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Haves and Have Less

WE used to think that overall economic growth would pull everyone up. While the rich might be getting richer, everyone would benefit and would see higher living standards. That was the unspoken bargain of the market system.

But now research is showing that, in many countries, inequality is on the rise and the gap between the rich and the poor is widening, particularly over the past quarter-century.

With taxpayers footing the bill for troubles in the financial industry in advanced economies during the global economic crisis, this discrepancy seems particularly galling to wage-earners who have seen their pay stagnate or worse. Inequality has started to attract more research by economists.

This issue of *Finance & Development* looks at income inequality around the world and how it matters.

The world has seen an unprecedented era of economic growth over the past decades, which has made people better off, on average. But overall the rich have done much better than the poor. According to the Organization for Economic Cooperation and Development (OECD), growing inequality breeds social resentment and generates political instability. It also fuels populist, protectionist, and anti-globalization sentiments. "People will no longer support open trade and free markets if they feel that they are losing out while a small group of winners is getting richer and richer," says Angel Gurría, the OECD Secretary-General.

According to Branko Milanovic, a lead economist at the World Bank who wrote our cover article, the global economic crisis may have narrowed global inequality somewhat between people around the world because most emerging and developing economies continued to maintain strong growth.

IMF economists Andrew Berg and Jonathan Ostry say that inequality is counterproductive. In fact, a more equal society has a greater likelihood of sustaining longer-term growth. A good snapshot of the inequality issue is in our Picture This section, which draws on interesting results from the World Top Incomes database.

Also in this issue, we speak to Elinor Ostrom, the first woman to receive the Nobel Prize for economics; explain the difference between microeconomics and macroeconomics in Back to Basics; and examine the state of the U.S. municipal bonds market.

* * * * * * * *

Finally, we are sorry to say goodbye to Lai Oy Louie, who has worked on *F&D* for 10 years—as *F&D*'s art director since 2004—and is now taking a well-deserved retirement.

Lai Oy's dedication and calm creativity have helped us produce some memorable issues. We have been fortunate to have her talent grace our pages.

We will miss her greatly and we wish her all the very best.

Jeremy Clift
Editor-in-Chief

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The Master Artisan

Maureen Burke profiles **Elinor Ostrom***, first woman to win the economics Nobel*

WHEN Elinor Ostrom won the Nobel Prize for economic sciences in 2009, it raised some eyebrows. University of Chicago economist and *Freakonomics* coauthor Steven Levitt wrote in his blog on the day the prize was announced, "If you had done a poll of academic economists yesterday and asked who Elinor Ostrom was, or what she worked on, I doubt that more than one in five economists could have given you an answer."

But Paul Dragos Aligica was not surprised in the least. "The entire philosophy of institutional diversity—of going beyond the dichotomy of market and state—is one of the most revolutionary paradigms suggested in the last 20 years or so for the social sciences," says Aligica, a former student of Ostrom's who is now a Senior Research Fellow at George Mason University's Mercatus Center.

In awarding Ostrom the Nobel for her analysis of economic governance, the Royal Swedish Academy of Sciences observed that her work "teaches us novel lessons about the deep mechanisms that sustain cooperation in human societies." If the choice of Ostrom—along with corecipient Oliver Williamson of the University of California at Berkeley—was viewed by some as offbeat, others saw it as an appropriate reaction to free-market failures highlighted by the 2008 financial crisis.

Ostrom, the first woman to receive the Nobel in economic sciences, is less concerned with markets than with the economic activity that does not get reflected in markets—within households, firms, associations, agencies, and other organizations. She has shown how common resources—forests, fisheries, grazing lands, and water for irrigation—can successfully be managed by the people who use them, rather than by governments or private companies.

She is perhaps best known for debunking the "tragedy of the commons," a theory put forth by biologist Garret Hardin in 1968. In an article by the same name published in the journal *Science*, Hardin theorized that if each herdsman sharing a piece of common grazing land made the individually rational economic decision of increasing the number of cattle he keeps on the land, the collective effect would deplete or destroy the commons. In other words, multiple individuals—acting independently and rationally consulting their own self-interest—will ultimately deplete a shared limited resource, even when it is clear that it is not in anyone's long-term interest for this to happen.

Ostrom believes that the "tragedy" in such situations isn't inevitable, as Hardin thought. Instead, if the herders decide to cooperate with one another, monitoring each other's use of the land and enforcing rules for managing it, they can avoid the tragedy.

Ostrom—who holds a Ph.D. in political science—may not be a traditional economist, but 2001 Nobel laureate George Akerlof (see *F&D,* June 2011), calls her work "utterly central" to the field. "Ostrom is interested in how social norms form and how they are enforced," he says. "These norms are the 'missing matter' in economics. You may be very close to an equilibrium in which everybody cooperates, but then you need something additional that

gets people to cooperate. And what gets people to cooperate are the norms."

Beverly Hills, 90210

Elinor Ostrom—or Lin, as she is often called—was born in Los Angeles, California, in 1933. Growing up poor in the middle of the Depression, Ostrom lived with her divorced mother, who taught her to grow vegetables and can fruit from their trees to save money. Their home was on the edge of the Beverly Hills school district, so she was able to attend the swank Beverly Hills High School and receive a top-notch education. Showing an early disdain for materialism that persists today, Ostrom bought her clothes secondhand, in stark contrast to her classmates at the public school that claims many celebrities as alumni.

She was encouraged to join the speech team, which sparked her interest in debate. "High school debate is excellent training," Ostrom says. "There are two sides to every question, and you have to learn how to make a coherent argument for each, since they randomly assign you to a side." Debate not only sharpened her critical thinking skills—it also cured her of a stutter.

Ostrom enrolled in the University of California at Los Angeles (UCLA), against her mother's wishes. No one else in the family had been to college—there seemed to be no point to it—and her mother refused to provide financial support. Undeterred, the young Elinor put herself through college, working a series of odd jobs. "At the time, UCLA had a very low fee, so I was able to avoid going into debt," Ostrom remembers.

Despite graduating with honors in political science, Ostrom headed to Boston to work as a clerk for an electronics exporting company. "The presumption in those days was that the appropriate job for a woman was as a secretary or a teacher," Ostrom observed in an autobiographical sketch. After a year, she landed a job as an assistant personnel manager at Godfrey L. Cabot, Inc., a Boston firm that had never before hired a woman in any professional capacity.

"I kind of pushed my way into that job, but the fact that I was able to do so successfully when I was 21 gave me confidence that helped me later in life," Ostrom says.

In 1957, Ostrom returned to UCLA, taking a mid-level post in the university's personnel office while pursuing graduate studies in political science. Her mother remained mystified by her choices. "She asked what my salary would be after I got my Ph.D.—would it be more than I was currently earning? I said, no, it'd be the same or less. She just didn't understand," Ostrom recalls with a smile.

In a graduate seminar, Ostrom found herself drawn to the question of how people act collectively to manage shared natural resources in a sustainable way. With a team of fellow students and researchers, she studied a groundwater basin in southern California. The communities were pumping out too much groundwater, and saltwater was seeping in. Ostrom became fascinated with how people from the overlapping jurisdictions that depended on this water source found incentives to put aside differences and solve the problem. She chose the study of this collaboration as her dissertation topic, sowing the seeds for later work on what she terms "common-pool resources."

Overseeing that graduate seminar was Vincent Ostrom, an associate professor of political science 14 years her senior, whom she married in 1963. It was the beginning of a lifelong partnership that blended "love and contestation," as Ostrom put it in the dedication of her seminal 1990 book, *Governing the Commons: The Evolution of Institutions for Collective Action*.

> "Ostrom is interested in how social norms form and how they are enforced. . . . These norms are the 'missing matter' in economics."

The scientist as artisan

In 1965, the Ostroms moved to Bloomington, Indiana, where Vincent took a position as a full professor at Indiana University and Elinor began teaching American government, eventually obtaining a tenure-track position. A few years later, they initiated a colloquium series, which brought together researchers from different disciplines to discuss topics of common interest, especially those relating to resource management. "We made a commitment that we would meet every Monday, even if it ended up being just five or six of us. And it grew and grew and grew," Ostrom recalls.

This informal Monday colloquium evolved into the Workshop in Political Theory and Policy Analysis, today a thriving research center that attracts scholars from all over the world in political science, economics, anthropology, ecology, sociology, law, and other fields.

"The logic of our Workshop has always been that there would be a variety of scholars across economics, political science, and other disciplines who worked together to try to understand how institutional arrangements in a diverse set of ecological and social, economic, and political settings affected behavior and outcomes," Ostrom wrote on the Nobel Prize website.

Inspired by a cabinetmaker friend, the Ostroms wanted the center to be modeled after an artisan's workshop. Their students would toil alongside them, allowing the transfer of knowledge to take place much as it does between master and apprentice—rather than through top-down methods such as lectures.

"Vincent envisioned a workshop where people have multiple skills at different levels—so young people are learning how to work with more senior people, but working together, not in a hierarchy," Ostrom says. "And that's very much what the Workshop has been for years now."

Headquartered in a former fraternity house and spanning four buildings on a quiet street near campus, the Workshop

is decorated with delicate Asian wall hangings, sleek African wood carvings, and other exotic art. The atmosphere welcomes scholars who come from all over the country and abroad to research how communities have avoided the tragedy of the commons.

This research—which looks at the management of such resources as water, fish, and forests—is part of a broader effort to develop a theory of how people can be self-organizing and self-governing. Questions are first tested through experimentation in a laboratory, where Ostrom studies the choices her subjects make when faced with hypothetical common-pool resource dilemmas. The resulting predictions about the outcome are then tested in the field through direct observation of real-life situations.

“It is the wealth of data that Ostrom has compiled from communities across the world, across time periods, and across resources that gives her theories credence.”

“We take something that theoretically we’re interested in, such as a public good or a common-pool resource, and we go back and forth between field and lab,” Ostrom explains. “In the field you’ve got all the richness, but sometimes it’s a little too rich to find out exactly what’s happening. So you go back to the lab to see if a variable you think is important actually turns out to make a difference in the way you think it should.”

Police performance and polycentricity

One of Ostrom’s earliest projects at the Workshop was research on police industry structure and performance. In the early 1970s, U.S. public policy experts were recommending a drastic reduction in the number of police departments, believing multiple units serving the same area was chaotic and inefficient. To determine the best course of action, Ostrom and colleagues embarked on a massive study of police service delivery in 80 metropolitan areas.

Ostrom spent 15 years on this project, riding around in police cruisers, interviewing people about their experiences with the police, collecting all manner of data, hard and soft. At the study’s conclusion, she and her colleagues found that bigger is not necessarily better when it comes to police agencies. And the widely held belief that a multiplicity of police departments in a metropolitan area was less efficient was *not* borne out. Instead, they found that agencies often developed cooperative networks for delivering public safety across jurisdictional lines. “Complexity is not the same as chaos,” Ostrom wrote.

The police study, Ostrom says, was a good illustration of “polycentricity,” an important concept in her work. First advanced by Vincent Ostrom, Charles Tiebout, and Robert Warren in 1961, the notion of a “polycentric” political system refers to a system in which citizens organize not just one but multiple governing authorities, at multiple scales.

“An analyst using polycentric theory does not predict that there is one optimal form of organization for all metropolitan areas,” Ostrom wrote in her 1997 acceptance paper for the Frank E. Seidman Distinguished Award in Political Economy. Rather, one needs to study the production and consumption characteristics of the urban service in question before deciding what institutional arrangement works best—which is exactly what she did with the study on policing.

Local knowledge matters

The basic question Ostrom is trying to answer is why some resource users manage to self-organize successfully and others do not. The question is not merely academic; it has real relevance for public policy. “If we do not find the means to develop and enhance the capabilities to govern and manage common-pool situations effectively,” she said in a 2003 interview, “the absence of such institutions in the twenty-first century will lead to fundamental social and economic problems.” The more we learn about these institutions, she says, the more likely it is that policymakers will be able to avoid past errors.

It is the wealth of data that Ostrom has compiled from communities across the world, across time periods, and across resources that gives her theories credence, says Amy Poteete, a former postdoctoral fellow at the Workshop and now an Assistant Professor of Political Science at Concordia University in Montreal. “The evidence is that much more convincing because it comes from such a diversity of situations.”

The International Forestry Resources and Institutions research program, started in the 1990s, is a prime example of a Workshop project that spans several countries and years. For this ongoing program, Ostrom and colleagues have established a network of collaborating research centers to study forestry in Africa, Asia, and Latin America. The study examines how governance arrangements affect forests and the people who depend on them. By measuring the long-term impact on both the biodiversity of the forest and the social fabric of the community, they hope to produce data that will help policymakers and forest users in the future.

“People think that it’s enough just to have ‘protected areas,’” Ostrom says. “Well, we’ve found that some work and some don’t.” If the people using the forest before the government designated it a “protected area” were simply kicked out, she explains, they may be bitter and less inclined to help monitor and protect the forest in the future. But if they are brought in and given a role, they help monitor the forest, and it tends to be in much better condition.

The research centers—in Bolivia, Guatemala, India, Kenya, Mexico, Nepal, Tanzania, Thailand, and Uganda—all use the same data protocols and contribute to a common database. They are staffed by local researchers, many of whom have come to Bloomington for training. Local knowledge matters a lot to Ostrom; she always seeks to capture it, or build on it.

Ostrom doesn’t consult with local experts just to be inclusive, but because their expertise is often superior. In a study of

irrigation systems in Nepal, she found that those systems built and governed by the farmers themselves tended to outperform those constructed with donor financing and managed by government agencies. Despite the better engineering of these latter systems, those overseeing them lacked understanding of the intricate web of incentives facing the local community.

Ostrom has seen this pattern repeatedly. "The initial plans for many of the major irrigation projects in developing countries focused almost exclusively on engineering designs for the physical systems and ignored organizational questions," she said in a 2003 interview. "While it is essential to understand the physical side of development projects, the emphasis should be on the institutional side." The crafting of such institutions, she stressed, must directly involve the local people, or they risk failure.

Contrasting styles

Given that Ostrom has worked closely with her husband all these years, was it odd to win the Nobel Prize without him? "It was—and yet I could understand," she says. "He has been much more of a philosopher. I had done a lot of laboratory experiments, statistical analysis, and fieldwork, so I could see why they might have picked me. But his work was definitely foundational."

Aligica, who studied at the Workshop in the 1990s, confirms this division of labor: "If you look at Lin's work, you can see that it's part of a broader picture. And the contours of that broader picture—and the broader philosophy behind that picture—were drawn by Vincent."

Vincent, 91, is one of the last remaining scholars of the old style, according to Aligica. Elinor, the more pragmatic of the two, is an "extraordinarily good entrepreneur" who is able to put together interesting projects, find sponsors for them—and even come up with an extra budgetary layer to cover the extra visiting scholar or a student in financial distress.

The Ostroms' contrasting styles seem to have struck just the right balance, as many attest. Researchers are encouraged to form working groups with like-minded colleagues to tackle whatever questions they wish. "It could be a reading group on some particular issue, or a working group trying to get funding for a project," says Poteete. "This idea of self-organizing groups is central to what she's been concerned with theoretically, so I think it's kind of nifty that these theoretical ideas are being put into practice at the Workshop."

And just as Ostrom believes that a "top-down" approach is not desirable in development, she feels the same way about the Workshop, opting not to impose her research agenda but rather let projects grow organically. "These are people that talk the talk and walk the walk," says Aligica of the Ostroms. "They say that they want a master-apprentice relationship with their students—a very personal relationship—and they have it."

In return, they get loyalty. "Even after people leave the Workshop, they still feel part of an extended family," Aligica says.

Still under pressure

Ostrom's pace hasn't slowed since she won the Nobel—requests for interviews and public appearances continue to flow in, even two years on. She stepped down as Director of the Workshop in 2009, ceding her place to Michael McGinnis, who has taught political science at Indiana University since 1985. But she continues to carry a full teaching and research load.

One of the many projects Ostrom is now juggling is a months-old study on health care that McGinnis directs. The study looks at health care systems in three communities—Cedar Rapids, Iowa; Grand Junction, Colorado; and Bloomington, Indiana—that have had varying degrees of success with collaborative models of governance.

In some systems, for example, hospitals compete fiercely, while in others, there is greater cooperation. Ostrom says the study, still in the data-gathering phase, will attempt to answer some fundamental questions: What factors lead some communities to create groups that collaborate and try to improve things? When people have found a way of keeping health care costs low and the quality of health care high, what are the community characteristics?

Ostrom's entire body of work is about social norms and what makes people cooperate, and the health care study is no exception. "She observes these norms in the small, of course, because that's the way that one can observe such things," Akerlof says. "But her theories apply not just to irrigation systems but to entities as large as countries or as large as the whole world, such as global warming."

At 78, Ostrom could choose to retreat from academic life and enjoy the serenity of the six-acre woods on the outskirts of Bloomington where she and Vincent live. But chances of that happening seem slim. Asked by a National Public Radio interviewer whether winning the Nobel took some of the pressure off what she felt she still had to accomplish, Ostrom laughed dismissively.

"I wasn't aiming to win a prize. So winning it doesn't take pressure off in terms of future research." ■

Maureen Burke is on the staff of Finance & Development.

More or Less

Income inequality has risen over the past quarter-century instead of falling as expected

Branko Milanovic

INEQUALITY is growing. Disparities are increasing—between the rich and poor in individual countries, and until recently, between countries. The global financial crisis is keeping real incomes stagnant in advanced economies but it probably narrowed global inequality between citizens of the world, because most developing countries continued with strong growth. Some say that inequality doesn't matter as long as markets are working efficiently, or if everyone is getting more. Others argue that inequality hampers growth, or that only so much disparity is ethically acceptable.

Measuring up

How is inequality measured? People tend to compare their personal financial situation to that of their neighbors, coworkers, or friends, based on the homes they live in or the possessions they have. Economists usually use household surveys to measure income inequality. A broad spectrum of households is interviewed to determine their various sources of income (monetary and in-kind) and patterns of consumption. A household's total income minus direct taxes paid (or alternatively, total household consumption) is divided by the number of people living in the household and then all individuals in the survey are ranked, from poorest to the richest, according to their household per capita income. This enables us to calculate what economists call the Gini coefficient (see Box 1).

Although household surveys are the best instruments to assess incomes and their variability, they are not perfect. The upper end of the distribution may be "truncated": either really rich people refuse to be interviewed for household surveys or they understate their incomes. The reasons for such evasion are not clear, given the confidentiality of household surveys. But suspicion of "upper-end truncation" has led to a recent wave of academic studies that instead use fiscal data—the reported pretax income of the rich—to estimate the income share of the richest 1 percent (or 0.1 percent) of individuals. The assumption is that the rich can less easily evade tax authorities than they can survey enumerators, and perhaps that they are more truthful when dealing with the former. But in fact, U.S. results based on surveys and those from fiscal data (Burkhauser and others, 2009) show little difference even though surveys look at the entire income distribution whereas fiscal data examine only the top.

Good or bad?

The view that income inequality harms growth—or that improved equality can help sustain growth—has become more widely held in recent years (see "Equality and Efficiency" in this issue of *F&D*). Historically, the reverse position—that inequality is good for growth—held sway among economists.

The main reason for this shift is the increasing importance of human capital in development. When physical capital mattered most, savings and investments were key. Then it was important to have a large contingent of rich people who could save a greater proportion of their income than the poor and invest it in physical capital.

But now that human capital is scarcer than machines, widespread education has become the secret to growth. And broadly accessible education is difficult to achieve unless a society has a relatively even income distribution. Moreover, widespread education not only demands relatively even income distribution but, in a virtuous circle, reproduces it as it reduces income gaps between skilled and unskilled labor.

So economists today are more critical of inequality than they were in the past. The advantages to reducing inequality are both practical—facilitating economic growth—and ethical—reducing unwarranted income disparities between men and women, between people living in different regions of a country, or between

citizens of different nations. The past quarter-century has seen contradictory changes: while many types of inequality have increased (particularly those within individual countries), others became less pronounced.

Inequality on the rise

Income inequality has been on the rise—or stagnant at best—in most countries since the early 1980s (OECD, 2008). Often, this flies in the face of the two theories most commonly used to predict inequality: the Kuznets curve and the Heckscher-Ohlin-Samuelson (HOS) theorem (see Box 2).

Income inequality in the richest countries (and in particular, those for which long-term data were the most plentiful—the United States and the United Kingdom) initially followed the Kuznets pattern of rising and then falling (not surprising, given that these observations inspired Kuznets to define the hypothesis). A massive and long downward swing in inequality occurred from its peak in the late 19th century in the United Kingdom and in the 1920s in the United States, to its lowest values in the 1970s.

But since then the United States and the United Kingdom—and indeed most advanced economies—have become much richer and much more unequal. In 2010, real per capita income in the United States was 65 percent above its 1980s level and in the United Kingdom, 77 percent higher. Over the same period, inequality in the United States increased from about 35 to 40 or more Gini points (see Chart 1), and in the United Kingdom, from 30 to about 37 Gini points. These increases reflect significant adverse movements in income distributions. Overall, between the mid-1980s and the mid-2000s, inequality rose in 16 out of 20 rich OECD countries. This coincidence of rising mean income and rising inequality in mature economies would no doubt have surprised Kuznets, as it did many economists.

Inequality also rose in China, a poor country with comparative advantage in unskilled labor–intensive products, whose trade-to-GDP ratio jumped from about 20 percent to more than 60 percent in 2008. The HOS theorem of globalization predicts that inequality would have fallen as wages of low-skilled workers relative to skilled workers rose. In fact, however, China's Gini coefficient rose from less than 30 in 1980 to about 45 today. Once again, fact confounds theory.

Richer in the rich countries

What causes inequality? In rich countries, some economists argue, technological change, resulting in increasing demand for highly educated workers, is the reason that inequality is again on the rise. Societies haven't been able to produce highly educated workers in the numbers needed in the new economy and as a result their wages have risen relative to their less-skilled counterparts. As the late Dutch economist (and first winner of the Nobel Prize in economics) Jan Tinbergen put it, inequality is the result of a race between technology and education. Although this favored the less skilled workers in the first decades of the 20th century, the requirements of the technological revolution again favored skilled workers.

In the United States, for example, Goldin and Katz (2008) find that the supply of skilled workers has been relatively fixed for the past three decades—the average number of years of schooling has been stuck at just over 12—and that, they argue, explains at least some of the increase in U.S. inequality.

This is plausible, if somewhat tautological, because we are unable to measure directly how much technological progress favors skilled workers. We can only deduce its strength from the gap between skilled and unskilled wages. But it is possible that an entirely unrelated force—say, the reduced power of trade unions—is in fact responsible for the rising skilled-unskilled wage gap.

A country's institutional framework also plays a role in determining the level of inequality. Governments can use higher taxes and social transfers to redistribute some of

Box 1

Let the Gini out of the bottle

The Gini coefficient is the most common measure of inequality. It ranges theoretically from 0, when everyone has exactly the same income, to 100 (or 1) when a single individual receives all the income of a society.

What are "normal," "usual," or "desirable" Gini values? The relatively egalitarian countries—Sweden and Canada, for example—have Ginis between 25 and 35. But the majority of countries are bunched around a Gini of 40. Today, the United States, China, and Russia all have Ginis in the low to mid-40s. Most African and Latin American countries have Gini coefficients in the upper 50s, and in some extreme cases and time periods, Ginis can even reach the low 60s. There are no confirmed and sustained cases of countries with Ginis that are any higher. So, the actual range of country-level inequality is 25 to around 60. And global inequality (between all citizens of the world) lies outside this range, at almost 70 (see Chart 1).

Chart 1

Worldwide gaps

Global inequality—between world citizens—is higher than inequality within even the most unequal individual countries.

(Gini coefficient)

World
Brazil
United States
Sweden

Sources: For United States and Sweden, Luxembourg Income Survey database; for Brazil, Socio-Economic Database for Latin America and the Caribbean (SEDLAC); for the world, Milanovic (forthcoming). The 2008 world Gini is a preliminary estimate.

Note: Gini based on disposable income.

the higher incomes earned by skilled workers. The more active redistribution in continental Europe may explain why inequality increased much less there than in English-speaking countries (Piketty and Saez, 2006). For example, in 2005, social transfers (exclusive of state pensions) and direct taxes reduced the Gini in Germany by 9 points but cut it in the United States by only 6 points.

A government's refusal to take steps to minimize inequality may reflect its view that redistribution is wasteful and hurts market incentives (endorsing the argument that there is a strong trade-off between equality and growth). But failure to redistribute income may also reflect a political reality—that the rich wield a disproportionate influence over policy because they are more politically active and contribute more to politicians than their less affluent counterparts.

Recent political economy models of inequality assume that the "decisive voter"—one whose preferences tilt a decision one way or another—is much richer than the "median income voter." Political decisions would then coincide much more with the preferences of the rich. In this analysis political systems have moved closer to "one dollar, one vote," from the more traditional "one person, one vote" model (Karabarbounis, 2011).

Another explanation for increased inequality is changing social norms. In the past, society frowned on huge pay gaps between, say, a company's chief executive officer and its workers. Now there are large gaps and they seem to be not only tolerated but encouraged (Levy and Temin, 2007). Although data confirm the widening gap, it is hard to pinpoint exactly which social norms have changed and why.

Globalization has also been blamed for the rising inequality in the rich world. Specialization in high-skilled exports leads to a rising gap between the skilled and unskilled wages. Moreover, cheap low-skill imports and outsourcing also reduce wages or increase unemployment among the low- or moderately skilled workers—further exacerbating inequality.

It is likely that all four explanations—technological progress, institutional change, changing social norms, and globalization—have had something to do with rising inequality in advanced economies. But even if impersonal forces like technology or globalization are the main cause, government intervention can still curb the increase in inequality.

