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Europe's Union Step by Step



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One Step at a Time

THE story of European integration begins with coal and steel.

The decision in 1951 by six European nations to pool coal and steel production under a common “High Authority”—the European Coal and Steel Community—marked the beginning of European integration amid the ruins of World War II.

French statesman and political visionary Robert Schuman, who dreamed of a continent united politically and economically, knew when he proposed the coal and steel community in 1950 that Europe would not come together in one fell swoop. Action on a “limited but decisive point”—pooled coal and steel production—would pave the way for greater integration and, ultimately, lasting peace in Europe.

What a great example of pursuing a long-term vision one step at a time—of not taking on too much at once.

Schuman's plan, so narrow and specific at first, gave rise to a vast enterprise. Today, Europe is a closely integrated region with some of the world's highest living standards. The 28-member European Union, built around common policies and shared institutions, has proven robust to many challenges and has accommodated great change—from the fall of the Berlin Wall and the associated wave of new EU members to the launch of the euro—used by 18 countries. For these accomplishments and more, the European Union was awarded the 2012 Nobel Peace Prize.

Amazing progress, yes, but as headlines over the past five years make clear, Europe's journey toward greater integration is far from over. The 2008 global financial crisis laid bare fault lines, exposing tensions between EU members and stresses and gaps in institutions and policies that Europe's political leaders are working hard to address. The crisis was damaging to Europe, and even though a recovery appears to be taking hold, too many people are still out of work—underscoring the urgent need for national and regional reforms.

This issue of *F&D* examines Europe's drive toward economic integration—the forces bringing it together and those pushing it apart. The IMF's chief for Europe, Reza Moghadam, opens with a short history lesson and argues that what Europe needs is more integration, not less. Oxford Professor Kevin O'Rourke takes a less sanguine view, questioning the future of the euro. The package is rounded out by articles on Europe's jobless, the push for a banking union, the continent's ambitious low-carbon energy goals, and, in a nod to the continent's favorite pastime, the liberalization of the players' market in European soccer leagues.

Elsewhere in the issue, we profile Lucrezia Reichlin, former Chief Economist at the European Central Bank and a pioneer of real-time economic forecasting. We also look at the impact of aging on monetary policy in advanced economies and at how changes in asset prices can predict economic downturns. Other articles look at macroeconomic policy and natural disasters and why the dollar is unlikely to be dethroned anytime soon as the world's global reserve currency.

Jeffrey Hayden
Editor-in-Chief

Feeding 9 billion by 2050

The world's agricultural production must shift to more sustainable patterns—including greater respect for ecosystem services and less waste—in order to feed the world's rapidly increasing population by 2050, says United Nations Environment Programme (UNEP) Executive Director Achim Steiner.

Speaking at the Global Forum for Food and Agriculture organized by UNEP in mid-January, Steiner stressed that, by 2050, the Earth will likely need to feed some 9 billion people with the same amount of land, water, and natural resources it has now.

In order for increases in agricultural production to be sustainable, he added, humanity must reduce its massive loss and wastage of food, as outlined in a soon-to-be-released UNEP study, *Food Wasted, Food Lost: Improving Food Security by Restoring Ecosystems and Reducing Food Loss*.

Time for a sea change

Major changes in how the planet's marine resources are managed and used are needed to safeguard global food security and preserve coastal and island countries, said Food and Agriculture Organization (FAO) Director-General José Graziano da Silva at the recent Blue Economy Summit.

Serious threats to ocean health such as pollution, overfishing, altered weather, and rising sea levels resulting from climate change must be tackled in earnest starting now, he argues. In a "blue economy," the sustainable development of oceans and fisheries is given priority.

On average, nearly 17 percent of animal protein

consumed worldwide comes from fisheries and aquaculture, and in many small island developing states, the figure is much higher. At the same time, the livelihoods of 12 percent of the world's population depend on fisheries and aquaculture.

But 30 percent of world fish stocks are estimated to be overexploited, depleted, or recovering from depletion, with economic losses in marine fisheries resulting from poor management, inefficiencies, and overfishing adding up to \$50 billion a year, FAO studies show.

And now climate change is posing new challenges by modifying the distribution and productivity of marine and freshwater species, affecting biological processes and altering food webs.

As a result, the FAO is establishing the Blue Growth Initiative, which will act as a catalyst for policy development, investment, and innovation to support the management of aquatic resources.



Vegetable recycling plant in Nijar, Spain.

Food loss occurs mostly at the production stages of harvesting, processing, and distribution, while food waste typically takes place at the retail and consumer end of the food supply chain. In industrialized regions, almost half of all food is squandered because producers, retailers, and consumers discard food that is still fit for consumption.

The quantity wasted amounts to more than the total net food production of sub-Saharan Africa and could feed the estimated 870 million hungry people in today's world.

No cause for complacency

Global efforts to control and eliminate malaria have saved an estimated 3.3 million lives since 2000, reducing malaria mortality rates by 45 percent globally and by 49 percent in Africa, according to the *World Malaria Report 2013*, published by the World Health Organization (WHO).

Expanded prevention and control measures are reflected in a consistent decline in malaria deaths and illness, despite an increase in the global population at risk of malaria between 2000 and 2012. Increased political commitment and expanded funding have played a key role.

The majority of the 3.3 million lives saved between 2000 and 2012 were in the 10 countries with the highest malaria burden and among children under 5, the group most affected by the disease. But more needs to be done.

"This remarkable progress is no cause for complacency: absolute numbers of malaria cases and deaths are not going down as fast as they could," said Margaret Chan, WHO Director-General. "The fact that so many people are infected and dying from mosquito bites is one of the greatest tragedies of the 21st century."

Events in 2014

March 27–30, Costa do Saúpe, Bahia, Brazil

Annual Meeting of the Inter-American Development Bank

April 11–13, Washington, D.C.

Spring Meetings of the IMF and the World Bank

May 2–5, Astana, Kazakhstan

Annual Meeting of the Asian Development Bank

May 14–15, Warsaw, Poland

Annual Meeting of the European Bank for Reconstruction and Development

May 16–17, Geneva, Switzerland

Africa Health Forum

May 29–30, Maputo, Mozambique

Africa Rising Conference

June 4–5, Sochi, Russia

Group of Eight Summit

New “school tool”

The World Bank Group has launched a new open data tool that provides in-depth, comparative, and easily accessible data on education policies around the world.

The Systems Approach for Better Education Results (SABER) Web tool helps countries collect and analyze information on their education policies, benchmark themselves against other countries, and prioritize areas for reform, with the goal of ensuring that all young people go to school and learn.

“Education is one of the most important drivers for ending extreme poverty and boosting shared prosperity. But guaranteeing a basic education means little unless schooling leads to learning for all children and youth,” said Elizabeth King, Acting Vice President for Human Development and Director of Education at the World Bank.

Despite significant progress in recent decades in getting children into school, learning levels remain alarmingly poor. In low-income countries, many young people complete



Schoolgirls in Cotonou, Benin.

basic education without acquiring fundamental literacy and numeracy skills. Even in middle-income countries, many students do not learn the basic skills expected by employers and needed to secure a job. Today, an estimated 250 million children around the world are unable to read and write, even after spending three or more years in school.

The World Bank, through SABER, has analyzed more than 100 countries to date. It plans to use the data to help countries link policy implementation to enhanced student performance and ensure that education programs have their intended outcomes.

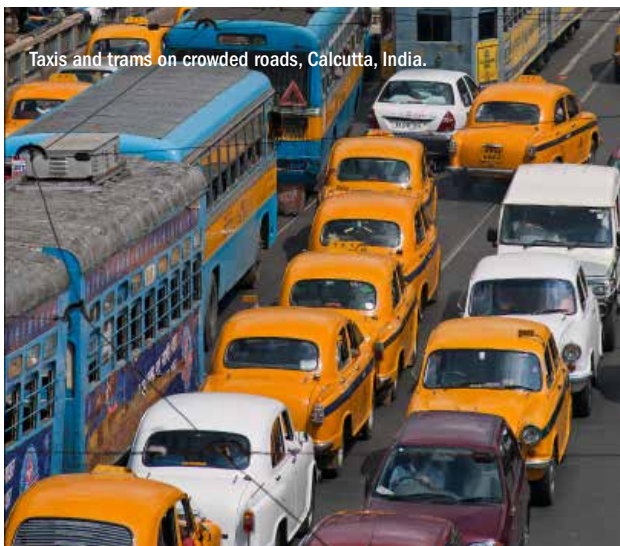
Smart transport

Improved urban transportation strategies can bring a myriad of benefits to India, from reduced carbon emissions to a more mobile and inclusive society, a new report says.

According to *Toolkits for Urban Development: Comprehensive Mobility Plans*, the goal of mobility strategies—which include more efficient vehicular traffic, enhanced public transit systems, and nonmotorized transportation—should be safe, secure, and efficient connectivity that enhances economic, social, and environmental sustainability.

Since 2008, developments in India’s policy landscape have a heightened focus on climate change. Given that growth over the past two decades has widened the chasm between the rich and poor, there is also an emerging focus on inclusive development.

The report recommends that cities develop strong, clear, and practical mobility plans. Issued by India’s Ministry of Urban Development together with the Institute of Urban Transport, UNEP, and others, the report builds on a similar study issued in 2008.



Taxis and trams on crowded roads, Calcutta, India.

Africa’s youth need skills boost

Raising earning potential among Africa’s growing youth population is a major priority for the region that will require strong action on multiple fronts, according to a new World Bank report, *Youth Employment in Sub-Saharan Africa*.

With youth now making up the largest share of the population in most African countries, it is more urgent than ever to pave the way for more productive job opportunities, the report notes. This is true regardless of the type of work that young people will do—in the fast-growing modern wage sector, in household enterprises, or on millions of small family-run farms.

“All young people need to have acquired basic literacy and numeracy, without which their earning potential remains low,” said Deon Filmer, one of the authors of the report and lead economist in the World Bank’s Development Research Group and Africa Region. “They also need to be able to access land, financing, and training, all of which play an important role in improving their prospects.”

Government policies must help build human capital and improve the business environment, so that the private sector can seize opportunities that arise from inevitable changes in the competitiveness of other regions. The report emphasizes that productivity must increase in agriculture, household enterprises, and the modern wage sector so that all young people can see better prospects ahead.

With the right combination of policies in place, Africa’s position as the “youngest” region in the world—in most other regions populations are rapidly aging—could lead to greater prosperity at the household level and major economic gains for African countries.

Jeremy Clift profiles
Lucrezia Reichlin,
a pioneer in real-time
short-term forecasting



The QUEEN of Numbers

EURO area growth may be on the mend, but the risks are far from over and the region is still in for a bumpy ride, reckons Lucrezia Reichlin, a professor at the London Business School who was the first female head of research at the European Central Bank (ECB).

“I think we’re not out of the crisis, and it’s going to take a while before we find the way,” says Reichlin, an expert in business cycle analysis. “We have a technical recovery in terms of GDP showing positive growth, but it doesn’t mean the risks to Europe are over,” she says in her cramped office overlooking London’s Regent’s Park.

She is a pioneer in real-time short-term economic forecasting that harnesses large amounts of data, and her expertise intersects the commercial and academic worlds. Chair of the Economics department at the London

Business School, she is also a non-executive director of UniCredit—an Italian commercial bank active in central and eastern Europe—a former director of research at the ECB under then-President Jean-Claude Trichet, and a former consultant to the U.S. Federal Reserve.

Ringside seat

“Sitting on the board of a commercial bank gives you a ringside perspective of Europe’s banking problems,” says Reichlin, who lives in north London with her daughter but visits Italy regularly.

She sees a banking union and implementation of a planned process for reorganizing or winding up failed banks as crucial next steps for a more stable euro area. The outcome of European Parliament elections in May 2014 could be critical to progress in the EU’s underlying financial architecture.

A banking union will introduce common rules and protections within the 18-member euro area by establishing an overall supervisory mechanism under the ECB, a single resolution mechanism for bailing out or winding up troubled banks, and a common deposit guarantee system (see “Tectonic Shifts,” in this issue of *F&D*). The European Union has taken some steps in the right direction, but Reichlin says more needs to be done to build a stable common monetary policy for a financially integrated world.

An Italian native, she talks with enthusiasm and empathy about her country. She studied economics at the University of Modena, a city known as the world’s “super-car capital” because of its proximity to the headquarters of Ferrari, Maserati, Lamborghini, and Pagani. She left Italy to pursue a Ph.D. at New York University before moving to teach at the Université Libre of Brussels for 10 years, where she collaborated to develop econometric models for handling large data sets, pioneering research on *dynamic factor models* that is now popular worldwide in applied macroeconomics.

In 2002 she visited the Fed at the request of then-governor Ben Bernanke (who became chairman four years later) to evaluate adapting these techniques to develop a model for short-term forecasting at central banks. This model has been adopted by many institutions around the world and is the basis for her business, Now-Casting Economics Ltd., which she cofounded 10 years later. Now-Casting uses the model she developed with her former doctoral student Domenico Giannone to forecast leading economies’ current-quarter GDP growth in real time.

Radical roots

Reichlin’s story and that of her family are closely bound up with the story of Europe since World War II. Her Swiss great-great-grandparents moved to southern Italy from Switzerland in the 19th century; her mother’s family is of Jewish origin and comes from Trieste, which until World War I was part of the Austro-Hungarian Empire. Born and raised in Rome, Reichlin grew up in a household of radical thinkers and political activists.

Her mother, Luciana Castellina, a well-known Italian Communist intellectual who later became a member of the European Parliament, played tennis as a child with Fascist dictator Benito Mussolini’s daughter. Her father, Alfredo Reichlin, was in the Italian resistance during the war and joined the Communist Party in 1946, becoming one of its leaders and its shadow “economy minister.” Her brother, Pietro, also an economist, teaches at a university in Rome.

“At home, all sorts of people came by: legendary Communist leaders such as Palmiro Togliatti; intellectuals who, like my parents, had opted for political activism; militants from all walks of life; and ‘fellow travelers’ from other countries,” says Reichlin, who as a little girl handed out political leaflets with her mother.

Reichlin is very aware of how history has treated the different generations. She contrasts her own adolescence with her mother’s in her personal introduction to Castellina’s coming-of-age memoir, to be published in English by Verso Books under the title *Discovery of the World: A Political Awakening in the Shadow of Mussolini*, which spans the turbulent years 1943 to 1947.

“We are the children of the ‘baby boom,’” she writes, “of the opulent society, of mass education, of the legalization of divorce and abortion, of new opportunities available to women, but we have also experienced disappointment.” Her mother, who

“We used to call her the Princess, but only when she wasn’t there!”

helped found the Communist newspaper *Il Manifesto* in 1969, was expelled from the Italian Communist Party because of her criticism of the Soviet invasion of Czechoslovakia.

“I was definitely very much attracted by the left, though not by the Communist Party. But then things became really difficult in Italy in the late ’70s, and my life took a different direction.”

Reichlin left Italy at a time of protest and terrorism, after the kidnapping and murder by the Red Brigades in 1978 of former Italian center-left Prime Minister Aldo Moro. She says she felt stifled in Italy at the time and needed to get away.

She feels the economic crisis has spawned an alienated generation in Europe, where youth unemployment is very high (over 50 percent in Spain, for example). Reichlin is not just skeptical about further European economic integration, but says the crisis has been damaging politically because of the rise of divisive political parties and a disaffected generation of unemployed youth.

Today, the danger is not a renewed rise of fascism, but of political instability and growing distrust of the political process, she says. “People don’t ask their politicians anymore; they don’t trust the democratic process. There is a void in democracy because there are a lot of people who are outside the process.

“People feel very alienated.”

Harnessing big data

Unlike her parents, Reichlin took refuge in numbers rather than ideology. “I studied economics and econometrics because I wanted to have more specialized technical tools to discuss progress; it was probably a bit of a reaction to my parents, but also in Italy at the time we studied a lot of Marx and the new Cambridge school, and I got a bit fed up of that, so I decided to move to the United States and got interested in econometrics.”

Econometrics lies at the intersection of economics, mathematics, and statistics. It applies statistical and mathematical methods to test and quantify economic theories and the solutions to economic problems (see “What Is Econometrics?” in the December 2011 *F&D*). It is often subdivided into two major categories: theoretical and applied.

“I’ve been very much on the technical side of economics, and I’ve been interested in developing methods to handle big data sets. This was a challenging analytical problem, but I was especially interested in practical applications. It was Ben Bernanke who invited me at the Fed when he was on the Board to try to solve the practical question that the central

What is nowcasting?

Nowcasting is used in both economics and meteorology to describe current conditions and those in the immediate future. A contraction of “now” and “forecasting,” in economics the term refers to the use of real-time data to present an up-to-date and continuously updated picture of an economy.

Economists usually can only track economic data with a time lag. So they actually must forecast the present and even the immediate past. Nowcasters have developed a statistical model that can process large amounts of data without the need for informal judgment. The model exploits information from a large quantity of data series at different frequencies and with different publication lags (Giannone, Reichlin, and Small, 2008).

The idea is that signals of changes in GDP can be extracted from large and diverse information sources (such as unemployment figures, industrial orders, the trade balance) before GDP itself is published. In nowcasting these data are used to compute sequences of current-quarter GDP estimates in relation to the real-time flow of data releases.

Nowcasting methods based on social media content (from Twitter, for example) have been developed to esti-

mate things such as the “mood” of a population or the presence of a flu epidemic.

Reichlin cofounded a company called Now-Casting Economics Ltd. to take advantage of these techniques.

“Everything gets fed into the machine—for example, an employment report. So when the government report actually comes out, there will be an error, which is the difference between the publication of the numbers and what we have anticipated. This variation will have an effect on our nowcast for GDP or anything else. So everything is connected through news. When I was at the European Central Bank, we were providing a briefing to the president, and the president would say, ‘Okay, today’s actual production has been revised up, but what does it mean?’ And this machine answers that question so that for everything that we have published we can say what it means for everything else.

“It’s a comprehensive framework to read the data, and the challenge is to say, ‘Can the machine replace human judgment?’ And what our evaluation shows is that on average it does as well as human judgment.”

bank has faced: every day you are bombarded by lots of data, and you have to actively analyze the flow of data that comes in every day and put it through a model.”

In Europe, at the *Centre for Economic Policy Research* in London and in collaboration with the Bank of Italy, she developed an index of European economic activity, called *EuroCOIN*, that is still published regularly to depict the aggregate euro area economy. Developed in the early years of the euro, it was the first index of aggregate economic activity for the currency area.

Reichlin founded the *Euro Area Business Cycle Network*, which helped link researchers at central banks and academics, and was the first chair of the Business Cycle Dating Committee for the euro area. The Committee chronicles the euro area business cycle by identifying the 11 original euro area members’ recessions and expansions from 1970 to 1998 and those of the euro area as a whole since 1999.

“This work put me closer to the central banking world, which led to the job at the ECB and my interest in monetary policy,” she says. She worked there for four years before joining the London Business School in 2008.

Reichlin has actively promoted economic research about Europe. While working in Brussels she helped establish and became head of a top doctoral school at the European Center for Advanced Research in Economics and Statistics.

Integrating research and policy

Giannone, who collaborated with her on both the Now-Casting short-term forecasting model (see box) and her work on nonstandard monetary policy for the euro area, says her main legacy at the ECB was an effort to bring “research closer to policy.”

“More specifically, she had an important impact on the debate about the role of money in the monetary policy of the ECB,” he says (Fischer and others, 2007; and Lenza, Pill, and Reichlin, 2010). She also improved the Bank’s forecasting at a time of crisis.

Frank Smets, who took over Reichlin’s old job at the ECB and is now counselor to the ECB president, says that her tenure there led to greater emphasis on empirics, following the (adapted) saying that “a stylized fact or picture is worth a thousand words.”

She supported the “enhanced use of cutting-edge research in policy debates,” argues ECB economist Michele Lenza, who points to her work on dynamic factor models for harnessing big data sets with multiple variables as probably her most enduring contribution to economics (Forni and others, 2000 and 2009).

Together with Giannone, her former professor at Modena, Marco Lippi, Mario Forni, and Marc Hallin, they were part of a team in the 1990s and early 2000s working on developing dynamic factor models that are used in policy analysis and forecasting. Similar ideas were at the same time being developed in the United States by James Stock and Mark Watson. Reichlin and Watson presented this work at the World Congress of the Econometric Society in 2000.

Lippi says that Reichlin brings to a research team “a tremendous sense of energy and purpose,” a drive to connect the theoretical and real worlds. “When the data model did not work, Reichlin would try to bring things back to reality with some blunt language.”

Being Italian, Lippi goes for a metaphor from the motor racing world. “Sometimes the more technically oriented among us felt the same way as, I imagine, the technical people in the Sebastian Vettel world champion racing team after a bad day.”

“We used to call her the Princess,” says Lippi, in reference to her somewhat imperious nature, “but only when she wasn’t there!”

Good progress

She is pleased about the progress women have made in her field. “This is a very exciting moment for women in economics,” says Reichlin with a smile.

“Often I’ve gone to meetings in the past and there were no other women. But now things are changing—Janet Yellen at the U.S. Federal Reserve; Christine Lagarde at the IMF; the new governor of the Bank of Russia, Elvira Nabiullina; the governor of the Central Bank of South Africa, Gill Marcus; and of course Zeti Akhtar Aziz in Malaysia, who has been there since 2000.

“And it could be cumulative because once you have a little bit of a base, then you have broken the cultural barrier, and also hopefully women will help each other in terms of the rules of the game, the networking, and being less shy in proposing oneself for an important job. But we are not there yet, and in my country, for example, I see a lot of attitudes still against women.”

Europe

Reichlin, who is writing a book about the ECB’s performance during the economic crisis, gives it high marks for its handling of the crisis, despite the absence of fiscal integration and the lack of a common European banking supervisory or resolution mechanism.

“It has done an amazing job in my view. In the middle of the storm, the ECB managed basically to save the financial system from meltdown. It was quite impressive how in 2008 the ECB was able to put together a package of liquidity provision measures, which were fundamental for avoiding a completely full-blown banking crisis.

“Of course, the fact that the architecture was incomplete and that the banks were not adequately capitalized and that sovereign tensions continued after the 2009 recovery implies that the central bank found itself in a situation that was inherently unstable and much more unstable than in either the United States or United Kingdom, or even Japan.

“And in that situation I think mistakes were made, but in order to give the final judgment you have to look at what it means to be a central bank without fiscal backing, without a lender-of-last-resort function, without the tools for dealing with resolution of the banking crisis. I think we’re getting there gradually, but I fear it will be a very bumpy ride.”

Why banking is key

Asked what remains to be done, she says that the top priority should be a banking union.

“It’s an extremely demanding project, where all of a sudden the responsibility of supervising the banks is foisted on the ECB, and it’s a huge effort for the organization. Where things are not clear is what will be the mechanism—what will be the resolution mechanism in case of banking variables or shortfalls of capital and so on.

“In Europe the banks are much bigger than the sovereigns because, with financial integration, one of the results of the central market was to create banks which are cross border. It’s a different situation than in the United States, where banks are smaller than their sovereigns.

“So if one of these [European] banks has problems, then we have to go beyond the nation to resolve the problems. And this is a very complicated thing to put together because it has fiscal implications and we do not have the fiscal tools. So we are really testing the program of having a central bank that is a private regulator but lacks a fiscal mechanism. So this is complex.

“Now we have a common supervisory mechanism, but there are still some questions of how this will function. And I am not particularly optimistic at the current juncture. Unless progress is made at the [May] elections, it will be difficult to continue the European common monetary policy project,” argues Reichlin, who writes regularly for the Italian newspaper *Il Corriere Della Sera*.

Looming problems

Asked about further crises, she points to the shadow banking system—nonbank financial institutions that function like banks, but are not regulated—as an area of potential concern.

“Risks are popping out in the financial system here and there, and we have to be aware that those risks will always be there in one form or another. So we have to keep our eyes open.”

High public debt must be reduced, but—where possible—gradually, she argues, and in a way that minimizes the negative short-term impact on growth. “I’m not a big believer in austerity.”

The European crisis is a debt crisis, she says. One of the lasting effects will be permanently lower GDP growth. “That would mean that we could maybe grow, but at a very low growth rate.”

Whatever the rate, she’ll be tracking it—in real time. ■

Jeremy Clift is the Publisher of the IMF.

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Europe's Road to **INTEGRATION**

Reza Moghadam

History points to integration to overcome a tough crisis

ALARMING headlines about Europe have been inescapable in recent years even if the latest outlook is somewhat better. Markets and the media have questioned Europe's ability to deal with a severe financial shock and an economic downturn, even raising concern about the viability of the euro.

