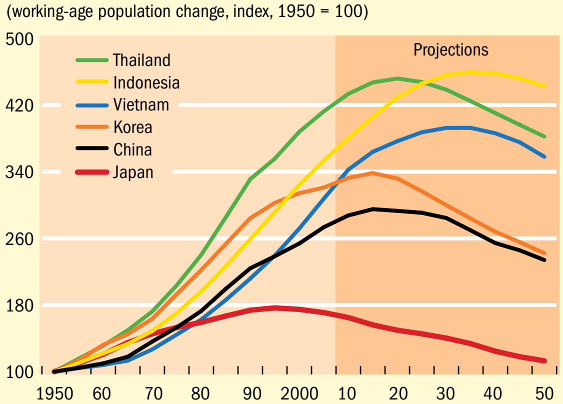
Source: United Nations Development Program.

Chart 6

Running out of workers

The working-age population is shrinking throughout Asia, but the situation is particularly dire in Japan, where it has always been low and is decreasing faster and sooner.

(working-age population change, index, 1950 = 100)



Sources: United Nations; and IMF staff calculations.

Parental leave policies and government expenditures on child care, among other supportive policies, are strongly correlated with high female labor participation.

Aging societies could even see the size of their economies shrink if the current fast pace of productivity growth does not continue to outstrip the decline in the number of workers. In Japan, where the negative impact from aging on growth has been larger than in any other advanced economy, the decline in labor is expected to subtract about ¼ percentage point from potential growth each year. An easy way to help slow this trend would be to increase labor participation of underutilized groups—which in several Asian countries, including Japan and Korea, tend to be women.

If, over the coming 20 years, Japan raised its female labor participation rate from 62 percent to 70 percent—that of its Group of Seven industrial countries (G7) compatriots excluding outlier Italy—then its per capita GDP would be approximately 5 percent higher. Raising the female labor participation rate even further, say to that of northern Europe, could increase per capita GDP by an additional 5 percent. The first scenario could increase GDP growth in the transition years by about ¼ percentage point and the second, ½ percentage point. With medium-term potential GDP growth at about 1 percent, these increases translate into a 25 to 50 percent increase in Japan's potential output in the transition years.

If Nakamura lived in Sweden, she would have the support she needed to "have it all," and wouldn't think twice about going back to her previous job after maternity leave. Making it easier for women like Nakamura to stay in the workforce will make it easier for Japan to remain a player in the global economy. Making the most of Asia's women is an equitable progrowth strategy that makes good sense. ■

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