Widening gaps in emerging markets

The story is not so different in developing countries. Even as the United States—the richest large country in the world—is one paradigmatic case of rising inequality, at almost the opposite end of the economic and political spectrum is China. China was (and still largely is) poor and has moved from being highly autarkic in the early 1980s to being highly exposed to international trade. Before reforms that began in 1978, China was universally poor, with a Gini under 30. As its economy grew in the years following 1978, China's inequality surged and surpassed that of the United States (see Chart 2). Inequality increased in all its manifestations. The gap between the average urban and rural incomes is now more than 3 to 1 (compared with, for example, 2 to 1 in India). Gaps between the provinces widened as the coastal areas, which were richer to start with, grew faster than the hinterland. Wage inequality soared. And property and entrepreneurial incomes—always the most unequally distributed, and unheard of in China before the reforms—became much more significant.

But the Chinese story so far does conform to the classic Kuznetsian pattern: a poor country in the early stages of its development is likely to display rising inequality. If the country continues on the Kuznets path, we can expect a decline in inequality in the coming years. This could happen if the

Box 2

Theoretically speaking

The ***Kuznets curve***, formulated by Simon Kuznets in the mid-1950s, argues that in preindustrial societies, almost everybody is equally poor so inequality is low. Inequality then rises as people move from low-productivity agriculture to the more productive industrial sector, where average income is higher and wages are less uniform. But as a society matures and becomes richer, the urban-rural gap is reduced and old-age pensions, unemployment benefits, and other social transfers lower inequality. So the Kuznets curve resembles an upside-down "U."

The ***Heckscher-Ohlin-Samuelson theorem*** from international trade posits that as poor countries engage more in global trade, they tend to specialize in the production of goods in which they hold a comparative advantage, namely low-skill goods. Doing so should increase demand in the country for low-skilled labor and raise the wages of low-skilled workers relative to that of skilled workers. Using the skilled-unskilled wage ratio as a proxy for inequality, inequality should decline. The opposite should happen in rich countries: as they export more high-skilled goods, inequality would rise.

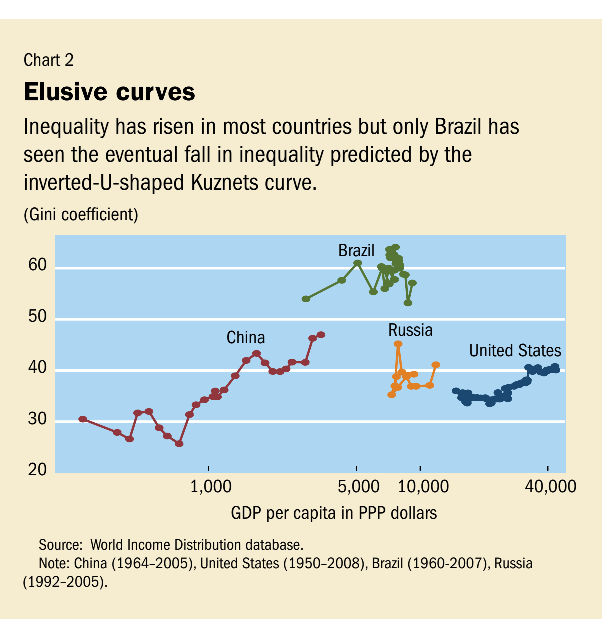


Chart 2

Elusive curves

Inequality has risen in most countries but only Brazil has seen the eventual fall in inequality predicted by the inverted-U-shaped Kuznets curve.

Source: World Income Distribution database.
Note: China (1964–2005), United States (1950–2008), Brazil (1960-2007), Russia (1992–2005).

government were to extend social security to many more people (outside the state sector), or introduce unemployment benefits and possibly even a guaranteed rural employment scheme—as India did recently. It could also happen as coastal prosperity naturally extends into the central and western areas of China. Inequality is not the product of impersonal forces alone; it widens when society permits it and can be limited through conscious government policies.

Dramatic transitions

Post-communist countries experienced, with a few exceptions, the most dramatic increases in inequality. After the breakup of the Soviet Union in the early 1990s, inequality in Russia increased at a speed never recorded before anywhere. While U.S. inequality increased by approximately one-third of a Gini point annually between 1980 and 1995, in the decade following the end of the Soviet Union, the Russian Gini rose three times that fast. At the same time, real average income in Russia declined, often precipitously—creating a huge pool of newly poor.

Global inequality is the product not only of inequality within countries, but also of the gaps between countries' per capita incomes.

The main force behind the increased inequality in the countries of the former Soviet Union was a privatization process that left enormous assets once part of the Soviet state in the hands of those close to the political power (the oligarchs) and created a strong division among the state-sector workers: the ones who remained employed and some who even prospered, and those who became unemployed, and whose incomes plummeted (Milanovic and Ersado, forthcoming). Social safety nets, which were often provided by companies, also collapsed. By the late 1990s, the growth in inequality ended; inequality in Russia has since remained slightly higher than in the United States—at a level similar to that of China.

In other post-communist countries, inequality increased too, although not as much as in Russia. In several Central European countries (Slovenia, Czech Republic, Slovak Republic) the new level of inequality was, judged by the standards of the current market economies, still relatively low. This was because they entered the post-communist transformation with highly egalitarian distributions of income, and even significant increases did not place them outside the levels continental Europe considered normal.

Latin exceptions to the rules

In key Latin American countries, by contrast, there has been a sustained decrease in inequality over the past decade (Gasparini, Cruces, and Tornarolli, 2011; see also "Spreading the Wealth," *F&D*, March 2011). This was particularly noticeable for Brazil, which for decades was considered the classic high-inequality country. Brazil's Gini dropped from the low 60s in 2000 to somewhere below 57 today—a striking difference given how much relative incomes need to change to effect a 1 Gini point decline or increase, how quickly the change took place, and how unique, compared with the rest of the world, it was (see Charts 2 and 3). Inequality also declined in Mexico and Argentina.

The improvements are often ascribed to social support programs such as Oportunidades in Mexico and Bolsa Familia in Brazil. But they are too big to be explained by the programs alone, whose size in terms of GDP is very limited (Soares and others, 2007). The changes in Brazil were also the result of broader access to education, which increased à la Tinbergen the supply of skilled workers. But even with these improvements, Latin American countries still exhibit some of the highest levels of inequality in the world. Brazil remains among the five most unequal countries in the world.

Round the world

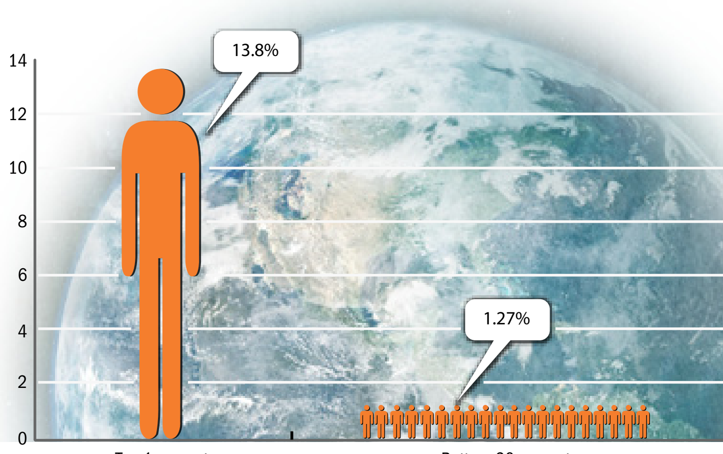
If inequality within most countries either increased or remained constant over the past 30 years, does that mean global inequality must have increased too? The link is not so simple. Global inequality is the product not only of inequality within countries, but also of the gaps between countries' per capita incomes. It is influenced by population and income sizes of the countries. China will affect global inequality much more than Luxembourg, for example. In determining what happened to inequality among all citizens of the world, we have to look at two contradictory movements: rising inequality within each country increases global inequality, but high rates of real income growth in poor countries,

Chart 3

What a difference!

The richest 1 percent of people in the world receive nearly 14 percent of global income while the poorest 20 percent received just over 1 percent.

(percent of global income)



Sources: World Income Distribution database; and author's calculations.
Note: Data are for 2005.

and especially in the gigantic countries like China and India, reduce global inequality.

The data for the calculation of global inequality come from individual countries' household surveys, but they have to be complemented by an adjustment factor to convert national incomes into an international "currency" that has the same purchasing power in all countries of the world. The adjustment factor is the so-called purchasing power parity dollar ($PPP). Its main role is to adjust for differences in price levels between countries. Generally speaking, price levels in poorer countries are lower than in rich countries and, when we adjust for purchasing power, incomes in poor countries are higher than they would be if measured at market exchange rates. Using the most recent data on $PPPs, one can construct a global income distribution—a giant accumulation of individual survey data adjusted by country-specific PPP exchange rates—and calculate a worldwide Gini.

Decreasing global inequality . . . represents an epochal change: it reflects the newfound prosperity of millions of people.

When we do this, at approximate five-year intervals for 1988–2005, we find that global inequality does not show a clear trend, but it is extremely high (see Chart 3), oscillating around 70 Gini points. This implies that the forces of (population-weighted) country convergence (namely, China and India catching up with the rich world) just about offset the forces of rising inequality within nations. But preliminary data for 2008—which reflect the much faster growth of emerging economies than advanced economies that continues today—suggest that lower global inequality could be ahead.

Global inequality seems to have declined from its high plateau of about 70 Gini points in 1990–2005 to about 67–68 points today. This is still much higher than inequality in any single country, and much higher than global inequality was 50 or 100 years ago. But the likely downward kink in 2008—it is probably too early to speak of a slide—is an extremely welcome sign. If sustained (and much will depend on China's future rate of growth), this would be the first decline in global inequality since the mid-19th century and the Industrial Revolution.

One could thus regard the Industrial Revolution as a "Big Bang" that set some countries on a path to higher income, and left others at very low income levels. But as the two giants—India and China—move far above their past income levels, the mean income of the world increases and global inequality begins to decline. It is somewhat ironic that these hopeful developments coincide with the global financial crisis, but the very simple arithmetics of income and population show that the "decoupling" of economic growth between the rich world and emerging market economies has contributed to the decrease in global inequality.

Even in the middle of the crisis, and despite appearances, economics is not only about the "dismal" stuff. Decreasing global inequality, driven by high rates of growth and higher living standards of populous and still relatively poor economies like China and India, represents an epochal change: it reflects the newfound prosperity of millions of people. And as the world becomes more integrated, the political significance of lower global inequality may come to outweigh that of rising inequalities within nations. ■

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Equality and Efficiency

Is there a trade-off between the two or do they go hand in hand?

Andrew G. Berg and Jonathan D. Ostry

IN his influential 1975 book *Equality and Efficiency: The Big Tradeoff*, Arthur Okun argued that pursuing equality can reduce efficiency (the total output produced with given resources). The late Yale University and Brookings Institution economist said that not only can more equal distribution of incomes reduce incentives to work and invest, but the efforts to redistribute—through such mechanisms as the tax code and minimum wages—can themselves be costly. Okun likened these mechanisms to a "leaky bucket." Some of the resources transferred from rich to poor "will simply disappear in transit, so the poor will not receive all the money that is taken from the rich"—the result of administrative costs and disincentives to work for both those who pay taxes and those who receive transfers.

Do societies inevitably face an invidious choice between efficient production and equitable wealth and income distribution? Are social justice and social product at war with one another?

In a word, no.

In recent work (Berg, Ostry, and Zettelmeyer, 2011; and Berg and Ostry, 2011), we discovered that when growth is looked at over the long term, the trade-off between efficiency and equality may not exist. In fact equality appears to be an important ingredient in promoting and sustaining growth. The difference between countries that can sustain rapid growth for many years or even decades and the many others that see growth spurts fade quickly may be the level of inequality. Countries may find that improving equality may also improve efficiency, understood as more sustainable long-run growth.

Inequality matters for growth and other macroeconomic outcomes, in all corners of the globe. One need look no further than the role inequality is thought to have played in creating the disaffection that underlies much of the recent unrest in the Middle East. And, taking a historical perspective, the increase in U.S. income inequality in recent decades is strikingly similar to the increase that occurred in the 1920s. In both cases there was a boom in the financial sector, poor people borrowed a lot, and a huge financial crisis ensued (see "Leveraging Inequality," *F&D*, December 2010 and "Inequality = Indebtedness" in this issue of *F&D*). The recent global economic crisis, with its roots in U.S. financial markets, may have resulted, in part at least, from the increase in inequality. With inequality growing in the United States and other important economies, the relationship between inequality and growth takes on more significance.

How do economies grow?

Most thinking about long-run growth assumes implicitly that development is something akin to climbing a hill, that it entails more or less steady increases in real income, punctuated by business cycle fluctuations. The pattern in Chart 1—which shows the level of real (after-inflation) per capita income in two advanced economies, the United Kingdom and the United States—is consistent with this idea.

Chart 1

Climbing the hill

For advanced economies like the United Kingdom and the United States, income grows at a more or less steady pace over the long run.

(real GDP per capita, log)

United Kingdom: 10.5, 10.0, 9.5, 9.0; 1950, 60, 70, 80, 90, 2000

United States: 11.0, 10.5, 10.0, 9.5, 9.0; 1950, 60, 70, 80, 90, 2000

Source: Penn World Tables Version 6.2.

Note: Real GDP per capita is measured in logarithms, which means that the straighter the line, the more constant the growth rate.

The experiences in developing and emerging economies, however, are far more varied (see Chart 2). In some cases, the experience is like climbing a hill. But in others, the experience is more like a roller coaster. Looking at such cases, Pritchett (2000) and other authors have concluded that an understanding of growth must involve looking more closely at the turning points—ignoring the ups and downs of growth over the horizon of the business cycle, and concentrating on why some countries are able to keep growing for long periods whereas others see growth break down after just a few years, followed by stagnation or decay.

A systematic look at this experience suggests that *igniting* growth is much less difficult than *sustaining* it (Hausmann, Pritchett, and Rodrik, 2005). Even the poorest of countries have managed to get growth going for several years, only to see it peter out. Where growth laggards differ from their more successful peers is in the degree to which they have been able to sustain growth for long periods of time.

Income distribution and growth sustainability

In our research we looked at the extent to which the duration of a growth episode is related to differences in country characteristics and policies. The quality of economic and political institutions, an outward orientation of an economy, macroeconomic stability, and human capital accumulation have long been recognized as important determinants of economic growth. And we found that they matter for the duration of growth episodes too.

We argue that income distribution may also—and independently—belong in this pantheon of critical determinants of growth duration. At the level of simple correlation, more inequality seems associated with less sustained growth.

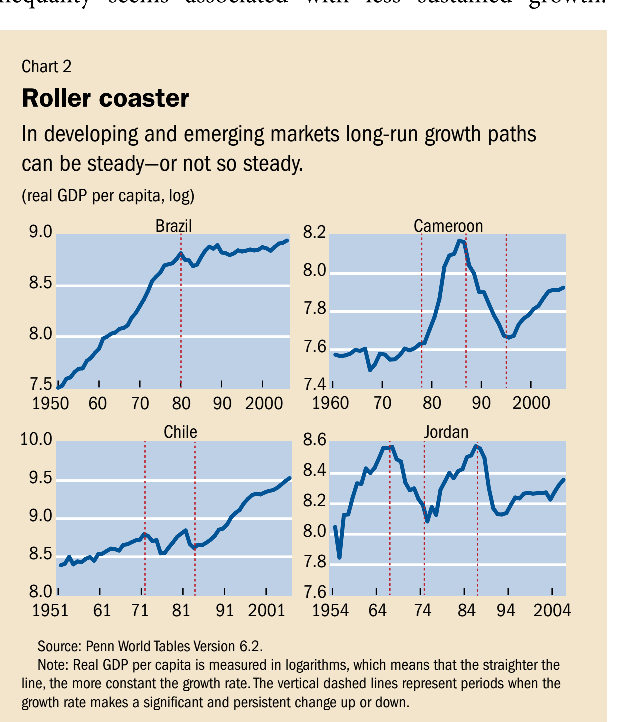


Chart 2

Roller coaster

In developing and emerging markets long-run growth paths can be steady—or not so steady.

(real GDP per capita, log)

Source: Penn World Tables Version 6.2.

Note: Real GDP per capita is measured in logarithms, which means that the straighter the line, the more constant the growth rate. The vertical dashed lines represent periods when the growth rate makes a significant and persistent change up or down.

Chart 3 shows the length of growth spells and the average income distribution during the spell for a sample of countries. We define a growth spell as a period of at least five years that begins with an unusual increase in the growth rate and ends with an unusual drop in growth. The measure of inequality is the Gini coefficient, which varies from zero (all households having the same income) to 100 (all income received by one household).

It may seem counterintuitive that inequality is strongly associated with less sustained growth. After all, some inequality is essential to the effective functioning of a market economy and the incentives needed for investment and growth (Chaudhuri and Ravallion, 2007). But too much inequality might be destructive to growth. Beyond the risk that inequality may amplify the potential for financial crisis, it may also bring political instability, which can discourage investment. Inequality may make it harder for governments to make difficult but necessary choices in the face of shocks, such as raising taxes or cutting public spending to avoid a debt crisis. Or inequality may reflect poor people's lack of access to financial services, which gives them fewer opportunities to invest in education and entrepreneurial activity.

Against this background, the question is whether a systematic look at the data supports the notion that societies with more equal income distributions have more durable growth.

We study growth spells as medical researchers might examine life expectancy. They study the effects of age, weight, gender, and smoking habits on life expectancy; we look at whether factors such as political institutions, health and education, macroeconomic instability, debt, and trade openness might influence the likelihood that a growth spell will end. The result is a statistical model of growth duration that relates the expected length of a growth episode (or, equivalently, the risk that it will end in a given year) to several of these variables. We compare the risk that the spell will end in a given year with the values of these variables in previous years—at the beginning of the spell or the previous year—to minimize the risk of reverse causality. In the face of the usual difficulties involved in disentangling cause and effect, and the risk that we have been unable to find good measures of important variables, the results we report below should nonetheless be interpreted only as empirical regularities ("stylized facts").

The analysis suggests that a number of variables found to be important in other contexts also tend to be associated with longer growth spells (see Chart 4). To show the importance of each variable, the chart (which covers 1950 to 2006) reports the increase in the expected duration of a growth spell for a given increase in the variable in question, keeping other factors constant. To compare the effects of the different variables on growth duration, we calculate expected duration when all the variables are at their median values (the value greater than that observed in 50 percent of the observations in the sample). Then we increase each variable, one variable at a time, and look at what happens to expected duration. We want the size of each of these increases to be readily comparable. To achieve this, we increase each variable by an amount such that it moves from the median value to a value greater than that observed in 60 percent of the sample (a 10 percentile increase).

Hazard to sustained growth

Somewhat surprisingly, income inequality stood out for the strength and robustness of its relationship with the duration of growth spells: a 10 percentile decrease in inequality (represented by a change in the Gini coefficient from 40 to 37) increases the expected length of a growth spell by 50 percent. The effect is large, but is the sort of improvement that a

Chart 3

Lasting effects

More inequality seems to spell less sustained growth.

(years in growth spell)

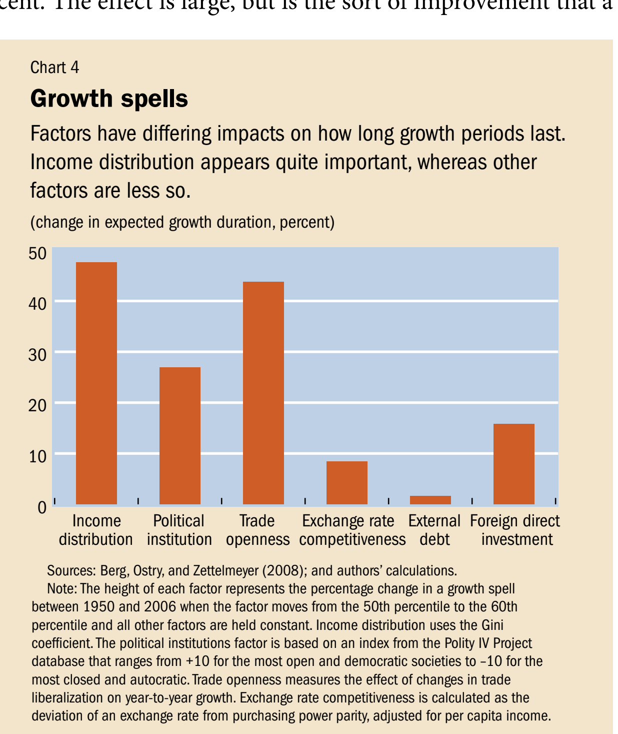
45 40 35 30 25 20 15 10 5 0

30 35 40 45 50 55 60 65

Inequality

Sources: Penn World Tables; and Wide World Inequality Database.

Note: Inequality is measured by the Gini coefficient, which ranges from zero, where all households have the same income, to 100, where one household has all the income. All spells lasted a minimum of five years. No incomplete spells are included. The data cover the period from 1950 to 2006. Countries in the sample include Belgium, Brazil, Cameroon, Colombia, Ecuador, El Salvador, Greece, Guatemala, Jamaica, Jordan, Pakistan, Panama, Singapore, Thailand, and Zambia.



Sources: Berg, Ostry, and Zettelmeyer (2008); and authors' calculations.

Note: The height of each factor represents the percentage change in a growth spell between 1950 and 2006 when the factor moves from the 50th percentile to the 60th percentile and all other factors are held constant. Income distribution uses the Gini coefficient. The political institutions factor is based on an index from the Polity IV Project database that ranges from +10 for the most open and democratic societies to –10 for the most closed and autocratic. Trade openness measures the effect of changes in trade liberalization on year-to-year growth. Exchange rate competitiveness is calculated as the deviation of an exchange rate from purchasing power parity, adjusted for per capita income.

number of countries have experienced during growth spells. We estimate that closing, say, half the inequality gap between Latin America and emerging Asia would more than double the expected duration of a growth spell in Latin America.

Remarkably, inequality retains its statistical and economic significance even when we include many potential determinants at the same time, a claim that we cannot make for many of the conventional determinants of good growth performance, such as the quality of institutions and trade openness. Inequality still matters when we allow for regional differences in expected growth duration (such as between emerging Asia and Africa). This all suggests that inequality seems to matter in itself and is not just proxying for other factors. Inequality also preserves its significance more systematically across different samples and definitions of growth spells than the other variables do. Of course, inequality is not the only thing that matters but, from our analysis, it clearly belongs on the list of well-established growth factors such as the quality of political institutions or trade openness.

Do these statistical results find a voice in the political and economic narratives of the actual country growth episodes? It appears to be the case in, for example, Cameroon. Growth averaged 7 percent from 1978 through 1985. Then the economy fell apart and declined by 6 percent a year over the subsequent decade. Oil wealth in the 1970s initially financed large increases in the public sector, particularly in public employee wages, which proved very difficult to cut when oil prices fell. "Although these measures [to cut government spending] were necessary to rescue the country from further economic crisis, they were very unpopular because they least affected the political elite and those in the upper echelon of government, whose privileges remained intact" (Mbaku and Takougang, 2003). Our statistical model of growth duration suggests that the risk that the growth spell would end in 1985 was very high—more than 100 times higher than would be typical for a country enjoying a growth spell. The model attributes this high risk mostly to Cameroon's unusually high inequality as well as its low inflow of foreign direct investment and high degree of autocracy.

Cameroon is typical. We have examined six historical cases, including Colombia, Guatemala, and Nigeria. These cases, and our broader statistical analysis of a large number of growth episodes, suggest that inequality is an underlying feature that makes it more likely that a number of factors—external shocks, external debt, ethnic fractionalization—come together to bring a growth spell to an end.

Raising the tide

One reasonably firm conclusion is that it would be a big mistake to separate analyses of growth and income distribution. To borrow a marine analogy: a rising tide lifts all boats, and our analysis indicates that helping raise the smallest boats may help keep the tide rising for all craft, big and small.

The immediate role for policy, however, is less clear. More inequality may shorten the duration of growth, but poorly designed efforts to reduce inequality could be counterproductive. If these efforts distort incentives and undermine growth, they can do more harm than good for the poor. For example, the initial reforms that ignited growth in China involved giving stronger incentives to farmers. This increased the income of the poor and reduced overall inequality as it gave a tremendous spur to growth. However, it probably led to some increased inequality among farmers, and efforts to resist this component of inequality would likely have been counterproductive (Chaudhuri and Ravallion, 2007).

Still, there may be some win-win policies, such as better-targeted subsidies, better access to education for the poor that improves equality of economic opportunity, and active labor market measures that promote employment.

When there are short-run trade-offs between the effects of policies on growth and income distribution, the evidence we have does not in itself say what to do. But our analysis should tilt the balance toward the long-run benefits—including for growth—of reducing inequality. Over longer horizons, reduced inequality and sustained growth may be two sides of the same coin.

The analysis calls to mind the developing country debt crises of the 1980s and the resulting "lost decade" of slow growth and painful adjustment. That experience brought home the fact that sustainable economic reform is possible only when its benefits are widely shared. In the face of the current global economic turmoil and the need for difficult economic adjustment and reform in many countries, it would be better if these lessons were remembered rather than relearned. ■

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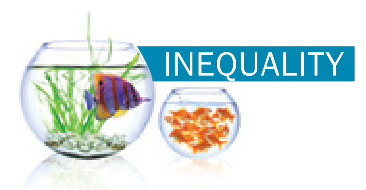

A Bigger Slice of a Growing Pie

Sarwat Jahan and Brad McDonald

Developing the financial sector accelerates economic growth and can enhance income equality

ECONOMIC development and financial development reinforce each other. That should come as no surprise. More varied and more accessible financial services—from banking to insurance to stock markets—permit larger pools of savings to be channeled with increasing efficiency toward productive investments that result in stronger growth. But to the surprise of some, there is mounting evidence that financial development does not merely enlarge the pie, but also divides it more evenly.