As bad as the crisis has been—and it has been extremely damaging, not least for the many people out of work—that should not obscure Europe's achievement of a closely integrated region with some of the world's highest standards of living. That this has been accomplished after two devastating world wars and the division of the continent between east and west for much of the 20th century is all the more remarkable.

Europe has experienced some crucial pushes toward integration in the past 25 years—the fall of the Berlin Wall in 1989, the wave of central European countries that

joined the European Union in 2004, and the launch of the euro in 1999. The current crisis presents an opportune time to consider Europe's path to integration so far and what lies ahead.

While Europe is much larger and more populous than the European Union alone, the Union has been at the heart of European integration, binding countries once in conflict and offering benefits well beyond its borders—as a key trading and investment partner across Europe and as a powerful catalyst for fundamental economic and governance reforms by many entrants and aspirants.

The past few years have been rocky, and there will surely be further bumps ahead. The crisis exposed weaknesses in the regional architecture and national policies, while eroding political support for closer ties. But integration has yielded substantial benefits for Europe so far, and continues to point the way forward.



Complex origins

More than six decades ago, six countries in western Europe (Belgium, France, West Germany, Italy, Luxembourg, and the Netherlands) decided to take economic cooperation a step further. The vision of the EU founding fathers, epitomized by the Schuman Declaration in 1950, was to tie their economies—including the reemerging West German economy—so closely together that war would become impossible.

Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a de facto solidarity.

—Robert Schuman

The history of the European Union has been one of big and small steps toward ever-closer integration. Early on, leaders decided to integrate their key industries of the war and post-war years: coal and steel production. Tariffs were reduced, subsidies slashed, and national cartels dismantled. But unlike other forms of emerging postwar economic cooperation, the integration of Europe was defined by the creation of supranational institutions. Over the years these institutions have evolved into the executive, legislative, and judicial branches of the European project. The durability and continuous strengthening of these institutions is a demonstration of the power and the success of the project. A key milestone was the first direct European vote in 1979 when the European Parliament became the legislative power.

Geographically, the European Union also went through various stages of enlargement. In 1973, Denmark, Ireland, and the United Kingdom joined what was then the European Community. The 1970s saw deep social and political transformations in Greece, Portugal, and Spain, where military regimes and dictatorships were overthrown. Inspired by the prosperity and stability of the European Community, these countries joined the European project a mere decade later, strengthening their emerging democracies. The countries benefited enormously from free trade and common policies, in particular structural funds that were set up to foster convergence by funding infrastructure and productive investments in poorer regions.

Transition from communism

The most significant episode in Europe's postwar political and economic integration was the collapse of the centrally planned economic systems at the end of the 1980s. The fall of the Berlin Wall stands as the defining moment of a long and multifaceted process of liberalization. More than 20 countries emerged from communism to take their places in democratic Europe, presenting both the greatest opportunities and the greatest challenges in European integration since the war.

In all cases the initial challenge for the transition was stabilization. The collapse of traditional trade and investment links and dislocation of domestic demand contributed to large output collapses in the early years of transition, ranging from about 10 percent in Poland and Hungary to some 40 percent in countries such as Latvia and Lithuania. As prices were liberalized, they tended to skyrocket, partly as relative prices were set by supply

The history of the European Union has been one of big and small steps toward ever-closer integration.

and demand rather than central planning, but with especially steep increases where state revenues dried up and governments had few sources of finance other than turning to central banks to print money. Currencies across the region devalued rapidly and banking crises were widespread. In some cases, where there was adequate political and institutional support for fiscal and monetary discipline, stabilization was achieved within a couple of years; others faced longer or multiple attempts to establish low inflation and sustainable public finances.

Following stabilization, the focus turned to institution building to improve the functioning of the economies, drawing on best practices from western Europe and the rest of the world. Countries faced huge challenges in privatization, public sector reform, and establishment of an environment conducive to reform. The creation of credible monetary and exchange rate frameworks—whether involving floating or different types of fixed-rate arrangements—in almost all countries was key to the success of transition. Integration has been particu-

A brief history of European integration



1945
WWII ends; nationalism falls out of favor



1949
Council of Europe created



1951
Treaty of Paris creates European Coal and Steel Community



1957
Creation of European Economic Community



1960
European Free Trade Association established

Box 1

Integration of East and West: Supply chains

The emergence of a German–central European supply chain is a good example of successful economic integration following the collapse of the Berlin Wall.

Since the 1990s the Czech Republic, Hungary, Poland, and the Slovak Republic have emerged as major manufacturing satellites—particularly in the automobile industry—of a production system with Germany at its hub. The evolution of this export-oriented system was spurred by large labor cost differentials, geographic proximity, and historical and cultural affinities and supported by large flows of foreign direct investment from Germany.

The supply chain benefits Germany by allowing it to produce and export goods in which it may not be competitive were it restricted to manufacturing within its national borders (see “Adding Value” in the December 2013 *F&D*). In economic jargon, its production possibility frontier has expanded. Meanwhile the emerging economies in the supply chain have received significant technology transfers, enabling particularly rapid income convergence. Economic theory predicts that, all else equal, poorer countries should grow faster than richer countries, but the central European countries belonging to the supply chain have been able to expand output at an even faster clip than can be accounted for by income differentials. Moreover, rapid export growth in these countries has been tilted in favor of knowledge-intensive sectors. So the supply chain is driving greater demand for skilled labor and creating opportunities for countries to move up the value chain over time.

larly evident in the financial sector, with western European banks dominating in most of the transition countries. This has brought critical benefits in terms of know-how and financing. At the same time, the unfettered flow of capital into the region during the heady years of the early to mid-2000s stoked bubbles that burst in the ensuing global financial crisis.

Integration has contributed to strong convergence of incomes. Average GDP per capita across emerging Europe relative to advanced economies in Europe rose by about 50 percent between 1995 and 2013, despite the recent crisis. Sizable trade and investment links with western Europe were key to the growth and convergence progress that brought

emerging Europe’s income levels to just under half of those in their advanced economy neighbors.

The European Union has been an increasingly important focus for the transition. In the 1990s, external assistance came mainly from other countries and international institutions such as the IMF, the World Bank, and the new European Bank for Reconstruction and Development. But as accession—the process by which countries join the European Union—gained steam, the European Union has played a critical role in developing institutions, guiding economic policy, and financing infrastructure. This process culminated in EU accession for 11 countries (4 of them already euro area members), and candidate status for an additional 3. This achievement was inconceivable 25 years ago and has brought tremendous benefits both to the transition countries and to the existing EU members (see Box 1), through increased trade, capital, and labor flows.

Maastricht and the euro

Meanwhile, Europe’s core countries continued to grow closer. Early on, exchange rate variability between member states was reduced through the European Exchange Rate Mechanism (ERM), which allowed currencies to fluctuate around parities within predefined bands. In 1990, exchange controls within the European Economic Community were abolished, allowing for the free flow of capital. Although there were crises under the ERM—for example, the United Kingdom was forced out in 1992 when the value of the pound sterling fell below ERM limits—realignments became less frequent over time as monetary policies and inflation rates converged.

The idea of a common currency slowly gained traction, but it was not until the Maastricht Treaty of 1992 that the Economic and Monetary Union, and with it a common currency and monetary policy, truly began to take shape. While creation of a single currency was rooted in Europe’s integration and facilitating economic transactions within the union, it also helped place the unified Germany that emerged at the end of the Cold War solidly within a common European institutional framework.

The Maastricht Treaty established convergence criteria designed to ensure that countries joining the new common currency would be sufficiently similar to be well served by a single monetary policy. It also gave market forces a significant role in disciplining member states, by establishing the “no bail-



1973

Denmark, Ireland, and United Kingdom join European Community



1979

First elections in European Parliament



1989

Fall of Berlin Wall



1993

European Union established



1999

Launch of the euro

out” clause. To dispel skepticism and preserve fiscal discipline after the common currency was introduced, member countries signed the Stability and Growth Pact in 1997, which was designed to tie policies to fiscal balance and debt targets.

In sum, the euro’s architecture was built on the premise that market forces, combined with minimal coordination of policies, would suffice to align economies, discipline fiscal policies, and allow countries to withstand idiosyncratic shocks.

Global crisis becomes European debt crisis

The global financial crisis after the collapse of Lehman Brothers in September 2008 triggered the euro area’s sovereign debt crisis. The crisis exposed severe imbalances in the euro area and weaknesses in the European architecture.

Following the introduction of the euro in 1999, many countries—among them Greece, Ireland, Italy, Portugal, and Spain—experienced a dramatic decline in borrowing costs, for both the private and public sectors. In many cases, cheap credit—often fed by capital from banks in the euro area’s core—fueled a credit boom that led to high growth rates, which in turn attracted more capital and investment. But it also increased the indebtedness of households and firms, and investment was concentrated in the nontradables sector (for example, real estate), while high wages eroded external competitiveness. Current account balances deteriorated sharply, and countries accumulated large foreign debt. Misled by the belief that the increase in income was permanent, governments expanded.

Converging interest rates masked an absence of underlying structural convergence. Cross-border financial flows—stimulated by the absence of cross-border transaction costs and financial regulation—facilitated increasing disparities in competitiveness. But when the credit cycle turned, a sudden stop in private capital flows left a number of euro area countries on the brink, their banks laden with bad debt from overinvestment and with large exposures to weakening sovereign debt. Not only had markets not recognized emerging risks, the Stability and Growth Pact had been weakened—a number of members, including some core countries, exceeded its limits, undermining its credibility, and failed to instill sufficient fiscal discipline.

The highly integrated European financial system lacked circuit breakers and common supervision at the onset of the euro area crisis, and was thus highly susceptible to contagion. Country-

specific economic and financial shocks spread quickly throughout the region, threatening the viability of the currency union.

Crisis response

National governments began implementing challenging macroeconomic adjustment programs, with the overarching goals of reducing fiscal deficits and improving the competitiveness of their economies—unwinding the imbalances that had grown in previous years and laying the basis for more sustainable long-term growth. European policymakers realized that the European Union had yet to develop the institutional and financial capacity to support crisis economies, prompting

Country-specific economic and financial shocks spread quickly throughout the region.

cooperation with the IMF (see Box 2). The European Union had to reconsider its “no bailout” principle, and it extended support to sovereigns priced out of the market.

A more forceful response would have been preferable to the numerous false starts and solutions that often seemed just enough to keep the currency area intact, yet insufficient for a decisive break. But much has still been achieved. A permanent financial support facility for euro area member states—the European Stability Mechanism—was set up. At the height of the crisis, the European Central Bank stepped up to defend the euro area’s integrity with large liquidity support for banks (longer-term refinancing operations) and by establishing a framework for so-called Outright Monetary Transactions.

Most critically, the crisis made clear the need for a pan-European approach to the banking system—the banking union—with efforts now under way (see “Tectonic Shifts” in this issue of *F&D*). The ultimate objective is to help reduce financial fragmentation and sever the negative feedback loops between banks and sovereigns. The European Union has also taken important steps to strengthen fiscal and economic governance, to detect—and ultimately avoid—a renewed emergence of excessive fiscal and external imbalances.

At critical moments, Europeans have answered with more integration and more solidarity.

The global financial crisis and its reverberations in the euro area also presented formidable challenges for emerging Europe. Financial markets froze and issuing sovereign international bonds became next to impossible. Capital flows retreated, even those channeled through subsidiaries of western banks. As western parent banks faced capital and liquidity shortages, fragilities of an interconnected system came to the fore and subsidiaries in these countries entered a period of deleveraging that has yet to end.

With plummeting exports and domestic demand, output in most countries declined sharply, generating a deeper recession in emerging Europe than in other emerging market regions. Only a few countries escaped—either because their precrisis boom was more contained, leaving room for countercyclical



2004

Wave of countries joins the European Union

The IMF and Europe

This remarkable journey of European integration has had the IMF as a partner all along.

Surprising as it may sound now, many of the earlier IMF program engagements were with the currently “advanced” European economies. The list of early IMF arrangements features countries such as Belgium, France, Italy, the Netherlands, Portugal, Spain, and the United Kingdom. Italy and the United Kingdom were the last G7 economies to have IMF-supported programs, as late as 1977.

IMF involvement in the region escalated with the historic transformation in eastern Europe. The fall of the Berlin Wall opened the floodgates. The challenges of economic stabilization—combating output collapses and in some cases hyperinflation as well as establishing new institutions—underpinned IMF programs in many transition economies, with momentous structural reforms helping countries move from communist to market-based frameworks.

The next wave of programs came at the onset of the global financial crisis. The lull of the late 2000s was interrupted by devastating effects on emerging Europe from disruptions in advanced economies. Ukraine, Hungary, and Iceland were the first, each putting IMF-supported programs in place in November 2008. Others followed suit, and with the crisis spreading to euro area countries as well, Greece, Ireland, and Portugal requested programs in 2010 and early 2011.

This latest round typifies the changes in IMF engagement with countries. For instance, Poland, with its very sound economic fundamentals, benefited from a new insurance-like credit line. But most other countries, commensurate with their higher needs, also benefited from greatly increased loan amounts, as well as efforts to focus conditionality on key macroeconomic priorities.

policies, or because their trade and financial interconnectedness was limited.

Countries adopted a range of policies to respond to the crisis, which shocked their economies beyond the most pessimistic expectations. The initial goal was to stabilize the financial sector: countries relaxed reserve requirements, increased deposit coverage, and, in some cases, intervened directly in individual distressed financial institutions.

With large stocks of private debt, mostly denominated in foreign currency, there were few monetary and exchange rate options. Nor was fiscal expansion an option for most in the region as recession took its toll on government finances. Not surprisingly, a number of countries turned to financial assistance from the IMF. IMF lending, often front-loaded and supporting economic programs designed in conjunction with country authorities and European institutions, has provided support to help smooth the needed policy adjustment in 13 countries in the region since the onset of the crisis.

The journey continues

The nascent economic recovery in the euro area risks creating complacency—a wrong-headed belief that the crisis is over and integration efforts can be relaxed.

Far-reaching decisions have been made, but the economic integration of the euro area remains incomplete. Financial markets are fragmented (low European Central Bank interest rates are not spreading throughout the euro area, and firms in countries under pressure often face high borrowing rates), competitiveness gaps remain large, structural rigidities hinder labor and product market integration, and fiscal and other policy coordination have a long way to go.

The task is not just to overcome the crisis and repair the damage, however daunting that may be with output and investment still below precrisis levels and unemployment still unacceptably high in most euro area countries. The even greater challenge is to build a more robust euro area that is able to withstand future shocks and where country-specific shocks cannot easily become systemic.

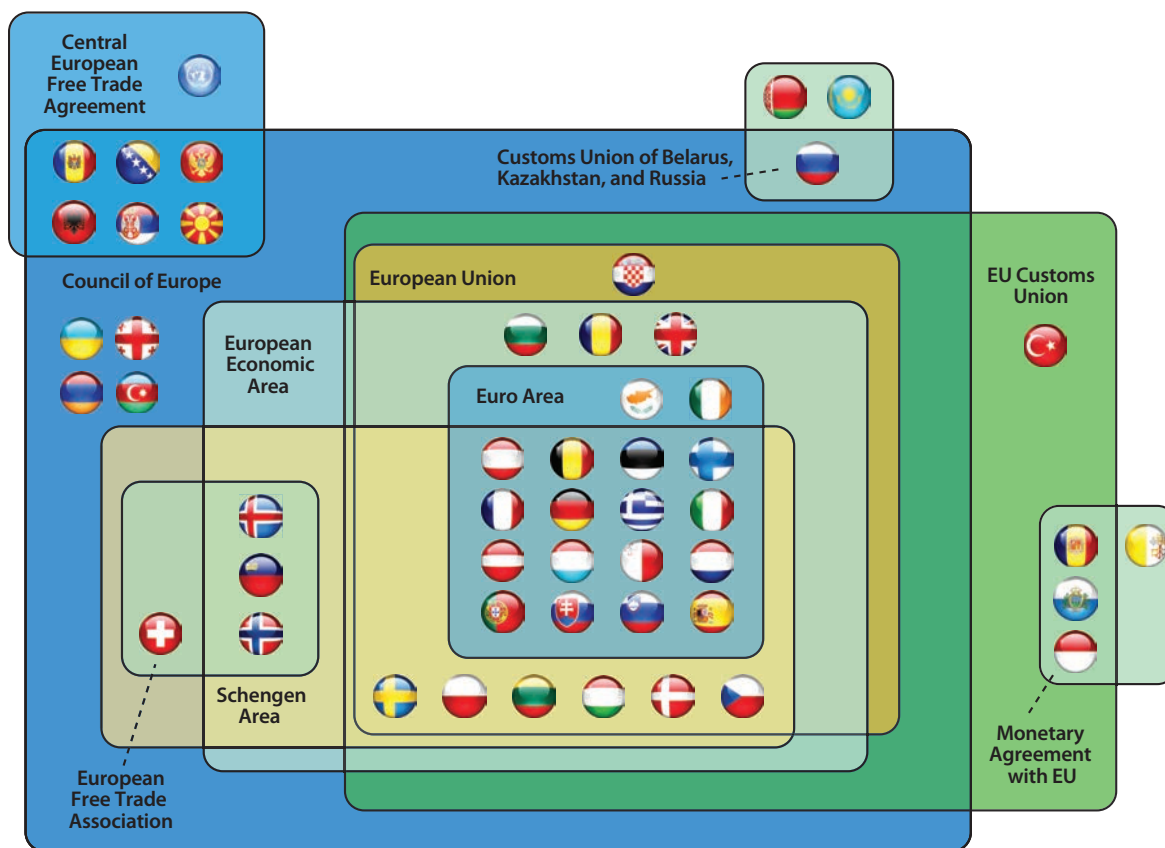
Solving the crisis calls for a reassessment of the economic and financial architecture underpinning the euro area. The common approach to the area’s banks—as embodied in the vision of a strong banking union—rightly suggests the need for more integration, stronger institutions at the center, and more emphasis on understanding spillovers.

The crisis and its response also mark a departure from some principles in the Maastricht Treaty, including the “no bailout” clause, and have led to a new understanding of national sovereignty in the context of common policies. Designing a union that builds on these new realities will be challenging. Among the most difficult decisions will be finding a political consensus that strikes the right balance between national sovereignty and the role of a strengthened center and policies that serve the greater good. A political framework will be needed to support the necessary economic integration.

Strengthening the monetary union is critical to reviving cross-border capital flows and restoring the effectiveness of monetary policy across the euro area. The banking union is a key part of this process, and the establishment of a Single Supervisory Mechanism is an important step toward a common approach to a healthy banking system. The ongoing Balance Sheet Assessment, which will provide a clear picture of where most banks stand, can help reduce uncertainty about the riskiness of banks. The recent agreement on a Single Resolution Mechanism and a Single Resolution Fund are additional steps toward a fuller union better equipped to deal with banks in trouble, though their complex structure and a cumbersome decision-making process could hamper effectiveness. In the future, an effective common financial backstop will be necessary to address links between sovereigns and banks seen during this crisis (indebted governments struggled to cover banking sector costs, which, coupled with banks holding government debt, undermined confidence in both sovereigns and banks).

Deeper fiscal integration in the euro area can correct weaknesses in the system’s architecture, make the area more resilient to future crises, and provide long-term credibility to crisis-response measures already adopted. Better oversight of national policies and enforcement of rules is under way and will help reinstate fiscal and market discipline. Stronger governance is also a prerequisite for greater sharing of fiscal risks

The complexities of European integration



Source: Wikipedia.

ahead of time; progress is still needed on this front, and is important to reduce the need for costly support after a crisis strikes. Minimal fiscal risk sharing—by increasing cross-country fiscal insurance mechanisms—is also a precondition to reinstate market discipline, adding credibility to no-bail-out arrangements.

Long-standing labor and product market rigidities continue to hamper relative price adjustment and competitiveness, especially in the countries that have been under pressure recently. There has been some progress—notably labor market reforms in Spain and Portugal—but much more must be done. A renewed push to improve productivity by implementing the EU Services Directive—which would facilitate cross-border provision of services similar to the current free movement of goods—will help. Providing support for credit to small and medium-sized enterprises and a new round of free trade agreements would also spur growth. Such efforts would lead to a more balanced and sustainable growth path, helping to reduce euro area imbalances.

In emerging Europe, most of the precrisis growth resulted from fast and furious capital inflows that fueled credit expansion, largely benefiting the nontradables sector. The region now faces a very different reality as western parent banks continue to reduce their exposure and the unwinding of ultraloose monetary policy in advanced economies threatens prospects for capital inflows. The region also faces

a smaller labor supply with the decline in the working-age population set to accelerate in coming years.

With a modest outlook for capital inflows and labor force participation, the region's growth opportunities depend on improving productivity through structural reforms. For some, this requires sustained pursuit of labor market reforms: greater flexibility in wage determination, reducing disparities between standard and temporary contracts, and complementary reforms in social benefits. For others, improving the business environment and completing privatization are important to attract foreign investment in the tradables sector and improve links with supply chains in Europe. And yet for others—which already have a competitive export sector and well-established links with regional supply chains—the challenge is to move up the value ladder by improving the skills of their workers.

While the recent crisis in Europe differs from previous challenges in its nature and calls for far-reaching actions, a look back reminds us of the momentous hurdles Europe has surmounted in the past, as well as the approach it has taken in those trying times: greater integration. If political will can once again be summoned, further integration coupled with steps to boost growth can create a more durable foundation for prosperity in the region. ■

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Unemployed youth protest austerity measures in Madrid, Spain.

Whither the **EURO?**

Kevin Hjortshøj O'Rourke

Historians may wonder how it came to be introduced in the first place

THE euro area economy is in a terrible mess.

In December 2013 euro area GDP was still 3 percent lower than in the first quarter of 2008, in stark contrast with the United States, where GDP was 6 percent higher. GDP was 8 percent below its precrisis level in Ireland, 9 percent below in Italy, and 12 percent below in Greece. Euro area unemployment exceeds 12 percent—and is about 16 percent in Portugal, 17 percent in Cyprus, and 27 percent in Spain and Greece.

Europeans are so used to these numbers that they no longer find them shocking, which is profoundly disturbing. These are not minor details, blemishing an otherwise impeccable record, but evidence of a dismal policy failure.

The euro is a bad idea, which was pointed out two decades ago when the currency was being devised. The currency area is too large and diverse—and given the need for periodic real exchange rate adjustments, the anti-inflation mandate of the European Central Bank (ECB) is too restrictive. Labor mobility between member countries is too limited to make migration from bust to boom regions a viable adjustment option. And there are virtually no fiscal mechanisms to transfer resources across regions in the event of shocks that hit parts of the currency area harder than others.

Problems foretold

All these difficulties were properly pinpointed by traditional optimal currency area



theory. By 1998 Ireland was experiencing an unprecedented boom, and house prices were rising rapidly. Higher interest rates were warranted, but when Ireland joined the currency union in January 1999 the central bank discount rate was lowered from 6.75 percent in the middle of 1998 to just 3.5 percent a year later. With the Irish party well under way the new ECB was busily adding liquor to the punch bowl.

Similar stories were repeated around the euro area periphery, where capital inflows pushed up wages and prices. But what goes up does not come down so easily when there is no independent currency. Labor mobility within the euro area remains limited: young Irish workers emigrate to Australia or Canada, the Portuguese to Angola or Brazil. And with no federal budget to smooth asymmetric shocks, procyclical austerity, which exacerbates rather than ameliorates recessions, has been the policy weapon of choice during this crisis—whether imposed by the markets or by euro area politicians and central bankers. Mass unemployment in the periphery is exactly what theory would predict in such circumstances.

Indeed, since 2008 we have learned that traditional optimal currency area theory was too sanguine about European monetary union. In common with much mainstream macroeconomics, it ignored the role of financial intermediaries such as banks, which link savers and borrowers. Many of the

euro area's most intractable problems stem from the flow of capital from the core to the periphery via interbank lending. When that capital stopped flowing, or was withdrawn, the resultant bank crises strained the finances of periphery governments. That further worsened bank balance sheets and credit creation, leading in turn to worsening economic conditions and rising government deficits—a sovereign bank doom loop that kept replaying.

Political ramifications

Bank crises have had poisonous political ramifications, given their cross-border impact. Panic-driven decision making has been ad hoc and inconsistent—contrast the treatment

Small, vulnerable countries have had a painful lesson in European realpolitik.

of bank creditors in Ireland in 2010, who were largely made whole, with those in Cyprus in 2013, where they took a big hit. This will have long-term political consequences. Despite the understandable desire of European bureaucrats to regard such matters as water under the bridge, hypocrisy and bullying remain unpopular with ordinary voters. Small, vulnerable countries have had a painful lesson in European realpolitik that they will not soon forget.