For the bottom fifth of society, about 60 percent of the benefit of financial development comes from overall economic growth and 40 percent from greater income equality (Beck, Demirgüç-Kunt, and Levine, 2007).

This is important for countries at all income levels. But for the developing world and especially for many low-income countries—where indicators of financial development are strengthening rapidly—it also provides reason for optimism that faster rates of poverty reduction may lie ahead.

This link between equality and financial development raises an urgent question for policymakers: How can governments promote financial development that supports growth and reduces inequality, with adequate financial and economic stability? Experience provides few firm rules, only some broad guidance. Just like economic reforms more generally, the pace and approach of financial liberalization should be tailored to a country's situation and complement its policies in other areas. A foundation of a stable macroeconomic environment and flexible trade, product, and labor markets can influence the success of a financial development strategy. From there, the more successful strategies will identify and remove impediments to financial access—such as policies that inhibit competition—without directing particular outcomes. Successful strategies will also be mindful of the damage financial instability inflicts, on growth and particularly on lower-income members of society.

Across the globe

Financial development differs markedly around the world (see Chart 1). The increase in the level of financial services is often called financial deepening. When measured by the ratio of private credit to gross domestic product (GDP), high-income countries are on average about six times deeper than low-income countries. A similar observation holds for another indicator of financial deepening, the ratio of M2 to GDP. M2 is a measure of the money supply that includes cash, checking, and saving accounts. Encouragingly, although they have much lower levels of financial depth, the low-income countries are experiencing financial deepening at rates far faster than higher-income countries. Over the period 2004–09, cumulative average growth of private credit–to-GDP ratios in low-income countries was about 63 percent, compared with 33 percent for all other income groups.

But financial deepening will be of low quality if financial services are available to only a few firms or households. Access to finance is as pivotal as the depth of the financial system. High-income countries have on average 12 times more bank branches per 100,000 adults than the average low-income country—and 30 times more automated teller machines. Still, access to financial services in low-income countries is growing. The average number of bank branches per 100,000 people in low-income countries increased by about 31 percent during 2004–09; over the same period, growth of bank branches was stagnant for high-income countries, and between 5 and 20 percent for low- to upper-middle-income countries.

The level of financial depth is also widely dispersed among countries at similar income levels (see Chart 2). Among the low-income countries, the median country has a ratio of

private credit–to-GDP of 10 percent, while about 17 percent have ratios between 20 to 35 percent. The median private credit–to-GDP ratio for lower-middle-income and upper-middle-income countries are respectively 24 and 29 percent, but there is significant dispersion. The median high-income country has a private credit–to–GDP ratio of 62 percent, but nearly 8 percent of high-income countries have ratios below 35 percent.

Financial development and inequality

Financial development enables bigger investments and more productive allocation of capital, which lead to higher income growth. But the benefits of financial development extend beyond financing investment, and often start by offering better and cheaper services for saving money and making payments. These services allow firms and households to avoid the cost of barter or cash transactions, cut the costs of remitting funds, and provide the opportunity to accumulate assets and smooth income. Insurance services help firms and households cope with shocks and reduce their vulnerability to adverse situations, reducing the risk of falling into poverty. Well-developed domestic financial markets may be instrumental in moderating boom-bust cycles triggered by sudden stops in financial flows.

Financial market imperfections—such as informational asymmetries (when one side knows more about a transaction than the other does), transaction costs, and contract enforcement costs—may hamper poor entrepreneurs, who generally lack collateral, credit histories, and connections. These credit constraints will impede the flow of capital to poor individuals with high-return projects. Some economic models, therefore, show that financial development reduces poverty and income inequality directly, by disproportionately *relaxing credit constraints on the poor,* and indirectly, by *improving the allocation of capital and accelerating growth.*

Other models suggest that financial development may initially increase inequality before ultimately reducing it. The poor rely primarily on the informal sector for capital, so improvements in the formal financial sector help mainly the rich. Some models suggest that at early stages of development, only the rich can afford to access and profit from financial markets, so financial development intensifies income inequality. At higher levels of economic development, financial development helps an increasing proportion of society.

The evidence

Simple cross-country patterns indicate that income inequality is lower in countries with deeper and more accessible financial markets. Using the Gini coefficient to measure inequality, we find that a more developed financial system tends to have less income inequality, although there is much variation. The Gini coefficient ranges from zero, when all households have the same income, to 100 when one household has all the income. Both financial depth, as measured by private credit to GDP, and financial access, measured by the number of bank branches (see Chart 3), indicate an initial benefit to the richer segments of society, but as financial development progresses, poorer segments benefit—and as access increases, inequality declines more sharply.

A growing body of empirical work also finds support for the influence of financial development on reducing inequality, particularly after controlling for income levels, other

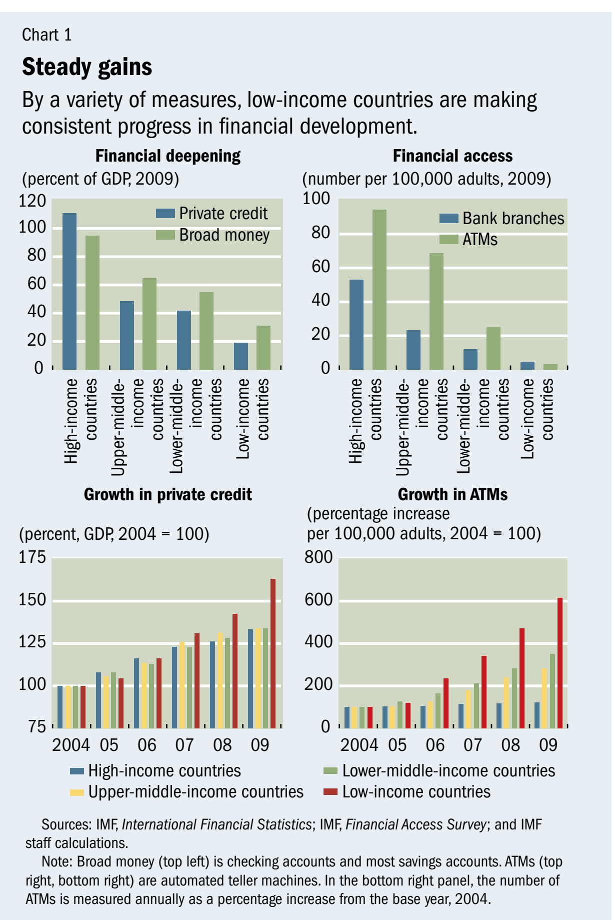

Chart 1

Steady gains

By a variety of measures, low-income countries are making consistent progress in financial development.

Sources: IMF, *International Financial Statistics*; IMF, *Financial Access Survey*; and IMF staff calculations.

Note: Broad money (top left) is checking accounts and most savings accounts. ATMs (top right, bottom right) are automated teller machines. In the bottom right panel, the number of ATMs is measured annually as a percentage increase from the base year, 2004.

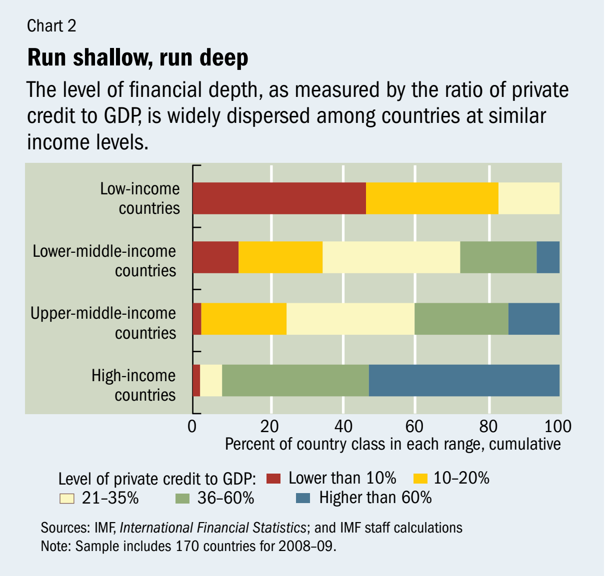

Chart 2

Run shallow, run deep

The level of financial depth, as measured by the ratio of private credit to GDP, is widely dispersed among countries at similar income levels.

Sources: IMF, *International Financial Statistics*; and IMF staff calculations

Note: Sample includes 170 countries for 2008–09.

country characteristics, and potential reverse causality (that is, the possibility that declining inequality triggers financial development). Cross-country analysis shows that: Gini coefficients fall more rapidly in countries with more developed financial intermediaries (such as banks or insurance companies); with better developed financial intermediaries, the income of the poorest 20 percent of the population grows faster than the national average; and the percentage of the population living on less than one or two dollars a day falls more rapidly with higher levels of financial development (Beck, Demirgüç-Kunt, and Levine, 2007).

Country-specific studies reach the same conclusions. An impact study of bank branches in rural India found that output increased and poverty declined with greater access to finance (Burgess and Pande, 2005), and another showed that greater access to bank branches lowered income inequality in the United States (Beck, Levine, and Levkov, 2010).

Benefits of financial development extend beyond income equality to other poverty indicators. Countries with well-developed financial systems seem to have a lower incidence of poverty than others at the same level of national income. A 10 percentage point increase in the private credit–to-GDP ratio reduces the percentage of the population in poverty by 2.5 to 3 percentage points (Honohan, 2004). Similarly, a 1 percentage point increase in private credit to GDP reduces the prevalence of undernourishment by 0.2 to 2.5 percentage points (Claessens and Feijen, 2007). There is also evidence that financial development improves societal health, education, and gender equality and reduces child labor.

However, not all financial development reduces inequality, at least in the short run. For example, a study of stock market liberalization in emerging markets shows that the benefits accrue primarily to the rich at the expense of middle-income citizens. Similarly, financial globalization, especially when it comes to foreign direct investment, has been associated with widening income disparities (IMF, 2007). More generally, there is a risk that small groups of elites may capture the process of financial liberalization, directing it in ways that narrow rather than broaden access (Claessens and Perotti, 2007).

How much is enough?

While properly functioning financial systems can support growth, too much financial sector development can also bring risks. Empirical estimates find that financial development can cause volatility of output growth, which increases when credit to the private sector exceeds 100 percent of GDP (Easterly, Islam, and Stiglitz, 2001). Thresholds for what is "too much" depend not only on the level of financial development, but also on other country characteristics such as the quality of institutions—including the regulatory framework and financial supervision. When institutions are weaker, the integration of a country's financial markets with those in other countries may contribute to increased macroeconomic volatility (such as in growth and unemployment).

Developing countries are often far from these thresholds, but they are also becoming more exposed to turmoil induced by the financial sector. Poverty has tended to rise in economic crises, as social spending suffers and aid stagnates, pinning the livelihood of the poor to often underdeveloped social safety nets.

Helping the poor

The evidence that financial development fosters growth and strongly benefits poorer segments of society is good news for poverty reduction and income equality. Particularly for low-income countries, recent trends in financial development indicators may portend a sustained period of strong and progressively inclusive growth. How can this rather hopeful trend be supported? Several key policy areas are important.

Chart 3

More finance: less inequality

As financial markets develop, as measured by private credit and bank branch growth, poorer segments of society benefit, although the rich benefit disproportionately during the initial stages.

(log, Gini coefficent)

Financial deepening

Log, private credit/GDP

(log, Gini coefficent)

Financial access

Log, number of bank branches

Sources: World Bank, *World Development Indicators*; IMF, *International Financial Statistics*; and IMF staff calculations.

Note: Financial development is measured by both private credit as a percentage of GDP and the number of bank branches. The data have been adjusted mathematically to reflect more compactly the relationship between the measures of financial development and inequality. The higher the number on the vertical axis, the higher the level of inequality in the country. All data are averaged over five-year periods between 1980 and 2009. There are 170 countries in the sample.

Financial and macroeconomic stability: A stable macroeconomy helps attract domestic and foreign investment, which is one key way financial development translates to growth. Taxing and spending policy and debt management can help directly, by averting excessive domestic debt that would reduce the pool of funds available for private investment. And while episodes of financial instability seem to affect incomes disproportionately at the top end, the poor are ill prepared to deal with any income decline (Honohan, 2005).

Other structural reforms: Evidence of the interplay between structural reforms emphasizes that those concerning product markets—such as trade, agriculture, and domestic services—make financial development strategies more successful in fostering stable growth. The enhanced profitability and solvency of domestic firms that result from product market reforms seem to lead to improved credit availability (Ostry, Prati, and Spilimbergo, 2008).

Legal environment and financial market infrastructure: Surveys, such as the World Bank's *Doing Business*, shed light on the role of property rights and contract enforceability in financial development. Balanced, transparent, and timely processes for securing collateral in the event of loan defaults encourage financial institutions to lend to more and smaller firms, promoting a competitive and dynamic business sector. In larger and more developed economies, the emphasis should include developing capital markets.

The poor are ill prepared to deal with any income decline.

Promoting financial access: Despite the recent growth, financial systems remain small in low-income regions, especially in much of sub-Saharan Africa. In banking, which is the dominant source of finance in these regions, the high spreads between deposit and lending rates reflect a lack of competition and inhibit firms from growing to take advantage of economies of scale. Banking sector liberalization that promotes competition (and takes due consideration of stability) boosts growth: the IMF estimated that the annual growth rate of developing economies with more open banking sectors exceeded that of economies with less open banking sectors by about 1 percentage point (Ostry, Prati, and, Spilimbergo, 2008).

Fostering integration: One way to enhance banking sector competition and promote financial access is through global and regional integration. For example, opening up the domestic banking market at an appropriate pace and with supporting reforms brings benefits for economies of all sizes. For those economies where a smaller scale of operations means higher operating costs, it also brings a "pro-competition" effect that promotes access by driving down prices and enhancing the range of banking services provided. This "opening up" can be achieved by allowing subsidiaries of foreign banks to incorporate domestically or by allowing branches of foreign banks. Complementary steps toward regulatory harmonization and supervisory cooperation also promote competition. Trade agreements at the multilateral and regional levels have developed to facilitate and provide an external anchor for such reforms.

These strategies emphasize financial development generally—evidence on particular strategies that may do more to reduce poverty is still limited. But some areas warrant emphasis. With poverty often concentrated in rural areas, regulators can ensure that loan classification criteria and capital requirements are not biased against loans to the agricultural sector, where many of the poor work. In developing countries, exploiting new technologies can provide financial access to those who were previously shut out. For example, Kenya's "mobile money" programs, which allow the poor to use their cell phones to bank, have successfully broadened financial access while reducing transaction costs and facilitating trade (IMF, 2011). ■

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Painful Medicine

Pedestrians pass by limousine in Times Square area of New York City, United States.

Although advanced economies need medium-run fiscal consolidation, slamming on the brakes too quickly will hurt incomes and job prospects

Laurence Ball, Daniel Leigh, and Prakash Loungani

WHEN British Prime Minister David Cameron announced his government's deficit reduction plans earlier this year he said, "Those who argue that dealing with our deficit and promoting growth are somehow alternatives are wrong. You cannot put off the first in order to promote the second" (Cameron, 2011).

The challenge facing the United Kingdom and many advanced economies is how to bring debt down to safer levels in the face of a weak recovery. Will deficit reduction lead to stronger growth and job creation in the short run?

Recent IMF research provides an answer to this question. Evidence from data over the past 30 years shows that consolidation lowers incomes in the short term, with wage-earners taking more of a hit than others; it also raises unemployment, particularly long-term unemployment.

For the advanced economies, there is an unmistakable need to restore fiscal sustainability through credible consolidation plans. At the same time, we know that slamming on the brakes too quickly will hurt the recovery and worsen job prospects. Hence the potential longer-run benefits of fiscal consolidation must be balanced against the short- and medium-run adverse impacts on growth and jobs.

The twin challenges

The Great Recession of 2007–09 has led to the most pronounced increase in unemployment the advanced countries have seen in the post–World War II period. Unemployment averaged 5 percent in 2007 but shot up to 8 percent by 2009 and has remained high since then (see Chart 1, left panel).

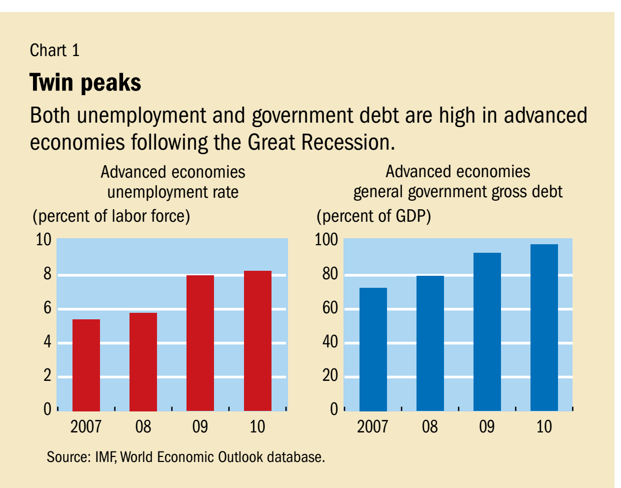


Chart 1

Twin peaks

Both unemployment and government debt are high in advanced economies following the Great Recession.

Source: IMF, World Economic Outlook database.

In many countries, such as Ireland and Spain, unemployment is at double-digit levels; in the United States, two years after the recession was officially declared to have ended, unemployment remains above 9 percent and net job creation is at a virtual standstill.

The Great Recession has also been a factor in increasing public debt, in large part because of the collapse in tax revenues as incomes fell. Other contributors to the debt buildup were the costs of financial bailouts of banks and companies and the fiscal stimulus provided by many countries to stave off a depression. In advanced economies public debt has increased from 70 percent of GDP in 2007 to about 100 percent of GDP—its highest level in 50 years (see Chart 1, right panel). Looking ahead, population aging could create even more serious problems for public finances (see *F&D*, June 2011).

Will it hurt?

Many governments are already undertaking or planning policies to reduce government debt and deficits (fiscal consolidations), through a combination of spending cuts and tax hikes. What are the likely short-term effects of these plans?

Because such plans have been quite common, history offers a good guide. Over the past 30 years, there have been 173 episodes during which 17 advanced economies undertook budgetary measures aimed at fiscal consolidation. (The countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, Portugal, Spain, Sweden, United Kingdom, and the United States.) The average size of fiscal consolidation was about 1 percent of GDP a year.

To obtain estimates of the effects of fiscal consolidation, the IMF research draws on historical accounts and records of policy actions—tax hikes and spending cuts—motivated by a desire to bring about deficit reduction. This is a more accurate measure of policy actions than those used in previ-

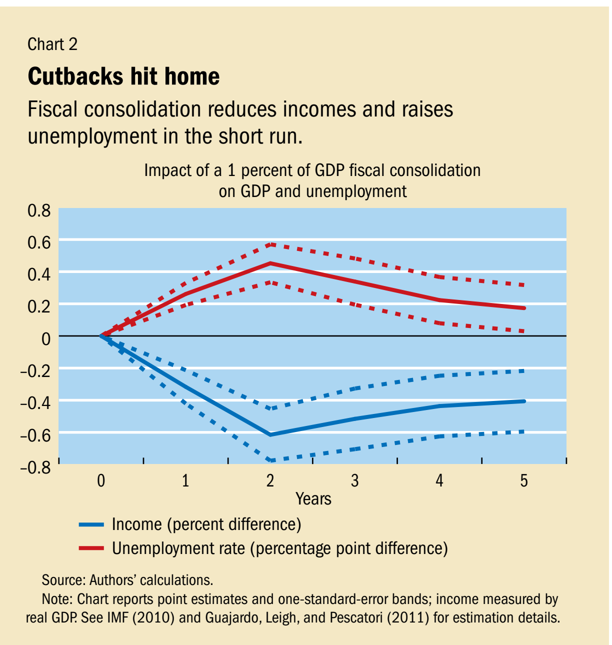


Chart 2

Cutbacks hit home

Fiscal consolidation reduces incomes and raises unemployment in the short run.

Source: Authors' calculations.

Note: Chart reports point estimates and one-standard-error bands; income measured by real GDP. See IMF (2010) and Guajardo, Leigh, and Pescatori (2011) for estimation details.

Measuring fiscal consolidation

The measure of fiscal consolidation used in this article focuses on policy actions—tax hikes or spending cuts—taken by governments with the intent of reducing the budget deficit. This may seem to be the natural thing to do but it is not the way fiscal consolidation has been measured in previous studies (e.g., Giavazzi and Pagano, 1990; and Alesina and Ardagna, 2010).

In previous studies, fiscal consolidation is measured by successful budget outcomes. Specifically, the cyclically adjusted primary balance (CAPB)—the primary balance adjusted for the estimated effects of business cycle fluctuations—is used as a measure of fiscal consolidation. The cyclical adjustment is needed because tax revenue and government spending move automatically with the business cycle. The hope is that, after this cyclical adjustment, changes in fiscal variables reflect policymakers' decisions to change tax rates and spending levels. An increase in the CAPB would therefore, in principle, reflect a deliberate policy decision to cut the deficit.

In practice, however, budget outcomes turn out to be an imperfect measure of policy intent. One problem is that the cyclical adjustment suffers from measurement errors. In particular, it fails to remove swings in government tax revenue associated with asset price or commodity price movements from the fiscal data, resulting in changes in the CAPB that are not necessarily linked to actual policy changes. For example, in the case of Ireland in 2009, the collapse in stock and housing prices induced a sharp reduction in the CAPB despite the implementation of tax hikes and spending cuts exceeding 4.5 percent of GDP.

Another problem is that the standard approach ignores the motivation behind fiscal actions. Thus, it includes years in which governments deliberately tightened policy to restrain excessive domestic demand. For example, in Finland in 2000, there was an asset price boom and rapid growth, and the government decided to cut spending to reduce the risk of economic overheating. If a fiscal tightening is a response to domestic demand pressures, it is not valid for estimating the short-term effects of fiscal policy on economic activity, even if it is associated with a sharp rise in the CAPB.

It turns out that these problems with the CAPB bias the analysis toward downplaying contractionary effects and overstating expansionary ones. It tends to select periods associated with favorable growth outcomes but during which no austerity measures were actually taken. It also tends to omit cases of fiscal austerity associated with unfavorable growth outcomes. Using the preferable measure based on policy actions gives the clear result that fiscal consolidation is contractionary, as shown in Chart 2.

ous studies, which often rely on the observed change in the budget deficit adjusted for the economic cycle (see box).

Using this better measure, the evidence from the past is clear: fiscal consolidations typically have the short-run effect of reducing incomes and raising unemployment. A fiscal consolidation of 1 percent of GDP reduces inflation-adjusted incomes by about 0.6 percent and raises the unemployment rate by almost 0.5 percentage point (see Chart 2) within two years, with some recovery thereafter. Spending by households and firms also declines, with little evidence of a handover from public to private sector demand.

In economists' jargon, fiscal consolidations are contractionary, not expansionary. This conclusion reverses earlier suggestions in the literature that cutting the budget deficit can spur growth in the short term.

No pain relievers?

The reduction in incomes from fiscal consolidations is even larger if central banks do not or cannot blunt some of the pain through a monetary policy stimulus. The fall in interest rates associated with monetary stimulus supports investment and consumption, and the concomitant depreciation of the currency boosts net exports. Ireland in 1987 and Finland and Italy in 1992 are examples of countries that undertook fiscal consolidations, but where large depreciations of the currency helped provide a boost to net exports.

Unfortunately, these pain relievers are not easy to come by in today's environment. In many economies, central banks can provide only a limited monetary stimulus because policy interest rates are already near zero (see "Unconventional Behavior" in this issue of *F&D*). Moreover, if many countries carry out fiscal austerity at the same time, the reduction in incomes in each country is likely to be greater, since not all countries can reduce the value of their currency and increase net exports at the same time.

Simulations of the IMF's large-scale models suggest that the reduction in incomes may be more than twice as large as that shown in Chart 2 when central banks cannot cut interest rates and when many countries are carrying out consolidations at the same time. These simulations thus suggest that fiscal consolidation is now likely to be more contractionary (that is, to reduce short-run income more) than was the case in past episodes.

The historical evidence also shows that fiscal consolidations based on spending cuts are less painful than those based on tax hikes. This is largely because central banks have cut interest rates more after spending cuts. Again, this avenue is not one that many countries can rely on today.

Fiscal consolidation may also seem less painful when markets are more concerned about the risk of a government defaulting on its debt. This could reflect so-called confidence effects: the fact that the country is tackling the fiscal situation can impart confidence to financial markets and to consumers and firms, leading them to spend more. But the IMF research found that even in such cases, on average, the effects are contractionary, with no evidence of any surge of consumption and investment.

Long-term pain

Fiscal contractions raise both short-term and long-term unemployment, as shown in Chart 3, but the impact is much greater on the latter. Long-term unemployment refers to spells of unemployment lasting more than six months. Moreover, within three years the rise in short-term unemployment due to fiscal consolidation comes to an end, but long-term unemployment remains higher even after five years.

Fiscal consolidations thus add to the pain of those who are likely to be already suffering the most—the long-term unemployed. This is a particular worry today since the share of long-term unemployed increased in most Organization for Economic Cooperation and Development countries during the Great Recession. And even in countries where it did not increase—such as France, Germany, Italy, and Japan—the share had already been very high even before the recession.

Job loss is associated with persistent earnings loss, adverse impacts on health, and declines in the academic performance and earnings potential of the children of displaced workers (see "The Tragedy of Unemployment," in *F&D*, December 2011). These adverse effects are exacerbated the longer a person is unemployed.

Moreover, long spells of unemployment reduce the odds of being rehired. For instance, in the United States today, a person unemployed for more than six months has only a 1 in 10 chance of being rehired in the next month, compared with 1 in 3 odds for a person unemployed less than a month. The increase in long-term unemployment thus carries the risk of entrenching unemployment as a structural problem because workers lose skills and become detached from the labor force—a phenomenon referred to as "hysteresis" (Blanchard and Summers, 1986).

Long-term unemployment also threatens social cohesion. An opinion survey conducted in 69 countries around the world found that an experience with unemployment leads to more negative opinions about the effectiveness of democracy

Chart 3

No job soon

Fiscal contractions raise unemployment, particularly long-term unemployment.

Impact of a 1 percent of GDP fiscal consolidation on short-term unemployment
(percentage points)

Impact of a 1 percent of GDP fiscal consolidation on long-term unemployment
(percentage points)

Years

Source: Authors' calculations.
Note: Chart reports point estimates and one-standard-error bands.

and increases the desire for a rogue leader. The effects were found to be more pronounced for the long-term unemployed.

Inequity?

A traditional way of splitting the economic pie is into wages, profits, and rents. This harks back to times when the roles of workers, capitalists, and landlords were fairly distinct. Although these distinctions have eroded somewhat over time, the split between wages and other forms of income represents a starting point for describing how income is divided between Main Street and Wall Street.

How does fiscal consolidation affect the distribution of income between wage-earners and others? The research shows the pain is not borne equally. Fiscal consolidation reduces the slice of the pie going to wage-earners. For every 1 percent of GDP of fiscal consolidation, inflation-adjusted wage income typically shrinks by 0.9 percent, while inflation-adjusted profit and rents fall by only 0.3 percent. Also, while the decline in wage income persists over time, the decline in profits and rents is short-lived (see Chart 4).

The reasons wage income declines more than profits and rents have not yet been studied much by economists. Some fiscal austerity plans call for public sector wage cuts, thus providing a direct channel for this effect. But there could be indirect channels as well, for instance because consolidations increase unemployment, and particularly the share of long-term unemployed in the total. (See "Unemployed in Europe" in this issue of *F&D* for evidence that unemployment raises income inequality.)

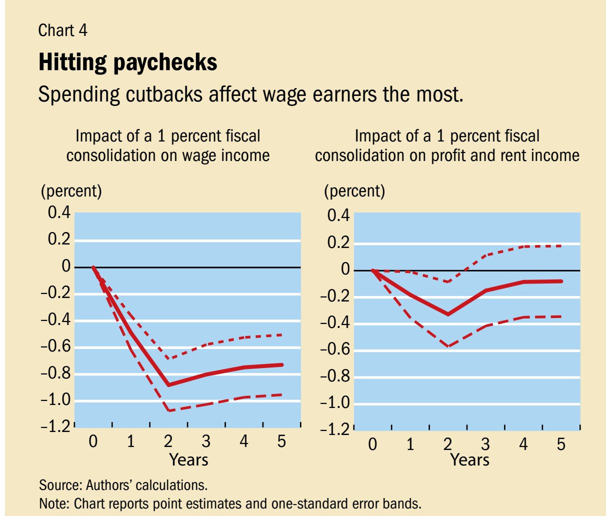
The bottom line

The research described here shows that it is important to have realistic expectations about the short-term consequences of fiscal consolidation: it is likely to lower incomes—hitting wage-earners more than others—and raise unemployment, particularly long-term unemployment. These costs must be balanced against the potential longer-term benefits that consolidation can confer—such as reducing interest rates and lightening the burden of interest payments, permitting cuts to distortionary taxes (those that discourage desirable behavior).

Chart 4

Hitting paychecks

Spending cutbacks affect wage earners the most.



Source: Authors' calculations.
Note: Chart reports point estimates and one-standard error bands.

Accordingly, fiscal measures that are approved now but kick in to reduce deficits only in the future—when the recovery is more robust—would be particularly helpful. Examples include linking statutory retirement ages to life expectancy and improving the efficiency of entitlement programs. In contrast, fiscal consolidations that are unduly hasty risk prolonging the jobless recovery in many advanced economies. So countries with the scope to do so should opt for a slower pace of consolidation combined with policies to support growth (Lagarde, 2011). In countries such as the United States, where unemployment remains at historical highs and long-term unemployment is at alarming levels, more active policies are needed to spur job creation and increase consumer confidence, including measures such as mortgage relief for distressed homeowners.

Fiscal consolidation plans should also spell out how policies would respond to shocks, such as slower growth than envisaged in the plan. For instance, plans could specify that unemployment benefits would be shielded from cuts in the event of slower growth than assumed in the plan. History shows that fiscal plans succeed when they permit "some flexibility while credibly preserving the medium-term consolidation objectives" (IMF, 2011; see also Mauro, 2011). ■

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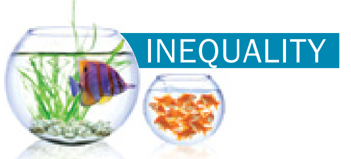


Unemployed in Europe

The most vulnerable Europeans were also the most susceptible to losing their jobs, which exacerbated inequality in the region

Hanan Morsy

THE MOST fragile groups in the European labor market—young, low-skilled, and temporary workers—suffered the most during the global and regional economic crises. And if they remain unemployed for too long, they are likely to lose their skills, become discouraged, and withdraw from the workforce. Unemployment among these groups has aggravated income inequality and runs the risk of shredding Europe's social fabric, threatening its public finances, and inhibiting growth.

To find out how labor market developments after the crisis affected inequality in Europe and what can be done to help, we looked at what caused income inequality in the Organization for Economic Cooperation and Development countries—for which a strong set of inequality data are available—in the quarter-century (1980–2005) before the recent global economic crisis. Extrapolating from the precrisis experience, we found that despite the social safety nets Europe is famous for, the crisis exacerbated inequality in the region, mainly by increasing unemployment and inhibiting job creation. Moreover, as the recovery takes hold, how it plays out globally and in Europe itself—which income groups benefit the most—will determine what happens to inequality on the continent. A jobless recovery could further worsen economic disparity and undermine both economic performance and social cohesion.

No surprises

Overall, the rise in unemployment during the crisis increased inequality by an estimated 2 percentage points in the euro area as a whole, and by as much as 10 percentage points in the periphery countries—Greece, Ireland, Portugal, and Spain—where the labor market situation deteriorated much more sharply. The crisis also led discouraged workers to drop out of the labor force, a factor that is likely to have further exacerbated income disparity. On the other hand, social safety nets are likely to have cushioned the impact of unemployment on inequality.

Inequality went up in most euro area countries as the rise in unemployment rates further widened the gap between rich and poor. Spain and Ireland, in particular, are estimated to have suffered the largest deterioration in income distribution, with income inequality rising by 20 percentage points and 11 percentage points, respectively. This reflects surging job losses as construction sector activity contracted sharply after housing bubbles burst, leaving many low-skilled workers without jobs. Close to half of the unemployment contribution to inequality in these countries can be attributed to long-term unemployment. By contrast, inequality barely moved in Germany and the Netherlands: the unemployment response to declining output was unusually muted because of part-time work programs that supported job retention in anticipation of a rebound.

Within Europe, cross-country differences in income inequality reflect the interplay of labor-market developments, education levels, and social expenditures. In general, the evidence confirmed expectations. Higher unemployment, long-term unemployment, and a two-tier employment system of temporary and permanent workers all ***worsen inequality***. And social safety nets, including unemployment benefits and welfare payments; more education; and better job opportunities for vulnerable groups who do not easily find jobs—especially women and youths—***all reduce inequality***.

What to do

European countries can take a number of steps to protect vulnerable groups from unemployment and help reduce income inequality:

- ***rebalance employment protection***—with a view to *supporting job creation*—by relaxing protection for regular workers while enhancing it for temporary workers, who are generally the last hired and first fired;
- ***avert long-term unemployment***, through *job search assistance, training, and incentives for private sector employment*;
- ***improve youth access to the labor market***, by integrating employment services and the education system through outreach programs, training, apprenticeships, and access to job-search assistance measures;
- ***attract second-income earners to the labor force***, by enhancing child care support and allowing women to file their labor income separately from their husbands in countries with joint family taxation;
- ***allow wages to be more aligned with productivity*** to provide firms with better incentives to invest and create jobs; and
- ***foster competition and a more business-friendly environment*** by removing entry barriers and reducing operating restrictions in sectors such as services and retail and network industries.

Only a healthy recovery accompanied by job creation will improve income distribution and strengthen social cohesion and political sustainability of growth. Accelerating jobs recovery through far-reaching labor and product market reforms is essential to prevent the buildup of long-term unemployment, especially for those groups that were hit the hardest. ■

Hanan Morsy is an Economist in the IMF's European Department.

This article is based on a forthcoming IMF working paper, "Unemployment and Inequality in the Wake of the Crisis."

Unequal= Indebted

Michael Kumhof and Romain Rancière

Higher income inequality in developed countries is associated with higher domestic and foreign indebtedness

ECONOMISTS have long worried about the growing chasm between countries that borrow heavily internationally and those that dish out the loans. They call it global current account imbalances and, especially since the onset of the global economic crisis in 2007, there has been concern that global markets could be destabilized were there a run on the currencies of those countries that pile up huge deficits. That hasn't happened, at least so far. In fact, the biggest borrower of all, the United States, is viewed mainly as a safe haven by lenders.

But there is another, domestic dimension to the pileup of international obligations. Domestic debt rises too and could reach unsustainable levels that could lead to domestic financial crises.

Why the United States has built such persistent and large deficits in its current account—which covers all noninvestment international transactions, including exports and imports, dividends and interest, and remittances—is a matter of some debate. Explanations include a low domestic saving rate, high foreign saving rates, high demand for high-yield U.S. assets from fast-growing but less financially developed countries, excess holding of international reserves in emerging market countries for both precautionary and mercantilist motives, demographics and productivity, and the role of the U.S. dollar as the world's reserve currency. But the phenomenon of persistently high current account deficits is not limited to the United States; it has also been observed in a number of other developed economies, especially those in the English-speaking world.

In current research we therefore extend the work reported in "Leveraging Inequality" (*F&D*, December 2010), which dealt with only the United States, to include an open-economy dimension. We find (see Chart 1) that what unites the experiences of the main deficit countries is a steep *increase in income inequality* over recent decades, as measured by the share of income going to the richest 5 percent of the country's income distribution.

This increase in inequality has contributed to a deterioration in the richest countries' aggregate savings-investment balances, as the poor and middle class borrowed from the rich and from foreign lenders. This, along with the other factors mentioned above, can fuel current account deficits.

Indeed, we find that as income shares of the top 5 percent increased between the early 1980s and the end of the millennium, current account balances worsened. For example, in the United Kingdom, an 8.7 percentage point increase in the income share of the richest 5 percent was accompanied by a deterioration in the current account–to-GDP ratio of 2.7 percentage points.

Modeling the facts

An economic model can clearly illustrate these links between income inequality and current account deficits. In our model, based on an open-economy extension of Kumhof and Rancière (2010), households are divided into a top 5 percent income group ("top group") and a bottom 95 percent income group ("bottom group") in a medium-sized country that accounts for 5 percent of world GDP. Shares of aggregate income are determined by a bargaining process between the two groups.

The model assumes that the top group experiences a large and persistent favorable bargaining power shock that increases its share of the economy's economic pie over an initial period of 10 years—with a corresponding decrease in the bottom group's share. (Our research deals with only the macroeconomic consequences of higher observed inequality; the literature, as we surveyed in our earlier article, has identified a number of different reasons for this phenomenon.)

The top group derives satisfaction not only from consumption—there is only so much a person who "has it all" can consume—but also from accumulating wealth, including financial wealth, meaning loans to the bottom group. Part of the top group's response to the hike in its income is therefore to increase loans to the bottom group. This allows the bottom group to continue consuming the economy's output even though it is earning a significantly lower share of income. Consequently, credit supply from the top group and credit demand from the bottom group increase simultaneously. The probability of default by the bottom group is assumed to increase with the level of debt, which builds up over time, thereby leading to higher risk premiums.

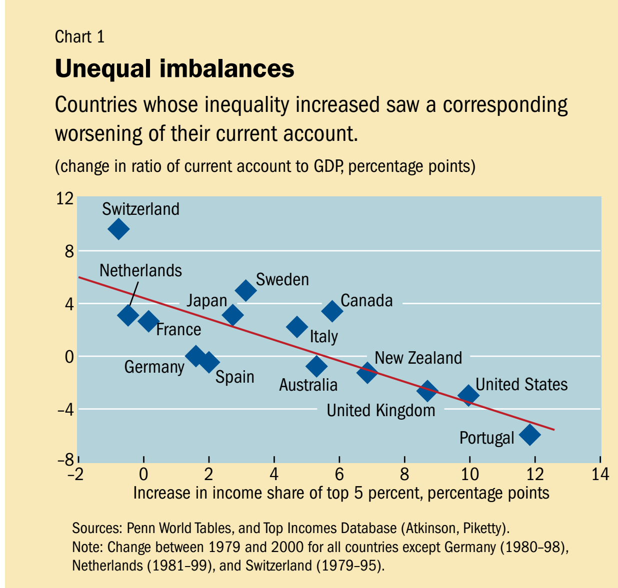
As a result of the shock, our model shows a decline of about 9 percent in the real wage (relative to trend real wage growth), an initial increase in the domestic loan interest rate of 80 basis points, and an increase of almost 120 percentage points in the lower group's debt-to-income ratio (see Chart 2, dashed line).

The increase in debt happens over the decades of below-trend incomes that result from the persistent shock. In an open economy, the task of financing the bottom group's borrowing demand following a negative income shock is shared between the domestic top group and foreigners. This enables the top group to deploy more of its higher income in domestic plant and machinery investment and consumption than would be possible in a closed economy. But externally the result is a deterioration of the current account, which peaks at more than 1 percent of GDP.

Chart 1

Unequal imbalances

Countries whose inequality increased saw a corresponding worsening of their current account.



Sources: Penn World Tables, and Top Incomes Database (Atkinson, Piketty).
Note: Change between 1979 and 2000 for all countries except Germany (1980–98), Netherlands (1981–99), and Switzerland (1979–95).

In reality, increases in income inequality are often followed by political interventions to prop up the living standards of the bottom group, whose real income is stagnating. This is generally done not by directly confronting the sources of inequality, such as declines in the collective bargaining power of the bottom group or shifts in the tax burden from the top group to the bottom group, but rather by promoting policies that cut the cost of borrowing for both individuals and financial institutions (Rajan, 2010). These policies include domestic and international financial liberalization, and they put additional downward pressure on current accounts.

As shown in the simulations in Chart 2 (solid line), a reduction in financial intermediation spreads leads to much lower lending rates, which draw more of the top group's resources into financial rather than real assets. Initially this allows the bottom group to maintain a much higher consumption level. But in the long run it means the top group underinvests in real assets such as plants and machinery, and so the bottom group sees lower real wages over time. At the same time, debt-to-income ratios rise more strongly, as do current account deficits.

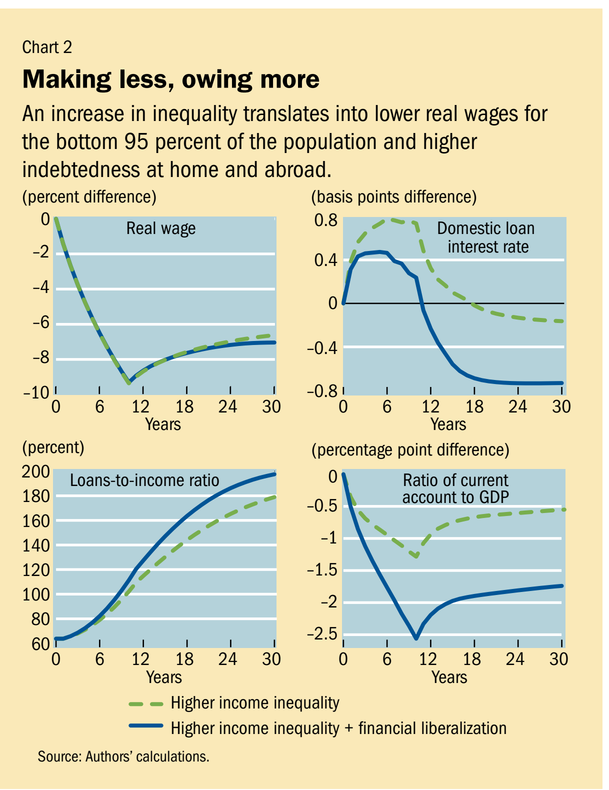
No surplus of equity

Using the same theoretical framework, we also looked at why current accounts could have simultaneously improved in other countries that experienced rising inequality, such as China. We find, seemingly paradoxically, that increases in domestic income inequality can also be the reason for these countries' large surpluses, beyond a response to higher borrowing in deficit countries.

Chart 2

Making less, owing more

An increase in inequality translates into lower real wages for the bottom 95 percent of the population and higher indebtedness at home and abroad.



Source: Authors' calculations.

These very different responses to inequality can occur to the extent that financial markets in surplus countries are less developed and therefore do not allow the poor and middle class to respond to lower shares in aggregate income by borrowing. The resulting shortfall of domestic demand then necessitates an export-oriented growth model, while the domestic wealthy end up deploying their additional income in foreign rather than domestic financial assets. If so, a short-sighted response to global imbalances could be to reduce these "financial imperfections" in surplus countries.

But if lending is liberalized without addressing the underlying income inequalities, the result would simply be an increase in indebtedness within surplus countries (between the rich and the rest of the population), rather than vis-à-vis the rest of the world. In other words, there would be a globalized rather than a regional increase in domestic indebtedness of the poor and middle class. While this would reduce cross-border financial imbalances, it would exacerbate domestic debt-to-income ratios and thus vulnerability to crises. In the long run, there is therefore simply no way to avoid addressing the income inequality problem head-on. Financial liberalization in surplus countries buys time, but at the expense of an eventually much larger debt problem.

Many of the policy options for reducing income inequality are fraught with difficulties. These include hard-to-resist downward pressure on wages, due to international competition, and the danger of driving investment to other jurisdictions if reductions in labor income taxes are financed through increases in capital income taxes. On the taxation front, solutions might include more progressive labor income taxes that leave average tax rates unchanged. Alternatively the financing of lower labor income taxes across all income levels could be financed through increases in taxes that do not distort economic incentives, including appropriately designed taxes on profits from investments in land, natural resources, and the financial sector. As for strengthening the bargaining power of workers directly, the difficulties of doing so must be weighed against the potentially disastrous consequences of further deep financial and real crises if current trends in lower- and middle-income household indebtedness—both domestic and international—continue. ■

Michael Kumhof is a Deputy Unit Chief, and Romain Rancière is an Economist, both in the IMF's Research Department. This article is based on the authors' research with Claire Lebarz, a graduate student at the Paris School of Economics, and Alexander Richter and Nathaniel Throckmorton, graduate students at Indiana University.

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Inequality over the Past Century

After declining in the first half of the 20th century, income inequality makes a comeback

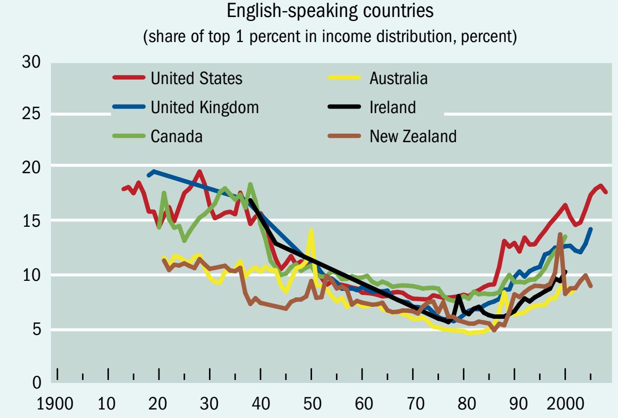
THE share of income received by the top 1 percent of earners varied markedly between 1900 and 2008 in 24 developed and developing economies. Moreover, the biggest earners changed as well. When the century began, the top 1 percent was dominated by capital owners. By the end of the century the hired hands—the top executives—shared with capital owners the highest part of the income distribution.

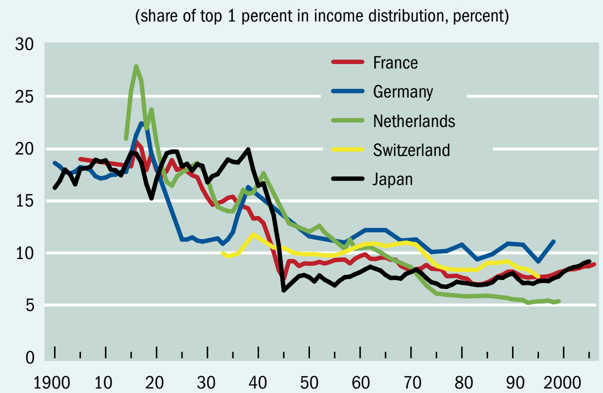
Businessman gets his shoes shined in London, United Kingdom.

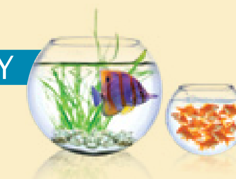
Widening income inequality

In Western English-speaking countries, inequality declined until about 1980 and then began to grow again. Continental European countries and Japan had a decline until about 1950; since then income distribution has leveled. For Nordic and Southern European countries, the drop in inequality in the early part of the century was much more pronounced than the rebound in the late part of the period. Developing countries show initial declines in inequality followed by a leveling off in some cases and an increase in inequality in others.

Income inequality has increased in most countries over the past 30 years.







Unemployed men wait in line for bread during the Depression in the United States.

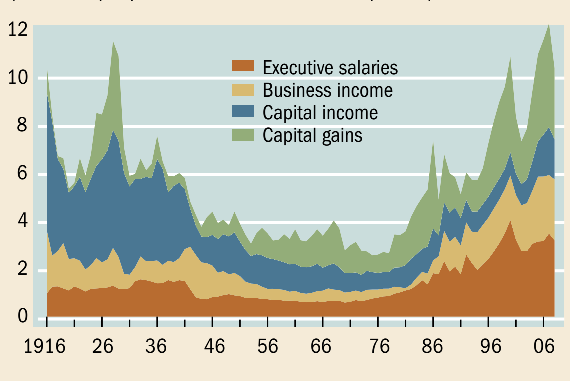
Source of inequality

Before 1945, the decrease in the share of income garnered by the top 1 percent in the developed world was caused mostly by a fall in income from investment (capital income). That decline took place during wartime and the Great Depression, suggesting that income inequality dropped because capital owners were hurt by major shocks to their holdings.

The dramatic increase in recent decades in the share of income going to the top 1 percent in many countries is due to a partial restoration of capital incomes and, more significantly, to very large increases in compensation for top executives. In the United States, as a result, the working rich have joined capital owners at the top of the income hierarchy.

In the United States, rising executive pay and a partial restoration of capital income is behind increasing income inequality.

(share of top 1 percent in income distribution, percent)



The United States

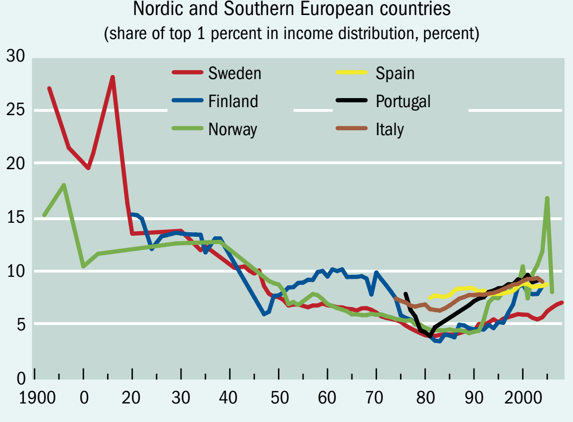
In the United States, average real incomes grew at a 1.3 percent annual rate between 1993 and 2008. But if the top 1 percent is excluded, average real income growth is almost halved, to about 0.75 percent a year. Incomes of the top 1 percent grew 3.9 percent a year, capturing more than half of the overall economic growth experienced between 1993 and 2008.

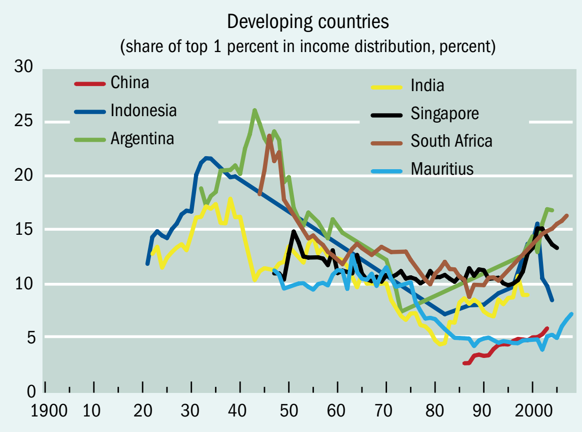
During the expansions of 1993–2000 and 2001–07, the income of the top 1 percent grew far more quickly—at an annual rate of more than 10.3 percent and 10.1 percent, respectively—than that of the bottom 99 percent, whose incomes grew at a 2.7 percent annual rate in the earlier expansion and 1.3 percent in the later one.

Growth and inequality

The new data call into question the standard relationship between economic development and income distribution—that growth and inequality reduction go hand in hand. But that relationship, postulated by economist Simon Kuznets, appears to be less certain—especially in English-speaking countries, which had a period of falling inequality during the first half of the 20th century followed by a reversal of the trend since the 1970s. Still, Kuznets's hypothesis may be relevant for many poor and developing countries that have not yet passed the initial industrialization stage (see "More or Less" in this issue of *F&D*).

Beggars soliciting alms on road in Shanghai, China.