Where do we go from here? Since 2010 the focus of most economists has been on how to make the currency union work better. Even those who were skeptical about the European Economic and Monetary Union (EMU) worried sufficiently about the consequences of a breakup to shy away from advocating a country's exit. The result has been a series of suggestions regarding how to prevent a collapse of the euro in the short to medium run, and how to improve its functioning in the longer run.

In the short run, what is needed is looser monetary policy and, where possible, accommodative fiscal policy as well. If economic historians learned anything from the Great Depression, it is that adjustment based on austerity and internal devaluation (as deflation in individual euro area members is termed nowadays) is dangerous. First, nominal wages are sticky downward, which implies that deflation, if achieved at all, leads to higher real wages and more unemployment. Second, deflation increases the real value of private and public debt, raises real interest rates, and leads consumers and businesses to postpone expensive purchases in anticipation of lower prices to come. Britain ran large primary surpluses throughout the 1920s, but its debt-to-GDP ratio rose substantially thanks to the deflationary, low-growth environment of the time.

Third, fiscal multipliers are large when interest rates are near zero, so spending reductions result in hefty declines in national income. The IMF has found that in the current crisis fiscal multipliers are closer to 2 than they are to 1—as was true between the world wars. The inescapable conclusion is

that the ECB must act aggressively, not just to prevent deflation, but to set an inflation target above 2 percent for a transitional period to facilitate real exchange rate adjustment and promote the solvency of its member states. More investment spending by countries with sufficient fiscal capacity, or by the European Investment Bank, would help as well.

For the longer run, there is widespread consensus—outside of Germany—that the euro area needs a banking union that promotes financial stability and that replaces ad

The longer this crisis continues, the greater the anti-European political backlash will be.

hoc crisis decision making with a more rule-based and politically legitimate process (see “Tectonic Shifts” in this issue of *F&D*). This process should include common supervision for the euro area, a single resolution framework for failing banks with a euro area-wide fiscal backstop, and a common deposit insurance framework. The Euro-nomics group, made up of noted European economists, has proposed a “safe” euro area asset that national banks could hold. This would help break the sovereign bank doom loop described earlier and make it easier for national governments to restructure their debt when necessary (by reducing collateral damage to their country’s banking system). The example of the United States suggests that an element of fiscal union, beyond what is required for a meaningful banking union, would be an important stabilizing mechanism. A euro area-wide unemployment insurance system would be one small step in this direction.

Less Europe

These are all arguments for “more Europe” rather than less. I and many others have made such arguments over the past five years. But as time goes on, it becomes more difficult to do so with conviction.

First, *crisis management since 2010 has been shockingly poor, which raises the question of whether it is sensible for any country, especially a small one, to place itself at the mercy of decision makers in Brussels, Frankfurt, or Berlin*. It is not just a question of hard-money ideology on the part of key players, although that is destructive enough. It is a question of outright incompetence. The botched “rescue” of Cyprus was for many observers a watershed moment in this regard, though the ECB interest rate hikes of 2011 also deserve a dishonorable mention.

There are serious legal, political, and ethical questions that must be asked about how the ECB has behaved during this crisis—for example, the 2010 threat that if Dublin did not repay private creditors of private banks, the ECB would effectively blow up the Irish banking system (or, if you prefer, force Ireland out of the euro area). A frequent argument is that the ECB cannot loosen monetary policy because it would take the pressure off governments to continue structural reforms that Frankfurt believes to be desirable. Aside from the fact

that there is less evidence of the desirability of these reforms than economists sometimes admit, deliberately keeping people involuntarily unemployed to advance a particular policy agenda is wrong. And it is not legitimate for an unelected central banker in Frankfurt to try to influence inherently political debates in countries like Italy or Spain, because the central banker is both unelected and in Frankfurt.

Second, *it is becoming increasingly clear that a meaningful banking union, let alone a fiscal union or a safe euro area asset, is not coming anytime soon*. For years economists have argued that Europe must make up its mind: move in a more federal direction, as seems required by the logic of a single currency, or move backward? It is now 2014: at what stage do we conclude that Europe has indeed made up its mind, and that a deeper union is off the table? The longer this crisis continues, the greater the anti-European political backlash will be, and understandably so: waiting will not help the federalists. We should give the new German government a few months to surprise us all, and when it doesn’t, draw the logical conclusion. With forward movement excluded, retreat from the EMU may become both inevitable and desirable.

Europe has lived through a golden age, largely as a result of European integration. This helped foster growth in the 1950s and 1960s and has given Europeans freedom to study, work, and retire abroad that is taken for granted. The EMU in its present form threatens the entire project. During the interwar period, voters flocked to political parties that promised to tame the market and make it serve the interests of ordinary people rather than the other way around. Where Democratic parties, such as Sweden’s Social Democrats, offered these policies, they reaped the electoral reward. Where Democrats allowed themselves to be constrained by golden fetters and an ideology of austerity, as in Germany, voters eventually abandoned them.

Divergent paths

Europe is now defined by the constraints it imposes on governments, not by the possibilities it affords them to improve the lives of their people. This is politically unsustainable. There are two solutions: jump forward to a federal political Europe, on whose stage left and right can compete on equal terms, or return to a European Union without a single currency and let individual countries decide for themselves. The latter option will require capital controls, default in several countries, measures to deal with the ensuing financial crisis, and agreement about how to deal with legacy debt and legacy contracts.

The demise of the euro would be a major crisis, no doubt about it. We shouldn’t wish for it. But if a crisis is inevitable then it is best to get on with it, while centrists and Europhiles are still in charge. Whichever way we jump, we have to do so democratically, and there is no sense in waiting forever. If the euro is eventually abandoned, my prediction is that historians 50 years from now will wonder how it ever came to be introduced in the first place. ■

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Tectonic Shifts

Nicolas Véron

Euro sculpture reflected in puddle in front of ECB headquarters, Frankfurt, Germany.

ON June 29, 2012, the leaders of euro area countries set in motion what is now universally known as European banking union, or the transfer of banking policy from the national to the European level. The first step, the empowerment of the European Central Bank as the new supervisor of most of Europe's banking system, has a fair prospect of meeting—by late 2014 or early 2015—its stated aim of addressing the long-standing fragility of Europe's banking system. But banking union will not stop there, and its structural implications will unfold well beyond the transition to centralized supervision.

Europe's banking problem

Banking union was initiated to resolve a pressing problem. The euro area crisis highlighted the damaging vicious cycle of either weak government balance sheets, which undermined banks' soundness, as in Greece, or banks' weaknesses, which damaged government credit, as in Ireland. This linkage became a threat to the entire euro area and

its financial system in mid-2011 and forced policy action in 2012. But the underlying problem of European banking system fragility long predates the outbreak of the euro area sovereign debt crisis in 2009–10.

This problem was generally denied throughout the first five years of the crisis. Many policymakers first claimed that banking weaknesses could be blamed on the U.S. subprime mortgage market, and then argued that fiscal mismanagement in countries such as Greece was to blame. This narrative was the conventional wisdom until 2012, especially in Germany and France, where policymakers used it to excuse homegrown sources of financial weakness.

However, the roots of Europe's banking problem went much deeper. The core of the problem was a misalignment of incentives of Europe's banking supervisors. EU countries and institutions, in the wake of monetary union in the 1990s, set themselves ambitious aims to remove cross-border barriers to entry in European finance. In reaction, national authorities tended to champion the protec-

Banking union is a long-term process that will dramatically reshape Europe's financial system

tion and promotion of their countries' banks to give them an advantage in an increasingly competitive environment, even when this entailed additional risk taking.

This form of "banking nationalism" effectively downgraded prudential concerns about risk accumulation. A striking example was officials' assent to the ill-fated takeover and breakup of the Dutch bank ABN AMRO in 2007, which contributed to the subsequent difficulties of other banks, including Fortis, Royal Bank of Scotland, and Banca Monte dei Paschi di Siena. More generally, banking nationalism goes a long way toward explaining the massive buildup of leverage and risk in many European banks' balance sheets in the decade preceding the global financial crisis.

The mismatch between the national scope of supervision and the European dimension of the financial system also explains the failure to address the fragile banking system from the outbreak of the crisis through 2012.

This failure was not for lack of adequate warnings, including from the IMF. Instead, it was a quintessential collective-action problem. Most countries were deeply reluctant to identify weak banks for fear of putting their banking sector at a disadvantage compared with those of neighboring countries, particularly in the euro area. The absence of a strong central authority resulted in paralysis or inadequate action. Successive Europe-wide bank stress tests in September 2009, July 2010, and July 2011 failed to restore confidence when their results quickly proved unreliable.

Watershed developments

Europe's unresolved banking problem then became a factor in the euro area's unfolding sovereign debt crisis.

The exposure of euro area banks, particularly in France and Germany, to Greek risk was a key reason why Greece's government debt was not swiftly restructured in early 2010. Later in the same year, similar factors led to Ireland's being barred from imposing losses on its failed banks' senior creditors, which compounded its fiscal deterioration. By mid-2011, contagion in the market for government bonds had reached two of the four largest euro area economies, Italy and Spain. In August 2011, even French banks were briefly denied normal market access to dollar-denominated liquidity.

An increasing array of investors and policymakers started to factor the possibility of a euro area breakup into their calculations, raising the possibility of a disastrous self-fulfilling prophecy. The pressure generated by this environment led to a number of major policy changes in key member states and in the European Union as a whole, all between mid-2011 and mid-2012.

In the United Kingdom, the flow of bad news from the euro area cemented the conviction that the country should isolate itself from the continent and not participate in additional institutional buildup. This shift was summarized by Chancellor of the Exchequer George Osborne's comment in July 2011 about the "remorseless logic" of political integration in the euro area, in which Britain would decline to take part. This marked a radical departure from decades of

British participation in EU initiatives, even while attempting to moderate them—most recently the formation in 2010 of the London-based European Banking Authority.

In France, the banks' funding difficulties in August 2011 undermined the self-confidence of the financial community and its belief in an independent national banking policy. This psychological turning point helps explain France's strong promotion of banking union in 2012, even though it was a

Most countries were deeply reluctant to identify weak banks for fear of putting their banking sector at a disadvantage.

key opponent of supranational banking supervision during earlier negotiation of EU treaties, including Maastricht in 1992 and Nice in 2001.

In Germany, the euro area turmoil compelled the European Central Bank to take unprecedented policy initiatives that broke the policy orthodoxy of the Bundesbank, and triggered the two institutions' parting of the ways. The European Central Bank had long been perceived as under a form of Bundesbank tutelage. However, after its crisis response led to the successive resignations of German central bankers Axel Weber and Jürgen Stark but was nevertheless endorsed by German Chancellor Angela Merkel despite Bundesbank dissent, it gained stature as an independent institution with a distinctive policy identity. This transformation arguably underpins the acceptance by all EU countries of the extension of its authority to banking supervision.

Throughout the European Union, the previous doctrine that banks should never be allowed to fail, an explicit pledge by European leaders in mid-October 2008, was abruptly reversed. Until early 2012, even junior creditors of failed banks were protected by government action from any losses in almost all EU member states, no matter how small the bank. But by then it was increasingly evident that the protection of all creditors threatened government balance sheets and was politically unsustainable. In early June 2012, the European Commission proposed EU legislation based on the principle that creditors should take losses before taxpayer-funded bailouts can be considered. Meanwhile, the Commission's competition policy arm started imposing losses on junior creditors as a necessary condition for state aid to banks, in Spain in 2012 and as a generally applicable rule in August 2013.

In light of these developments, the initiation of European banking union in late June 2012 did not happen in a vacuum. It is best described as the most visible of a series of tectonic shifts generated by the unresolved European banking problem and subsequent euro area deterioration. It was itself described as a condition for the European Central Bank's later announcement of its

Outright Monetary Transactions program to buy government bonds. Together, these shifts resulted in considerable reduction of the perceived risk of a euro area breakup since mid-2012.

Prospects for resolution in 2014

Even so, as of early 2014, Europe's banking problem is not resolved—but this could change in the months ahead. The EU legislation to establish an integrated bank supervisory framework, now in force, foresees the November 2014 handover to the European Central Bank of supervisory authority over most of the euro area's banking system. It mandates in the meantime a comprehensive assessment of these banks by the European Central Bank, a process started in 2013 that is widely referred to as Asset Quality Review. In addition to the balance sheet assessment, this process includes a supervisory risk assessment and EU-wide stress test coordinated by the European Banking Authority.

The Asset Quality Review was initially seen by many as a relatively minor technical requirement; it is mandated only in a subarticle of the legislation's final section on transitional arrangements. But its practical effect is to front-load a politically challenging process of bank triage, recapitalization, and restructuring. The experience of past banking crises suggests that this process is essential for successful crisis resolution. Its consequences may include the revelation of more past failures by national bank supervisors; shareholders, taxpayers, and creditors taking a hit; and an end to "pretend and extend" lending to dubious borrowers, which may in turn trigger extensive restructuring of nonfinancial companies. So the review has rapidly moved up the European policy agenda and is likely to generate headlines throughout 2014.

The review process is as ambitious and risky as it is unprecedented. The European Central Bank had little prior experience supervising banks, but has devoted considerable resources to this task. It is fully aware that its credibility is on the line, as a future supervisor and more generally as an authoritative institution. But while the assessment process is in the hands of the European Central Bank, its consequences will also involve governments that must restructure banks deemed weak by the review. Restructuring may be disruptive, financially and politically, for individual countries, especially since there will be no financial risk pooling at the European level, at least as long as market conditions do not deteriorate dramatically. At this early stage of the assessment process, it is too soon to say which banks and countries are most at risk.

This suggests that the interaction of governments, national authorities that have overseen banks until now, and the European Central Bank will become increasingly tense as the review gets closer to completion. National governments will be influenced by banking nationalism and by innumerable links that tie them to their respective banking systems. In July 2011, these factors resulted in the failure of the bank stress test process, which severely undermined the credibility of the European Banking Authority. But the balance of interests is different this time. All euro area coun-

tries have a stake in the credibility of the European Central Bank as the central pillar of the euro's sustainability.

Uncertainty, and quite possibly market volatility, will mark the review until it is completed, probably in late 2014. The coordination of the bank restructuring process will be a key aspect, including the possibility of setting up a European joint asset management vehicle, or "bad bank," even if financial risks remain allocated to individual member states. All things considered, it appears more likely than not that the review will broadly fulfill policymakers' objective of restoring confidence in the European banking sector and thus resolving Europe's short-term banking problem.

Longer-term outlook

A successful review and subsequent restructuring of banks identified as too weak would probably start a gradual healing of Europe's banking system. If so, bank funding conditions could return to normal in the course of 2015, allowing the European Central Bank to gradually withdraw its extraordinary intervention tools applied since 2008. The review may also lead eventually to a wave of bank mergers and acquisitions, many of them on a cross-border basis, which would reshape the European banking landscape.

The review would mark neither the full separation of banks' and governments' balance sheets nor the completion of banking union. These require broader steps, including further integration of EU frameworks for fiscal policy and political accountability, often referred to as fiscal and political union. Such union would pave the way for a genuinely integrated system to resolve bank crises and a pan-European deposit insurance system that would ultimately sever the financial link between banks and governments. The timing of such steps, if they occur at all, is impossible to forecast.

Nevertheless, the single banking supervisor could trigger a number of structural transformations over the next decade, depending on future European Central Bank policy decisions. Many banks' governance models, which are currently shaped by national or subnational political and legal contexts, may be affected. Non-European banks may enter the European retail and commercial banking market. Europe's financial system may become more diverse and less dependent, as it now is, on banking intermediation. The geography of wholesale market activity and financial centers in Europe may change. And governments, no longer able to fund themselves by harnessing domestic banks, may have to become more disciplined.

As this tentative list illustrates, Europe has just started a long journey of discovery. Banking union amounts to a regime change for European finance. Even as prospects for the first step are reasonably encouraging, it will be a long time before the implications for Europe's financial stability and economic prospects can be comprehensively assessed. ■

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A Long Shadow over Growth

Job seekers line up for recruiting forum in Nice, France.

Helge Berger and Martin Schindler

Conquering unemployment and boosting growth is the number one priority in Europe today

EVEN if the European economy were sailing along at full capacity—and it clearly is not—some people would be looking for jobs. As new and innovative firms make their way into the marketplace and less productive firms retreat, employees are on the move as well, and finding a new job will always take some time. Some unemployment is therefore part and parcel of a healthy and growing economy.

But these are not normal times: since the beginning of the European debt crisis, euro area unemployment has risen to nearly 20 million people. At the end of 2013, this meant about 12 percent of those looking for work remained without a job, about one and a half times the level before the crisis (see Chart 1). What is worse, an increasing share of those seeking employment have been out of work for more than one year. The latest available numbers suggest that nearly half of Europe's unemployment is long term.

Unemployment on this scale is worrisome. The sacrifice and hardship that come with being out of work for a long time have affected many European families. To make matters worse, the unemployment crisis also threatens to cast a long shadow over Europe's ability to grow in the future. Much of the rise in unemployment has been concentrated among vulnerable groups, including the less educated and the young: at the end of 2013, more than half of those below age 25 looking for work in Spain and Greece were without a job (see Chart 2). The comparable figure is over one-third in Italy and Portugal, about a quarter in Ireland, and nearly one-quarter on average in Europe. Numbers like these raise the specter of a lost generation.

The repercussions of being unemployed at a young age are severe. It means that those who are well trained cannot put their skills to work and, in an application of the “use it or lose it” principle, may lose those



skills, while those with less education are missing out on crucial on-the-job training. All of these could have lasting consequences and set young people off on a permanently lower earnings path, risking entrenchment of already rising income inequality.

But the scarring effects of unemployment at a young age extend well beyond the economic sphere: many unemployed people adjust their life decisions accordingly, deferring marriage and child rearing or leaving home to seek employment abroad. While migration supports macroeconomic adjustment when other mechanisms fail, it can come at a cost for those who have to move: cultural change, the need to learn a new language, and a lack of recognition of degrees and training can mean that highly skilled workers are employed in low-skill jobs. The tale of highly trained foreign scientists driving cabs in Berlin or Stockholm is not far from reality.

A two-way street

There is clearly a need for action: unemployment is at tragic, unacceptable levels in many countries and threatens to hold back growth in the European economy for years to come. But while the call to policymakers is loud and clear, putting people back to work is far from simple. A new IMF book, *Jobs and Growth: Supporting the European Recovery*, based on extensive analysis by IMF staff members, provides a road map for policymakers on how to answer this call for action.

Getting economic growth going must be the priority. A harsh lesson reaffirmed by the crisis is that the relationship between jobs and growth is a two-way street. Mass unemployment often translates into weak consumption and fewer incentives to invest, so growth is depressed and firms have little incentive to hire. At the same time, securing higher levels of growth would create employment and support pri-

vate demand. This link between unemployment and growth certainly applies to Europe today (see Chart 3). Thus, the first and most effective way to address unemployment is to get growth going again.

But how can countries get this done? There are no quick or easy fixes. Raising and sustaining growth is a complex and multifaceted challenge that requires action on many fronts and over different time horizons. Indeed, while there is a

A harsh lesson reaffirmed by the crisis is that the relationship between jobs and growth is a two-way street.

sense that the worst of the crisis may be behind us, growth rates and output levels remain below precrisis levels. Annual growth in Europe is projected to average just 1.6 percent between 2013 and 2017, barely half the 2.6 percent achieved in the five years before the crisis (IMF, 2014). Thus, in the near term, there is a need for continued monetary policy support and for fiscal consolidation to proceed gradually, where markets allow, to protect the recovery.

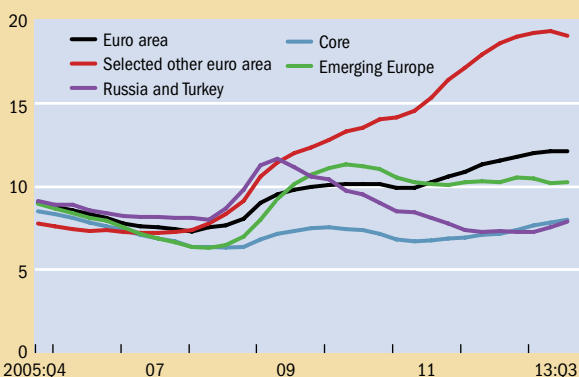
But just as urgent is steady progress in enhancing the euro area's institutional framework, and putting in place the elements of a banking union would be an excellent place to start. The ability to undertake timely, effective, and low-cost resolution of ailing banks with access to common public resources—a common backstop—would help break the vicious cycle of mutually reinforcing distress in the banking and public sectors.

Chart 1

Out of a job

Unemployment in many countries reached unacceptably high levels after the crisis.

(unemployment rate, percent)



Sources: Haver Analytics; and IMF staff calculations.

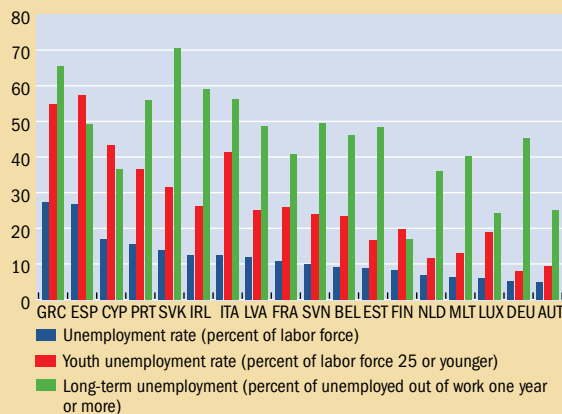
Note: Core = Belgium, France, Germany, and Netherlands; Selected other euro area = Greece, Ireland, Italy, Portugal, and Spain; emerging Europe = Bulgaria, Croatia, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, and Ukraine. All aggregates are simple averages.

Chart 2

Long time hunting

Youth unemployment is about twice as high as that of the rest of the population; most of the unemployed have been jobless for over a year.

(measures of unemployment, November 2013)



Source: Eurostat.

Note: GRC = Greece, ESP = Spain, CYP = Cyprus, PRT = Portugal, SVK = Slovakia, IRL = Ireland, ITA = Italy, LVA = Latvia, FRA = France, SVN = Slovenia, BEL = Belgium, EST = Estonia, FIN = Finland, NLD = Netherlands, MLT = Malta, LUX = Luxembourg, DEU = Germany, AUT = Austria.

Progress on euro area institutions would also go a long way toward reducing the residual uncertainty of investors, who will have to trust that the crisis is finally over before they commit significant resources to the future. In addition, the medium-term work of strengthening public and private balance sheets has to start in earnest everywhere to reduce vulnerabilities. And there is little doubt that tackling long-standing weaknesses in labor and product markets is required to lay the foundation for lasting output and employment growth in Europe and to help realize the promise of the economic and monetary union for those in the euro area.

Crisis legacies

A lasting pickup in growth will remain out of reach, however, until the crisis's balance sheet legacies are addressed. In many European countries, already high debt ratios among households and businesses worsened as a result of falling or negative income growth while property prices fell. Public sector debt also increased significantly during the recession. Given the slow pace of global demand, there is little hope that any of these sectors will simply grow out of their debt problems. The resulting pressure to deleverage—that is, to bring down debt by reducing household consumption, corporate investment, and government net spending—threatens to hamper the recovery.

That said, not all debt is created equal. Economists are still debating the link between debt and growth, but IMF research indicates that high levels of private sector debt may be particularly problematic. Indeed, while very high household and corporate debt tends to unambiguously lower growth—mostly because it creates vulnerabilities and reduces consumption and investment spending—there are indications that, where fiscal sustainability is not at risk, public sector debt on its own may be less detrimental. This suggests that

by facilitating private sector deleveraging now, governments may be able to improve the conditions for self-sustained growth later on. Depending on country circumstances, policymakers may be able to do this by putting in place or

Fateful surges in youth unemployment can have grave social and economic consequences.

reinforcing appropriate microstructures, such as effective insolvency frameworks—featuring, for example, fast and flexible personal and corporate bankruptcy proceedings—to help avoid lengthy periods of deleveraging and to protect growth.

Ultimately, of course, government debt will have to come down as well. History tells us that this is difficult, but not impossible to do even in a lower-growth environment. For example, in the early 1990s, Belgium, Denmark, and Iceland achieved debt reductions exceeding 30 percent of GDP, in spite of initially close to zero, or even negative, growth. Going forward, the trick is to reduce budget deficits gradually, where markets allow, with policies anchored by a durable commitment to sustaining fiscal consolidation over the medium term, and to make a strong effort to limit the impact of budget tightening on growth through smart design of revenue and expenditure measures. For example, cutting less productive spending, protecting public investment, and shifting the emphasis from direct to indirect taxes will help, and some countries may also have scope for additional privatization efforts. What is more, consolidation episodes can also provide a chance to implement growth-enhancing tax or subsidy reforms.