Prepared by Facundo Alvaredo of CONICET (National Council for Science and Technology, Argentina), Paris School of Economics, and the Institute for New Economic Thinking at the Oxford Martin School. The data come from The World Top Incomes Database, available at http://g-mond.parisschoolofeconomics.eu/topincomes/

Fiscal Neighbors

Canada and the United States confronted growing budget deficits and public debt but the results differed

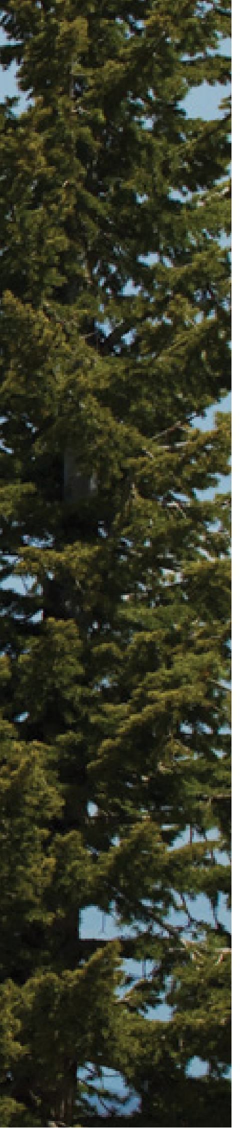
Jiri Jonas and Cemile Sancak

PUBLIC debt has grown rapidly in many advanced economies as a result of the recent severe global downturn. Now those countries will have to undertake unprecedented expenditure and tax (that is, fiscal) adjustments to ensure debt sustainability. Earlier attempts at fiscal adjustment provide important lessons to guide policymakers in this effort. We look at efforts undertaken more than a decade ago in Canada and the United States that provide lessons for today's issues.

Both nations faced growing fiscal deficits and public debt in the 1980s, and the initial attempts to correct them proved insufficient. As deficits and debt mounted in the first half of the 1990s, both countries introduced adjustment plans to restore debt sustainability. In Canada, the 1995 Plan, introduced in the 1994 and 1995 budgets, relied heavily on expenditure measures to reduce the federal deficit to no more than 3 percent of gross domestic product (GDP) by fiscal year (FY) 1997 (the spending year that began April 1, 1996, and ended March 31, 1997). The ultimate goal was a balanced budget. In the United States, the 1993 Omnibus Budget Reconciliation Act (OBRA-93) used both spending cuts and tax increases with the aim of cutting the federal deficit from 5 percent of GDP in 1992 to 2½ percent in 1997.

Both countries improved the fiscal balance and reversed growth in the debt-to-GDP ratio. In Canada, the overall balance improved by 5 percent of GDP over FYs 1995–97, moved to a surplus in FY1998, and remained in surplus until the onset of the global recession in 2007–08. In the United States, too, the overall balance improved steadily by 5 percent of GDP during 1993–98, even reaching surplus during 1998–2001. However, the U.S. surpluses did not last, and by 2003 the budget deficit was again in excess of 3 percent of GDP.

Why did fiscal outcomes diverge in the 2000s despite the initial success in both



countries? Part of the explanation relates to differences in the approach to reining in deficits. The U.S. improvement was due in part to expenditure and tax reforms. But it also resulted from strong economic activity and significant capital gains growth, which generated tax revenues that could not be sustained—but lulled the country into relaxing its fiscal vigilance. Canada, meanwhile, implemented profound structural reforms in spending and tax policy that had a longer-lasting impact.

Fiscal imbalances prompt action

Before the countries set off on their mid-1990s adjustment efforts, their economic and budget conditions were similar. Primary balances (before interest payments were taken into account) were almost identical (see Chart 1, top panel), although when interest payments were added, Canada's overall balance was worse (see Chart 1, bottom panel). Debt ratios were increasing rapidly in both countries (see Chart 2), and economic growth rates were similar during the two overlapping adjustment episodes (see Chart 3). Cyclical factors such as global recession and higher interest rates played a role in increasing debt ratios, as did structural factors such as the indexation of several expenditure programs to inflation in Canada. Adding to the debt-to-GDP rise were stimulative policies aimed at boosting economic growth, including tax cuts and spending increases.

Both countries perceived growing public debt as a threat to economic prosperity, though for somewhat different reasons. The Canadian government stressed the negative implications of high interest payments on growth, the importance of intergenerational equity (that future citizens should not pay the bills of living citizens), and the need to maintain the ability to spend on valued public programs such as health care and old age security, without jeopardizing long-run fiscal stability. The U.S. government emphasized the adverse effect of high interest rates on private investment and, through that channel, on economic growth.

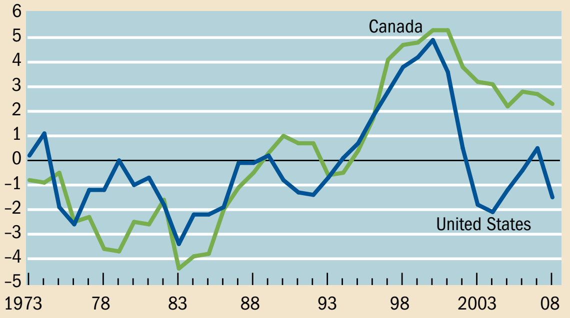
The adjustment plans also differed. In Canada, the 1995 Plan undertook a major expenditure reduction and profound structural measures based on a comprehensive expenditure review, a reform of the unemployment insurance program, major revisions to the system of transfers of federal revenue to the provinces, and pension reform. The authorities chose to adjust public finances primarily by cutting expenditures, because the tax burden was already higher than in the United States, Canada's main trading partner. In the United States, OBRA-93 included both spending controls and measures to increase tax revenues.

Chart 1

Almost in sync

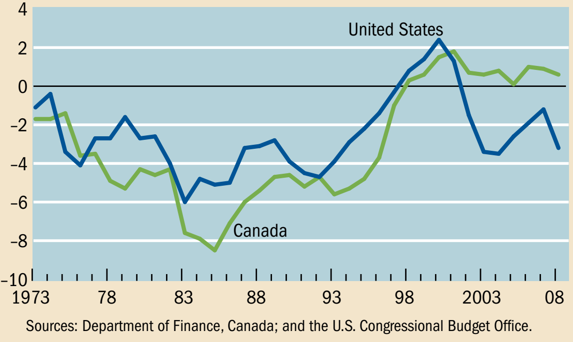
From 1980 until 2000, the United States and Canada had similar fiscal developments. As a percentage of GDP, their primary balances (that is, before interest payments) tracked each other closely . . .

(primary balance, percent of GDP)



. . . although when interest payments were included, Canada's performance was worse.

(overall balance, percent of GDP)



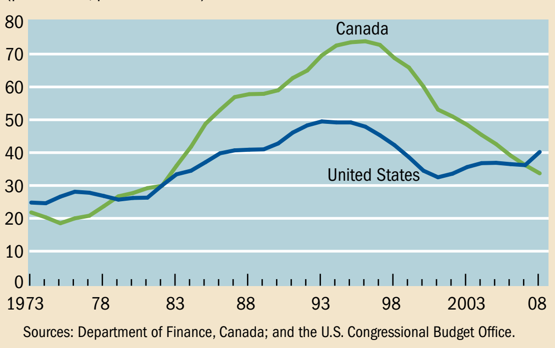
Sources: Department of Finance, Canada; and the U.S. Congressional Budget Office.

Chart 2

Borrowing aplenty

As a percentage of GDP, government debt in both Canada and the United States grew rapidly from the early 1980s until the mid-1990s, when government efforts to reduce deficits began to take hold and a revenue boom occurred in the United States.

(public debt, percent of GDP)



Sources: Department of Finance, Canada; and the U.S. Congressional Budget Office.

Initial success

In both countries, deficit reduction turned out to be greater than expected, but for different reasons that, in turn, help explain the contrasting developments in the following decade.

In the United States, the Congressional Budget Office (1993) projected that OBRA–93 would halve the deficit, to 2.7 percent of GDP by 1997, after which the deficit was projected to increase again. However, the actual deficit was close to zero in 1997, and the budget balance moved to a surplus that exceeded 2 percent of GDP by 2000. This comparison of plans versus outcomes reveals much about the sources of initial success, and its limited duration. The much greater-than-projected deficit reduction was driven by higher revenues, especially personal income tax revenues (see Chart 4), and, to a lesser extent, by lower-than-projected mandatory spending (mainly Medicare, Medicaid, and Social Security). Congress held to the ceilings it set for discretionary spending.

The revenue increase is explained largely by the progressivity of the U.S. federal tax system. A *rapid rise in real incomes* during the 1990s pushed more taxpayers into higher tax brackets. As income distribution worsened, a rising share of income went to high-income individuals, who paid higher tax rates. In addition, the *stock market boom* resulted in greater capital gains, further boosting individual income tax revenues.

In Canada, the overall fiscal deficit was reduced by 4.7 percent of GDP over three years, outperforming the plan's target. Expenditures fell more than projected, in part because interest costs were lower than forecast. Revenues also outperformed the target, but their overall contribution to deficit reduction was smaller than that of expenditures. The fiscal position continued to improve after the three-year goal, and the overall balance moved to surplus during 1997–98.

The successful outcome in Canada reflected a *major restructuring of the role of the federal government* and profound structural measures centered around four pillars:

- a comprehensive expenditure review that helped refocus the role of government by examining the mandates for the federal government as a whole and for each ministry;
- labor market reform that overhauled the system of benefits as well as labor market policies and funding of the system, helping to improve incentives to work and to reduce excessive cost of the unemployment insurance system;
- major revisions to the system of transfers to the provinces that increased cost-effectiveness and flexibility as well as the incentive for provinces to limit additional social expenditure; and
- federal government and provincial reforms in the Canadian pension plan that fostered long-term debt sustainability.

These deep reforms were sustained thanks to strong *public support*, which the government helped build through an intensive communication strategy, including national and regional conferences organized by the federal finance minister and substantive public debates across the country. Canadians became increasingly aware of the implications of high debt levels for growth and intergenerational equity as well as the ways high debt-service costs, which consumed 35 percent of government revenues in the early 1990s, diverted resources from more productive spending.

Furthermore, the government adopted prudent macroeconomic and fiscal assumptions, which helped produce an overall outcome consistently better than projected, raising public confidence in the 1995 Plan. A contingency reserve (of 0.4 percent of GDP) was included in the deficit projection to cover the risks of unpredictable events and forecasting errors. This reserve could offset expenditures but could not to be used to fund new initiatives. In the end, it was not needed, and was used to pay down debt.

Fiscal paths diverge

The two countries' fiscal positions began to diverge in the early 2000s. The U.S. fiscal position deteriorated and the def-

Chart 3

Joined at the hip

In the three and a half decades after 1973, real GDP growth was virtually identical in Canada and the United States.

(real GDP growth, annual rate)

Source: IMF, *World Economic Outlook*.

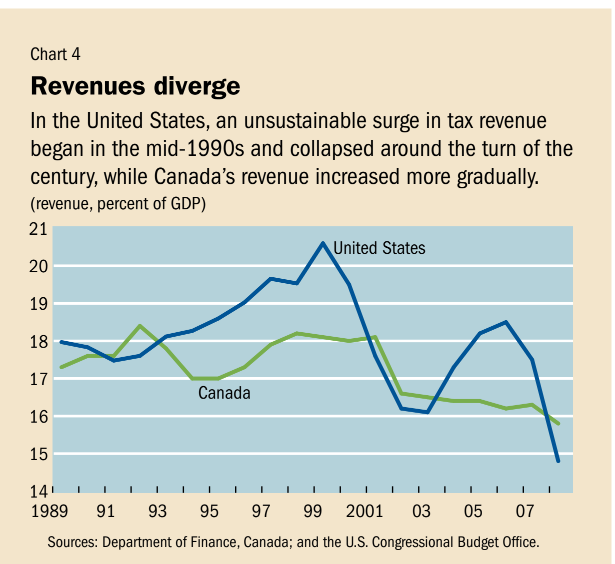


Chart 4

Revenues diverge

In the United States, an unsustainable surge in tax revenue began in the mid-1990s and collapsed around the turn of the century, while Canada's revenue increased more gradually.

Sources: Department of Finance, Canada; and the U.S. Congressional Budget Office.

icit exceeded 3 percent of GDP by 2003. In contrast, Canada's overall balance remained in surplus until the global financial crisis in 2008, and Canada's net debt-to-GDP ratio is now the lowest among the G7 countries (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States).

In hindsight, it is clear that the fiscal improvement experienced by the United States in the late 1990s and early 2000s had a less solid foundation, because it was in part driven by temporary factors related to the stock market boom and realized capital gains, as well as by strong economic activity boosted by rapid credit expansion. In the early 2000s, policymakers debated over what to do with fiscal surpluses and expressed concern about the implications of a disappearing public debt. No one expected that both fiscal deficits and debt as a percentage of GDP would be at new postwar highs by the end of the decade. The fiscal outlook at that time appeared favorable, facilitating a relaxation of fiscal discipline.

Fiscal adjustment based on structural reforms is more likely to be sustainable compared with improvements based on temporary factors.

However, the U.S. fiscal surpluses did not last, and the federal government debt did not disappear. Increased spending and, especially, lower revenues contributed to the reappearance of the deficit and deterioration of the debt ratio. Again, declining individual income tax revenues were the dominant driving force, accounting for three-fourths of the revenue decline. As for spending, in almost all categories, measured as a percent of GDP, it increased during 2000–03.

In contrast, Canada's adjustment gains accomplished by the 1995 Plan were sustained in subsequent years, because they were a result of fundamental structural reforms. The 1995 Plan raised the primary surplus to more than 4 percent of GDP in FY1997. With the debt-to-GDP ratio firmly on a downward path, the government decided to cautiously stabilize the spending path and introduce tax cuts while continuing to use prudent macroeconomic and fiscal assumptions. As a result, revenues started declining and the pace of spending cuts started slowing down gradually beginning in FY1998. Primary surpluses were maintained for 11 consecutive years. In little more than a decade, the federal net debt declined by 40 percent of GDP.

Structural reforms most important

What are the lessons emerging from the U.S. and Canadian experiences with fiscal adjustment?

The main lesson is that *fiscal adjustment based on structural reforms is more likely to be sustainable* compared with improvements based on temporary factors. During the 1990s, both Canada and the United States reduced their fiscal deficits sizably and more than expected—and even reached budget surpluses. However, these similar improvements reflected different underlying elements. In the United States, the improvement was, to a large extent, driven by revenue gains that were not based on tax reforms, but rather were linked to booming asset prices, which turned out to be temporary, and shifts in income distribution that could not go on forever. Indeed, that revenues increased far more than expected under the initial fiscal adjustment plan could have been seen as a warning sign that lower-than-expected deficits might not last. In contrast, the adjustment in Canada was primarily based on structural reforms. The spending discipline, introduced through restructuring of the role of government and structural spending measures, was long lasting.

Second, even if based on temporary factors, *an improved fiscal balance can reduce pressure to pursue fiscal discipline*. The expenditure limits introduced in the early 1990s began to be ignored as soon as the U.S. deficits turned into surpluses, and were officially abandoned in 2002. At the same time, prospects of continued fiscal surpluses contributed to the decision to cut taxes in the early 2000s to return money to taxpayers.

Given the size of fiscal imbalances and future fiscal pressures related to population aging, many advanced economies will have to maintain fiscal discipline for several years, if not decades. How can policymakers ensure that fiscal discipline is maintained even when good times return in the world economy? Resilient medium-term fiscal adjustment plans, fiscal institutions, and/or fiscal rules can help. However, as Canada's adherence to fiscal surpluses during the 2000s shows, ultimately, it is the political commitment to sound fiscal management that counts. And that in turn rests on the general public's *clear understanding of the fiscal challenges and broad support for fiscal adjustment*. Indeed, the sustainability of fiscal adjustment in Canada reflects a strong public mandate, and the government's communication strategy on the implications of high debt levels for growth and intergenerational equity helped raise public awareness of the need for fiscal adjustment and supporting structural reforms. ■

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Municipal Fallout

U.S. state bond markets are not insulated from each other but are from the federal bond market

Rabah Arezki, Bertrand Candelon, and Amadou N.R. Sy

THE market for municipal bonds has often been viewed as a safe haven by individual investors (see box). The 45,000 U.S. bond issuers include state and local governments, school districts, and water authorities that sell their debt securities in the so-called muni market. They are all reliable payers. Only 54 of them defaulted during 1970–2009 (Moody's, 2010). The most recent U.S. state to default was Arkansas in 1933, during the Great Depression. Throughout history there have been but a handful of state defaults—10 in the aftermath of the U.S. Civil War and eight plus the then-territory of Florida during the 1830s and 1840s (Ang and Longstaff, 2011).

But recently the safety of the muni market has been questioned, especially for its largest issuers: individual U.S. states, Puerto Rico, and New York City. The housing bust, financial crisis, and recession devastated state and local tax revenues. As a result, the U.S. municipal bond market has experienced worrisome signs of instability: volatility has increased, as has the spread between the average rates on municipal bonds and the rates on U.S. Treasury securities (see chart). In normal times, rates on municipal securities are lower than on U.S. government offerings because of the tax benefits munis receive. The now-higher borrowing costs for individual U.S. states reflect concerns about their future revenues and pension obligations, among other things. But what perhaps makes matters more worrisome for investors is that, unlike Chapter 9 for municipalities, there is no bankruptcy mechanism governing state defaults. In other words, U.S. states can repudiate their debt. Under the 11th Amendment to the U.S. Constitution, individual states have the same sovereign immunity as countries, and states can be sued only with their consent.

For more than three years, states have responded to investor fears with a series of measures to address both short- and long-run fiscal issues—including cutting spending, raising taxes, borrowing, and turning to the federal government for help in keeping their budgets balanced. However, there is increasing concern that if a state defaults—and many face severe budget issues—the effects would spill over to other municipal securities and even affect the market for U.S. government securities. Also, with few places left to find savings, states are rolling back funds for cities, counties, and school districts.

State Capitol building, Olympia, Washington.

The resulting layoffs could become a drag on the national economy at a time when the recovery from the financial crisis still appears to be fragile.

The recent Standard & Poor's downgrade of the U.S. credit rating from AAA to AA+ is a further concern. Although so far it has had little, if any, effect on U.S. Treasury securities, the one-notch downgrade has increased investor worries that U.S. state bond markets might face consequences were there financial disruptions in federal markets. Moreover, the prospect of more federal budget tightening could further erode already precarious state finances.

In a recent study (Arezki, Candelon, and Sy, 2011), we looked at two issues with a focus on the largest borrowers in the muni market. We examined the spillover effects within the muni markets—in particular, whether a shock to the market for bonds of one U.S. state can affect the markets for bonds from other states (a situation called spillover). We also studied spillover effects between the bond markets for individual U.S. states and the market for U.S. Treasury securities, and which way shocks between the two markets are transmitted.

The U.S. municipal bond market

Municipal bonds are debt securities issued by states, cities, counties, and other government entities to finance capital projects—such as building schools, highways, or sewer systems—and to fund day-to-day activities. Short-term bonds mature in one to three years; long-term bonds generally will not come due for more than a decade. Individual investors hold about two-thirds of the roughly $2.8 trillion in U.S. municipal bonds outstanding, either directly or indirectly through mutual funds and other investments (www.sec.gov).

Investors in municipal bonds get a number of benefits, including interest payments that are generally exempt from federal income tax and may also be exempt from state and local taxes for residents in the state where the bond is issued. Because of the tax benefits, interest on municipal bonds is usually lower than on taxable fixed-income securities such as corporate bonds. The two most common types of municipal bonds are general obligation bonds (bonds backed by the "full faith and credit" of the issuer) and revenue bonds (bonds backed by income from a specific project or source). In addition, municipal borrowers sometimes issue bonds on behalf of private entities such as nonprofit colleges or hospitals. These "conduit" borrowers typically agree to repay the municipal issuer, which pays the interest and principal on the bonds.

Debt service is a relatively small portion of most governments' budgets, except for a handful of state governments that issue long-term debt to fund current operations. Reliance on deficit financing is one of the reasons California, Illinois, and Arizona are the three lowest-rated states according to Moody's.

We found that between most markets for individual U.S. state bonds there are what we would call negative spillovers that result in a "flight to quality." That is, a negative shock to one state's securities typically results in lower borrowing costs for other U.S. states. Overall, we find no substantial spillover effects between shocks originating from state securities and from federal markets, except for a few large issuers.

Spillover effects

The literature on spillover effects in financial markets is abundant, but has so far focused mainly on spillover effects between countries. We studied the spillover effects within and between bond markets pertaining to different levels of government in a given country—the United States.

To study spillover effects in the markets for bonds of U.S. states and federal (that is, U.S. Treasury) securities, we empirically tested whether a shock specific to one market is transmitted to other markets. Our tests correct for the higher volatility observed during the financial crisis, starting in 2008 (Forbes and Rigobon, 2002).

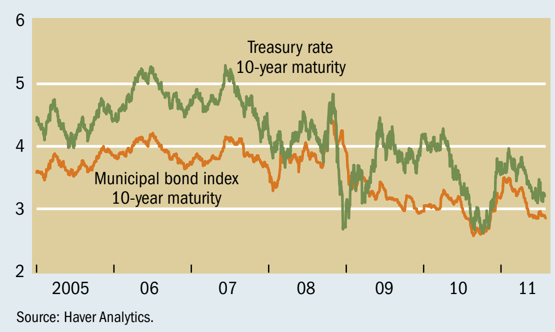
There are obvious linkages between U.S. states, as well as between states and the federal government (transfer payments being a good example). Those linkages could be invoked to explain spillover effects between various bond securities. In contrast, other factors such as investor psychology make spillover effects more difficult to explain. As a result, we focused on describing the nature of the spillover effects rather than trying to find a specific explanation for them.

The results indicate that during a period of volatility, investors seek safer municipal investments—the same sort of flight to quality that occurs during financial crises when investors (domestic and international) become less concerned about yield and more concerned about the safety of their funds and buy U.S. Treasury securities, long considered one of the world's safest investments. In other words, an increase in borrowing costs in one U.S. state results in better borrowing conditions for states considered less risky. We found that a few of the largest municipal issuers—such

Volatile times

The 2008 global financial crisis increased volatility in the U.S. municipal bond market. Despite their tax benefits, 10-year municipal bond yields at times exceeded U.S. Treasury yields.

(yield, percent)



Source: Haver Analytics.

as the states of California (the largest of all), Georgia, and Maryland and the City of New York—benefit when other states experience problems (in other words, the spillover is negative). But there are a handful of states, such as Connecticut and Florida, where the correlation is positive—that is, their securities suffer when another state is having problems. We cannot determine why the situation is different with those few states—this is fertile ground for future research. On balance, though, market participants so far have not penalized most U.S. states when there is heightened stress in another state's bond market.

Feeling the pain?

But when it comes to the relationship between the markets for municipal securities and U.S. Treasury securities things are a bit different. Overall, we found no substantial spillover effects between shocks originating from state securities and federal markets, except for a few large issuers. Indeed, for a few states that are among the largest borrowers, we found that problems in their market can lead to troubles in the federal market. We found evidence of positive spillover—albeit below the conventional level of significance—between the U.S. Treasury market and the markets for New Jersey, Texas, Washington state, and New York City—with the strongest result for New York City. But when it comes to the largest municipal bond issuer in the United States, California, we found a negative spillover with the market for U.S. Treasury securities. Our results indicate that the yields on bonds issued by the state of California and those on federal government securities move significantly in opposite directions following a shock to both bond markets. Overall, our analysis suggests that in only a few key states are bond markets linked with the Treasury bond market. A shock to the bond market in one of these states may lead to heightened instability in the Treasury bond market. To evaluate the robustness of our results, we controlled for the possibility that other factors were affecting the relationships. We concluded that our findings were robust.

One remaining question was whether the spillover between the municipal bond market and the Treasury bond market is short run, long run, or both. We also needed to sort out the direction of the shocks—whether they went primarily from the Treasury market to the muni markets or vice versa. The implications for policy can be quite different.

The empirical tests we used to determine spillovers do not say much about the direction of the transmission of shocks. The approach is also silent on whether the evidence is of a short-term or long-term nature. To explore this avenue, we used a causality test that allowed us to sort out which way shocks are transmitted and whether they have a short- or long-term effect (Breitung and Candelon, 2006).

One way or the other

Using that test, we found that the Treasury bond market directly causes changes in the markets for municipal bonds in both the short and long run. There is also some evidence of causality from the municipal to the Treasury bond market, but it is only of a long-run nature.

Depending on whether the spillover effects between states and between state securities and federal markets are positive or negative, those results suggest that structural reforms that have a positive impact on the federal budget in the long run will also benefit or worsen the borrowing condition of U.S. states. Similarly, reforms at the state level should help either reduce or increase the cost of borrowing for the federal government.

There are potentially important policy lessons to be drawn from that evidence of spillover from and within the muni market—and they are not limited to the United States. Countries with developed bond markets for securities issued by states or provinces should not simply worry about the potential spillover from neighboring countries but also investigate thoroughly the nature of the spillover across their subfederal bond markets and between those markets and their federal bond market. The design of risk management policies must be informed by the nature of those linkages and adapted to their evolving nature.

In Europe, a debate is raging over whether there should be more fiscal federalism and whether the issuance of a common euro bond would aid ailing euro area economies. But it is important to reflect on the impact that such fiscal federalism would have on linkages between bond markets in euro area economies. This study suggests that the markets for individual U.S. state bonds are prone not to contagion but rather to flight to quality, which implies that the problems in one state did not make matters worse for other states and thus did not increase systemic risk. Would this be a byproduct of more fiscal federalism? Perhaps, but the higher degree of fiscal federalism in the United States has not yet completely insulated the municipal bond market from the Treasury market. ■

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Differing Benefits

Financial development does not give the same growth boost to all countries

Adolfo Barajas, Ralph Chami, and Reza Seyed Yousefi

FINANCIAL development and economic development are inextricably linked. Research has shown that countries with financial systems that mobilize a substantial amount of funds—that are deeper, to use the standard parlance—will tend to have higher, more equitable rates of growth over the long run. Undoubtedly, part of this is success breeding success—higher-growth countries naturally generate higher demand for financial services, which in turn induces the financial sector to develop more rapidly. But research has uncovered an independent relationship that runs in the opposite direction—from financial development to increased growth. Banks and financial markets allocate funds to productive uses, provide firms and households with instruments to manage risk, facilitate transactions, and exert some control over the end uses of these funds. For policymakers, this is of critical importance, because it implies that an integral part of any growth strategy should be the creation of conditions that allow the financial sector to deepen (see "A Bigger Slice of a Growing Pie," in this issue of *F&D*).