Laying the foundations

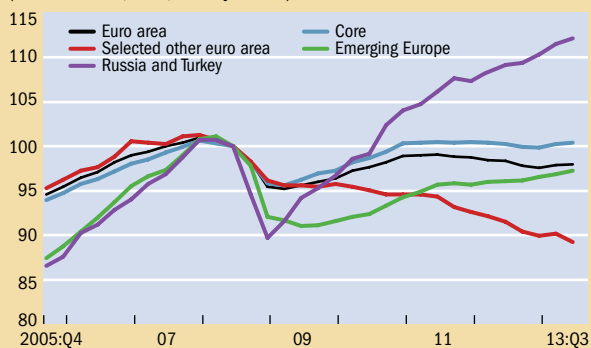
The opportunities for reforms that will help lift growth in the longer term are not limited to the fiscal realm. Country circumstances differ, but there are strong indications that truly ambitious structural reforms can make a significant difference for what economists call potential growth—countries' capacity for sustainable income growth and employment—which, in turn will help households and firms strengthen their balance sheets. IMF research suggests that simultaneous reforms in product and labor markets carry the greatest promise for raising potential growth, although reform priorities and their optimal design will vary widely across countries. For example, measures to increase productivity in the German services sector, such as through strengthened competition and public investment in the energy and transportation industries, can help boost investment, incomes, and domestic demand, while further enhancing labor market flexibility in Spain can foster adjustment there. Elsewhere, many of the Balkan economies that are not members of the European Union (Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Montenegro, and Serbia) need to address deep-

Chart 3

In unfortunate sync

The crisis hit GDP and incomes hard, which explains a large part of unemployment in Europe.

(level of real GDP, index, 2008:Q3 = 100)



Sources: Haver Analytics; and IMF staff calculations.

Note: Core = Belgium, France, Germany, and Netherlands; Selected other euro area = Greece, Ireland, Italy, Portugal, and Spain; emerging Europe = Bulgaria, Croatia, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, and Ukraine. Due to lack of data, Ireland and Luxembourg are excluded from the 2013:Q3 averages. All aggregates are simple averages.



Laborer works on building under construction in Athens, Greece.

rooted problems arising from a delayed transition process, poor investment climate, and the resulting low flows of foreign direct investment.

Comprehensive reform is a key to success—only partially addressing problems can actually make matters worse. The past two decades of piecemeal labor market reforms in many European economies illustrate this point. Although labor markets have become more flexible on average, reform efforts were in many cases partial and asymmetric—for example, reducing dismissal restrictions on temporary jobs but not on others. This often resulted, among other things, in split (or “dualized”) labor markets that work very differently for workers with permanent than for those with shorter-term contracts. Dual labor markets, combined with a lack of wage flexibility, especially at the lower end, can mean that firms under pressure to cut costs are forced to reduce employment if wages cannot adjust. Vulnerable groups, such as the low-skilled and the young, tend to be particularly affected by such outcomes, leading to fateful surges in youth unemployment in some European economies. As noted earlier, this can have grave social and economic consequences.

Taking advantage of changes

Addressing their structural weaknesses can also help countries benefit more from the export dynamics provided by global supply chains. Such links are gaining in importance as firms increasingly unbundle their production processes and take their activities where they find the right skills and factors of production. The examples of some eastern European economies, such as the Czech Republic and Slovakia, suggest that some of the same reform efforts that can help an economy grow will also advance its competitiveness and ability to attract foreign investment into higher-productivity export sectors, which in turn generates benefits for the economy as a whole. These dynamics may help explain the drop in Slovakia’s unemployment before the crisis. Among other things, increased supply-chain integration could also help address the widening divergences in intra-euro area cur-

rent account balances that were observed prior to the crisis. Indeed, much of the recent reduction in current account deficits in the countries hit most by the crisis was triggered by the crisis itself—where jobs and growth are lacking, spending on domestic and imported goods and services tends to be weak. How much better it would be if these imbalances were resolved through faster export growth instead of shrinking imports and living standards.

Boosting jobs and growth in Europe is a difficult task. There are encouraging signs that the worst may finally be over, but the impact of the crisis will be felt for some time to come, and the challenges it has thrown at policymakers are immense. The good news is that there is a road map to chart the course to full recovery.

In the short term, policies to boost demand for goods and services, especially supportive monetary policy, can help protect the rebound, and completing the institutional infrastructure of the euro area—most pressing toward a full banking union—will reduce uncertainty and the risk of future crises. There are also, where needed, options to address the crisis’s damage to household and corporate balance sheets, and a thorough reform effort can clear the structural obstacles to output and employment growth in the longer term.

None of this will be easy, but now is the time for governments to ensure that more Europeans can finally get back to work. ■

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This article draws on research results summarized in a new book by the IMF’s European Department: Jobs and Growth: Supporting the European Recovery.

Reference:

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Greener EUROPE

The continent has set ambitious goals for reducing carbon emission

Laszlo Varro

ON a cold, dark afternoon in the United Kingdom in January 2013, a storm arrived from the North Sea. Windmills spun harder and harder, producing more and more energy—and then suddenly stopped as wind speed reached the level at which safety systems halt production. As a result, energy output went from the theoretical maximum to zero within hours.

But no one noticed. There were no headlines about London in the dark. The system responded as designed—first, by reducing, and then by rapidly increasing gas-fired power generation.

This smooth switch between energy sources did more than keep the lights on. It provided a glimpse of what policymakers envision as Europe's lower-carbon energy future. It is a future filled with promise but also potholes as the

continent seeks to reduce its 2050 carbon emissions to 80 to 95 percent less than its 1990 level.

That means 80 percent or more of power generated in the European Union must come from wind, solar, and other noncarbon sources. An interim goal, proposed in January 2014 and under consideration by the European Commission, would reduce carbon emissions by 40 percent from their 1990 level by 2030.

Hurdles to greening

The goals are ambitious. And will be hard to achieve. Compared with the United States and China, Europe already has a low carbon profile. That precludes easy solutions to reducing carbon emissions.

In the United States, coal accounts for more than 40 percent of power generation; in China, more than 75 percent is coal based. Simple substitution of much cleaner burning natural gas for coal in either country results in a substantial reduction in

carbon emissions (although China continues to add coal-generation capacity far more than other sources).

But in Europe coal accounts for only about 28 percent of electricity generation, while 38 percent comes from nuclear and hydro—both of which emit no carbon. Gas substitution, then, won't help much in reducing carbon emissions in Europe. Even if all the coal-fired power generation in Europe were replaced with gas, the electricity sector would still emit over twice as much carbon dioxide as the EU target.

That means that the ambitious emission-reduction objectives can be met only with large-scale deployment of low-carbon energy sources. And it will have to be done even as Europe replaces the nuclear capacity installed in the 1960s and 1970s. With the future of nuclear generation problematic in Europe, much of the investment needed to meet the carbon target will have to be in renewable sources such as wind and solar power—whose development is being subsidized by European governments.

But some days the sun doesn't shine. Other days the wind doesn't blow. Or, as in England in 2013, sometimes the wind blows too hard. The basic geographic facts—the variability of wind and sunshine—will not change. Here gas will play a role: in helping maintain the safe and cost-efficient operation of the European electricity system, which increasingly relies on renewable resources, Europe must develop energy policies that deepen integration of electricity markets, system operation, and regulation. And, as the London incident suggests, the electricity system will rely on judicious use of natural gas to keep the lights on when renewable sources cannot.

Accumulation of know-how

In the past decade, there has been an impressive accumulation of know-how about operating electricity systems with high shares of renewable energy. Some European countries now have several times more wind and solar production than initially projected. Arguably, this improvement in system-level knowledge is at least as important as the hard technological progress in wind and solar production.

To reach these ambitious goals, policymakers must accomplish the following:

Complete a single market for energy in the European Union. Although declarations in support of a single market are on the



books, many countries still pursue energy self-sufficiency, which works against the evolution of a unified market that would allow solar-generated electricity from Germany to fuel electric heaters in Paris, as happened during a cold spell in 2012.

Create a rational market for natural gas. Gas must be the backup fuel that utilities turn to for power generation when renewables falter. Even under the most optimistic assumptions, conventional power plants will remain essential to a secure electricity supply for decades to come. Even if there were no political constraints on nuclear plants, they are too expensive to use for backup production. Coal emissions are twice those of gas. That leaves natural gas as the lowest-carbon alternative.

A modern gas turbine can go from generating zero to a million horsepower in an hour, and back to idle—as needed—with astonishing efficiency. A single plant can provide flexible backup for 600 large wind turbines. The International Energy Agency estimates that in a decarbonized EU power system,

Windmills and solar farms are often built where there are attractive subsidies rather than in places with strong wind or abundant sunshine.

the region's substantial gas capacity will run only 3.5 hours a day on average to fill in for faltering solar or wind or variations in demand due to weather. Sometimes gas turbines will be idle for several days; sometimes they will have to go from zero to flat out and back to zero several times a day. But that is not how gas plants are used in a system dominated by conventional energy, where they typically run 10 to 12 hours a day and reduce production or shut down at night. The euro area recession reduced power demand and hastened a transition to low and variable utilization in Europe, but electricity market design did not keep up, which led to concern about stranded investments. Europe must rethink the design of electricity markets and build a flexible gas infrastructure that can handle rapid fluctuations in demand and has the capacity to store and send out gas almost instantaneously. It also needs efficient, liquid spot markets in which utilities can obtain gas on short notice. It needs new transmission lines and secure sources for a fuel that is expensive, and must develop sources when all it can guarantee gas producers is variable demand dependent on the vagaries of solar and wind production and on changes in consumer usage.

Improve the cost efficiency of renewable sources. Development of renewable sources is being subsidized by European governments based on the premise that they are infant industries that need help to reach the economies of scale of their competitors. But in some cases, excessive subsidies have triggered investment bubbles—in solar panels, for example. In other cases, energy policies did not fully take into account geographic conditions and developments in technology. Because renewable subsidies differ from country to country and from technology to technology, there are more

than 3,000 different subsidized prices for the same commodity, which distorts investment. Windmills and solar farms are often built where there are attractive subsidies rather than in places with strong wind or abundant sunshine and cost-efficient infrastructure connections.

Overhaul the design of markets for electricity. Some European countries have several times more wind and solar production than initially projected, and technology costs have declined—both of which are positive developments. But there is no silver bullet for dealing with the volatility of generation that results. For a century, the electricity industry was planned on the supply side: consumers use whatever they want whenever they want it and the system meets the demand. Inefficient even in a conventional system, it is unaffordable in one that relies on wind and solar.

Europe could undertake more demand-side approaches. Persuading a million customers to turn down their air conditioners a bit has the same result as a billion-dollar backup power plant. Such an approach was instrumental to the safe operation of the electricity system in Japan after the loss of nuclear generation. Another approach is to smooth integration of electricity markets, with more liquid electricity trade across the continent, which would take advantage of the fact that peak demand varies country by country. Overall European peak demand is 30 gigawatts less than the sum of the national peak demands at different times—equivalent to the electrical needs of a medium-size country. Northern Europe's demand peaks in the winter; southern Europe's in the summer. North-south flows could yield powerful efficiency gains.

Slow progress

But Europe's power transmission system is far from ready to function in an integrated fashion and support a low-carbon energy market. Progress in expanding transmission capacity has been slow because virtually each new transmission line faces heavy local resistance. Although some obstacles may be overcome, transmission capacity will remain a scarce resource. Moreover, it is still organized at the national level. Electricity must be able to flow across national borders in Europe with ease. With a much stronger transmission network linking the various European regions and allowing integrated markets to respond to weather changes in real time, European wind and solar production could eventually quadruple, to over 100,000 new windmills and half a billion solar panels.

This low-carbon future will come with a higher price tag—but how much higher depends on whether Europe takes steps now to transform its energy landscape, putting in place policies that support natural gas as an “insurance” fuel while driving down costs of renewables, improving transmission of both gas and electricity, and breaking down national barriers. It could defer action, of course—perhaps the costliest choice of all. ■

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On the BALL

European soccer's success can be credited, in part, to the liberalization of the players' market. But what will the future bring?

Stefan Szymanski

THE soccer World Cup in Brazil will be the biggest sporting event of 2014, likely dominating the news and lives of fans for many months. For some of the players, this will also be the defining moment of their careers.

Attention will focus on established soccer stars such as Argentina's Lionel Messi and Portugal's Cristiano Ronaldo and whether they can do as well for their countries as for their clubs (Barcelona and Real Madrid, respectively).

The World Cup will also create several new millionaire players—players currently working for small clubs in places like Costa Rica, Croatia, Greece, or Japan will earn lucrative contracts with mega clubs such as Bayern Munich and Manchester United on the back of star performances in Brazil. Almost every player's ambition will be to play at the highest level in Europe.

Thanks to fundamental changes in the regulatory regime and other factors, international mobility in Europe's soccer labor market has increased markedly in the past two decades. Today, the size of the expatriate labor force in European soccer (at more than one-third of the total) far exceeds that in the wider European labor market, where foreigners comprise only 7 percent of the labor force (Besson, Poli, and Ravenel, 2008; European Commission, 2012). This internationalization is a key factor in Europe's soccer success.

Early evolution

Soccer was first organized in England in 1863 and spread rapidly to the rest of Europe. It was one of the first manifestations of globalization, with the World Cup, which started in 1930. Today the Fédération Internationale de Football Association (FIFA), the sport's world governing body, has more national members than the United Nations.

But if soccer is the world's game, it is also true that the biggest teams and markets for playing talent are in Europe. According to FIFA's "Big Count" survey published in 2006, there are approximately 113,000 professional soccer players worldwide, of whom 60,000 work inside the Union of European Football Associations (UEFA), the European governing body (Kunz, 2007). UEFA calculated that in 2011 the total income of European soccer was €16 billion, of which €6.9 billion was paid out as wages. European football is successful in that it has the biggest clubs, the best national teams

(only Brazil and Argentina rank alongside European nations such as Germany, Italy, the Netherlands, and Spain), the largest national leagues, and the biggest competitions.

Labor mobility has played a significant role in maintaining Europe's dominance. In the early days, players bid away by higher wages would frequently change teams within the same season. But the clubs banded together and instituted a transfer system, which required that each professional player be registered with a club. The registration was the club's property, and the player could not play for another club until it was transferred. Initially the club held the registration in perpetuity unless it chose to sell it, effectively tying the player to the club. This system mainly ensured that player salaries remained low. In the 1960s, players started to secure greater rights, such as the freedom to move when their contracts ended.

International player migration became an important part of soccer beginning in the 1950s. Argentine Alfredo Di Stefano and Hungarian Ferenc Puskás were the backbone of the great Real Madrid team of that era, and in the 1960s, Spanish and Italian teams sought to attract the best players from Europe and South America. But until the 1990s, mobility was mostly domestic.

More broadcast competition following the development of cable and satellite technologies in the 1980s significantly enhanced the demand for sports content and created an international audience for league soccer. Greater competition also increased the thirst for international talent. In 1992, only nine foreign players were playing in the English Premier League, but by 2013 this number had risen to 290, accounting for two-thirds of all soccer players. While the figures are less dramatic for other European leagues, the proportion of foreigners playing in Germany is about 50 percent, and in Spain, about 40 percent.

Bosman ruling

Deregulation has done much to diversify the European soccer labor market. Sports organizations are private associations and, as such, have considerable latitude to set their rules and regulations free from government interference. However, restrictive employment agreements can fall foul of the legal system, as happened in the landmark "Bosman ruling."

Jean-Marc Bosman was a Belgian player with the Belgian club Liège whose contract had expired; the French team



Dunkerque wanted to hire him and he wanted to move. Dunkerque offered to pay a transfer fee for his registration, which, under the rules at the time, still belonged to Liège. Liège considered the offer inadequate, and so Bosman could not move. Bosman sued, and the case went to the European Court of Justice. In 1995 the court ruled that the rules of the transfer system contravened EU laws on the free movement of labor and that rules restricting the number of foreign players also breached the law (European Court of Justice, 1995). This ruling was widely seen as facilitating a big increase in cross-border migration of players.

As a result, the transfer regulations were significantly recast in negotiation with the European Commission. Since then, transfer fees are applicable only to players whose contracts have not expired, except for those under the age of 23, to compensate for training. Clubs participating in UEFA competition must field a minimum of eight “homegrown” players—at least four trained by the club itself and another four from the national association.

At the time, many experts argued that the Bosman ruling would destroy the transfer market, and with it the economic viability of smaller clubs. Neither forecast proved correct. The transfer fee record has been broken several times, most recently in 2013 when Tottenham player Gareth Bale, with three years left on his contract, moved to Real Madrid for a fee of €100 million. Many clubs find themselves in significant financial difficulties, but this has always been the case in soccer—yet clubs rarely exit the market. Instead, their losses are often absorbed by “sugar daddies,” wealthy individuals who relish the considerable prestige that goes with the ownership of a soccer team.

Labor market efficiency

For all of the obvious success of European soccer with its flexible labor market, it is more difficult

to assess its economic efficiency. The relationship on average between wage spending and team success for the top two divisions of English football over the past two decades is strongly

In some ways, the soccer labor market represents perfect competition.

correlated (see chart). There are many reasons to believe that this relationship is causal: players are widely and openly traded in the market, player characteristics are well known and frequently observed, better players tend to win more games, and teams that win generate more income. In some ways, the soccer labor market represents perfect competition.

Reverse causality seems unlikely: while players may earn contractually stipulated bonuses when the team wins, it seems unlikely that a successful club would pay higher wages just because it could—most clubs want to invest in future success and are quite willing to trade players they think are no longer performing. More sophisticated models that seek to control for potential feedback effects tend to support the hypothesis that causation runs from wages to success (Peeters and Szymanski, forthcoming). Moreover, the relationship identified here for English soccer has been found in other leagues, such as Spain, Italy, and France.

Sustaining fan interest

The data imply that players are, on average, priced efficiently in the market, in the sense that the wage paid is proportionate to the success of the team. However, it is less clear that this is an efficient outcome for European soccer as a whole.

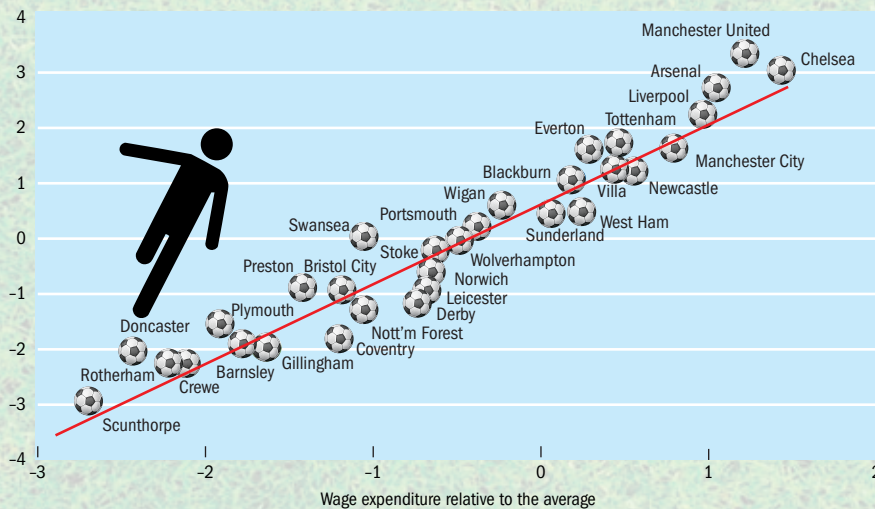


Portugal's Cristiano Ronaldo, the highest paid soccer player in the world.

You get what you pay for

Soccer teams that are paid higher wages tend to win more games.

(average league position)



Source: Companies House website (<http://www.companieshouse.gov.uk>).

Note: The chart includes data on wage spending for a sample of clubs in the top two divisions of English soccer (Premier League and Championship) between 2003 and 2012. Data are based on the clubs' financial accounts.

From an economic perspective, the players should move to teams where their “marginal revenue product” is maximized—that is, where they can make the greatest possible contribution to the team’s success. The contribution of a win to revenue is clearly highest at a small number of clubs that have traditionally dominated national leagues, but many economists have argued that the perpetual dominance of a league by a small number of teams is inefficient.

The argument is that a degree of “competitive balance” is required to make a league attractive, or there will be no uncertainty of outcome—in which case fans will lose interest, even in successful teams. (What is the point of watching a game if you already know the outcome?) Successful teams will destroy the interest in the competition if they are too dominant (see Rottenberg, 1956). The league should promote competitive balance by the redistribution of resources.

From the perspective of the labor market, this suggests that the dominant clubs have an incentive to overinvest in talent relative to the best interests of the league and the fans, and the smaller clubs choose to underinvest. Consequently the allocation of players in an unrestricted market is socially inefficient—the big clubs will be too strong and the small clubs too weak. This problem is taken seriously in the United States, where a wide array of mechanisms has been adopted by professional sports leagues to equalize competition.

For example, in the National Football League (NFL), the most profitable sports league in the world, 40 percent of gate revenue is shared with the visiting team and all broadcast and merchandising revenue is shared equally among the 32 teams in the league. A salary cap limits the amount teams can spend on players, a salary floor dictates a minimum, and a draft system rewards the worst-performing team in the league with the first pick of new talent. All these rules aim to equalize competi-

tion, and the NFL boasts that “on any given Sunday, any team in the league can win.” There is almost no correlation between wage spending and team performance, because there is almost no variation in wage spending.

The evidence in favor of an NFL-like system is surprisingly mixed, given that the highly unbalanced European system has continued to generate much fan interest (Borland and MacDonald, 2003). But rules imposed for the sake of competitive balance tend to constrain wages and labor mobility. The NFL draft gives exclusive bargaining rights to a single team, for example, while players entering the league are tied to a four-year contract. Should a player turn out to be far better than expected, he has little prospect of a better deal until the four

years are over. This regime has been negotiated with the players’ union, which secures agreements on minimum terms and conditions in exchange. Such constraints make the NFL teams profitable and give the players security. By contrast, in Europe, teams are largely unprofitable, and the player union FIFPRO claims that many players are not paid on time or in full.

In the current year, a new system of financial regulation called “Financial Fair Play,” which seeks both to enforce contractual obligations on clubs and restrain spending on players, will go into effect in Europe. The likely outcome of these regulations, if fully enforced, will be to reduce player mobility and increase the profitability of clubs. Whether it heralds a trend toward a more American style of league organization remains to be seen. ■

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Senior Shock

The graying of advanced economies may make monetary policy less effective

Patrick Imam

THE world is experiencing an unprecedented demographic shift. The population is aging, especially in advanced economies. The consequences of a graying population for government spending and tax (that is, fiscal) policy have been widely explored, and there is general agreement that a combination of higher taxes, reduced pension benefits, and longer working lives is essential to deal with the fiscal burden an aging population imposes—although the political challenges of doing so are enormous.

But there has been little exploration of the impact of an aging population on monetary policy—the process by which central banks influence interest rates and the supply of money to promote stable inflation, employment, and growth.

The life-cycle hypothesis—which posits that households borrow mainly when they are young, accumulate assets and pay down their loans until they retire, then live off their assets in retirement—suggests a clear link between the effectiveness of monetary policy and demographics. Part of the reason economists have barely explored that link is because monetary policy is typically designed to react to short-term shocks over a short horizon of one to two years, not to slow-moving factors, such as demographic change, that materialize over decades.

Silent and sluggish though demographic change may be, my research points to significant implications for monetary policy in advanced economies—including for current unconventional approaches, such as quantitative easing, those economies have deployed in recent years. Theoretically, the impact of an aging population is ambiguous: older populations are affected in different ways than the young by the various channels through which monetary policy moves. On balance, though, I found that a graying society blunts the effectiveness of monetary policy.

Sudden comeuppance

Monetary policy was accorded much of the credit for containing and stabilizing inflation, thereby fostering the steady growth and major reduction in business cycle volatility that lasted in advanced economies from the mid-1980s until the global financial crisis that began in 2008. By keeping inflation expectations in check, the analysis has it, central banks reduced the uncertainty that can cloud investment decisions

and hold back consumption, and were able to respond flexibly to shocks. Both the Gulf War in 1991 and the collapse of the Internet bubble in 2000 were followed by a swift loosening of monetary policy to restart economic activity. That quick response was possible because inflation expectations were low.

But belief in the effectiveness of monetary policy was upended by the 2008 global financial crisis. Since the beginning of the crisis, central banks have found it difficult to prop up growth and prices—whether in Japan, the United States, or Europe. And now evidence is mounting that even during the roughly 25 years of the so-called Great Moderation that preceded the crisis, monetary policy was less omnipotent than it appeared.

That new evidence shows that monetary policy has had a diminished and diminishing impact on variables such as unemployment and inflation since the mid-1980s. The declining effectiveness—measured by the impact of interest rate changes on unemployment and inflation—is usually attributed to better-anchored inflation and output expectations, which are then less affected by interest rate changes (Boivin, Kiley, and Mishkin,

Monetary policy was less omnipotent than it appeared.