While the benefits of financial development are well established, until recently there has been little investigation into whether the link between finance and growth varies quantitatively across countries. In empirical studies, the degree of financial development is generally measured by an economy's depth (that is, the relative size of its banking system or stock market). For example, a common measure is the volume of banking system credit to the private sector as a percentage of gross domestic product (GDP). For the most part, the research has assumed that the process of financial deepening will have roughly the same impact on growth regardless of the region or the structure of an economy. Similar-sized increases in banking system credit should have the same growth impact whether they occur in, say, Brazil, Morocco, France, Saudi Arabia, or Korea.

But the relationship might vary across countries. Because of differences in efficiency or in institutional factors, the same amount of bank credit may not be channeled into productive uses as effectively in some countries as in others. We analyzed whether the strength of the relationship varies

- across regions, where common characteristics of how financial sectors operate might result in different growth effects; and
- for oil-exporting countries, where the dominance of oil-related activities in the economy, commonly associated with less efficient resource allocation, also extends to how well the financial sector allocates credit.

Of course, any differences among countries in the finance–growth link would have important implications for policy. To the extent that growth impact turns out to be weaker in a given country, simply increasing the amount of bank credit will not suffice to generate growth. Policymakers would also have to address the underlying cause of private credit's inability to spur economic activity over the long run.

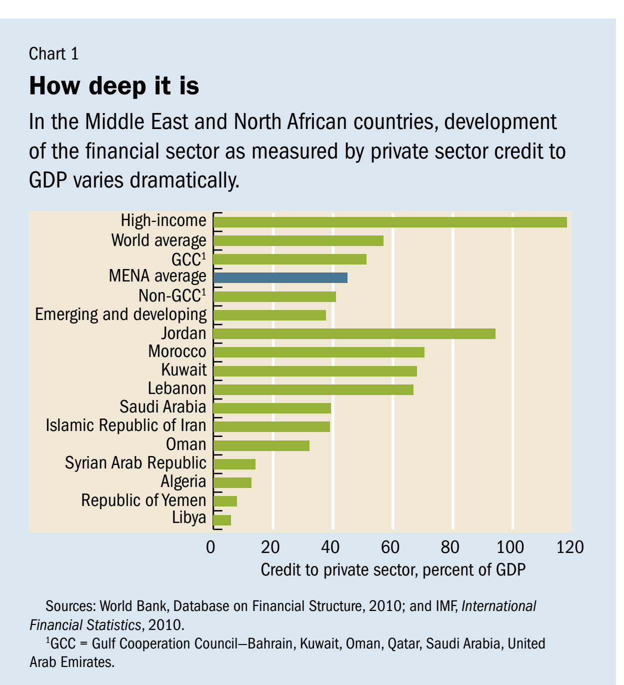
We analyzed this relationship for a worldwide sample of more than 140 advanced and developing economies during 1975–2005 and reached two main conclusions.

First, we found that *one region stands out as being relatively less successful in translating banking depth into long-run growth: the Middle East and North Africa* (MENA). Although the average depth in the region has been similar to the global average for emerging and developing countries (EDC), there is great variation within the region (see Chart 1). For example, in 2008, the country in this region with the deepest banking sector (Jordan) provided credit to the economy at a scale equivalent to 16 times that of the shallowest (Libya). Furthermore, for many MENA countries, the amount of credit provided by the banking system should be greater than it is, given their ability to attract deposits. Excluding the

Chart 1

How deep it is

In the Middle East and North African countries, development of the financial sector as measured by private sector credit to GDP varies dramatically.



Sources: World Bank, Database on Financial Structure, 2010; and IMF, *International Financial Statistics*, 2010.
[1]GCC = Gulf Cooperation Council—Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates.

countries of the Gulf Cooperation Council (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates), the average loan-deposit ratio in MENA banking systems has been well below the EDC average for the past 30 years.

But more crucially, for a given level of depth, MENA banks have not delivered benefits to the same degree as elsewhere. The growth impact in the MENA region falls short of that in most other regions. Depending on the country sample, the size of the estimated shortfall ranges between one-third and two-thirds (see Chart 2), and is present whether the growth rate of total GDP or merely non-oil GDP is being analyzed. For example, if Yemen's banking system were to deepen to the EDC average—a 22 percentage point increase in the credit-GDP ratio—annual per capita growth would increase by at most 1½ percentage points, whereas a similarly shallow country in another region, say, Myanmar, would accelerate its growth rate by more than 2⅓ percentage points.

Second, we found that *in oil-exporting countries across different regions the growth benefits of increased bank credit are weaker as well.* Specifically, the greater a country's oil dependence—the ratio of oil-related activity to GDP—the smaller the growth impact of financial deepening. In fact, this impact seems to disappear altogether at a level of oil dependence of about 35 percent, roughly the level of Saudi Arabia, Algeria, and Trinidad and Tobago.

Although the exact cause of the weak finance–growth link in MENA and in oil-exporting countries—what we call the *quality gap* in banking intermediation—is not clear, a few possible factors stand out.

- *MENA financial services have not been extended as broadly as in other regions,* according to recent work by the World Bank. Survey results indicate that fewer firms have received bank financing, a greater proportion cite access to credit as a major constraint to their business plans, and a smaller percentage of the population has access to checking accounts or automated teller machines. Bank loans tend to be concentrated among a small number of borrowers, excluding many potentially growth-enhancing firms. These shortcomings apply both to the shallow banking systems in the region's oil importers as well as to the very deep systems in the high-income oil exporters, which suggests that inadequate access to finance is a key piece of the puzzle.
- *There is a comparative lack of competition in MENA banking systems.* Anzoategui, Martínez Pería, and Rocha (2010) recently tested the degree of competition within banking systems throughout the world and found the MENA region was significantly less competitive than other regions—with the possible exception of sub-Saharan Africa. Furthermore, they identified two factors behind the lack of competition: inadequate credit information and relatively strict obstacles to entry into the banking market.
- *The pattern of ownership may play a role.* Again, despite considerable diversity, most countries in the MENA region have a relatively high share of state-owned banks and/or a relatively small share of foreign-owned banks. A high state share in the banking system has often been associated with limited financial depth, but whether it has an independent negative impact on growth is not clear cut. However, Körner and Schnabel (2010) identify two factors that combine with high state ownership to produce negative growth effects: low levels of financial depth and low institutional quality. Within the group of countries covered by their study, several MENA countries—Bahrain, Egypt, Kuwait, and Syria—exhibit these three characteristics.
- *The state and pace of financial reform may also be related to the weak finance-growth link.* Although comparative data are relatively scarce for MENA countries, a composite index of financial reform (Abiad, Detragiache, and Tressel, 2008) permits comparisons between five MENA countries and other regions. Although the state of reform achieved by these countries by 2005 was not particularly low, it also appears that the pace stalled between 1995 and 2005, when all other regions made significant strides. Europe and central Asia made the greatest progress over this period. ■

Chart 2

Less effective

Financial development in the Middle East and North Africa (MENA) does not produce as much growth as elsewhere. The impact of a 20 percentage point increase in private credit to GDP is much lower in MENA countries, whatever the initial depth of the financial system.

(increase in GDP resulting from 20 percentage point increase in private credit to GDP, percentage points)

Non-MENA
MENA

Initial credit-to-GDP ratio, percent

Source: Authors' calculations.

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Unconventional Behavior

Innovative balance sheet policies of central banks helped during the recession, but they should be used only in exceptional circumstances

Mark Stone, Kenji Fujita, and Kotaro Ishi

IN early 2009 the U.S. Federal Reserve was in a quandary. The United States was locked in the second year of a recession, and things were not improving. The standard action would have been to reduce short-term interest rates to stimulate consumer and business demand. But the crisis had brought short-term interest rates to near zero, and they could go no lower.

So the Fed, as the U.S. central bank is called, turned to a policy it had not used since World War II. It bought long-term public bonds directly for its portfolio in exchange for newly created reserve money, expanding its balance sheet to fight the recession (see "Uncharted Territory," *F&D*, June 2009).

A large-scale bond purchase program, often called quantitative easing, was perhaps the best known of a number of unconventional ways central banks in advanced economies used their balance sheets during the global crisis to deal with a substantial risk of deflation when monetary policy was unable to lower rates further. Faced with profound and varied disruptions to financial markets and real economies, several advanced economy central banks also launched various liquidity provision programs, including ones to keep markets open, to rescue banks and nonbank financial institutions, and to supply needed foreign exchange. These policies also swelled the size of central bank balance sheets to unprecedented levels.

Overall, the balance sheet policies can be deemed a success, at least in preventing the downward spiral of financial and economic crises. Growth has resumed—albeit at an anemic rate in most advanced economies. But that success does not mean these policies should become part of the standard central bank arsenal. The crisis called for measures that pose risks to financial markets and even to the central banks themselves that are too big to take on except in exceptional circumstances.

Policies for macroeconomic stability

For at least a generation, the Fed had used its ability to control short-term interest rates to smooth the U.S. economy. It controlled the short-term interest rate that prevails in the money markets by withdrawing or injecting reserve money that banks are required to keep on deposit with the Fed. Changes in the so-called federal funds rate (at which banks short of reserves borrow overnight from banks with excess reserves) translate into changes in other short-term, as well as longer-term, interest rates that affect the cost of borrowing for households and businesses.

But with the federal funds rate near zero, the Fed had run out of traditional options. So it bought long-term public bonds—trying to boost the economy by directly lowering long-term interest rates. When the Fed buys long-term bonds from banks or other financial institutions in exchange for newly created dollars (in the form of reserves), it reduces the market supply of those bonds. That raises the price of the bonds remaining in the market—and reduces their yield. Yields on other long-term securities go down in concert with government bond yields, making borrowing less expensive. The aim is to raise the potential of banks to lend and boost asset values, thereby lifting domestic demand and boosting economic growth. The Fed conducted two rounds of large-scale bond purchase programs: one from March 2009 to May 2010, the other from November 2010 to June 2011. There is considerable evidence that the bond purchase program (at least the first round) lowered yields and probably furthered the U.S. recovery. Because of the importance of the U.S. economy, the program almost surely moderated the global down-

turn. The Bank of England also undertook a bond purchase program although it stopped earlier than did the Fed.

The impact of the bond purchase program on Fed asset holdings is much more significant than that of its conventional operations. The overall amount of reserves does not change much in the Fed's traditional monetary operations to target the federal funds rate. But the bond purchase program changed the size and composition of its balance sheet.

Policies for financial stability

It is the power of central banks to create unlimited amounts of reserves—the most liquid of all assets—that gives them the unique capacity to prevent liquidity problems in the financial sector from carrying over to the real economy—that is, to maintain systemic financial stability. Traditionally, central banks have served as a lender of last resort to solvent but cash-short banks and, if necessary, to the banking system as a whole. During the recent crisis the central bank role of providing liquidity to ensure financial stability greatly expanded. Not only did the central banks aid commercial banks, they also lent to large nonbank financial institutions. A few major central banks—especially the Fed—also became *market makers of last resort* by accepting as collateral securities that could not be sold in the market in exchange for central bank loans. Even more out of the ordinary, many central banks supplied foreign exchange, mainly U.S. dollars, to local banks having difficulties raising funds in foreign currencies. The measures, aimed at supporting important financial markets and preserving financial stability, for the most part did ease liquidity constraints and support asset prices.

As the crisis receded, central banks began to undo many of the unconventional balance sheet operations. However, several advanced economy central banks—notably the Fed, the Bank of England, and the Bank of Japan—continue to carry large balance sheets.

Evaluating the policies

Even though unconventional central bank balance sheet policies appear to have helped the U.S. and other advanced economies recover, they also may have had unintended consequences—some argued that they induced unwanted capital flows to some emerging market economies and helped cause commodity inflation. But these balance sheet policies also created risks to the central bank and to markets.

Injecting cash to support markets inherently involves credit risk that could cause losses for the central bank. Extensive central bank liquidity support can raise expectations of support in the future, and lead market players to make riskier decisions because they believe they will be bailed out if things go badly again. Extensive central bank injection of liquidity into a money market could also reduce the incentives of market players to trade among themselves, thereby diminishing the interbank and money markets, and eventually lead to a weak market infrastructure after the central bank exits.

A central bank can minimize these risks. For example, to contain credit risks it can value the collateral it accepts based on appropriate risks. Balance sheet policies can also be implemented on a conditional basis for a limited duration and with a clearly communicated exit strategy to avoid unintended side-effects.

Large-scale bond purchases also carry potentially serious costs and risks. If bond yields rise, the central bank would suffer losses on the securities it owns. The bond purchase program may leave the central bank exposed to pressure from vested interests that benefit from bond purchases. And a strategy for selling the bonds or reducing bond holdings must be carefully designed, because it might cause a sharp increase in long-term yields, thus bringing about unintended monetary tightening effects. Perhaps most important, the bond purchase program can create the perception that the central bank is actually "monetizing" government debt, that is, permanently exchanging newly created money for government bonds. For example, the bond purchase program may be welcome by the government at its outset, as lower yields contribute to public finance saving, but once the central banks' policy focus shifts to tightening, there could be a conflict of interest between the central banks and government.

To address these risks, the objectives and broad framework of the bond purchase program should be established early on. In particular, central bank autonomy should be fully respected, and policymakers should have a clear understanding that central banks' bond purchases are not part of government spending and taxing policies and will be terminated and eventually unwound when monetary policy objectives are reached.

These considerations suggest that balance sheet policies will not lead to a new way of central banking in normal times. It is no coincidence that only highly credible central banks leaned heavily on these policies, most of which involved large increases in domestic liquid assets. And even for the highly credible central banks, balance sheet policies should be used only in special circumstances—such as when the economy is facing financial problems severe enough to disrupt the real sector, and the policy interest rate is stuck at the lower bound.

Unconventional balance sheet policies likely played an important role in helping economies recover from the most severe downturn since the Great Depression. Central banks showed creativity and no small degree of daring. Although the risks were probably worth taking, these policies should be used only by the most credible central banks—and then only rarely. It is important to remember that central bank policies are not a panacea, especially when the underlying problem is solvency. There is also a risk that central bank policies would reduce incentives for policymakers to tackle the underlying solvency problems. ■

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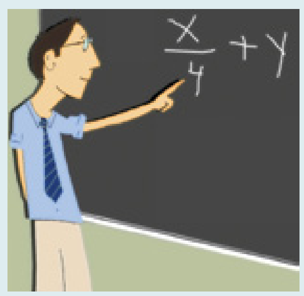

The Big and the Small Picture

Why economics is split into two realms

G. Chris Rodrigo

PHYSICISTS look at the big world of planets, stars, galaxies, and gravity. But they also study the minute world of atoms and the tiny particles that comprise those atoms.

Economists also look at two realms. There is big-picture ***macroeconomics***, which is concerned with how the overall economy works. It studies such things as employment, gross domestic product, and inflation—the stuff of news stories and government policy debates. Little-picture ***microeconomics*** is concerned with how supply and demand interact in individual markets for goods and services.

In macroeconomics, the subject is typically a nation—how all markets interact to generate big phenomena that economists call *aggregate variables*. In the realm of microeconomics, the object of analysis is a single market—for example, whether price rises in the automobile or oil industries are driven by supply or demand changes. The government is a major object of analysis in macroeconomics—for example, studying the role it plays in contributing to overall economic growth or fighting inflation. Macroeconomics often extends to the international sphere because domestic markets are linked to foreign markets through trade, investment, and capital flows. But microeconomics can have an international component as well. Single markets often are not confined to single countries; the global market for petroleum is an obvious example.

The macro/micro split is institutionalized in economics, from beginning courses in "principles of economics" through to postgraduate studies. Economists commonly consider themselves microeconomists or macroeconomists. The American Economic Association recently introduced several new academic journals. One is called *Microeconomics*. Another, appropriately, is titled *Macroeconomics*.

Why the divide?

It was not always this way. In fact, from the late 18th century until the Great Depression of the 1930s, economics was economics—the study of how human societies organize the production, distribution, and consumption of goods and services. The field began with the observations of the earliest economists, such as Adam Smith, the Scottish philosopher popularly credited with being the father of economics—although scholars were making economic observations long before Smith authored *The Wealth of Nations* in 1776. Smith's notion of an invisible hand that guides someone seeking to maximize his or her own well-being to provide the best overall result for society as a whole is one of the most compelling notions in the social sciences. Smith and other early economic thinkers such as David Hume gave birth to the field at the onset of the Industrial Revolution.

Economic theory developed considerably between the appearance of Smith's *The Wealth of Nations* and the Great Depression, but there was no separation into microeconomics and macroeconomics. Economists implicitly assumed that either markets were in equilibrium—such that prices would adjust to equalize supply and demand—or that in the event of a transient shock, such as a financial crisis or a famine, markets would quickly return to equilibrium. In other words, economists believed that the study of individual markets would adequately explain the behavior of what we now call aggregate variables, such as unemployment and output.

The severe and prolonged global collapse in economic activity that occurred during the Great Depression changed that. It was not that economists were unaware that aggregate variables could be unstable. They studied business cycles—as economies regularly changed from a condition of rising output and employment to reduced or falling growth and rising unemployment, frequently punctuated by severe changes or economic crises. Economists also studied money and its role in the economy. But the economics of the time could not explain the Great Depression. Economists operating within the classical paradigm of markets always being in equilibrium had no plausible explanation for the extreme "market failure" of the 1930s.

If Adam Smith is the father of economics, John Maynard Keynes is the founding father of macroeconomics. Although some of the notions of modern macroeconomics are rooted in the work of scholars such as Irving Fisher and Knut Wicksell in the late 19th and early 20th centuries, macroeconomics as a distinct discipline began with Keynes's masterpiece, *The General Theory of Employment, Interest and Money,* in 1936. Its main concern is the instability of aggregate variables. Whereas early economics concentrated on equilibrium in individual markets, Keynes introduced the

simultaneous consideration of equilibrium in three interrelated sets of markets—for goods, labor, and finance. He also introduced "disequilibrium economics," which is the explicit study of departures from general equilibrium. His approach was taken up by other leading economists and developed rapidly into what is now known as macroeconomics.

Coexistence and complementarity

Microeconomics is based on models of consumers or firms (which economists call agents) that make decisions about what to buy, sell, or produce—with the assumption that those decisions result in perfect market clearing (demand equals supply) and other ideal conditions. Macroeconomics, on the other hand, began from observed divergences from what would have been anticipated results under the classical tradition.

Today the two fields coexist and complement each other.

Microeconomics, in its examination of the behavior of individual consumers and firms, is divided into consumer demand theory, production theory (also called the theory of the firm), and related topics such as the nature of market competition, economic welfare, the role of imperfect information in economic outcomes, and at the most abstract, general equilibrium, which deals simultaneously with many markets. Much economic analysis is microeconomic in nature. It concerns such issues as the effects of minimum wages, taxes, price supports, or monopoly on individual markets and is filled with concepts that are recognizable in the real world. It has applications in trade, industrial organization and market structure, labor economics, public finance, and welfare economics. Microeconomic analysis offers insights into such disparate efforts as making business decisions or formulating public policies.

Macroeconomics is more abstruse. It describes relationships among aggregates so big as to be hard to apprehend—such as national income, savings, and the overall price level. The field is conventionally divided into the study of national economic growth in the long run, the analysis of short-run departures from equilibrium, and the formulation of policies to stabilize the national economy—that is, to minimize fluctuations in growth and prices. Those policies can include spending and taxing actions by the government or monetary policy actions by the central bank.

Bridging the micro/macro divide

Like physical scientists, economists develop theory to organize and simplify knowledge about a field and to develop a conceptual framework for adding new knowledge. Science begins with the accretion of informal insights, particularly with observed regular relationships between variables that are so stable they can be codified into "laws." Theory is developed by pinning down those invariant relationships through both experimentation and formal logical deductions—called models (see "What Are Economic Models?" *F&D*, June 2011).

Since the Keynesian revolution, the economics profession has had essentially two theoretical systems, one to explain the small picture, the other to explain the big picture (micro and macro are the Greek words, respectively, for "small" and "big"). Following the approach of physics, for the past quarter century or so, a number of economists have made sustained efforts to merge microeconomics and macroeconomics. They have tried to develop microeconomic foundations for macroeconomic models on the grounds that valid economic analysis must begin with the behavior of the elements of microeconomic analysis: individual households and firms that seek to optimize their conditions.

There have also been attempts to use very fast computers to simulate the behavior of economic aggregates by summing the behavior of large numbers of households and firms.

A number of economists have made sustained efforts to merge microeconomics and macroeconomics.

It is too early to say anything about the likely outcome of this effort. But within the field of macroeconomics there is continuing progress in improving models, whose deficiencies were exposed by the instabilities that occurred in world markets during the global financial crisis that began in 2008.

How they differ

Contemporary microeconomic theory evolved steadily without fanfare from the earliest theories of how prices were determined. Macroeconomics, on the other hand, is rooted in empirical observations that existing theory could not explain. How to interpret those anomalies has always been controversial. There are no competing schools of thought in microeconomics—which is unified and has a common core among all economists. The same cannot be said of macroeconomics—where there are, and have been, competing schools of thought about how to explain the behavior of economic aggregates. Those schools go by such names as New Keynesian or New Classical. But these divisions have been narrowing over the past few decades (Blanchard, Dell'Ariccia, and Mauro, 2010).

Microeconomics and macroeconomics are not the only distinct subfields in economics. Econometrics, which seeks to apply statistical and mathematical methods to economic analysis, is widely considered the third core area of economics. Without the major advances in econometrics made over the past century or so, much of the sophisticated analysis achieved in microeconomics and macroeconomics would not have been possible. ■

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Trading **Places**

Richard Harmsen and Nagwa Riad

Emerging markets are becoming major trading centers thanks to global supply chains and high-technology exports

FOR nearly 40 years, the historic seaport of Rotterdam held the uncontested position of world's busiest. It was overtaken in 2006 by Singapore, which in turn ceded the title to Shanghai this year. Shanghai now handles more than 29 million standard container units a year.

China is home to 6 of the top 10 busiest ports, mirroring the country's phenomenal ascent in global trade over the past two decades as it overtook Germany and Japan to become the world's second-largest trader after the United States. China is the lead player in a move by dynamic emerging market economies from the periphery of global trade to become major systemic trading centers.

Global trade has grown steadily since World War II and accelerated over the past decade, with noncommodity trade—especially in high-technology products such as computers and electronics—rising to more than 20 percent of global GDP in 2008. The expansion in world trade has been characterized by three important trends: the rise of emerging market economies as systemically important trading partners; the growing role of global supply chains; and the shift of higher-technology exports toward dynamic emerging market economies. The convergence of

Port in Shanghai, China.

Moving on up

Emerging markets are becoming systemically more important trading centers.

1999				2009			
Jurisdiction	Overall rank[1]	Size rank	Interconnectedness rank[2]	Jurisdiction	Overall rank[1]	Size rank	Interconnectedness rank[2]
Germany	1	2	2	**China**	**1**	**1**	**1**
United States	2	1	6	United States	2	1	3
France	3	3	2	Germany	3	3	2
Japan	4	3	5	Netherlands	4	6	3
United Kingdom	5	5	2	Japan	5	4	8
Netherlands	6	8	1	France	6	5	6
Italy	7	7	7	Italy	7	7	7
Canada	8	6	12	United Kingdom	8	8	5
China	**9**	**9**	**8**	Belgium	9	9	11
Belgium	10	11	9	**Korea, Republic of**	**10**	**10**	**10**
Hong Kong SAR	**11**	**9**	**18**	Canada	11	12	13
Korea, Republic of	12	13	10	**Hong Kong SAR**	**12**	**10**	**20**
Spain	13	14	11	Spain	13	14	11
Switzerland	14	16	13	**India**	**14**	**17**	**9**
Singapore	**15**	**14**	**22**	**Singapore**	**15**	**13**	**22**
Malaysia	**16**	**16**	**21**	**Russia**	**16**	**16**	**21**
Sweden	17	18	17	Switzerland	17	18	17
Thailand	18	22	16	**Thailand**	**18**	**20**	**15**
Denmark	19	24	15	**Brazil**	**19**	**22**	**14**
Mexico	**20**	**12**	**44**	**Malaysia**	**20**	**20**	**19**
India	**21**	**25**	**14**	Australia	21	19	29
Brazil	**22**	**23**	**19**	Sweden	22	25	17
Austria	23	19	29	**Mexico**	**23**	**15**	**44**
Ireland	24	20	27	Austria	24	24	25
Australia	25	21	25	**Turkey**	**25**	**29**	**15**

Source: IMF staff estimates.
Note: Emerging markets are highlighted.
[1]Weighted average of the size and interconnectedness rankings using a 0.7/0.3 weight breakdown, respectively.
[2]Excludes links representing less than 0.1 percent of each jurisdiction's GDP.

emerging market export structures with those of advanced economies suggests that rising competition from emerging market exporters is likely to continue, with a further growth push as they increase their export sophistication.

Interconnected world

The growing prominence of emerging markets in the global trade landscape reflects not only the total volume of trade (exports plus imports) they engage in but, just as important, the significant increase in the number of partners they trade with (interconnectedness).

Recent IMF analysis (IMF, 2011) uses both measurements—volume and interconnectedness—to rank the world's top 25 systemic trading centers. Between 1999 and 2009, China moved up nine places to tie with the United States as the systemically most important trading center; India and Brazil moved up seven and three places to rank, respectively, fourteenth and nineteenth worldwide; and Russia and Turkey joined the list (see table). By contrast, France, Canada, and Switzerland have each moved down three places to sixth, eleventh, and seventeenth, respectively. The shift in the relative importance of advanced and emerging market economies has occurred in tandem with growing trade interconnectedness worldwide.