2010). Inflation is generally less responsive to changes in the cyclical unemployment-output gap (the difference between what an economy can produce at full employment and what it actually is producing) when inflation expectations remain well anchored on the central bank's target, including during deep recessions, such as the recent global financial crisis (IMF, 2013). Many economists say these factors explain why the unprecedented monetary policy expansion since 2008 has not had a larger impact on inflation or output.

Researchers have two main explanations for the reduced effects of monetary policy.

Structural transformation of the economy, particularly in the credit market: Some analysts argue that institutional changes in the credit market explain the weakening of monetary policy's effectiveness. They say that over the past few decades, regulatory restrictions were loosened and credit markets liberalized.



New forms of lending (such as securitization, which transforms loans into securities) have allowed more types of institutions to provide credit in what has been dubbed the shadow banking sector (see “What Is Shadow Banking?” in the June 2013 *F&D*). Shadow banks (which can include such entities as investment companies and insurance companies) have allowed easier access to credit and more of it to people who previously had trouble borrowing—especially those with lower incomes. These changes should, in principle, increase the effectiveness of monetary policy. However, the changes in credit markets occurred at the same time that household balance sheets, especially the value of houses, began to play a growing role in consumption decisions. Consumers found they could tap the equity in their homes by refinancing their mortgages. That meant that standard consumer borrowing and interest rates became less important, which in turn reduced the importance of the credit channel—and, as a result, the sensitivity of economic activity to monetary policy changes.

Changes in the way monetary policy affects the expectations of economic players such as businesses and consumers: Some economists also argue that central banks—because of their strong credibility—have increasingly operated through “open mouth operations”—that is, managing expectations through communications alone—without having to change interest rates as much as they did before. The expectation that monetary policy would respond strongly if output deviated from its potential or to deviations from the inflation target has led to more stable income and inflation expectations. That in turn means greater stability in actual spending and inflation, which reduces the effect of interest rate changes.

These factors are important, but they are not the only explanation for the decreased effectiveness of monetary policy. One explanation that has not garnered much attention is the important role of changing demographics in weakening monetary policy effectiveness in five major advanced

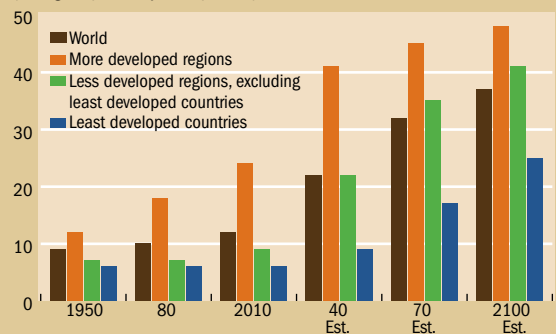
economies I studied—Canada, Germany, Japan, the United Kingdom, and the United States.

Demographic profiles vary significantly by country. Some, such as Germany and Japan, are aging more rapidly than others, but no country remains untouched by this phenomenon. The result is a growing ratio of the elderly to the working-age population, the so-called old-age dependency ratio (see chart). Moreover, because fertility rates

Getting gray

Some societies are aging faster than others, but none is untouched by changing demographics, which result in a growing ratio of the elderly to the working-age population.

(old-age dependency ratio, percent)



Source: United Nations.

Note: The old-age dependency ratio is the number of persons older than 65 divided by the number of persons ages 15 to 65. The years after 2010 are estimates. More developed regions comprise Australia, Canada, Europe, Japan, New Zealand, and the United States. Less developed regions comprise all countries in Africa, Asia (excluding Japan), Latin America and the Caribbean, plus Melanesia, Micronesia, and Polynesia—except for the least developed countries. There are 49 countries in the least developed category: Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, The Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Samoa, São Tomé and Príncipe, Senegal, Sierra Leone, Solomon Islands, Somalia, Sudan, Tanzania, Timor-Leste, Togo, Tuvalu, Uganda, Vanuatu, Yemen, and Zambia.

are plummeting everywhere, the world is rapidly graying. According to the life-cycle hypothesis, older societies, especially in advanced economies, should have a large share of households that are creditors and be less sensitive to interest rate changes, especially if interest rates are fixed and do not change with inflation, as is usually the case in the countries studied. Younger societies, by contrast, should have a larger share of debtors with higher sensitivity to changes in interest rates induced by monetary policy. In other words, demographics play a role alongside structural change and expectations in moderating the effect of monetary policy on inflation and unemployment.

Different strokes

Monetary policy affects different groups in varying ways, depending on both the group and the channel through which monetary policy flows (see table). There are several ways monetary policy induces changes in behavior by adjusting interest rates (and specifically how they affect older citizens in advanced economies), including the following:

Interest rate channel: According to the life-cycle hypothesis, individuals acquire assets such as houses and stocks and bonds throughout their working lives and sell them after they retire. Both the saving and consumption patterns of households follow a well-established path that changes with age. Debt rises early in the life cycle and then begins to fall (though in recent years more gradually than in the past, given the global crisis and higher cost of education and parental care, among other things). Younger households, which are typically net debtors, are more sensitive to interest rate changes—particularly if interest rates on housing loans are mostly variable—while older households, which typically do not need to borrow, are less sensitive to this channel. That means that in societies dominated by young households, monetary policy would be a more effective tool for dampening or encouraging demand than it would be in an older society.

Credit channel: This channel amplifies the interest rate channel by affecting the so-called external finance premium—the difference in the cost to households or businesses of using their own funds to finance purchases rather than borrowing externally. Older households have greater net worth than younger households and are more likely to rely on self-financing to fund investment or consumption. At the

same time, older people have a large amount of assets that can be used as collateral, so the risk premium of borrowing is lower and the cost of raising external funds should also be lower. The ability to self-finance and borrow more cheaply suggests that grayer societies are less sensitive to the effect of monetary policy on the credit channel. There are many older people in poverty in advanced economies, but they are normally little affected by monetary policy changes because they cannot obtain credit under any circumstances.

Wealth effect channel: Based on the life-cycle hypothesis, demographic shifts can be expected to affect asset prices. Young people typically have few assets, while older ones may own many. When a household has acquired substantial assets, many of them earn interest, which means that interest rate changes affect the income of older households more than those with few interest-earning assets. In graying societies, wealth effects are likely to be more important, because wealth tends to be concentrated among the elderly (at least in advanced economies) and typically more heavily invested in interest-sensitive fixed-income products (such as bank deposits or bonds) than equities. The demographic shift would, therefore, tend to raise the relative importance of the wealth effect channel, increasing the effectiveness of monetary policy. But looser monetary policy since the global crisis may have weakened monetary policy through the wealth effect channel. The lower rates resulting from the looser policies reduced the income that can be generated from savings or annuities, which may have encouraged older households to save more and consume less. However, there is not yet much convincing empirical evidence to support this position.

Although less studied and more difficult to discern, other channels may alter the way monetary policy is transmitted, for example:

Risk-taking channel: Monetary policy affects the perception of risk by individuals and firms. This channel influences risk taking by encouraging people to search for yield. Financial entities have been found to borrow more (increase leverage) when interest rates fall, and less when interest rates rise. Older people have less time to recoup losses, so in an older society there may be more risk-averse households and less overall risk taking—that is fewer stock and more bond investments. Given a less potent risk-taking channel in a graying society, monetary policy effectiveness is likely to be diminished.

Expectations channel: The demographic shift is likely to have little impact on expectations because they are so strongly based on the credibility of the central bank—which should not change when a society ages. But recent research using survey data suggests that, all else equal, inflation expectations rise as people age, leading to risk-averse behavior (Blanchflower and MacCoille, 2009). Behavioral finance economists say that this higher risk aversion occurs because older households generally are creditors and have more to lose from higher inflation than younger households, which may actually benefit from inflation. In practice, therefore, it is possible that central banks will respond to growing concern about inflation in an aging society and place greater emphasis on price stability.

Channeling monetary policy

Monetary policy can be transmitted through a number of channels, and the age of the population can influence its effectiveness.

Channel	Young Society	Old Society	How It Works
Interest rate	More important	Less important	Credit demand: Young adults need more credit than older ones
Credit	More important	Less important	External risk premium: Young adults have greater need to borrow from outside sources
Wealth effect	Less important	More important	Income distribution: The young possess little wealth, while the old own much of it, making the latter more sensitive to monetary policy changes
Risk taking	More important	Less important	Risk aversion: Older adults are more risk averse, reacting less to changes in monetary policy
Expectation	Less important	More important	Inflation expectations: Older adults are more sensitive to inflation than younger ones

To estimate the net impact of these conflicting effects of demographic change on monetary policy effectiveness, I mapped estimations of each country's monetary policy against its demographic structure. The research focused on the five biggest advanced economies with independent monetary policies during the period 1963–2007. I picked 2007 to avoid

Aging societies will require more activist monetary policy, along with bigger variations in interest rates.

any complications caused by the global crisis. Comparing the changes in monetary policy effectiveness with changes in the old-age dependency ratios in each of the five countries, and focusing on the extent to which aging can explain changes in interest rate sensitivity, I analyzed the impact of changes in monetary policy on inflation and unemployment. The research confirmed a robust relationship between the demographic trend and monetary policy effectiveness.

The research also demonstrated a relationship between aging and weaker monetary policy effectiveness that is long term and unaffected by short-term factors such as the business cycle. It showed that a 1 percentage point increase in the old-age dependency ratio reduces the ability of monetary policy to affect inflation by 0.1 percentage point, and its ability to affect the jobless rate by 0.35 percentage point. This is particularly significant when linked, for instance, to the projected 10 point rise in the old-age dependency ratio in Germany over the next decade. In societies dominated by older folks, therefore, the diminished effectiveness of monetary policy is more marked.

New trade-offs

My research illustrates that the demographic shift explains in part why monetary stimulus is not having a larger impact. If societies dominated by older households tend to be less sensitive to interest rate changes, then monetary policy will be less potent in an aging society. Changing demographics mean that policy rates will remain low in advanced economies for a very long time (unless, for instance, asset values fall to make younger households feel richer relative to retirees). New trade-offs will arise in a society going through the demographic shift toward aging that will likely cause monetary policy to operate differently to achieve the same impact.

First, the relative preference for inflation versus output stabilization is likely to change, because older households have on average larger asset holdings and, therefore, have more to lose from unexpected inflation. Increasing aversion to inflation may then lead to a lower optimal inflation target. Central banks around the world, in turn, will have to think through these trade-offs, and may conduct tighter monetary policies to keep inflation low, potentially at the expense of more variation in output. In other words, there may be lower inflation but also more recessions and recoveries.

Second, if monetary policy is less effective in a graying society, then to have the same impact on inflation or unemployment they had in a younger society, central banks will have to induce a larger change in the interest rate they use to transmit policy. This suggests that a change of 25 basis points (a basis point is 1/100th of a percentage point), which was the norm in previous decades, may not be enough. (Or, in the current environment in most advanced economies, where rates are already at zero, aggressive quantitative easing policies will become part of the regular toolkit and will be used more frequently.) Aging societies will require more activist monetary policy, along with bigger variations in interest rates, to enhance effectiveness.

Third, as the effectiveness of monetary policy declines, non-monetary policies such as taxation and spending will play a greater role in stabilizing the economy and financial system. So-called macroprudential policies may also contribute to monetary policy effectiveness (see “Protecting the Whole,” in the March 2012 *F&D*). Macroprudential policies use financial regulatory prudential tools—such as mandatory bank loan-to-value ratios, capital requirements, and prescribed levels of cash-like assets on balance sheets—to address concerns about the overall economy. For example, if the transmission of monetary policy appears clogged, one way to induce (or dampen) borrowing or lending is to alter those prudential ratios, without compromising financial stability (Haldane, 2011).

The research reported here focuses on advanced economies, which were the first to go through the demographic shift. Although emerging market and low-income economies will also gradually age, the impact on monetary policy is likely to be different than in advanced economies because wealth is not as skewed toward older generations, and the overall society is likely to remain more sensitive to interest rate changes. ■

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This article is based on the author's 2013 IMF Working Paper 13/191, “Shock from Graying: Is the Demographic Shift Weakening Monetary Policy Effectiveness.”

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THE DOLLAR Reigns Supreme, by Default

Eswar Prasad

International currency arrangements have come under scrutiny in the aftermath of the global financial crisis

THE dollar has been the preeminent global reserve currency for most of the past century. Its status as the dominant world currency was cemented by the perception of international investors, including foreign central banks, that U.S. financial markets are a safe haven. That perception has ostensibly driven a significant portion of U.S. capital inflows, which have surged in the past two decades. Many believe that this dollar dominance has allowed the United States to live beyond its means, running sizable current account deficits financed by borrowing from the rest of the world at cheap interest rates. Some other countries have chafed at this “exorbitant privilege” enjoyed by the United States.

Moreover, the fact that a rich country like the United States has been a net importer of capital from middle-income countries like China has come to be seen as a prime example of global current account imbalances. Such uphill flows of capital—contrary to the prediction of standard economic models that capital should flow from richer to poorer countries—have led to calls for a restructuring of global finance and a reconsideration of the roles and relative importance of various reserve currencies.

The 2008–09 global financial crisis, whose aftershocks continue to reverberate through the world economy, led to heightened speculation about the dollar’s looming, if not imminent, displacement as the world’s leading currency.

Indeed there are indications that the dollar's status should be in peril. The United States is beset by a high and rising level of public debt. Gross public (federal government) debt has risen to \$16.8 trillion (see Chart 1), roughly equal to the nation's annual output of goods and

Overall, foreigners have sharply increased their holdings of U.S. financial assets.

services. The aggressive use of unconventional monetary policies by the Federal Reserve, the U.S. central bank, has increased the supply of dollars and created risks in the financial system. Moreover, political gridlock has made U.S. policymaking ineffectual and, in some cases, counterproductive in driving the economic recovery. There are also serious concerns that recent fiscal tightening has constrained the government's ability to undertake expenditures on items such as education and infrastructure that matter for long-term productivity growth.

All these factors should have set off an economic decline in the United States and hastened erosion of the dollar's importance. But the reality is starkly different. The dominance of the dollar as a global reserve currency has been barely affected by the global financial crisis. Not only did the dollar's share in global foreign currency reserves change only modestly in the decade before the crisis, it has held steady at about 62 percent since the crisis began (see Chart 2). Overall, foreigners have sharply increased their holdings of U.S. financial assets. Foreign investors now hold nearly \$5.6 trillion in U.S. government securities (see Chart 3), up from \$1 trillion in 2000. In fact, during and after the recent crisis (since the end of 2006), foreign investors purchased \$3.5 trillion in Treasury securities. Even as the stock of U.S. federal debt has been rising, foreign investors have steadily increased their share of the portion of that debt that is "privately held" (not held by other parts of the U.S. government or the Federal Reserve). That share now stands at 56 percent. In some respects, then, the dollar's role as the dominant reserve currency has strengthened since the crisis.

How did this happen against all logic? Is the situation tenable?

The rush to safety

One of the striking changes in the global economy over the past decade and a half is the rising importance of emerging market economies. These economies, led by China and India, have accounted for a substantial fraction of global GDP growth over this period. Interestingly, the crisis did not deter these countries from allowing freer movement of financial capital across their borders. While this might seem risky, emerging markets have been able to alter the makeup of their external liabilities from debt to safer and

more stable forms of capital inflows, such as foreign direct investment. Still, even as their vulnerability to currency crises has declined, these economies face new dangers from rising capital inflows, including higher inflation and asset market booms and busts.

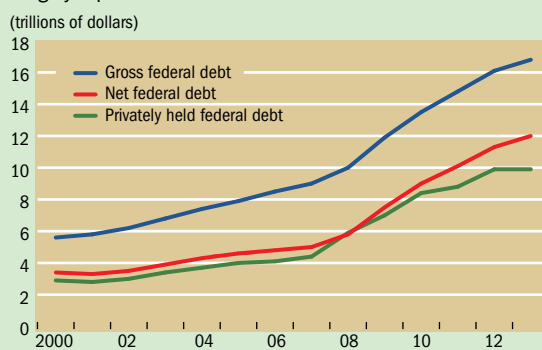
The global financial crisis shattered conventional views about the amount of reserves an economy needs to protect itself from the spillover effects of global crises. Even countries with large stockpiles found that their reserves shrank rapidly over a short period during the crisis as they sought to protect their currencies from collapse. Thirteen economies that I studied lost between a quarter and a third of their reserve stocks over about eight months during the worst of the crisis.

Rising financial openness and exposure to capital flow volatility have increased official demand for safe financial assets—investments that at least protect investors'

Chart 1

Ballooning debt

Gross public debt in the United States is about \$16.8 trillion, roughly equivalent to its annual GDP.

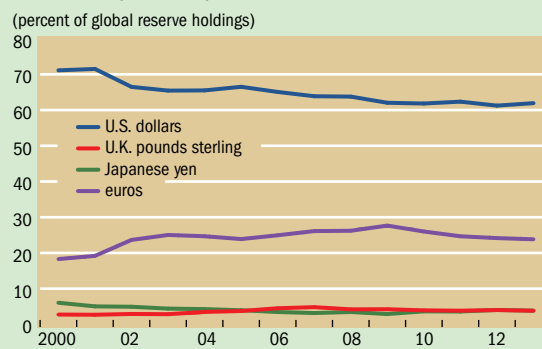


Source: U.S. Treasury Bulletin, December 2013, Tables OFS-1, OFS-2, and FD-1.
 Note: Gross debt includes intragovernment debt, including debt held by the Social Security trust funds. Net debt includes the U.S. Federal Reserve's holdings of U.S. Treasury securities. Data for 2013 end in June.

Chart 2

Hanging in

The dominance of the dollar as the global reserve currency has declined only modestly in the past decade.



Source: IMF, Currency Composition of Official Foreign Exchange Reserves database.
 Note: Only the four major reserve currencies are shown.

principal and are relatively liquid (that is, easy to trade). Emerging market economies have a stronger incentive than ever to accumulate massive war chests of foreign exchange reserves to insulate themselves from the consequences of volatile capital flows. In fact, since 2000, emerging markets have added about \$6.5 trillion to their reserve stockpiles, with China accounting for about half of this increase (see Chart 4).

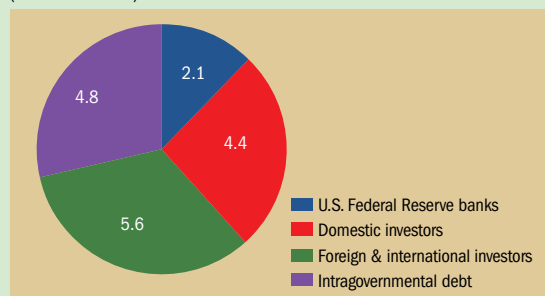
In addition, many of these countries, as well as some advanced economies such as Japan and Switzerland, have been intervening heavily in foreign exchange markets—buying foreign currencies to limit appreciation of their own currencies, thereby protecting their export competitiveness. Exchange market intervention also results in accumulation of reserves, which must be parked in safe and liquid assets, generally government bonds. This kind of intervention has led to rising demand for safe assets.

Chart 3

Popular securities

Foreign and international investors owned \$5.6 trillion in U.S. government securities at the end of 2012, up from \$1 trillion in 2000.

(trillions of dollars)



Source: U.S. Treasury Bulletin, June 2013, Tables OFS-1, OFS-2, and FD-1.

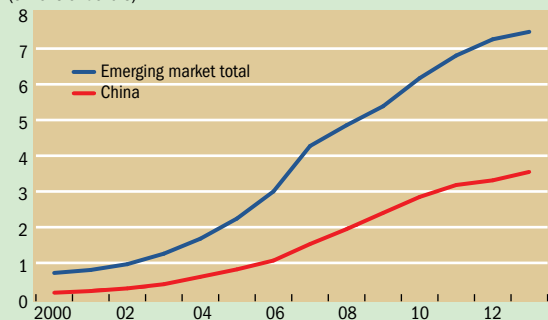
Note: Foreign investors include official agencies such as foreign central banks and sovereign wealth funds.

Chart 4

Adding to the pile

Emerging market economies have added about \$6.5 trillion to their reserves since 2000. China accounts for about half of it.

(trillions of dollars)



Sources: IMF; and People's Bank of China.

Note: Foreign exchange reserves data for 2013 are through the second quarter.

Regulatory reforms that require financial institutions to hold safe and liquid assets as a buffer against adverse financial shocks are adding to this demand. Moreover, at times of global financial turmoil, private investors worldwide also clamor for such assets.

This has led to an imbalance: the supply of safe assets has fallen, even as the demand for them has surged. The crisis dealt a blow to the notion that private sector securities, even those issued by rock-solid corporations and financial institutions, can be considered safe assets. At the same time, government bonds of many major economies—such as those in the euro area, Japan, and the United Kingdom—also look shakier in the aftermath of the crisis as those economies contend with weak growth prospects and sharply rising debt burdens. With its deep financial markets and rising public debt, the U.S. government has thus solidified its status as the primary global provider of safe assets.

Paradoxes

Does it make sense for other countries to buy more and more U.S. public debt and regard it as safe when that debt is ballooning rapidly and could threaten U.S. fiscal solvency? The high share of foreign ownership makes it tempting for the United States to cut its debt obligations simply by printing more dollars, which would reduce the real (that is, after-inflation) value of that debt—implicitly renegeing on part of its obligation to those foreign investors. Of course, such an action, while tempting, is ultimately unappealing, because it would fuel inflation and affect U.S. investors and the U.S. economy as well.

In fact, there is a delicate domestic political equilibrium that makes it rational for foreign investors to retain faith that the United States will not inflate away the value of their holdings of Treasury debt. Domestic holders of U.S. debt include retirees, pension funds, financial institutions, and insurance companies. These groups constitute a powerful political constituency that would inflict a huge political cost on the incumbent government if inflation were to rise sharply. This gives foreign investors some reassurance that the value of their U.S. investments will be protected.

Still, emerging market countries are frustrated that they have no place other than dollar assets to park most of their reserves, especially since interest rates on Treasury securities have remained low for an extended period, barely keeping up with inflation. This frustration is heightened by the disconcerting prospect that, despite its strength as the dominant reserve currency, the dollar is likely to fall in value over the long term. China and other key emerging markets are expected to continue registering higher productivity growth than the United States, so once global financial markets settle down, the dollar is likely to return to the gradual depreciation it has experienced since the early 2000s. In other words, foreign investors stand to get a smaller payout in terms of their domestic currencies when they eventually sell their dollar investments. Thus, foreign investors seem willing to pay a high price—investing in

low-yielding U.S. Treasury securities rather than higher-return investments—to hold these assets that are otherwise seen as safe and liquid.

Competitors

There are tangible and intangible benefits to a country whose currency serves as a reserve currency. In addition to the prestige conferred by this status, it also means access

Investors around the world have become dependent on financial assets denominated in U.S. dollars.

to cheap financing in the country's domestic currency and the benefit of seigniorage revenue—the difference between the purchasing power of money and the cost of producing it—which can be extracted from both domestic and foreign holders of the currency.

Other major advanced economies either have much smaller financial markets or, as in the case of Europe and Japan, have relatively weak long-term growth prospects and already high levels of public debt. As a result these currencies are unlikely to return to their former glory anytime soon. But because of the benefits that have accrued to the dollar from its reserve currency status, there should, in principle, be new competitors seeking a share of those benefits.

One putative competitor to the dollar, which has been the subject of considerable attention, is the Chinese renminbi. China's economy is the second biggest in the world and is on track to become the largest over the next decade. The Chinese government is taking many steps to promote the use of the renminbi in international financial and trade transactions. These steps are fast gaining traction given the economy's sheer size and prowess in international trade. As restrictions on cross-border capital mobility are removed and the currency becomes freely convertible, the renminbi will also become a viable reserve currency.

However, the limited financial market development and structure of political and legal institutions in China make it unlikely that the renminbi will become a major reserve asset that foreign investors, including other central banks, turn to for safekeeping of their funds. At best, the renminbi will erode but not significantly challenge the dollar's preeminent status. No other emerging market economies are in a position to have their currencies ascend to reserve status, let alone challenge the dollar.

Of course, the dollar's dominance as a store of value does not necessarily translate to continued dominance in other aspects. The dollar's roles as a medium of exchange and unit of account are likely to erode over time. Financial market and technological developments that make it easier to conduct cross-border financial transactions using other currencies

are reducing the need for the dollar. China has signed bilateral agreements with a number of its major trading partners to settle trade transactions in their own currencies. Similarly, there is no good reason why contracts for certain commodities, such as oil, should continue to be denominated and settled only in dollars.