The expansion of global trade as a share of world output—now almost triple the level in the early 1950s—and associated interconnectedness has several causes. Trade liberalization has certainly contributed—by lowering trade barriers first in advanced economies and more recently in many developing countries. In addition, as technological advances led to falling transportation and communication costs, it became more feasible for production processes to be divided up so that countries could specialize in a particular stage of a good's production (*vertical specialization*).

This, in turn, led to the emergence of *global supply chains*. Today, intermediate goods typically cross borders several times before being transformed into a final product. Countries that are downstream in a global supply chain have higher imported content in their exports, because their exports rely on intermediate inputs imported from supply chain partners.

Stronger links in global chains

Vertical specialization in production has implications for the interpretation of trade statistics and for analysis of countries' interconnectedness—and, in turn, for policy choices.

Official trade statistics are measured in gross terms, which include both intermediate inputs and final goods. Given the rising import content in exports, aggregate trade data are magnified by the flow of intermediate goods that cross borders several times. So tracking the extent and source of imported content in a country's exports becomes important when gauging the extent of trade and policy spillovers across countries. For instance, for countries such as Singapore that engage in significant assembly and processing trade—that is, using imported intermediate goods to assemble final goods for export—gross exports can account

for more than double the domestic-value-added portion of their exports (see Chart 1).

Advanced economies tend to have higher domestic value added—or relatively little foreign content—in their exports. (They are "upstream" in the global supply chain.) Emerging market economies tend to add less domestic value ("downstream"). The relative downstream position of some emerging market economies, including China, reflects the important role of processing trade.

Exports of many emerging market economies stem from processing activities that use mainly imported intermediate goods to assemble final products for export. Such trade accounts for a significant share of exports from China, which together with many other Asian emerging market economies serves as a downstream assembly center in the Asian supply chain. Mexico plays a similar role in North America, hosting duty-free assembly plants that use imported intermediates and reexport final goods back to the United States. And with the accession of eastern European countries—which have lower production costs—to the European Union (EU), production is being outsourced away from the advanced EU economies.

Regional supply chains in Asia, North America, and Europe depend to different degrees on their regional powerhouse, or hub. The Asian supply chain loops through a number of countries, with goods-in-process crossing borders several times, including through the hub (Japan), before reaching their final destination. For instance, about 15 percent of Japanese value added embodied in Chinese products goes through other countries in Asia before reaching China. In contrast, almost all the imported content in North America and Europe is imported directly from the hub—the United States and EU15, respectively. Global supply chains in Asia are therefore more regionally integrated and their export structures more intertwined than those in North America and Europe.

The regional dispersion of the Asian supply chain has important policy implications for Asian traders. Any disruption of trade flows, particularly intraregional trade flows in Asia, could have large negative effects on domestic production in partner countries. The recent earthquake-related disruption in the supply of sophisticated manufacturing inputs by upstream exporter Japan is a sobering illustration (see "Shaken to the Core," *F&D,* June 2011). Protecting the free flow of inputs and outputs must therefore be a top policy priority for the region. This could be achieved by making binding the region's unilateral tariff cuts under the World Trade Organization's Doha round of trade liberalization negotiations, or including all the key players in regional free-trade arrangements such as the Trans-Pacific Partnership.

Competitor or complement

Global supply chains have allowed emerging markets such as China to increase the technology content of their exports, both as final products and as inputs to high-technology exports of advanced economies, which moves them upstream in the value-added chain. And the share of high-technology exports from China has risen remarkably since 1995, boosted by trade processing and with significant imports from Japan and other Asian countries.

As China and other emerging market economies have become more active in sectors traditionally dominated by advanced economies such as Germany and the United States, their export structures—the types of goods they export—have begun to resemble those of advanced economies. Emerging market countries are therefore likely to compete more with advanced country exporters.

But this observed shift in high-technology content and corresponding convergence in export structures may also reflect

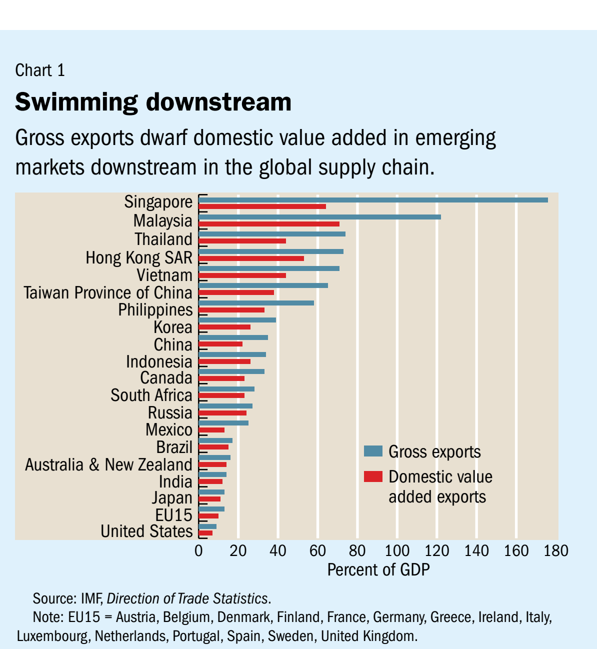

Chart 1

Swimming downstream

Gross exports dwarf domestic value added in emerging markets downstream in the global supply chain.

Source: IMF, *Direction of Trade Statistics*.
Note: EU15 = Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

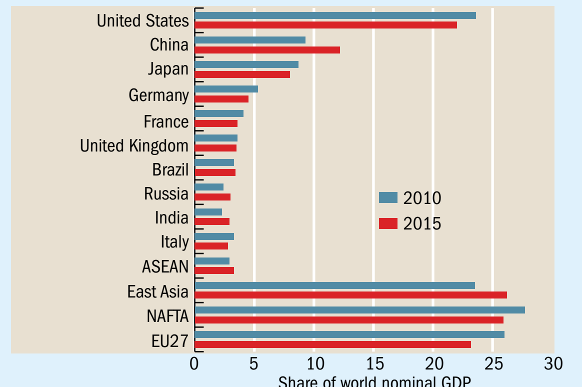

Chart 2

Neck and neck

East Asia is set to overtake NAFTA as the world's largest trading bloc by 2015, as global demand shifts to emerging markets.

Source: IMF, *World Economic Outlook*.
Note: ASEAN = Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietman. East Asia = ASEAN + Taiwan Province of China + Hong Kong SAR. NAFTA = North American Free Trade Agreement (Canada, Mexico, United States). EU27 = Current members of the European Union.

complementarity rather than competition, as labor-intensive stages of production are outsourced to lower-wage countries in the region. Even though emerging market economies are exporting products in categories similar to those of advanced economies, there may be differences in quality and price.

In China in particular, the important role the country plays in processing trade in high-technology exports may affect *aggregate indicators of export similarity*. The export similarity index is an indicator commonly used to gauge a country's competitiveness, which ranges from 1 for country pairs with identical shares of product categories in their overall export structure to zero for country pairs with completely dissimilar structures. In our analysis, we attempted to account for differences in quality by distinguishing products by destination market, on the assumption that high-income countries are likely to demand higher-quality versions of a product. Based on this modified export similarity index, we found that there is still overlap in the export structures of advanced and emerging market economies. Rising competition from emerging market exporters is therefore likely to continue.

Any disruption of trade flows, particularly intraregional trade flows in Asia, could have large negative effects on domestic production in partner countries.

Another growth push?

The ongoing change in export structures suggests that dynamic emerging market economies can look forward to a growth push in the future. Analysis (based on an indicator by Hausmann, Hwang, and Rodrick, 2007) measuring the income level embodied in a country's exports is useful in gauging the extent of export sophistication. The indicator assigns to each product category the weighted average income level of countries producing the same product. A product produced exclusively by an advanced economy and likely embodying higher quality and value added is assigned a higher value. The results of this analysis suggest that countries whose income value of exports is higher than expected tend to grow more in subsequent years.

Thanks to ongoing upgrading, the overall quality of exports in several emerging market economies is higher than one would expect based on per capita GDP alone. Our updated analysis of the Hausmann indicator thus implies that the growth push is expected to be most pronounced for some Asian countries—such as India and China—and somewhat small but still positive for most eastern European countries.

The integration of rapidly growing emerging market economies is likely to induce a gradual shift in global demand away from advanced economies. China overtook Japan as the second-largest economy in the world in 2010, and East Asian countries are likely to emerge as the world's largest trading bloc by 2015, surpassing the North American Free Trade Agreement countries (NAFTA—Canada, Mexico, and the United States) and the euro area (see Chart 2). Global supply chains have been an important factor in this trend, and a country's position along the supply chain could have important implications for trading patterns in the future.

Exchange rates

The emergence of global supply chains may also have changed the way trade responds to relative price changes. The higher the amount of imported content in a country's exports, the less sensitive trade will be to changes in the exchange rate. For instance, if a country's currency appreciates compared with that of its trading partners, exports will become more expensive, but imported intermediate goods become cheaper.

Advanced economies—whose exports tend to be concentrated in medium- and high-technology goods—are therefore likely to be more sensitive to relative price changes because their exports have higher domestic content. The converse should hold for emerging market economies.

Indeed, our analysis of the response of sectoral trade flows to changes in exchange rates found that a real exchange rate appreciation of, say, 10 percent, in a downstream country such as China is likely to exert a relatively smaller adjustment in the trade balance than a similar change in an upstream country such as Japan. The rebalancing implications of any exchange rate changes should therefore take into consideration the composition of the country's trading structure, including how much imported content it includes.

Joining the list

Emerging market economies, led by China, are turning out to be systemically important trading partners, alongside key advanced economies. Their growing trade integration has been accompanied by rising technology content of exports and growing convergence of their export structures with those of advanced economies. And as they continue to grow, the systemic importance of the more dynamic emerging market economies in their respective global supply chains is also likely to increase. More emerging markets making the busiest seaports list? Probably. Stay tuned. ■

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This article is based on a June 2011 IMF paper, "Changing Patterns of Global Trade," available at www.imf.org/external/np/pp/eng/2011/061511.pdf.

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Harnessing Diasporas

Africa can tap some of its millions of emigrants to help development efforts

Dilip Ratha and Sonia Plaza

Passengers board an airplane in Nairobi, Kenya.

AFRICA'S diaspora has often been a source of hand-wringing. More than 30 million people have officially emigrated from north and sub-Saharan Africa. Unrecorded migrants, children, and grandchildren boost the number sharply, although there are no good estimates.

Members of this population (see box) send more than $40 billion a year to residents of their home or ancestral lands. But their skills, knowledge, and entrepreneurial capabilities are lost to their home countries—not to mention the tens of billions of dollars they do not send home but save outside Africa each year. Persuading these emigrants and their offspring to return is generally a vain hope. Although many, perhaps even most, view their homeland warmly, they left for a reason.

But perceptions are changing. The diaspora has a number of good aspects beyond remittances and experts are beginning to believe that even the loss of skilled workers has an upside. Most important, perhaps, members of the African diaspora are playing a role in helping their homelands develop, and African countries have begun efforts to tap the skills and resources of emigrants and their offspring.

How big?

Estimating the size of a diaspora is complicated. Where a person was born, when he or she emigrated, and how he or she self-identifies are part of the equation. For example, estimates of U.S.-based diasporas are constructed using the "place of birth for the foreign-born population" available from the U.S. census. Many countries classify children of immigrants based on the ethnicity of the parent, which results in higher estimates of the stock of immigrants than classification based on place of birth. Temporary migrants, and second- and higher-generation migrants, may be considered as part of a diaspora, but are usually not captured in migration statistics. Even when data are good, estimating the size of a diaspora is difficult. It is more difficult for the African diaspora because data are often incomplete.

Using a narrow but convenient definition of diaspora as "foreign-born population," the total diaspora from African nations was 30.6 million in 2010 (World Bank, 2011). About half left for another country in Africa. Europe was the primary destination for the rest (see chart).

More than 90 percent of migrants from north Africa go to countries outside the region, especially to Western Europe. But almost two-thirds of migrants from sub-Saharan Africa leave for other countries in the region. Most of those remain

What are diasporas?

A diaspora can be defined as a group of persons who have migrated and their descendents who maintain a connection to their homeland. The U.S. State Department defines diasporas as migrant groups that share the following features: dispersion, whether voluntary or involuntary, across sociocultural boundaries and at least one political border; a collective memory and myth about the homeland; a commitment to keeping the homeland alive through symbolic and direct action; the presence of the issue of return, although not necessarily a commitment to do so; and a consciousness and associated identity, expressed in diaspora community media, the creation of diaspora associations or organizations, and online participation.

The African Union defines its diaspora as "consisting of people of African origin living outside the continent, irrespective of their citizenship and nationality and who are willing to contribute to the development of the continent and the building of the African Union."

within the subregion (for example, west Africans remain primarily within west Africa).

Benefiting from the diasporas

Most research on the contributions of diasporas to development in origin countries focuses on highly educated migrants living in Europe and the United States. But both low- and high-skilled diaspora members—whether outside or inside Africa—make contributions to their homelands. These contributions include remittances, trade and investment, and transfer of skills and technology.

Remittances: African migrants sent at least $40 billion in remittances to African countries in 2010. The true size of remittance flows, including unrecorded flows, is believed to be significantly larger. Remittances are the most tangible link between migration and development. Remittances are a large source of funding in many African countries: in Lesotho, they are close to 30 percent of GDP; in Cape Verde, Senegal, and Togo, more than 10 percent of GDP. In Egypt, remittances are larger than the revenue from the Suez Canal, and in Morocco they exceed tourism revenue.

Remittances tend to be relatively stable, and may behave countercyclically—because relatives and friends often send more when the recipient country is in an economic downturn or experiences a disaster (Mohapatra, Joseph, and Ratha, 2009). In sub-Saharan Africa, remittances have been more stable than foreign direct investment, private debt, and equity flows. Nevertheless, even small fluctuations in remittance inflows can pose macroeconomic challenges to recipient countries, especially those with large inflows.

Remittances play an important role in reducing the incidence and severity of poverty. They help households diversify their sources of income while providing a much needed source of savings and capital for investment. Remittances are also associated with increased household investments in education, entrepreneurship, and health—all of which have a high social return in most circumstances. That said, the evidence of the impact of remittances on economic growth is mixed.

Many migrants transfer funds to households in origin countries for investment purposes. Data from household surveys show that African households receiving international remittances from the developed countries in the Organization for Economic Cooperation and Development (OECD) have been making such productive investments as buying agricultural equipment, building a house or a business, purchasing land, and improving a farm. Among the countries surveyed were Burkina Faso, Kenya, Nigeria, Senegal, and Uganda. Households receiving transfers from other African countries also invest in business activities and housing, although to a lesser extent than those receiving remittances from OECD countries.

Even though remittances provide a lifeline to the poor in many African countries, sending money to Africa remains costly (see "Lowering the Cost of Sending Money Home," *F&D*, June 2011). Indeed the average fee for remittances to Africa is more than 10 percent of the principal, the highest among the developing regions. Fees for intraregional remittances within Africa tend to be even higher because currencies are often not convertible or foreign exchange commissions are exorbitant.

Trade and investment flows: Migrants have a preference for their native country's goods and services, thus supporting "nostalgic trade" in ethnic products. More important, migrants facilitate bilateral trade and investment flows between their country of residence and their home country by matching producers of consumer goods in one country with appropriate distributors in the other country, and assemblers with the right component suppliers. Sharing the same language or a similar cultural background eases communication and facilitates understanding of transport documents, procedures, and regulations.

Some governmental agencies and private firms in African countries are tapping their diasporas to provide market information about the countries in which emigrants now live. Activities include the establishment of diaspora trade councils and participation in trade missions and business networks. The Ethiopian, Kenyan, and Ugandan embassies in London and Washington support business and trade forums to attract diaspora investors and to match suppliers with exporters.

Diaspora members can act as catalysts for the development of capital markets in their countries of origin by diversifying the investor base, by introducing new financial products, and by providing reliable sources of funding. Members of the diasporas can increase investment flows between sending and receiving countries because they possess important information that can help identify investment opportunities and facilitate compliance with regulatory requirements. Moreover, these emigrants may be more willing than other investors to take on risks in their origin country because they are better able to evaluate investment opportunities and possess contacts to facilitate the investment process. Potential

Leaving the homeland

Many African emigrants went to Europe or the United States in 2010, but a large number left home for other African countries.

(destination of migrants, percent of total)

France, Côte d'Ivoire, South Africa, Saudi Arabia, United States, United Kingdom, Spain, Italy, Burkina Faso, Nigeria, Jordan, Kenya, Sudan, Uganda, Tanzania, Portugal, Libya, Ethiopia, Israel, Rwanda

Source: World Bank (2011).

investors can improve their profitability by tapping the expertise of diaspora members.

Ethiopia, Ghana, Kenya, Nigeria, and Rwanda, among others, are looking to tap into their diasporas for investments in their homeland. Governments and the private sector both have supported business forums to attract diaspora investors. African investment promotion agencies in Ethiopia, Ghana, Nigeria, and Uganda, for example, are providing information and linkage opportunities to investors, including those from the diaspora community. Some private firms and African diaspora associations also provide information on investment opportunities and sourcing in their homeland countries and facilitate contacts between traders in destination and origin countries.

Diaspora investors can be a more stable source of funds than other foreign investors because of their familiarity with the home country.

Diaspora bonds: Worldwide, African diaspora members save an estimated $53 billion annually. If one in every 10 members of the diaspora could be persuaded to invest $1,000 in his or her country of origin, Africa could raise $3 billion a year for development financing.

Mobilization of diaspora funds is possible through the issuance of a diaspora bond, a retail saving instrument marketed to diaspora members. A developing country government (or a reputable private corporation in a developing country) can tap into the wealth of relatively poor (but financially aware) migrants by selling such bonds in small denominations (from $100 to $1,000). The bonds could be sold in larger denominations to wealthier migrants, diaspora groups, and institutional investors.

The money raised through diaspora issuances could be used to finance projects that interest overseas migrants—such as housing, schools, hospitals, and infrastructure projects that have a concrete benefit to their families or the community back home. Diaspora bonds can tap into the emotional ties—the desire to give back—of the diaspora and potentially help lower the cost of financing for development projects back home. Because the diaspora savings are held mostly as cash under the mattress or in low-yielding bank accounts in the countries of destination, offering an annual interest rate of 4 or 5 percent on diaspora bonds could be attractive.

Diaspora investors can be a more stable source of funds than other foreign investors because their familiarity with the home country often gives them a lower perception of risk. In particular, diaspora members generally are less concerned with devaluation risk because they are more likely to have a use for local currency.

Ethiopia has issued bonds to its diaspora, and others—including Kenya, Nigeria, Rwanda, and Zimbabwe—are in the process of doing so. Other African countries with a large diaspora that could consider diaspora bonds include Egypt, Liberia, Morocco, Senegal, Tunisia, Uganda, and Zambia. In many of these countries, however, high political risks, weak legal systems, absence of global banking networks, and limited financial expertise constrain the potential for diaspora bonds. For example, Ethiopia's diaspora bond issued in 2009 did not attract diaspora investors, allegedly because of a high perception of political risk. Partial guarantees by multilateral development banks could enhance the creditworthiness of many diaspora bonds. Surveys of diaspora groups' income and investment characteristics and political risk perception would help with the pricing and marketing of diaspora bonds. Embassies and consulates overseas can play a major role in marketing such bonds.

Still, there are some dangers to the origin countries. Large foreign currency inflows after a bond issuance, and potential outflows when the bond matures, require careful macroeconomic management, especially of the exchange rate. Even if the bond is issued in local currency, countries must pay attention to exchange rate management and prudential debt management.

Skill and technology transfer: Diasporas may also provide origin-country firms access to technology and skills through professional associations (for example, the Ghanaian Doctors and Dentists Association in the United Kingdom), temporary assignments of skilled expatriates in origin countries, distance teaching, and the return (mainly for a short period) of emigrants with enhanced skills.

In recent years there has been a shift in thinking. Instead of viewing the emigration of skilled people as a loss, many economists and policymakers view it as an opportunity to get trade and investment projects and new knowledge. Moreover migration raises the domestic skill level because the hope of getting a well-paying job with good working conditions abroad encourages citizens to enroll in professional schools.

The skills of the diasporas can be tapped by establishing knowledge exchange networks. Some initiatives include mentor-sponsor programs in certain sectors or industries, joint research projects, peer reviewer mechanisms, virtual return (through distance teaching and e-learning), and short-term visits and assignments. To increase the benefits of these activities, countries will have to survey the human resources available in their diasporas, create active networks, and develop specific activities and programs. For example, there are some small pilot initiatives that invite diaspora members to teach courses in African universities.

Mobilizing diaspora resources

Countries inside and outside Africa are beginning to implement policies to boost flows of financial resources, skills, and technology from the diasporas. Many countries are reorienting their embassies abroad to engage with the diaspora community.

A few African countries have established *government agencies to encourage diasporas to invest, assist local communities, and provide policy advice.* Such agencies are also involved in

the collection of data on diasporas, provision of information and counseling, consular services, and, at times, facilitation of the migrants' participation in social security, housing, and insurance programs at home. Government initiatives have taken various forms—from the creation of dedicated ministries to deal with migrant communities to the addition of specific functions to existing ministries such as foreign affairs, interior, finance, trade, social affairs, ministry, and youth. In addition, some governments have set up councils or decentralized institutions that deal with migrant community issues, with varying degrees of success.

Government institutions abroad, especially embassies and consulates, can play a key role in reaching out to the diaspora. A recent survey of African embassies in France, the United Arab Emirates, the United Kingdom, and the United States (conducted as a part of the World Bank's Africa Migration Project) found that several have little information on the number of diaspora members, that coordination between the embassies and government ministries needs to improve, and that there is an urgent need for training embassy staff on how to work with diaspora members.

Encouraging the growth of private sector networks may be an effective way of establishing links to the diaspora. Investments in modern communications technology can facilitate such links. Some governments have eased restrictions on foreign land ownership to attract investments from diasporas; indeed, offering small discounts on land purchases can strengthen ties with second- and third-generation diaspora members.

Allowing *dual citizenship* can encourage greater diaspora participation in their origin countries by facilitating travel, avoiding the constraints foreigners face on some transactions (for example, temporary work or land ownership), and providing access to public services and social benefits. More broadly, dual citizenship can help maintain emotional ties with the origin country, thus encouraging continued contact and investment. Despite these benefits, only 21 of Africa's 54 countries allow dual citizenship. Interviews with diaspora groups and individuals showed that granting *voting rights* to the diaspora is an important means of encouraging greater engagement with origin countries.

As with other potential investors and trading partners, migrants seeking to invest in or trade with African countries are often constrained by the poor business environment in those nations. Excessive red tape, customs delays, bad infrastructure, corruption, lack of macroeconomic stability, trade barriers, lack of legal security, and mistrust in government institutions affect migrants' decisions to invest in their home countries and to return. Harnessing diaspora contributions to trade, investment, and technology requires a *favorable business environment*, a sound and transparent financial sector, rapid and efficient court systems, and a safe working environment.

The United States and several high-income countries in Europe are working with developing-country diaspora groups not only to further their foreign policy objectives, but to promote the development of origin countries. Some destination countries in Europe have tried to encourage the return of skilled migrants, but the experience so far has been largely disappointing because of the limited number of migrants affected, resentment over the preferential treatment of returnees, and concerns that funds are devoted to attracting workers who would have returned anyway. For example, the United Nations Development Program supported three-week to three-month development assignments for expatriates, at much lower costs than would have been incurred were professional consultants hired. However, the program's transfer of technology was disappointing because contacts with expatriates were not sustained or diaspora members stayed only a relatively short time.

Allowing dual citizenship can encourage greater diaspora participation in their origin countries.

Destination countries get in the act too. Some—such as Canada, France, and the Netherlands—are funding development projects promoted by diaspora groups or are helping build the capacity of diaspora organizations. Diaspora groups are also urging many destination countries to provide matching funds (as in Mexico's 3-for-1 programs targeted at hometown associations in the United States) or tax breaks for charitable contributions to and investments in origin countries.

Inadequate data and understanding of the diasporas impair efforts to increase the contributions they can make to origin countries. Changing that should be a high priority for the global community interested in harnessing diaspora resources. ■

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This article is based on Diaspora for Development in Africa, *edited by Sonia Plaza and Dilip Ratha and published in 2011 by the World Bank.*

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More Europe, Not Less

The euro area is learning from its debt crisis that it needs a more centralized approach to fiscal and financial policies

Céline Allard

WHEN it comes to sovereign debt, the euro area seems to be different. Even with a level of debt in line with that of other advanced economies, it has been engulfed in a sovereign debt crisis (see Chart 1). True, the euro area is not a single nation, and its treaty prohibits member states from sharing each other's liabilities. But why should that mean that one member's troubles mean trouble for all and investors fret about the future of the economic and monetary union?

Looking back at the causes of the debt crisis in Europe, we conclude that incomplete economic, financial, and fiscal integration is part of the answer. To function effectively, the economic and monetary union will require some form of fiscal risk sharing, tighter monitoring of national policies, and an integrated pan-European approach to its financial system. Progress is being made on all these fronts, but rapid implementation remains of the utmost importance.

Conspiracy of factors

The Economic and Monetary Union (EMU) was founded on the premise that the benefits of a common currency would outweigh the costs of relinquishing national currencies. The plan envisaged in the Stability and Growth Pact (SGP) was to have European institutions keep a close eye on countries' budgets via annual evaluations and to create enough fiscal discipline to leave room to deal with country-specific shocks. The coordination of national product and labor market reforms (for instance, opening up the electricity market or encouraging labor market participation) would align economies so that they would react more similarly to common shocks.