By contrast, because financial assets denominated in U.S. dollars, especially U.S. government securities, remain the preferred destination for investors interested in the safekeeping of their investments, the dollar's position as the predominant store of value in the world is secure for the foreseeable future.

What lies ahead

Official and private investors around the world have become dependent on financial assets denominated in U.S. dollars, especially because there are no alternatives that offer the scale and depth of U.S. financial markets. U.S. Treasury securities, representing borrowing by the U.S. government, are still seen as the safest financial assets in global markets. Now that foreign investors, including foreign central banks, have accumulated enormous investments in these securities as well as other dollar assets, they have a strong incentive to keep the value of the dollar from crashing. Moreover, there are no alternative currencies or investments that provide a similar degree of safety and liquidity in the quantities demanded by investors. Therein lies the genesis of the "dollar trap."

The reason the United States appears so special in global finance is not just because of the size of its economy, but also because of its institutions—democratic government, public institutions, financial markets, and legal framework—which, for all their flaws, still set the standard for the world. For instance, despite the Federal Reserve's aggressive and protracted use of unconventional monetary policies, investors worldwide still seem to trust that the Fed will not allow inflation to get out of hand and diminish the value of the dollar.

Ultimately, getting away from the dollar trap will require significant financial and institutional reforms in countries that aspire to have their currencies erode the dollar's dominance. And it will take major reforms to global governance to reduce official demand for safe assets by providing better financial safety nets for countries. Such reforms would eliminate the need for accumulation of foreign exchange reserves as self-insurance against currency and financial crises.

The dollar will remain the dominant reserve currency for a long time, mainly for want of better alternatives. ■

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This article draws on the authors' new book, The Dollar Trap: How the U.S. Dollar Tightened Its Grip on Global Finance.



What Is Monetarism?

Its emphasis on money's importance gained sway in the 1970s

Sarwat Jahan and Chris Papageorgiou

JUST how important is money? Few would deny that it plays a key role in the economy.

But one school of economic thought, called monetarism, maintains that the money supply (the total amount of money in an economy) is the chief determinant of current dollar GDP in the short run and the price level over longer periods. Monetary policy, one of the tools governments have to affect the overall performance of the economy, uses instruments such as interest rates to adjust the amount of money in the economy. Monetarists believe that the objectives of monetary policy are best met by targeting the growth rate of the money supply. Monetarism gained prominence in the 1970s—bringing down inflation in the United States and United Kingdom—and greatly influenced the U.S. central bank's decision to stimulate the economy during the global recession of 2007–09.

Today, monetarism is mainly associated with Nobel Prize-winning economist Milton Friedman. In his seminal work *A Monetary History of the United States, 1867–1960*, which he wrote with fellow economist Anna Schwartz in 1963, Friedman argued that poor monetary policy by the U.S. central bank, the Federal Reserve, was the primary cause of the Great Depression in the United States in the 1930s. In their view, the failure of the Fed (as it is usually called) to offset forces that were putting downward pressure on the money supply and its actions to reduce the stock of money were the opposite of what should have been done. They also argued that because markets naturally move toward a stable center, an incorrectly set money supply caused markets to behave erratically.

Monetarism gained prominence in the 1970s. In 1979, with U.S. inflation peaking at 20 percent, the Fed switched its operating strategy to reflect monetarist theory. But monetarism faded in the following decades as its ability to explain the U.S. economy seemed to wane. Nevertheless, some of the insights monetarists brought to economic analysis have been adopted by nonmonetarist economists.

At its most basic

The foundation of monetarism is the Quantity Theory of Money. The theory is an accounting identity—that is, it must be true. It says that the money supply multiplied by velocity (the rate at which money changes hands) equals nominal expenditures in the economy (the number of goods and services sold multiplied by the average price paid for them). As an accounting identity, this equation is uncontroversial. What is controversial is velocity. Monetarist theory views

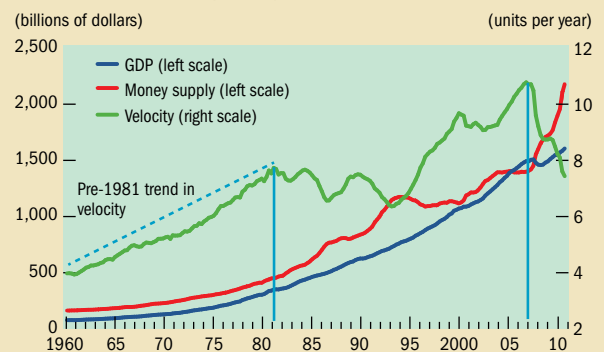
velocity as generally stable, which implies that nominal income is largely a function of the money supply. Variations in nominal income reflect changes in real economic activity (the number of goods and services sold) and inflation (the average price paid for them).

The quantity theory is the basis for several key tenets and prescriptions of monetarism:

- **Long-run monetary neutrality:** An increase in the money stock would be followed by an increase in the general price level in the long run, with no effects on real factors such as consumption or output.
- **Short-run monetary nonneutrality:** An increase in the stock of money has temporary effects on real output (GDP) and employment in the short run because wages and prices take time to adjust (they are sticky, in economic parlance).
- **Constant money growth rule:** Friedman, who died in 2006, proposed a fixed *monetary rule*, which states that the Fed should be required to target the growth rate of money to equal the growth rate of real GDP, leaving the price level unchanged. If the economy is expected to grow at 2 percent in a given year, the Fed should allow the money supply to increase by 2 percent. The Fed should be bound to fixed rules in conducting monetary policy because discretionary power can destabilize the economy.

Varying velocity

When dollars changed hands at a predictable pace before 1981, money and output grew together. But when velocity became volatile, the relationship fell apart.



Source: Board of Governors, U.S. Federal Reserve System.

Note: Quarterly data are seasonally adjusted. Money supply = cash in circulation and checking accounts (M1). Velocity = the number of times a dollar changes hands in a year. GDP is reduced by a factor of 10 to fit on the chart.

• **Interest rate flexibility:** The money growth rule was intended to allow interest rates, which affect the cost of credit, to be flexible to enable borrowers and lenders to take account of expected inflation as well as the variations in real interest rates.

Many monetarists also believe that markets are inherently stable in the absence of major unexpected fluctuations in the money supply. They also assert that government intervention can often destabilize the economy more than help it. Monetarists also believe that there is no long-run trade-off between inflation and unemployment because the economy settles at long-run equilibrium at a full employment level of output (see “What Is the Output Gap?” in the September 2013 *F&D*).

The great debate

Although monetarism gained in importance in the 1970s, it was critiqued by the school of thought that it sought to supplant—Keynesianism. Keynesians, who took their inspiration from the great British economist John Maynard Keynes, believe that demand for goods and services is the key to economic output. They contend that monetarism falters as an adequate explanation of the economy because velocity is inherently unstable and attach little or no significance to the quantity theory of money and the monetarist call for rules. Because the economy is subject to deep swings and periodic instability, it is dangerous to make the Fed slave to a preordained money target, they believe—the Fed should have some leeway or “discretion” in conducting policy. Keynesians also do not believe that markets adjust to disruptions and quickly return to a full employment level of output.

Keynesianism held sway for the first quarter century after World War II. But the monetarist challenge to the traditional Keynesian theory strengthened during the 1970s, a decade characterized by high and rising inflation and slow economic growth. Keynesian theory had no appropriate policy responses, while Friedman and other monetarists argued convincingly that the high rates of inflation were due to rapid increases in the money supply, making control of the money supply the key to good policy.

In 1979, Paul A. Volcker became chairman of the Fed and made fighting inflation its primary objective. The Fed restricted the money supply (in accordance with the Friedman rule) to tame inflation and succeeded. Inflation subsided dramatically, although at the cost of a big recession.

Monetarism had another triumph in Britain. When Margaret Thatcher was elected prime minister in 1979, Britain had endured several years of severe inflation. Thatcher implemented monetarism as the weapon against rising prices, and succeeded in halving inflation, to less than 5 percent by 1983.

But monetarism’s ascendance was brief. The money supply is useful as a policy target only if the relationship between money and nominal GDP, and therefore inflation, is stable and predictable. That is, if the supply of money rises, so does nominal GDP, and vice versa. To achieve that direct effect, though, the velocity of money must be predictable.

In the 1970s velocity increased at a fairly constant rate and it appeared that the quantity theory of money was a good one (see chart). The rate of growth of money, adjusted for a predictable level of velocity, determined

The relationship between money and economic performance changed.

nominal GDP. But in the 1980s and 1990s velocity became highly unstable with unpredictable periods of increases and declines. The link between the money supply and nominal GDP broke down, and the usefulness of the quantity theory of money came into question. Many economists who had been convinced by monetarism in the 1970s abandoned the approach.

Most economists think the change in velocity’s predictability was primarily the result of changes in banking rules and other financial innovations. In the 1980s banks were allowed to offer interest-earning checking accounts, eroding some of the distinction between checking and savings accounts. Moreover, many people found that money markets, mutual funds, and other assets were better alternatives to traditional bank deposits. As a result, the relationship between money and economic performance changed.

Relevant still

Still, the monetarist interpretation of the Great Depression was not entirely forgotten. In a speech during a celebration of Milton Friedman’s 90th birthday in late 2002, then-Fed governor Ben S. Bernanke, who would become chairman four years later, said, “I would like to say to Milton and Anna [Schwartz]: Regarding the Great Depression, you’re right. We [the Fed] did it. We’re very sorry. But thanks to you, we won’t do it again.” Fed Chairman Bernanke mentioned the work of Friedman and Schwartz in his decision to lower interest rates and increase money supply to stimulate the economy during the global recession that began in 2007 in the United States. Prominent monetarists (including Schwartz) argued that the Fed stimulus would lead to extremely high inflation. Instead, velocity dropped sharply and deflation is seen as a much more serious risk.

Although most economists today reject the slavish attention to money growth that is at the heart of monetarist analysis, some important tenets of monetarism have found their way into modern nonmonetarist analysis, muddying the distinction between monetarism and Keynesianism that seemed so clear three decades ago. Probably the most important is that inflation cannot continue indefinitely without increases in the money supply, and controlling it should be a primary, if not the only, responsibility of the central bank. ■

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Harbingers of

John C. Bluedorn, Jörg W. Decressin, and Marco E. Terrones

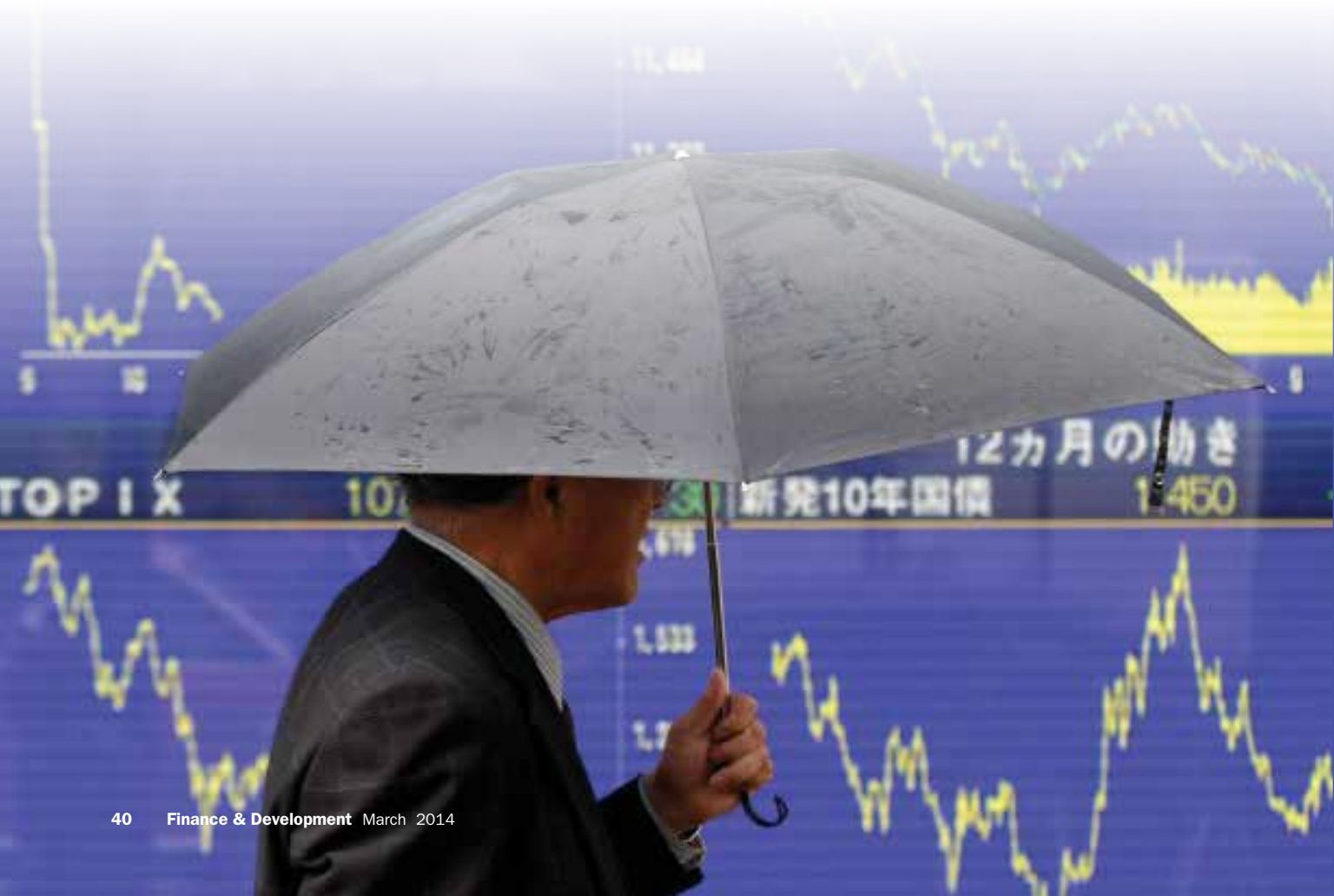
Changes in asset prices are good predictors of economic downturns

THERE are two views about the relationship between changes in asset prices and business cycles, particularly recessions. One view contends that asset price corrections often precede or coincide with a recession. The 1929 stock market crash and the Great Depression, the early 1990s asset price collapse and the ensuing recession in Japan, and the 2008 global crash in asset prices and the Great Recession are some of the most vivid cases of recessions foreshadowed by asset price corrections.

The other view argues that asset prices may fluctuate too widely to be useful predictors of recessions. The sharp collapse in the stock market in 1962 did little to unsettle

the economic recovery in the United States. Likewise, the stock market crash of October 1987 did not significantly affect U.S. economic activity, despite predictions of a severe recession in 1988. Proponents of this view contend that asset price changes often reflect overly optimistic or pessimistic changes in investors' expectations and are therefore poor indicators of the business cycle.

These two views raise some important questions about the relationship between asset prices and the business cycle. What does the theory say? Are these implications borne out by the data? Are asset price corrections useful in predicting the start of a recession? To shed light on these questions,



Recessions

we first describe economic theory's predictions about the relationship between asset prices and the business cycle and examine whether they are supported by data for the Group of Seven (G7) advanced economies (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States) over the past four decades. Next, we assess whether the prices of two key assets—equities and houses—are useful predictors of recession starts in these economies and explore the effect on the explanatory power of these prices when other variables commonly thought to be associated with the cycle are included in the analysis.

Asset prices and output fluctuations

In theory, there are many reasons why asset price movements could be associated with the business cycle. First, asset prices affect households' net wealth and their ability to borrow, which can have important effects on households' consumption plans. Second, according to standard Tobin's q -theory, investment should move in the same direction as q , which is the ratio of the market value of capital to its replacement cost. Therefore investment should be high when asset prices—which are directly associated with the market value of capital—are high, and vice versa. Third, asset price changes can affect firms' balance sheets, hurting or helping their collateral and creditworthiness and thus increasing or decreasing their willingness and ability to invest. Asset price movements may also affect banks' balance sheets, inducing them to adjust their capital and lending activities. These effects can be amplified through financial markets when there are differences in the information available to borrowers and lenders and borrowers are limited in their ability to commit to repayment.

Last, according to the basic asset-pricing equation in finance, an asset price should equal the discounted value of its current and expected future returns. In the case of equities, dividends are the relevant returns; for houses, it is rent. To the extent that returns move together or ahead of economic conditions, asset prices should be useful in forecasting economic activity. Movements in the discount rate (that is applied to the stream of future returns to derive present value) accentuate this relationship if they reflect investors' search for yield—during economic expansions investors take on more risk, lowering the discount rate and bidding up the price of unchanged dividend or rent flows, while in economic contractions they do just the opposite.

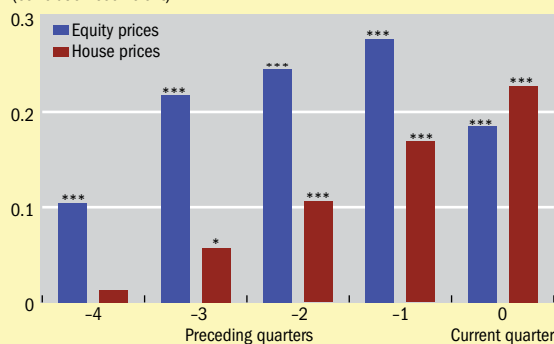
From this discussion, we derive two important implications about the relationship between asset prices and the

Chart 1

Taking the lead

Asset price changes in the G7 economies tend to lead output changes, suggesting that asset price declines could foreshadow recession starts.

(correlation coefficient)



Source: Authors' calculations.

Note: The chart measures the correlation between changes in equity and house prices in the current quarter (0) and previous quarters and current output changes in the G7 economies—Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. A positive (negative) correlation indicates that the highlighted asset price change in the current or preceding quarter moves in the same (opposite) direction as current output changes. * = 90 percent and *** = 99 percent probability that the highlighted asset price change and output change move together. Chart is based on data from 1970 to 2012.

business cycle. First, asset prices should move in tandem with real output (that is, they should be procyclical). Second, asset prices should lead the business cycle. Are these two features borne out by the data? We explore this issue using data for the G7 economies over the period 1970 through 2012. Chart 1 shows the average contemporaneous and lead cross-correlation coefficients for changes in real asset prices and output growth across these economies.

Two important results stand out. First, asset prices are indeed procyclical—that is, they move together with output, as the theory predicts. The contemporaneous correlations between real asset price changes and output growth are positive (that is, they move in the same direction) and significantly different from zero (in other words, they are statistically significant). The low correlation coefficients, however, indicate that equity and house prices are only weakly procyclical. Second, asset prices lead output by up to one year. The highest lead cross-correlation with output growth for equity price and house price changes is observed one quarter ahead. However, these cross-correlation coefficients differ significantly from zero at every horizon only for equity price changes up to four quarters ahead of a



change in output. These two results suggest that asset prices could indeed be useful coincident and leading indicators of the business cycle, as the theory suggests.

Predicting recession starts

We next examine the ability of asset price changes to predict the start of recessions with a logistic regression model, which is commonly used to investigate the behavior of binary dependent variables. These are variables that can take one of two possible values. In our analysis, the value is 1 if a recession starts in the next quarter—output per capita peaks in the current quarter—and zero otherwise. In these models, the predicted value will fall between zero and 1 and can be interpreted as the chance that a recession will start in the next quarter. A rise in the predicted value would indicate that the chances of a recession have grown according to the model. Our focus on when a recession starts rather than just on whether or not an economy is in recession in a given quarter is a notable departure from many earlier studies. As such, the statistical model we developed is a kind of early-warning indicator for the start of a recession, which typically is called with a delay of several quarters.

So are real asset prices useful in predicting recession starts? In a word, yes. We found a negative and statistically significant relationship between real (or inflation-adjusted) equity price changes and the chance that a recession will start in the next quarter. The negative association means that when real equity prices fall, the probability that a recession will start rises, and if real equity prices increase, the chance that a recession will begin falls. We also found that real house price changes exhibit a negative association with the chance that a recession will start, but unlike with equity price changes, this association is not significantly different from zero. When price changes for both assets are included simulta-

neously in the model, their coefficients and significance are similar to those in the models that take them separately. The in-sample performance of these models is very strong, as reflected by the large AUC statistics. The AUC statistic (technically, the “area under the receiver operating characteristic

The statistical model we developed is a kind of early-warning indicator for the start of a recession.

curve”) is designed to show, in this case, how well a model calls recession starts. It is about 0.8 when equity prices are included, which is significantly greater than the 0.5 benchmark achieved by flipping a coin (making random guesses). That said, the model is not perfect: recessions occur so infrequently that the model generates some false alarms.

To examine the role of other factors commonly thought to presage a recession, we introduced into the model the following variables: the term spread (the difference between the 10-year and three-month government bond yield); the implied price volatility of equities that make up the S&P 500 index in the United States (a common measure of global uncertainty and risk aversion); and changes in real oil prices. A reduction in the term spread (a proxy for tighter monetary policy), greater uncertainty and risk aversion (which negatively affect durable consumption and investment), and higher oil prices (which increase transportation and production input costs) are often cited as raising the probability of a recession start.

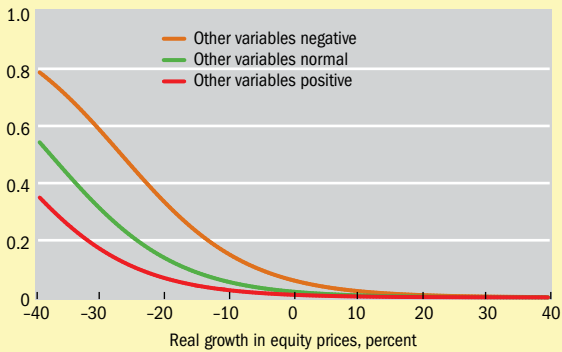
Even after including these additional explanatory variables, the negative and significant effect of real equity price changes

Chart 2

Full prognosis

How strongly an equity price decline in G7 countries raises the chances that a recession will start in the next quarter is affected by the performance of other market variables—house prices, term spread, equity price volatility, and oil prices.

(probability of new recession)



Source: Authors' calculations.

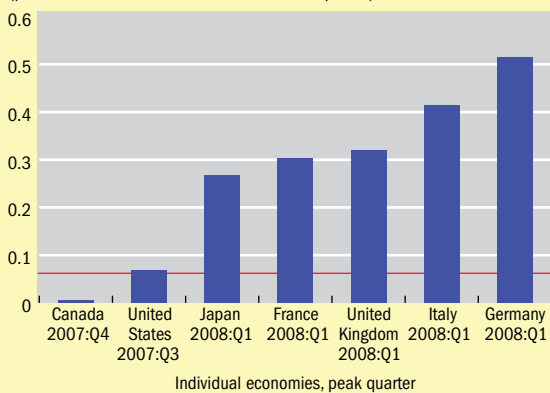
Note: The red line represents the probability of a recession after a drop in equity prices, when other indicators are generally positive. The green line represents the case when other indicators are normal. The orange line represents the recession probability when other indicators are also flashing problems. "Other" indicators are real house price changes, the term spread (the difference between the 10-year and three-month government bond yields), the implied volatility of the prices of equities in the S&P 500 index in the United States (VIXO/VIX), and real oil price growth. Chart is based on data from 1970 to 2012.

Chart 3

More hits than misses

Asset price declines correctly called the start of the recent large recession in major European economies and Japan, narrowly caught it in the United States, but missed it in Canada.

(prediction that a recession starts in the next quarter)



Source: Authors' calculations.

Note: The red line (0.06) represents the optimal cutoff probability for calling a recession start in the next quarter, chosen using information through the second quarter of 2007 (the so-called Youden cutoff). The bars represent the strength with which the model called the start of a recession in each of the G7 economies. The quarters shown occur just prior to the start of the global recession in each economy (at a peak in output), and the bars represent the strength of the signal that a recession would start in the next quarter.

remains unchanged. Interestingly, when the other variables are included, the estimated negative effect of real house price changes is larger than when house price changes are considered alone or only with equity prices. When considered with these other variables, house price changes are statistically

significant. As anticipated, reductions in the term spread and increases in market uncertainty and risk aversion are associated with greater chances of a new recession. In contrast, real oil price changes do not appear to help predict recessions. This may be because rising oil prices can also reflect strong aggregate demand. The performance of this model when these other variables are included is about as strong as when only equity prices are considered, which suggests that these other variables have little effect on the model's ability to predict recessions.

The overall picture then is that real equity price changes are one of the most useful predictors of recession starts. Chart 2 portrays this relationship. A drop in equity prices significantly raises the chance that a recession will start in the following quarter, as illustrated by the downward sloping lines. In contrast, higher equity prices tend to reduce the predicted chance. But because the baseline chance of a recession is already low (about 4 percent in any quarter), increases in equity prices have little practical effect on the prognosis. In other words, there is an inherent asymmetry in the predictive power of equity prices. When stock prices fall sharply, watch out! When they rise, the chances of a recession do not change much. The predictive power of asset prices also changes when the other real-time variables are flashing red—the orange line is everywhere higher than the green line. If a term spread inversion and falling house prices accompany a large equity price drop, the model indicates that a recession is very likely in the offing.

Finally, the model seems to have performed relatively well in predicting the starts of the most recent recessions in the G7 economies. Chart 3 shows the model's forecast for recessions that start in the next quarter for each G7 economy in recent years. For the European G7 economies (France, Germany, Italy, and the United Kingdom) and Japan, it was a clear call. For the United States, a recession start was called, but it was close. However, for Canada it was a miss.

Useful predictors

Real asset price corrections are useful predictors of new recessions. In particular, large corrections in real equity prices are associated with significant increases in the chance that a recession will start in the following quarter. If at the same time, house prices collapse and the term spread becomes negative, the chance of a recession increases markedly. The message is clear: policymakers should be mindful of sharp asset price drops—especially if the declines are accompanied by narrowing term spreads. These developments are likely to signal trouble in the very near future. ■

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This article is based on the author's 2013 IMF Working Paper 13/203, "Do Asset Price Drops Foreshadow Recessions?"

MAN versus Mother Nature



Nicole Laframboise and Sebastian Acevedo

In the battle against natural disasters, forward-thinking macroeconomic policy can help countries prepare for and mitigate the eventual blow

IMAGES of destruction and grief following Typhoon Haiyan, which hit the Philippines in November 2013, are still fresh in our minds. They summon up similar scenes of devastation following the great south Asian tsunami of 2004 and Hurricane Katrina, which hit the United States in 2005. And the damages are not limited to immediate effects.

The New York Times ran a heartbreaking front-page story in November 2013, describing the plight of a young man in the Philippines who sustained a simple leg fracture after Typhoon Haiyan (Bradsher, 2013). He lay on a gurney in a makeshift hospital, surrounded by his children, for five days awaiting treatment, only to die from an infection.

Not surprisingly, disasters have long-lasting psychological consequences. In addition to the immediate direct human cost, natural disasters often exacerbate poverty and undermine social welfare. Developing economies—and their most vulnerable populations—are especially at risk.

Are there more natural disasters today and are they more severe? Or are we simply better informed thanks to modern real-time, round-the-clock media coverage? What about our response? Have we figured out—with technology and sophisticated communications—how to prepare and respond in a way that saves lives and limits economic damage?

Over the past 50 years, the frequency of natural disasters has indeed increased (see Chart 1). Reporting of disasters has improved dramatically, but there has also been a documented rise in the number and intensity of climatic disasters and more people and physical assets are concentrated in at-risk areas. Interestingly, in the past decade the number of reported disasters dipped, but the number of people affected and the related costs continued to rise.

The poor more at risk

Natural disasters are more common and affect more people in developing economies (all low- and middle-income countries as defined by the World Bank) than elsewhere

(Laframboise and Loko, 2012) (see Chart 2). Since the 1960s, about 99 percent of the people affected by natural disasters lived in developing economies (87 percent middle income,

The most vulnerable members of society are the major victims of natural disasters.

12 percent low income), and 97 percent of all disaster-related deaths occurred there (64 percent middle income, 32 percent low income). Weighted by land area and population, small island states suffer the highest frequency of natural disasters. In the eastern Caribbean, a large natural disaster with damage equivalent to more than 2 percent of GDP can be expected every two to three years.

Advanced economies are better equipped to absorb the cost of disasters because they have recourse to private insurance, higher domestic savings, and market financing. They also allocate more resources to reducing vulnerabilities—for example, by developing and enforcing building codes.

The dollar value of disaster damage is much larger in advanced economies because of the amount and concentration of capital, but as a percentage of national wealth and output, the damage is usually much greater in developing economies. For example, the direct costs of the large earthquake in Japan in 2011 were estimated at about 3.6 percent of GDP; in Haiti the direct cost of the 2010 earthquake far exceeded total GDP that year.

People in developing economies are more likely to live in high-risk areas, and those countries tend to have a weak infrastructure. Developing economies rely more on sectors such as agriculture and tourism that depend on the weather. Moreover, their economic sectors are more interconnected—which makes these countries' economies more vulnerable to shocks in other sectors, including through infrastructure and cross-sector-ownership linkages. Yet they lack adequate emergency coping mechanisms.

The most vulnerable members of society, both in high- and low-income countries, are the major victims of natural disasters. They have little, if any, savings to fund current consumption, and divesting any limited capital stock, such as livestock, lowers their productive capacity and lifetime earnings. They have limited labor skills and opportunity for mobility, and indirect effects such as inflation hurt them disproportionately. (Inflation often rises after a disaster, when shortages of essential goods and services generate demand pressure.) These all add up to permanent welfare losses.

Economic toll

In the short term, economic output shrinks and the fiscal deficit worsens after a disaster. Countries' export potential suffers as well, which leads to larger deficits in trade and services with the rest of the world. The impact can be alleviated by foreign aid and investment, but after large disasters

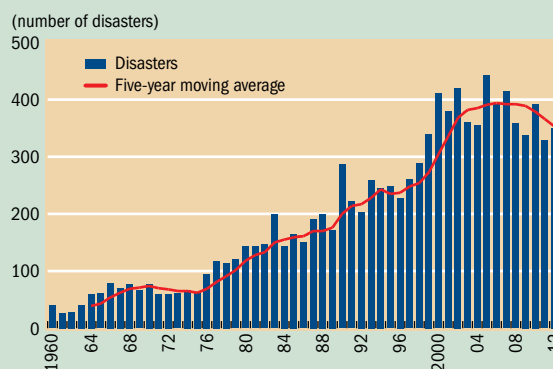
the growth and income effects usually persist. A country's growth drops by an average 0.7 percent in the first year after a disaster, with a cumulative output loss three years after the disaster of about 1.5 percent over and above the immediate direct losses. Per capita real GDP falls by about 0.6 percent on average and by 1 percent in low-income countries. Droughts have the broadest impact, except in small island states (for example, in the Caribbean; see box), where hurricanes are the most damaging.

After a major disaster, policymakers must decide whether to finance emergency spending by reducing or diverting existing spending or by borrowing. If the shock is deemed temporary—that is, physical recovery will take less than a year—it makes sense to borrow to support the domestic economy and offset the adverse effects of the shocks. This also helps maintain the incomes of those hardest hit and support the most vulnerable. If the effects of a disaster are long lasting, the economy must slowly adjust to a new equilib-

Chart 1

Calamity strikes

The frequency of natural disasters across the globe has increased steadily since 1960, dipping only in the past decade.

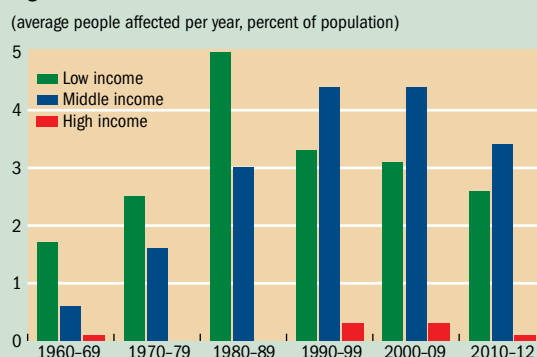


Sources: EM-DAT International Disaster Database; and IMF staff calculations.

Chart 2

Hardest hit

Disasters affect more people in developing countries than in high-income countries.



Sources: EM-DAT International Disaster Database; and authors' calculations.

Disaster impact in the Caribbean

The Caribbean region is one of the most disaster-prone areas in the world. In terms of disasters per capita and disasters per square kilometer, Caribbean countries are ranked among the top 50 riskiest places in the world (Rasmussen, 2006). More than 400 disasters afflicted the region between 1950 and 2012, including 267 tropical cyclones (usually hurricanes) and 113 floods. On average there is a 14 percent probability that a Caribbean country will be hit by a tropical storm in any given year, and in most countries the probability exceeds 10 percent.

The effect of natural disasters in the Caribbean on growth and debt are sizable. Strobl (2012) finds that the average hurricane reduces a country's output by nearly 1 percent; Acevedo (2013) finds similar results for severe storms and floods, and

a smaller impact from moderate storms (0.5 percent). Growth typically follows a standard recovery path: activity rebounds shortly after a disaster thanks to rehabilitation and reconstruction. But this rebound is usually short lived and smaller than the initial impact, with a negative cumulative effect on GDP.

The impact on debt is even more dramatic. In the Eastern Caribbean Currency Union, the debt-to-GDP ratio rises by almost 5 percentage points on average the year a storm strikes (Acevedo, 2013). Viewed more broadly, however, Caribbean floods increase debt but storms do not. In part, this is because hurricanes attract more global media coverage, which drives aid and debt relief (Eisensee and Strömberg, 2007), whereas floods' impact is more local.

rium, and the government must smooth the transition and preserve macroeconomic stability.

In small island states and low-income countries, natural disasters often drive up public debt. Even with external assistance and remittance flows, public debt tends to rise. In the eastern Caribbean, this disaster-related increase has been significant. Take for example Hurricane Ivan, which hit Grenada in 2004. Ivan killed 39 people, displaced 60,000, and caused damages estimated at \$890 million (150 percent of GDP). Output collapsed and the debt-to-GDP ratio rose by 15 percentage points in just one year, to 95 percent. Grenada underwent a debt restructuring in 2005 and continues to struggle with high debt today.

The impact of natural disasters depends on many things, including the size and structure of the economy, the concentration of people in high-risk areas, per capita income, and financial system development. Recent studies find that higher skills, better institutions (for example, local governments, health services, police, rule of law), more openness to trade, and higher government spending help lower the economic costs of a natural disaster (Noy, 2009). Better institutions and a better-educated population help ensure a capable and efficient disaster response, good allocation of foreign aid, and proper enforcement of such structural measures as building codes and zoning laws, which helps reduce damages when they hit. In addition, countries with healthy foreign exchange reserves and constraints on capital outflows can better withstand the capital flight that often follows a natural disaster.

Countries with deeper financial systems—that is, where more people have bank accounts and more households and businesses have bank loans—suffer less after a disaster. Countries with well-developed financial systems generally run up fiscal deficits but lose less in output. Deeper credit markets provide quicker access to local financing to fund recovery, minimizing the need for foreign borrowing, which can take longer to access or even be completely out of reach. Countries with deep financial systems *and* high insurance coverage fare the best, because the risk is transferred to outsiders (even in the case of local insurers through reinsurance policies), so investment and recon-

struction place little or no extra fiscal burden on the state. Two large earthquakes in New Zealand in 2010 and 2011, for example, caused major damage—estimated at 10 percent of GDP—but insurance coverage (6 percent of GDP) transferred much of the cost of rehabilitation abroad. Activity did not contract, and growth in fact rose subsequently with reconstruction.

In general, the government policy response could be a combination of new financing and reserves drawdown, as well as macroeconomic adjustment in the form of current spending cuts or higher taxes. The IMF contributes at this stage, including as a catalyst for other lenders and by helping governments maintain macroeconomic stability and design the right policy response to lay the foundation for recovery.

Managing risk

While most natural disasters cannot be prevented, our research finds that more could be done to reduce their human and economic costs and minimize welfare losses. We found that there are steps the government can take before a disaster to mitigate the impact on people and output, particularly in countries very prone to disasters for geophysical or meteorological reasons. In such regions, a policy framework that explicitly takes into account the risks and costs of disasters would allow the government to better prepare for, and respond to, natural disaster shocks. Such preparation falls under the key pillars of risk assessment and reduction, self-insurance, and risk transfer (see table).

There are several obstacles to a more holistic, preventive approach to coping with disasters. First, many low-income countries lack the budget resources and technical and human capacity to prepare for disasters or to build levees or retrofit offices and homes to withstand storms. Countries with large debt overhangs are particularly constrained. These factors impede the development of mechanisms to reduce risk or self-insure—that is, either save for a rainy day or take out insurance for that day.

Second, it is difficult to allocate scarce resources that would otherwise be spent on much needed social spending or infrastructure, particularly when there is always the chance that the next “big one” may not hit for a while.

This is why efforts to assess the likelihood of disaster and key vulnerabilities should guide prevention and mitigation decisions.

Third, emergency aid and financing can be a strong but rational incentive for developing economies to underinvest in risk reduction. In fact, because such financing is offered at such low interest rates, it may not make sense to spend scarce resources before a disaster; the expense may not justify the expected return. Haiti, for example, received pledges of US\$9.9 billion after the 2010 earthquake, 1.5 times the value of the country's nominal GDP. The country could not have paid for equivalent insurance coverage.

Finally, it is possible that countries are underestimating how much the probability of disasters has increased over time, particularly of climate-related disasters.

Should we be talking dollars and cents in the face of human tragedy? The first imperative of public policy should be to save lives, but efforts to reduce economic costs, which carry other human and social costs that can last for generations, are also important. When the economic costs are lessened resources are freed up for disaster preparedness, resilience, and mitigation, which can save lives in the future. Policymakers must ask whether, from the top down, disaster risk management has received sufficient attention in the decision-making process.

Planning ahead

Our research draws some basic and not-so-basic lessons from recent case studies. It finds that good macroeconomic policies before and after shocks make a difference. Some of the more basic lessons are that room in the budget for emergency spending helps crisis mitigation and resolution, insurance coverage and low public debt bolster government spending flexibility if reconstruction needs arise, and public investment in risk reduction pays off over time.

Less obviously, but still important, there is considerable room for improvement in government policy frameworks to better manage risk and mitigate economic and social costs (see table). In at-risk regions, policymakers should estimate the probability of shocks and identify local vulnerabilities. They can then integrate this information into plans for con-

tingencies, investing in risk reduction, insurance, self-insurance, and disaster response.

Tax and spending policies need to be flexible, to allow rapid redeployment of spending when needed.

Coordination with foreign partners before disaster strikes could mobilize external assistance for risk reduction, which is likely to earn a higher return than emergency help after the fact.

Better cooperation between foreign partners after natural disasters is also sorely needed, particularly in low-income countries and in those with limited administrative capacity.

Insurance is the best way to reduce the real costs of natural disasters without raising taxes or cutting spending. Some innovative instruments have surfaced in recent years, but the international community could do more to pool resources and ideas to help vulnerable countries. The Caribbean Catastrophe Risk Insurance Facility (CCRIF) is one such example and has recently supported immediate relief to Caribbean countries. However, strained fiscal positions have left countries underinsured in the CCRIF and still exposed to shocks.

These are practical top-down policy suggestions for consideration during the calm between the inevitable storms. Most countries wait for the next disaster and then try to pick up the pieces quickly. Instead, policymakers and their foreign partners should integrate new and better ways to manage risk and reduce costs ahead of time. This would save lives, reduce suffering, and save money. And that would prevent unnecessary casualties—like the young man with the broken leg in the Philippines. ■

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Pillars of disaster risk management

Risk assessment	Risk reduction	Self-insurance	Risk transfer
Gather data, assess probability of natural disaster strike	Take measures to lower physical vulnerability, improve fiscal planning	Build savings, reserves	Boost insurance, reinsurance
Assess human and physical vulnerabilities	Embark on relocation, rebuilding, retrofitting, flood control, etc.	Build reserve fund, buffer stocks, etc.	Arrange for global insurance, pooled insurance (e.g., Caribbean Catastrophe Risk Insurance Facility)
Integrate information into fiscal framework, development plans	Establish building codes, alarms, emergency response, etc.	Establish rainy day funds, deepen financial system	Establish debt facility, catastrophe bonds, facilities with international financial institutions, etc.

Note: These pillars aim to guide policy formulation and ensure comprehensive planning, not to provide a specific sequence of steps.

Aid and

OIL

Drilling platform off West African coast.

Growing numbers of large oil discoveries in low-income countries could reduce the need for foreign aid

Rabah Arezki and Ritwik Banerjee

FOREIGN aid has long been a sizable source of funding for developing economies. In 2012, major donors disbursed \$127 billion, two-thirds of it to low-income countries in Africa and Asia. Foreign aid—more precisely official development assistance—is a drop in the bucket for donor countries, about 0.3 percent of their combined GDP. But it is a major source of funding for some developing economies—amounting to 15 percent of Liberia’s GDP and 5 percent of Burundi’s, for example (see chart).

Foreign aid comes in many guises, but the most prominent is development assistance, which advanced economies disburse to poorer economies to promote economic and social development and is measured by the Development Assistance Committee of the Organisation for Economic Co-operation and Development. The general long-run objective of development aid is the alleviation of poverty and promotion of welfare in low- and middle-income countries through budgetary assistance and access to technology—although there is no clear evidence yet

to support a relationship between aid and economic performance (see box).

In recent years, however, many developing economies, especially in sub-Saharan Africa, have found a new source of home-grown wealth that offers the same type of budgetary assistance as development aid—with none of the strings that donor countries often attach to how it can be used or reforms countries must make to continue receiving it. Across Africa, discoveries of large oil fields are changing the financial picture for many developing economies.

We will explore the impact of these discoveries on foreign aid. For example, do donors reduce their contribution when oil income rises? Or should they? That is, can foreign aid still play a constructive role in developing economies that strike it rich with oil?

Oil finds

In recent years, many developing economies, some of them major aid recipients, have discovered vast amounts of gas and oil. Although there have been some important finds in south Asia and Latin America, the

discoveries have been largely in sub-Saharan Africa. Some analysts have concluded that within a decade most African countries will be oil producers. Large discoveries—oil or gas fields that contain at least 500 million barrels of ultimately recoverable oil or gas equivalent—have already been made in such countries as Ghana, Kenya, Liberia, Mozambique, and Tanzania. Income from those discoveries can amount to a large percentage of a country's GDP. That in turn eases spending constraints on governments.

But the discovery of oil is not an unmixed blessing. Oil-rich countries have not all prospered, leading many to talk of the curse of oil, much as some analysts warn of aid's potential to retard growth. Indeed, over the past few decades, economic growth in resource-rich countries (especially those with large hydrocarbon deposits) has, on average, been lower than in those that are resource poor (Frankel, 2012). Whether there is a negative statistical relationship between resource richness and economic growth is widely debated. But even if oil wealth does not have a negative effect on growth there is still no strong evidence that the relationship is positive.

There are a number of reasons why an oil discovery can have deleterious consequences. It can lead to strong currency appreciation that leaves other parts of the economy, especially manufacturing, uncompetitive. In other words, the oil sector prospers while other sectors falter. In addition, the riches tossed off by the oil sector lead to political and public administration corruption (Arezki and Brückner, 2011) of individuals who may borrow lavishly to finance pork barrel projects and income transfers to curry favor with voters. If the oil boom goes bust that heavy borrowing can become a severe drag on the economy (Arezki and Brückner, 2012). The discovery of oil or other resources can also lead to an

Aid's effectiveness

Some analysts argue that aid can retard growth by driving up the value of the local currency, which makes the manufacturing sector less competitive. Others argue that aid may reduce tax revenue mobilization and that the stringent conditions imposed by donors may lead to excessive concentration of talent in aid administration. But there is also recent evidence to support the notion that aid promotes economic growth. In general, this uncertainty about aid's effectiveness has led to demands to overhaul the existing aid framework. Some even call for an end to aid altogether.

Oil may also lead to interstate conflicts when oil reserves are near borders.

internal struggle over which region or branch of society deserves the benefits (see "Under Pressure," in the December 2013 *F&D*). Oil may also lead to interstate conflicts when oil reserves are near borders. Properly addressed aid programs can help countries—especially those with weak institutions and limited ability to use the newly found resources productively—deal with these problems. It is important, then, to examine the oil-aid relationship and the effects of supplanting foreign assistance with oil revenues.

Sudden wealth

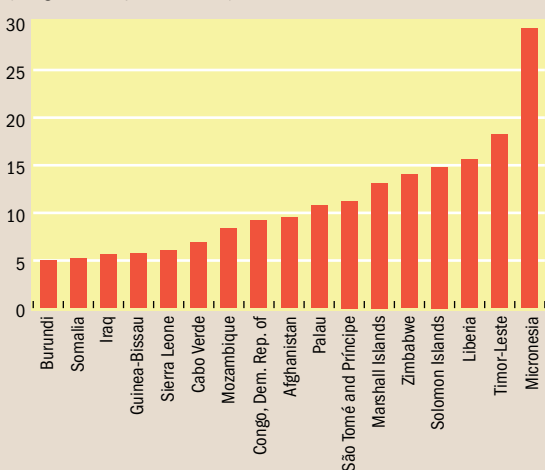
Announcements of giant oil discoveries signal that a country is suddenly richer than before. To some extent, then, an oil discovery should diminish the rationale for continued aid aimed at supporting a country's economic and social development. In other words, the often sizable stream of income from the exploitation of natural resources will relax developing economies' budget constraints and they will need less foreign aid. At the same time, there are many strategic reasons why donors may wish to continue providing aid (Alesina and Dollar, 2000). One is to ensure access to oil and energy produced by the recipient nation. After all, oil and gas imports are essential to the smooth functioning of most advanced economies, which are the major providers of development aid. Toward that end, maintaining the flow of development aid helps bilateral relationships and facilitates access to those resources. And because major Western oil companies stand to win contracts to extract the oil, aid is a way to ensure hefty profits for companies in donor countries.

To test whether the announcement of giant oil discoveries affects development aid, we looked at their timing. Data from Horn (2011) and the *OGJ Databook* (2013) document the precise time of discoveries and where and how much ultimately recoverable oil was found. Our calculations suggest that for the 170 countries we sampled over the period 1970 to 2012, the median net present value of the oil discoveries was 5 percent of GDP. Giant oil field discoveries are unevenly distributed across

Importance of aid

For some recipient countries, foreign aid is a drop in the bucket. For others it accounts for a big portion of GDP.

(foreign aid as a percent of GDP)



Sources: Organisation for Economic Co-operation and Development; and Penn World Tables Version 7.0.

Note: Represents the average level of annual aid during the period 2000–09.

the world. As a result, we were able to examine the effect of the timing of a discovery on development aid in a large number of countries. In addition, using econometric techniques we can capture the effect of discoveries on development aid over the typical five-year period between announcement of a discovery and the start of production (and, therefore, revenue).

Our results show no significant relationship between giant oil discoveries and changes in development aid. To test the robustness of our main result, we explore whether the results hold only for low-income countries or only for Africa. In order to reduce the possibility of measurement error, we also

Shutting down foreign aid flows could undermine efforts to improve governance in recipient countries.

use data for giant oil discoveries from different sources and reexamine the relationship. Results are robust and do not point to any significant change in aid after a recipient country announces a giant discovery. Moreover, there is nothing to suggest that donors maintain the level of aid until production begins and then scale back—there is no statistically significant difference five years after an announcement.

Because studies have found that democracies are likely to receive more aid, we test whether the political characteristics of recipient countries—such as their level of democracy—induce more aid after giant oil discoveries. We find some evidence that among low-income countries, democracies receive more aid than nondemocracies following a giant oil discovery. This result suggests that oil discoveries further deepen relationships between donors and recipient countries when political systems are considered viable over the long run.

Aid and governance

We found little change in foreign aid to countries that discover oil. If the only goal of aid is to ease budget constraints on developing economies, then aid could be reallocated away from those economies to others that have not found new resources. But that would be a short-sighted approach.

For example, shutting down foreign aid flows could undermine efforts to improve governance in recipient countries. As we discussed, oil discoveries can lead to corruption, conflict, pork barrel spending, and the withering of an economy's non-oil sectors. Donors could use the incentive of foreign assistance, for all its flaws, to help recipients avoid these pitfalls, improve governance, and manage the economy to offset the fallout from a rising currency. To ensure that foreign aid flows continue to nudge recipients toward economic efficiency and better governance led by democratic institutions, the aid framework should include these features:

- Incorporate a robust mechanism to build capacity for enhanced macroeconomic management of oil revenue. This will enable countries to tackle instability caused by oil price volatility and manage uncertainty about the value of the resource—two

crucial elements of oil revenue management. The mechanism should also incorporate a government's non-oil budget balance (before any interest payments) as the main metric to assess the scale of government expenditure and the injection of oil revenue into the economy. This will increase fiscal sustainability in the long run and reduce vulnerability in the short run.

- Help ameliorate the problems in manufacturing caused by currency appreciation and enable the economy to diversify. The World Trade Organization leads an Aid for Trade program aimed at helping developing economies remove supply-side and trade-related obstacles, such as low safety standards and poor regional economic integration. Donors could direct recipients to take some of the steps in the program—for example, developing trade-related infrastructure, such as ports, to improve the competitiveness of non-oil sectors. These steps should help eliminate one of the major problems in small economies with big oil finds—the crowding out of other sectors.