However, with the introduction of the EMU, southern euro area countries and Ireland (loosely referred to as the periphery) experienced a very specific shock: they witnessed a dramatic decline in borrowing costs after many years of much higher interest rates than their northern counterparts. This allowed firms to finance their productive investment more cheaply and expand—certainly a welcome development. But it also led to a widespread belief that strong growth would be permanent. Households assumed they could afford much higher living standards, leading to credit-led buying sprees and real estate bubbles. And governments—along with their creditors—took for granted the revenues generated by the growth spurt,

failing to save the debt-service savings brought about by the drop in interest rates.

Meanwhile, because the common currency eliminated cross-border transaction costs, financial integration within the euro area flourished—another benefit of the EMU. But inflows to countries in the periphery came mostly in the form of debt to banks, making them increasingly reliant on funding raised in the markets (which is called wholesale funding), rather than on bank deposits, to finance domestic credit. Conversely, equity flows—such as from cross-border mergers and acquisitions, where risks are shared and hence better monitored by investors—were small.

National financial supervisors fell under the same optimistic spell. They became complacent about rising credit risks and allowed banking systems to grow disproportionately to the size of the economy. As a result, the risk grew that the banking sector would become increasingly unaffordable for governments to support in a financial crisis. In the absence of a pan-European supervisory body, risks related to the growing interconnectedness of national financial systems through large cross-border loans to banks were overlooked.

Readily available intra–euro area financing made it easy to dismiss diverging trends in competitiveness. While Germany and neighboring euro area countries were retooling their production model by integrating eastern Europe into their supply chains to compete with lower-cost manufacturing powerhouses in Asia, countries in the periphery seemed oblivious to rising costs, as overheating led to large wage increases. For a long time, policymakers and foreign private investors alike ignored the fact that the dramatic deterioration in the periphery countries' external position was financing mostly unproductive spending (for example, real estate investment), so that the accumulating debt could prove hard to pay back (see Chart 2).

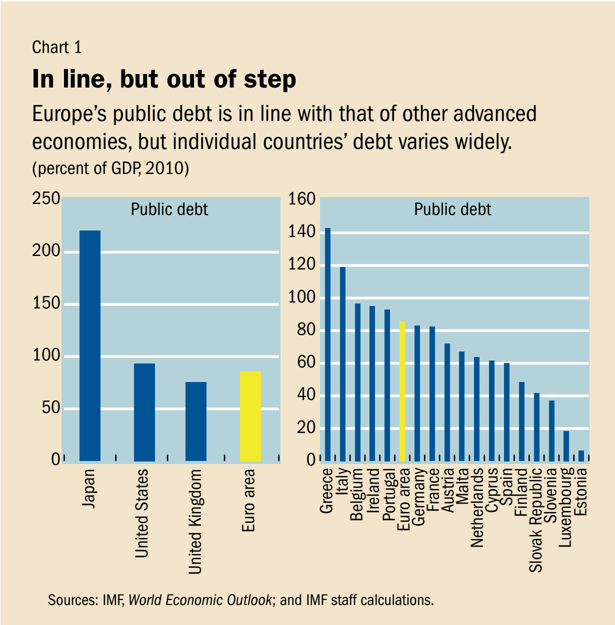

Chart 1

In line, but out of step

Europe's public debt is in line with that of other advanced economies, but individual countries' debt varies widely.
(percent of GDP, 2010)

Sources: IMF, *World Economic Outlook*; and IMF staff calculations.

Hard landing

Until the euro area came into existence, sovereign debt problems were primarily external debt problems. The nominal value of domestic debt could usually be preserved, albeit often at the cost of a bout of inflation. With the establishment of the euro area, this mechanism disappeared. Member countries' domestic and external debt were indistinguishable and there was no (domestic) central bank to inflate problems away.

The opposite is also true, however. In the euro area, countries retained control over fiscal policy and there was no common euro area treasury, including to back the European Central Bank's operations. The founders of the euro area were very much aware of the need to preserve fiscal discipline, and counted on a combination of administrative tools (the SGP) and market discipline. But both mechanisms were eroded: the SGP was watered down and markets fell asleep at the wheel. The plan worked well during good times, but fell apart when the global crisis hit.

The fall of the U.S. investment bank Lehman Brothers in October 2008 set the stage for a dramatic reversal of fortune in the euro area. Operations of wholesale funding markets came to a sudden halt, making it harder for banks in the periphery to continue financing credit-driven growth.

Once credit dried up, fundamental competitiveness problems and structural impediments to growth came to the fore, particularly in Greece and Portugal. Fiscal revenue dried up, revealing weak underlying public finances. Private investors started scrutinizing deteriorating balance sheets, and ailing banks increasingly needed fiscal support, especially in Ireland.

As a result, the private debt problem morphed into a sovereign debt crisis. With banks still heavily financing their national sovereign debt, concerns about fiscal solvency inhibited confidence in the peripheral banking sector, setting in motion a pernicious feedback loop that persists to this day. Soaring credit costs priced both sovereigns and banks out of private funding in Greece, Ireland, and Portugal. Most recently, the crisis engulfed Italy and Spain, which saw the

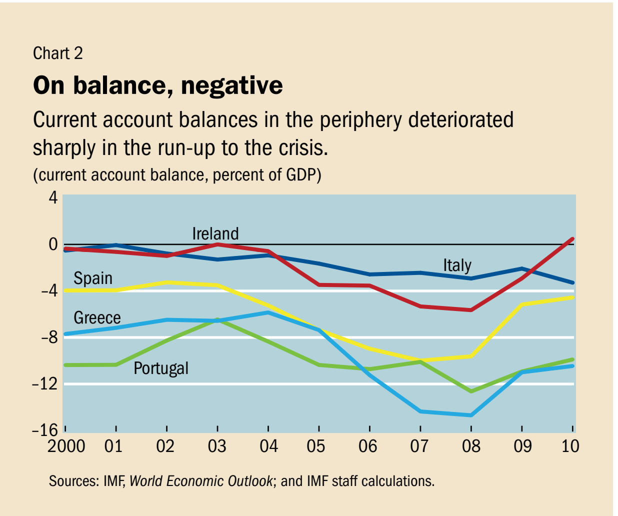

Chart 2

On balance, negative

Current account balances in the periphery deteriorated sharply in the run-up to the crisis.
(current account balance, percent of GDP)

Sources: IMF, *World Economic Outlook*; and IMF staff calculations.

cost of their sovereign debt climb during the summer of 2011 (see Chart 3).

Contagion did not stop at the borders of the periphery. Banks in the core euro area that had funded the booms in the periphery also came under scrutiny. Growing uncertainties about exposures and asset quality delayed the recovery in confidence that was essential for recovery in the euro area as a whole.

Still searching for solution

The countries that had accumulated large imbalances, either fiscal or external, came under intense market pressures. As a result, they immediately started implementing significant adjustment measures, ranging from cuts in public spending to tax increases and measures to improve the functioning of their economy. But the absence of proper euro area–wide crisis management institutions delayed decisions at the regional level. In May 2010, when it became clear that Greece would need external financial support, European leaders had to resort to bilateral loans. They later set up the European Financial Stability Facility (EFSF) to provide support to euro area member states in financial difficulty, which was tapped by Ireland in December 2010 and Portugal in May 2011.

But because it is politically difficult to use taxpayer money from some countries to pay for the past profligacy of others—and indeed, the Maastricht treaty was written in the spirit of avoiding fiscal transfers across euro area countries—decisions regarding the EFSF have not been easy to come by. As the market turmoil persisted, the EFSF's lending capacity was nearly doubled to €440 billion in spring 2011; when the turmoil threatened Spain and Italy, its mandate was significantly increased in summer 2011 to allow for precautionary lending and additional flexibility.

But the markets remain wary. Credit rating agencies' downgrades have continued, and as of mid-August 2011 market confidence had not turned around. Debt sustainability remains challenging, and painful and protracted adjustment looms. Growth—an essential ingredient for fiscal sustainability—has proved more elusive than expected in the countries where the crisis hit the hardest. Markets are therefore worried that reform fatigue will set in before the adjustment is complete, in turn driving up funding costs, which itself jeopardizes debt sustainability.

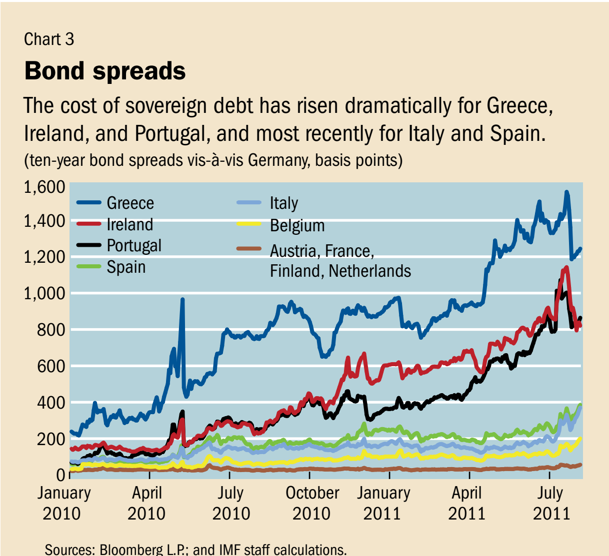

Chart 3

Bond spreads

The cost of sovereign debt has risen dramatically for Greece, Ireland, and Portugal, and most recently for Italy and Spain.

(ten-year bond spreads vis-à-vis Germany, basis points)

Sources: Bloomberg L.P.; and IMF staff calculations.

Early lessons

Economic and financial integration has brought benefits to the euro area that far exceed the costs. But the institutions underpinning the common currency have clearly been inadequate during the crisis, highlighting the need to delegate more country sovereignty to the center.

The first lesson from the crisis is that *effective functioning of the economic and monetary union requires some kind of fiscal risk-sharing mechanism at the euro area level*, to provide assistance to countries facing sovereign funding pressures and to back up European Central Bank emergency operations. The EFSF—and its successor from 2013 onward, the European Stability Mechanism (ESM)—presents a first step toward such a fiscal insurance plan, especially after its recent enhancements. Among the many ways forward, one option is that the ESM could evolve into a European debt management agency issuing common bonds conditional on prudent national policies.

A second lesson is that *the euro area institutions' oversight of fiscal and macroeconomic policies at the national level needs to be seriously strengthened*. Governance is indeed being enhanced at the supranational level to reinforce budgetary discipline and better monitor the buildup in imbalances. But more could still be done, for example by requiring correction to past upward drifts in public expenditure or establishing more semiautomatic sanctions for fiscal offenders.

Finally, *the need for an integrated, pan-European approach to financial supervision, regulation, and crisis resolution has become increasingly evident* as the crisis has unfolded. European institutions have recently been set up; they will bring much-needed coordination in supervision and systemic risk assessment. But it will be equally important to complete the region's financial stability framework with the establishment of a European resolution authority that would provide a common backstop for banks irrespective of nationality. Only then will the fate of banking sectors be fully delinked from that of their respective sovereign.

Finding an orderly solution to the sovereign debt difficulties in the periphery remains of the utmost importance. European leaders have started to make difficult decisions to deal with the crisis, most notably at the July 2011 European Union summit, but progress needs to be implemented swiftly if markets are to be convinced. ■

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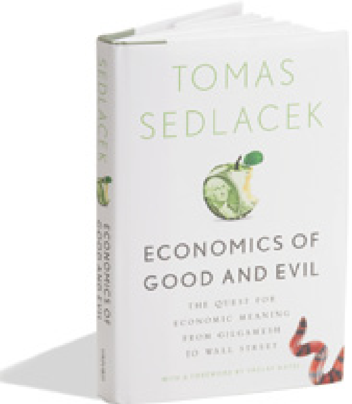
Justice in Economics



Tomas Sedlacek

Economics of Good and Evil

The Quest for Economic Meaning from Gilgamesh to Wall Street

Oxford University Press, Oxford, New York, 2011, 368 pp., $27.95 (cloth).

Some have put the financial crisis behind them. Calls to insert ethics into banking or to rethink the fundamentals of economics have been pushed aside by the practical men and women of business or economics eager to get on with life. Financial institutions have gone back to the old normal; vested interests are resurgent in the debate on regulatory reform, while in a striking example of confirmation bias, many economists have found that the crisis only confirmed what they already believed.

And yet . . . . The crisis has devastated employment and household balance sheets, and has left a legacy of fiscal tensions that will weigh on governments for a generation. Deleveraging is proving painful, and problems of the euro area and deteriorating growth prospects worldwide indicate that further troubles may lie ahead. And in various places, economists are thinking about whether the financial sector has fundamentally distorted our societies and whether economics as a discipline needs to take a different tack.

This erudite, original, and timely book is an exercise in metaeconomics, a look at the beliefs lying behind economics. Tomas Sedlacek, a leading Czech economist, considers the intellectual origins of some of the discipline's assumptions and some alternative approaches that have been neglected in our precrisis consensus. All rational knowledge rests on some assumptions about what is important and how the world works. These are narratives or myths that we accept, often unconsciously, as giving the world meaning. In economics, such myths include the invisible hand, the perfect market, and rational, utility-maximizing *homo economicus*.

Sedlacek draws on wide and eclectic reading to stress that economics is a cultural product. In the first four chapters, he trawls Sumerian, Old Testament, classical Greek, and Christian sources for their insights into economic issues. The next three short chapters examine the contributions to our economic thinking of René Descartes, Bernard Mandeville, and Adam Smith. The final section, "Blasphemous Thoughts," consists of short essays applying the findings of the earlier chapters to such matters as whether greed is good, the concept of growth, whether utility or good should be maximized, the invisible hand, *homo economicus*, animal spirits, the proper role of mathematics in economics, and the nature of truth in economics and other sciences.

For the classical economists, economics was part of moral philosophy. But since then, morality has been elbowed out as Mandeville's "greed is good" approach displaced older views of both Jewish and Christian traditions, as well as those of Smith and David Hume. Similarly, the legacy of utilitarianism is an approach of individual utility maximization, rather than John Stuart Mill's moral stress on collective utility—the greatest good of the greatest number. Virtually the only foothold that ethics has in modern economics is as the basis for well-functioning institutions in a prospering economy. Sedlacek suggests that the time is ripe for reexamining whether the products of the economy are indeed "Goods" in the moral sense.

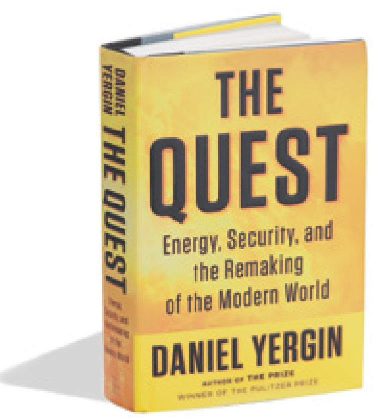
He stresses Smith's explicit disagreement with Mandeville on whether private vice was needed to fuel the public good, thus acquitting Smith of the charge that he believed the pursuit of individual self-interest is a guarantee of a nation's prosperity. In both *The Theory of Moral Sentiments* and *The Wealth of Nations*, Smith, in line with his close friend, Hume, professed that human society was held together by principles of benevolence and self-restraint, and the invisible hand that brought supply and demand together through the action of self-interest was just an ancillary mechanism. Indeed, the concept of the invisible hand owes more to Social Darwinism than to Smith.

The search for a single principle underlying economic behavior has led to a discipline that takes self-interest as the driver of all economic phenomena, despite Smith's explicit warning against trying to explain human actions with too limited a set of motivations. Man is reduced to *homo economicus*, an agent driven solely by rational choice. But neither Hume nor Smith allowed that human behavior could be explained by a single egotistical principle. They held that "feelings, not rationality, are the moving force behind human behavior."

Intellectual movements need time to gestate. A new intellectual edifice has to have a roof before people will abandon the old one en masse. It requires a critical mass of new formulations that give practical insight into current problems. But as Keynes put it, "soon or late, it is ideas, not vested interests, which are dangerous for good or evil." Sedlacek's interesting book is part of the construction project for a better economics and a more just world.

Mark Allen
IMF Senior Resident Representative for Central and Eastern Europe

Quest in Search of Itself



Daniel Yergin

The Quest

Energy, Security, and the Remaking of the Modern World

The Penguin Press, New York, 2011,
816 pp., $37.95 (hardcover).

Daniel Yergin's stimulating new book, *The Quest*, offers an informative guide to how energy shapes and is shaped by global economics, power, and security. Yergin has taken on a large and complex subject. But he makes his lengthy book accessible to a broad audience by developing his analysis through hundreds of short vignettes, many of which are rich in historical details. General readers will learn a great deal about the wide world of energy on which we depend so completely—how it came to be the way it is and how it works. Energy experts, while not the primary audience, will gain a greater appreciation for the complex interplay of technology, markets, environments, and politics in today's energy debate.

Yergin begins his story on December 31, 1991, the day the former Soviet Union ceased to exist. Readers may wonder (as I did) why a story about energy begins in Russia, out of the spotlight of the infamous Middle East. The reason is that this energy superpower is struggling with the many blessings and curses of an oil and gas economy. Russia has the potential to redraw the world map of fossil fuels, but it still has to get its own house in order. It must become much more efficient, orderly, and organized. And Russia must dial down domestic dependence on natural resources to capitalize on its vast natural resource wealth.

The troublesome geopolitical costs of oil and gas also come into sharp focus in Russia. Access to Asia's lucrative markets is stymied by perpetual unrest in neighboring states. Converting Russia's resources into economic growth requires finding a secure way out of central Asia to points south. Yergin details the personalities, politics, policy vacuum, chaos, and violence that hamper economic security from resource wealth. It's one thing to have mineral wealth and another to engage strategically to convert it into long-term national growth and regional stability.

With political unrest as a backdrop, Yergin tells how globalization has begun to knit the world together economically and socially in ways previously unimagined. Distance has disappeared along with borders as finance and supply chains tie production and commerce together around the globe. Maintaining the energy equilibrium is elusive. Yergin points out how oil and gas (as both physical commodities and financial instruments) have the capacity to transform national economies, and nations themselves.

The delicate balance in energy markets is easily disrupted by any number of forces. Resource nationalism, ethnic conflicts and populist revolts in oil-exporting nations, unanticipated swings in the world economy, disruptive innovations in technology and finance, red-hot growth in emerging nations, political upheaval at home and abroad, wars and skirmishes, terrorism and cyber-attacks that target energy systems, climate change, and mother nature all profoundly influence our energy future. Yergin asserts that "the next crisis could come from almost any direction."

While Yergin posts many valuable warning signs, he gives us too few tools to gauge where the priorities lie in energy, security, and remaking of the modern world. Readers will yearn to know how Americans and global citizens might craft a rational energy strategy for the 21st century. What *The Quest* offers is thousands of intricate puzzle pieces, all quite fascinating to ponder, but challenging to assemble.

What this book lacks in resolutions, it makes up for in valuable correctives. Yergin argues that U.S. aspirations of energy independence are not only unrealistic, but can corrode international relations that are critical to energy security in a resource-constrained, interdependent world. Infinitely versatile electricity "underpins modern civilization." For the business world, the biggest energy security issue will be the increasing importance of electricity, with the majority of innovations driven by electric power. While the world is not running out of oil—unconventional oils could provide ample supplies well into the future—we must increase the prevalence of electric cars for a multitude of security reasons. Rather than jeopardize global mobility, electric vehicles would provide energy stability and free up oil for other needs. Beyond these nuggets, there is much more intelligence to mine in this book.

The delicate balance in energy markets is easily disrupted by any number of forces.

In the end, Yergin reminds us that energy is all about trade-offs. Charting our energy future requires that we navigate the inherent risks and challenges that oil, gas, nuclear, and other energy sources portend. There is no certainty in securing our energy future. Rather, energy security will be an ongoing quest, in search of itself.

Deborah Gordon

Co-author of Two Billion Cars: Driving Toward Sustainability *and a Senior Associate at the Carnegie Endowment for International Peace*

Where Investment Goes

The Netherlands is the major conduit for foreign direct investment

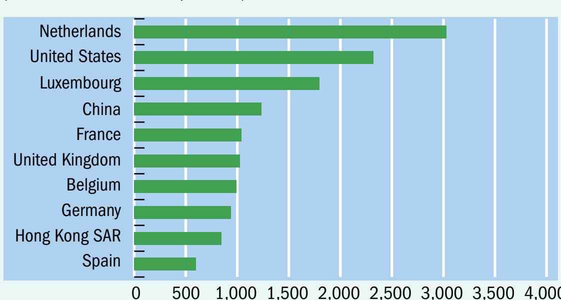
THE NETHERLANDS was the No. 1 recipient of foreign direct investment (FDI) globally as of end-2009, but because most of the funds passed through on the way to other economies the Netherlands was also the top source of FDI, according to new data from the IMF's Coordinated Direct Investment Survey (CDIS). The United States—the world's largest economy—had the second-largest amount of inward and outward direct investment, followed by Luxembourg. China received the fourth-largest amount of direct investment, 45 percent of which was invested via Hong Kong SAR.

The Netherlands had a total of $3.0 trillion in inward direct investment positions and had invested $3.7 trillion in other economies as of end-2009. Luxembourg was No. 3 and like the Netherlands was largely an "in transit" destination. Both countries have special legislation that provides advantages to multinational corporations using these countries as pass-throughs.

Most of the inward and outward direct investment—about 80 percent at end-2009—was between advanced economies. All of the economies in the top-10 lists except China are advanced economies. This concentration of direct investment can be attributed to advanced economies' generally larger markets, better-educated labor forces, greater profitability, and more developed financial markets.

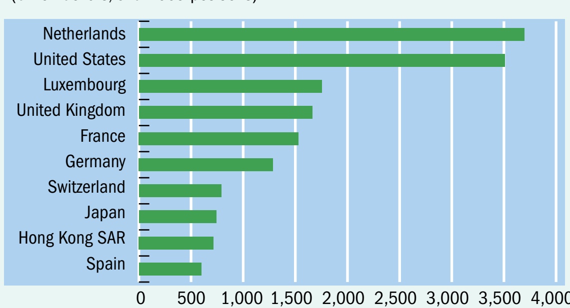
The top 10 recipients of foreign direct investment account for 68 percent of the total.

(billion dollars, end-2009 positions)



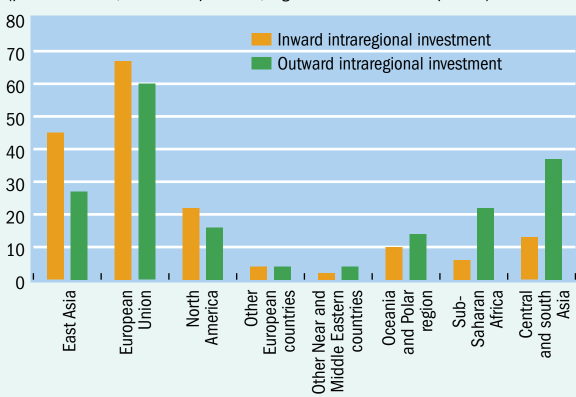
The top 10 investors of foreign direct investment represent 80 percent of the total.

(billion dollars, end-2009 positions)



Europe sees most investment within regions.

(percent of total, end-2009 positions, regions with at least 3 reporters)



Except for the European Union and east Asia, there was limited direct investment within regions. In the European Union, intraregional direct investment for both inward and outward investment levels was greater than 50 percent. Inward direct investment positions within east Asia were also significant at 45 percent. (Outward direct investment levels within east Asia are skewed downward because some large economies did not report investments abroad on the CDIS.)

What is foreign direct investment?

Foreign direct investment is investment by a resident in one economy in an enterprise that is resident in another economy in order to control or exert significant influence over the management of that enterprise. Such equity and debt investments are important for recipient countries because they provide financing and other resources, adding to economies' growth prospects. Direct investment often includes technological transfer, market access, and other benefits to the recipient economy, and is usually long-term in nature.

About the database

The CDIS is the only worldwide survey of foreign direct investment positions. The database currently includes end-2009 inward positions reported by 84 economies (59 economies also reported outward positions) by the counterpart economy—that is, the economy from which the investment comes (inward) and into which the investment is sent (outward). The survey results can be found at *http://cdis.imf.org*

Prepared by Tadeusz Galeza of the IMF's Statistics Department.

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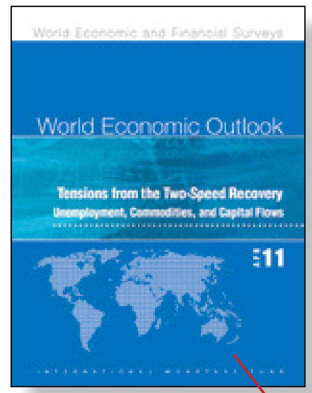
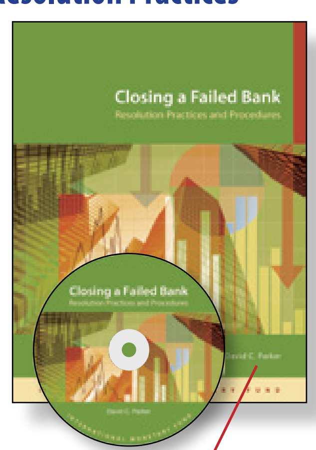


Closing a Failed Bank: Resolution Practices and Procedures

Written by a former bank liquidator for the FDIC, this manual, with an interactive CD-ROM, walks the reader through problem bank resolution from the time a bank is identified as being in financial trouble through intervention to liquidation.



Fiscal Monitor

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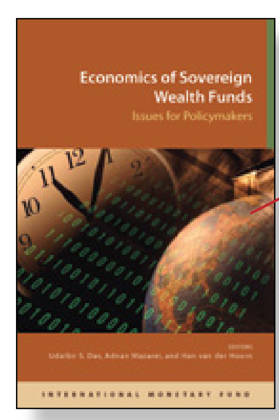

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