- Ensure that democratic institutions in the recipient countries are strengthened. Putting conditions on aid appears to be the main way donor countries can promote democratic, and therefore more legitimate, governance (Knack, 2004). Researchers have found that oil discoveries are often associated with an increase in authoritarianism (Ross, 2001; Tsui 2011). Tying aid to improvement in democratic institutions following oil discovery should be an important component of the larger policy framework guiding aid disbursement. ■

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Chained Value



A Boeing 787 Dreamliner on the assembly line in Everett, Washington, United States.

Michele Ruta and Mika Saito

The growth of multicountry manufacturing is changing how the world's income and growth are generated

THE 787 Dreamliner, the latest aircraft produced by Boeing, is a well-known American product, assembled in Washington state and sold worldwide—more than 80 percent of orders come from outside the United States.

Not only are Dreamliners bought by the world, they are made in the world. Many of their parts and components are manufactured outside the United States, among them the center fuselage by Alenia (Italy); the flight deck seats by Ipeco (United Kingdom); the tires by Bridgestone (Japan); the landing gear by Messier-Bugatti-Dowty (France); and the cargo doors by Saab (Sweden).

Airplanes are just one example of multicountry manufacturing. More and more final products—such as automobiles, cell phones, and medical devices—are pro-

duced in one country using inputs from many others, partly as a result of fewer trade barriers and technology-led declines in transportation and communication costs over the past 20 years. This development, what we call the growth of global value chains, is changing how world income and growth are generated. At the same time, the nature of competition has been affected. Are countries competing over the goods produced or over the labor and capital that go into production? Changes in the nature of competition are, in turn, changing the formulation of trade and other policies that are targeted to improve competitiveness. In this article we review how the growth of global value chains has affected income and growth, measures of competitiveness, and trade policies.

Remarkable growth

The growth of trade relative to total output in the past two decades has been remarkable—a reflection in large part of the number of times intermediate products cross borders. The world export-to-output ratio rose from 20 percent in 1995 to 25 percent during 1995–2009 (in 2008, the ratio was as high as 30 percent, before falling during the global financial crisis). The change is even more impressive for some countries—such as China, where the ratio rose from 23 to 39 percent, and the northern euro area countries, where it went from 30 to 40 percent.

The growth in gross exports relative to output to some extent reflects more intensive use of global value chains: more intermediate inputs move from one country to another as part of the manufacturing process. To produce just one more Dreamliner, for example, requires more imports—cargo doors from Sweden, tires from Japan, landing gear from France, and myriad other components from foreign suppliers. Assessing the growth and income effects of value chains, however, requires looking at more than just gross exports. The value of a country's exports (for example, a Dreamliner sold by the United States) can be very different from the value the country adds to its exports. The so-called value-added exports in this case represent the labor and capital income generated in the United States to export the Dreamliner.

A critical question is whether the growth of global value chains is generating wealth in the countries that make up the chain. The short answer is yes, but at different speeds within and across different economies. Most countries and all regions have increased their contribution to world output through exports. But for some this growth has been faster than for others. Globally, value-added exports increased from 15 percent of world GDP in 1995 to about 20 percent in 2009 (see Chart 1). Over time, both labor and

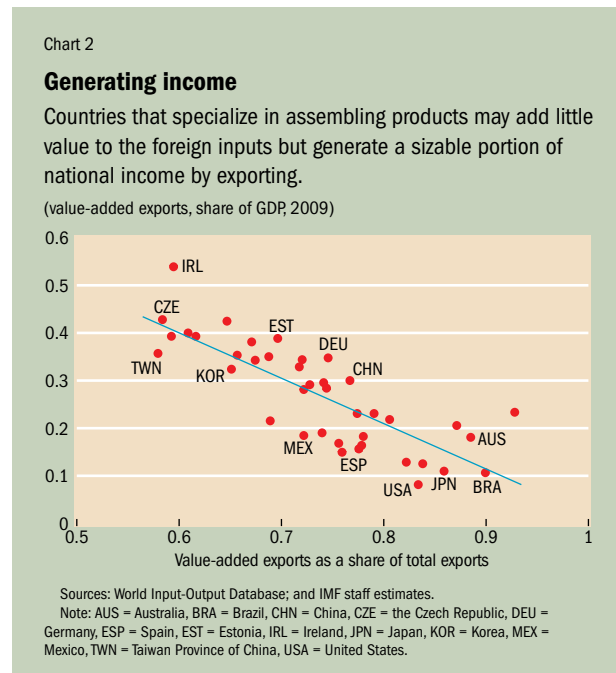
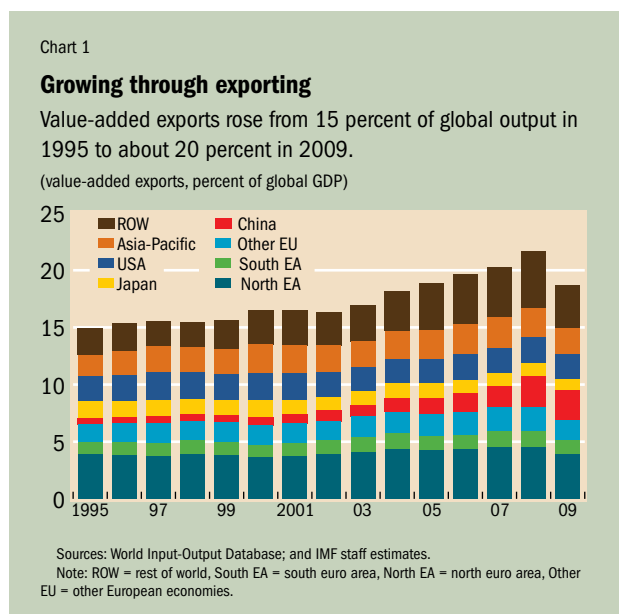
capital income have increased, although capital income has grown faster as value-added exports have become more capital intensive.

Growth isn't just about manufacturing: income in global value chains is generated increasingly by exporting services, many of which are susceptible to offshoring or outsourcing. Income generated by exporting financial, communication,

Income in global value chains is generated increasingly by exporting services.

business, and other services directly, or indirectly as part of manufactured goods exports, increased from 6 percent of world output in 1995 to almost 9 percent in 2008.

The increase in value-added exports results from a number of factors, but participation in global value chains appears to play an important role. Consider countries that specialize in the assembly stage. They import expensive core inputs, add relatively little value to those inputs, and export goods whose added value is largely foreign. These countries' ratios of value-added exports to gross exports tend to be lower. But even though they take on low-value-added assembly tasks, their exports still generate a substantial portion of their income—that is, they have a high ratio of value-added exports to GDP (see Chart 2). These are also the economies that have been growing relatively fast since the mid-1990s, which suggests that there are important learning effects and other kinds of positive spillovers on the rest of the economy that come from anchoring a



country to global value chains. For example, local firms in countries that specialize in assembly may indirectly benefit from exposure to new technology used by foreign firms or the improved business environment associated with foreign investment.

Changing competitiveness

Since December 2012, when Shinzo Abe became prime minister of Japan, the Japanese currency, the yen, has lost about 20 percent of its value against the euro and the dollar, which could affect Japan's Asian trading partners in two ways. It could mean that their exports are competing with much cheaper Japanese products. But the lower yen could also reduce the cost of the intermediate inputs they buy from Japan. Which effect predominates depends on how much a trading partner directly competes with Japanese products and how important Japanese imports are in products these countries produce as part of global value chains.

Economists' standard approach to measuring a country's price competitiveness is to calculate its real effective exchange rate, which essentially measures the buying power of a currency relative to a basket of currencies of its trading partners. (See "Why *Real* Exchange Rates?" in the September 2007 *F&D*.) This measure, though, is based on the assumption that goods traded are final consumption goods only and that goods are produced entirely in each country. In a world with value chains, this assumption is obviously incorrect. In recent years, two approaches have emerged to incorporate the international fragmentation of production into measuring the real effective exchange

rate. Both provide useful new insights but with a slightly different focus.

One approach (Bems and Johnson, 2012) is to construct an index that measures competitiveness in terms of tasks performed to produce goods rather than the goods themselves. Such an index is better suited for measuring the competitiveness of a country's factors of production (that is, labor and capital). A second approach (Bayoumi, Saito, and

A number of substantial free trade agreements are being negotiated that are not global but involve many large economies.

Turunen, 2013) measures the competitiveness of the goods produced in a country while accounting for the presence of imported inputs in their production. This index is better suited for measuring the competitiveness of goods shipped out of a country.

Empirical differences between the standard real effective exchange rate and the new indices incorporating global value chain operations are significant. For example, China had an additional 14 to 27 percent cumulative appreciation in its real effective exchange rate during 1990–2011 relative to the standard measurement (see Chart 3). In other words, China is less competitive than a standard real exchange rate calculation would suggest, mainly because the new measures better capture the rapid increase in the cost of wages and other factors in China (relative to its trading partners) during this period. The amount of additional appreciation varies depending on whether competitiveness is measured in terms of tasks or goods.

Global value chains involve more than just the relationship between a buyer and seller of final goods—just as the purchase of a Dreamliner involves not only the United States and the buying country but all economies that participate in the Dreamliner value chain. Changes in exchange rates between countries that are integrated in a value chain may therefore be more important and more complex than indicated by standard real effective exchange rate measures. The new indices are a step toward uncovering the complexities in value chain relationships—although more work and more data are needed to make them a tool for day-to-day policy analysis.

Blurred boundaries

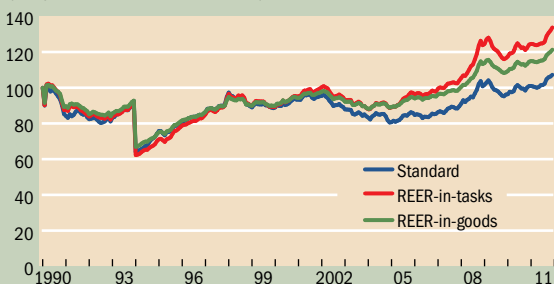
Although global trade talks under the auspices of the World Trade Organization (WTO), the so-called Doha Round, have stalled, a number of substantial free trade agreements are being negotiated that are not global but involve many large economies and cover a significant amount of global trade. For example, in 2013, the United States and the European Union began negotiating what they

Chart 3

Perspective change

For an economy such as China, its competitiveness, measured by the real effective exchange rate (REER), varies when the REER is calculated to incorporate operations of global value chains.

(competitiveness index, 1990 = 100)



Sources: Organisation for Economic Co-operation and Development Bilateral Input-Output Database; and IMF staff estimates.

Note: Standard REER measures a country's buying power relative to a basket of currencies of a country's trading partners, based on the assumption that goods traded are final consumption goods produced entirely in each country. REER-in-tasks measures competitiveness in terms of tasks performed to produce the goods. REER-in-goods measures the competitiveness of goods produced in a country while accounting for the presence of imported goods in their production.

call the Transatlantic Trade and Investment Partnership (TTIP). Another important free trade pact under negotiation is the 13-nation Trans-Pacific Partnership (TPP). The growth of value chains—which has increased the complexity of international commerce and blurred the boundaries between trade and domestic policy—requires the kind of new trade rules that are often negotiated within these trade agreements.

Supply chains mix the flow of goods, investment, services, technology, and people across borders. Baldwin (2011) calls this jumble “supply-chain trade.” Supply-chain trade differs markedly from traditional trade in final goods. In supply-chain trade, firms must set up production facilities in many countries and connect those factories—moving personnel, capital, and technology among many locations.

For policymakers, there are two challenges. First, *domestic policies are a more important barrier to international trade* than in the past. For example, weak protection of intellectual property and investment rights hurts global value chains because moving production to another country (offshoring) increases the international exposure of a firm’s knowledge and capital. Second, the rise of global value chains creates new forms of international policy spillovers because *governments’ policy choices that affect the domestic component of the international production chain also affect the full value of the chain*. These challenges create a demand for international policy agreement. But the content of these agreements is no longer about keeping the temptation of self-destructive tariff wars under control, but about ensuring that policies that regulate the different parts of the value chain of complex goods like the Dreamliner are coherent across countries.

The new rules and disciplines underpinning the rise of supply-chain trade have been and continue to be written, primarily (but not only) in newly negotiated free trade agreements. These agreements often include legally enforceable provisions that go beyond the commitments negotiated under the WTO (WTO, 2011). In a survey of 96 free trade agreements covering 90 percent of world trade, the WTO found that the core rules introduced in these agreements govern competition policy, intellectual property rights, investment, and movement of capital. For instance, 73 percent of agreements in the survey contain obligations on competition policy outside the current WTO mandate. While a number of factors are behind the new wave of free trade agreements—including geopolitical considerations and the difficulties in the multilateral negotiations under the WTO—the need to provide governance to supply-chain trade is an important driver.

This relationship between free trade agreements and global value chains has overall economic consequences that are often overlooked in the policy debate:

- The pattern of trade agreements will influence the future geography of value chains, forcing latecomers to adopt rules negotiated by others. This may create a risk of regulatory fragmentation of the multilateral trading system and impair further development of value chains. Finding

ways to “multilateralize” free trade agreements is an important objective.

- The new wave of trade agreements will magnify the transmission of policy and economic shocks between members and reduce their transmission between members and nonmembers. That is because firms that engage in cross-border production are inevitably more vulnerable to unexpected events—earthquakes, for example—that disrupt the provision of customized inputs.

- Economic models that estimate the effects of trade agreements generally focus on the consequences of removing high tariffs in protected sectors. However, mega free trade agreements, such as the TTIP and the TTP, are mostly about nontariff measures, many of which relate to cross-border production decisions that have a direct impact on growth. As a result, the effects of these agreements on economic welfare may be substantially different from those suggested in the current policy debate.

Economic consequences

In the past 20 years, the rise of global value chains has changed the nature of international trade with implications on, among other things, the generation of income, measures of competitiveness, and trade policymaking. The message is simple: recent developments in the area of trade have significant macroeconomic consequences, including on economic growth, countries’ competitiveness, and the transmission of shocks.

Our research points to three broad conclusions. Global value chains are generating wealth, but at different speeds within and across countries. They are also affecting the notion of competitiveness, making it more important to capture how firms produce across multiple borders. Finally, global value chains magnify interdependence across countries and, hence, the need for policy cooperation. ■

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This article is based on the 2013 IMF Policy Paper “Trade Interconnectedness: The World with Global Value Chains.”

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A Play on Words



Erez Aiden and Jean-Baptiste Michel

Uncharted

Big Data as a Lens on Human Culture

Riverhead Books, New York, 2013, 288 pp., \$27.95 (cloth).

There are many things that are uncharted in this book. But Erez Aiden and Jean-Baptiste Michel don't mean by "uncharted" that things are left out—in fact, a more appropriate title might be "Charted."

The book tells the story of collecting the billions of words in all the world's books, words that were previously lost in the meaning of the text—"uncharted" as it were—but can now be charted to our heart's content. The authors hope that the charting process will lead us to discover interesting aspects of our culture, which they refer to as "culturomics." Aiden and Michel collaborated with Google to make a powerful Web tool, but their claims about its usefulness are perhaps extravagant.

This is not to say that the book isn't fun. That's what you'd expect from the acknowledgments, in which Aiden thanks his three children and includes the middle name of a daughter: Banana. (At least he's quirkily consistent; his son is Galileo.)

Now I'm all for fun. But Aiden and Michel are doing important scientific work, and they don't do themselves any favors by giving "fun" examples. It doesn't take big data to convince us that the word chupacabra (a blood-drinking creature reportedly sighted in Puerto Rico in 1995) is much rarer than Sasquatch or the Loch Ness Monster. It also seems silly to chart the changing usage of "argh" and "aargh" in books published sometime between the 1940s (it's hard to tell the starting date from the chart reproduced in the book) and 2000. There's a quote on the book jacket from *Mother Jones* that calls the Ngram Viewer "the greatest timewaster in the history of the Internet." It was bold of the publisher to include that.

To document a cultural history by getting robots to read every word of every book ever published is ambitious. So what do I mean by saying there's a lot left out of this effort? Aiden and Michel acknowledge that they are searching through a tiny sample of words, and although they say that Google has so far scanned some 30 million books (probably more by now), there are still some 100 million to go.

Further, if a word's usage is a clue to our cultural history, many sources are ignored in this book: newspaper and magazine articles, letters, movies, TV and radio interviews, transcripts, lectures—in fact, everything written or spoken, but not published in a book. Besides, after books are written, they are often edited and revised for grammar and spelling, not to mention translated into other languages. Every author knows that editors change the text according to their publisher's house style. I wonder if the language in books, even 30 million of them, is a reliable source of changing language usage.

I expect Aiden and Michel would argue that the books Google has

scanned are all they have to work with, but given what's missing, their "lens on human culture" theory may be too bold a claim.

About the charts: there are many, and they are stripped down; printed in black, white, and gray; and generated directly from the data. There is nothing wrong with simple charts, but the relative lack of labels and grid lines, and the chart lines themselves (sometimes as many as six) in minimally dif-

The book tells the story of collecting the billions of words in all the world's books.

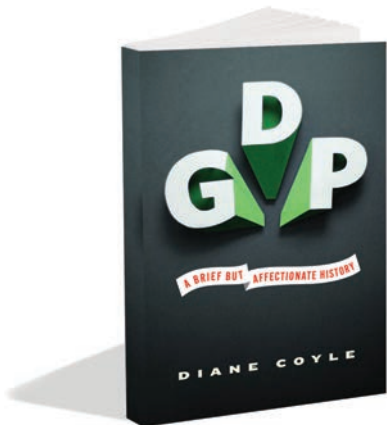
ferentiated shades of gray, make for difficult reading. The authors point us to the Web, where all these problems are taken care of: colors differentiate the lines, and clicking on them at any point reveals a label and date. It's an example of the distance between print and Web-based graphics.

But let's be positive. The authors bravely do not dodge copyright questions raised when books are scanned or seemingly unethical "shadow" ways to get around those questions. There is lovely detail about a 2002 experiment by Larry Page and Marissa Mayer, who worked out how long it might take to scan all the world's books. Apparently it would take "millennia, even eons." So how did the authors get around that problem? Read the book; you'll have fun!

Nigel Holmes

Principal, Explanation Graphics, author, most recently of Wordless Diagrams and The Book of Everything

The Price of Everything and the Value of Nothing



Diane Coyle

GDP

A Brief but Affectionate History

Princeton University Press, Princeton, New Jersey, 2014, 168 pp, \$19.95 (cloth).

Why didn't a smart guy like Aristotle come up with the concept of gross domestic product (GDP) 2,000 years ago, since the word "economy" derives from the Greek word for household, *oikos*? It was because Aristotle focused on things that moved, like moons and planets.

For about 50,000 years human GDP did not budge. In Aristotle's time there was no CNBC to shake the markets by announcing GDP gyrations. And nobody expected to live better than his parents. Of course, people cared about money and debt. In the 1500s, Henry VIII asked his treasurers to keep an eye on the tab he ran up at the pub and during the wars with France, but it would not have occurred to Henry to ask whether per capita GDP had climbed over the past year.

Diane Coyle's smart and lucid new book, *GDP: A Brief but Affectionate History*, tells the story of this twentieth century numerical creation, which every three months threatens to topple prime ministers. Coyle begins by reminding us of the stakes, not in ancient Greece but modern Athens, where the head of that country's statistical agency calls his job "a combat sport." She shares the story of her economist friend Paola Subacchi of Chatham

House, who visited the Greek agency expecting to see supercomputers, or at least an abacus. Instead, she walked up the stairs of a 1950s residential building to find "a dusty room with a handful of people" and no computers.

But national statistical agencies must come up with something, and often finagle data in their quest to sell bonds and wheedle others to provide aid. Coyle suggests that Chinese officials sometimes boast of their powerful GDP, while other times diminish GDP to qualify for handouts. After the Soviet Union collapsed, I visited St. Petersburg, Russia. My old economics textbooks suggested that the USSR had enjoyed strong growth under communism. Even a Nobel laureate like Paul Samuelson published such dubious numbers. Yet all I had to do was sniff the acrid air inside the decaying Hermitage museum to realize: the problem with communism was not that it couldn't keep up with the West; the problem was that it couldn't keep up with the standards of 1917!

Coyle performs an important task by reminding us that the very calculation of GDP ($C + I + G + [X - M]$ or consumption plus investment plus government spending plus net exports) gives government leaders an incentive to spend more money. Why? Because stronger government spending tautologically increases that sum. All a leader must do is turn on the spending spigot, and he can count on his bean-counters to add more to GDP. Moreover, the value of government spending is calculated based on the salaries of government workers, not the value of their output. One of my Harvard students once suggested that, given this tautology, leaders who are willing to consider occasional budgetary austerity deserve special ribbons.

Coyle also does a fine job picking apart other problems with GDP, including such paradoxes as the widower who marries his housekeeper and thereby lowers GDP because he doesn't pay her wages anymore. It's especially hard to properly value services in the information economy. In a

current, real-life example, I've devised a new matrix of numbers to help kids learn arithmetic. When children learn addition through this matrix called the Math Arrow, they increase their earning potential by, let's say, a hundred thousand dollars. Yet the app costs just \$4.99. Is each download of this matrix creating a hundred thousand dollars of value, or just a few?

After dissecting the problems with GDP, Coyle asks whether we can do better and runs through the list of competitors, including the Human Development Index (HDI), Measure of Economic Welfare (MEW), and assorted happiness indices. She is right to be skeptical, especially of those dispensed by happiness gurus and demagogues. Hugo Chavez called GDP a "capitalist conspiracy." But alternatives are even more easily twisted like taffy. In 2009, the Happy Planet Index, for example, ranked Costa Rica highest among nations, with Cuba not far behind at number 7. It also found that people living under the Palestinian Authority are happier and healthier than Israelis. If a pro-Zionist spokesman argued that Palestinians were better off, he'd be laughed at or stoned. Oh, the United States showed up 114th on the list. Funny, I've never seen a raft leaving Miami for Cuba. So Coyle is correct both to dissect GDP's flaws and to raise warning flags over its threatened demise.

I found only one omission in her otherwise short but masterful tract. When I wonder about a country's standard of living, I often ask this simple question: How many hours does a typical worker have to work in order to buy a chicken? In the 1920s, President Herbert Hoover's campaign promised "a chicken in every pot." In those days, it took about two and one-half hours to earn a chicken. Today, it takes less than 15 minutes. Sounds like progress to me. Unless, of course, you're poultry.

Todd G. Buchholz

former White House director of economic policy, author of *New Ideas from Dead Economists*, and CEO of *Sproglit, LLC*, an educational software firm

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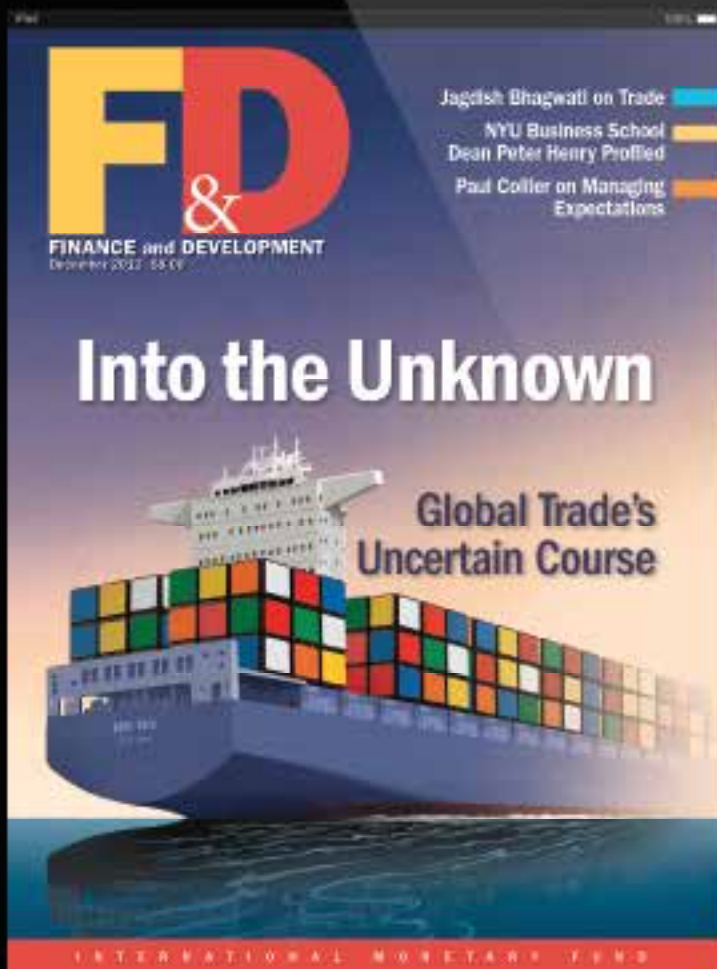


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