F&D

FINANCE AND DEVELOPMENT

SEPTEMBER 2019

Follow the Money

INTERNATIONAL MONETARY FUND

Contents

Vast sums of money that could be used to **improve lives** are stashed in tax havens or lost to corruption

HIDDEN CORNERS OF THE GLOBAL ECONOMY

FINANCE & DEVELOPMENT
A Quarterly Publication of the International Monetary Fund
September 2019 | Volume 56 | Number 3

35

ALSO IN THIS ISSUE

6

DEPARTMENTS

40

Illuminating Dark Corners

THIS ISSUE OF *Finance & Development* reminds me of a Sufi parable. A woman sees a mystic searching for something outside his door. "What have you lost?" she asks. "My key," he responds. So they both kneel down to look for it. "Where exactly did you drop it?" she asks. "In my house," he replies. "Then why are you looking here?" "Because there is more light."

The lesson: we all search for answers where it is easiest to look.

That is why we decided to shine a spotlight on the dark web of secret transactions that enable tax evasion and avoidance, money laundering, illicit financial flows, and corruption.

Consider these estimates: bribes to the tune of $1.5–$2 trillion change hands every year. Tax evasion costs governments more than $3 trillion a year, and countless more is lost through other illicit activities. This is money that could go for health care, education, and infrastructure for millions worldwide. But the cost to society is far greater: corruption distorts incentives and undermines public trust in institutions. It is the root of many economic injustices young men and women suffer every day.

The best disinfectant is sunlight. Paolo Mauro and others explore how countries can put in place accountable institutions, improve government budget transparency, and exchange financial information across borders. Jay Purcell and Ivana Rossi propose ways to resolve the tension between the need for transparency and the right to privacy. And Aditi Kumar and Eric Rosenbach argue for closer cooperation among law enforcement, financial institutions, and regulators.

These hidden transactions are not one nation's problem nor within one nation's power to resolve. Tackling the problem requires strong domestic policies and cross-border collaboration. The payoff will be myriad other political, economic, and social benefits, not least reducing inequality.

All the more reason to shed light on the dark corners of the world economy. FD

GITA BHATT, editor-in-chief

ON THE COVER

Vast sums are diverted to tax shelters, corrupt officials, and criminal enterprises, but we have only a vague notion of how this plays out. September's cover features illustrator John Cuneo's take on the funneling of money to the global economy's hidden corners.

FINANCE & DEVELOPMENT
A Quarterly Publication of the International Monetary Fund

Subscriber services, changes of address, and advertising inquiries:
IMF Publication Services
Finance & Development
PO Box 92780
Washington, DC 20090, USA
Telephone: (202) 623-7430
Fax: (202) 623-7201
E-mail: publications@imf.org

Postmaster: send changes of address to *Finance & Development*, International Monetary Fund, PO Box 92780, Washington, DC 20090, USA.

The English edition is printed at Dartmouth Printing Company, Hanover, NH.

Finance & Development is published quarterly by the International Monetary Fund, 700 19th Street NW, Washington, DC 20431, in English, Arabic, Chinese, French, Russian, and Spanish. English edition ISSN 0145-1707

FSC FPO

SHINING A LIGHT

Bringing money out of the shadows means improving governance

David Lipton

Global GDP last year was $87 trillion, up from just $11 trillion in 1980. While GDP is just one among many measures of well-being, the improvement is remarkable. But before we start celebrating, consider these numbers, which point to the dark side of the global economy:

$7 trillion

That figure, equal to 8 percent of global GDP, represents the amount of private wealth estimated to be hidden in offshore financial centers, much of which likely comes from illicit activities.

$1 trillion

That's the gain in government revenue, by one calculation, that could be achieved by reducing corruption around the world by one-third.

These numbers shine a light on the hidden corners of the global economy, the money that escapes the reach of tax collectors, regulators, and law enforcement. These are the ill-gotten gains of graft, the proceeds of regulatory arbitrage, and the profits from tax domiciles that some consider to be the equivalent of tax evasion. Taken together, they detract from the public good. It is money lost that could be put to use improving people's lives.

The rise of digital finance, crypto assets, and cybercrime adds to the challenges. Consider the so-called dark web, a hidden marketplace for everything from stolen identities to arms and narcotics.

Illegal or legitimate, these practices have a big impact on government revenues around the world, and increasingly the international community is being called upon to eliminate the regulatory gray areas.

But it is not just a matter of law enforcement. Governments are being pressed to adjust to rapid changes in the global economy that—if properly handled—can bring considerable benefits. That is certainly the case with fintech and, potentially, crypto assets.

Demands on government resources are building—to boost growth in some advanced economies, build infrastructure in emerging markets, and improve health and education in the developing world. So the draining away of trillions of dollars represents a threat to our well-being. It contributes to a weakening of trust in government and undermines its ability to address key economic problems like inequality and poverty.

IMF research shows that countries with lower levels of perceived corruption have significantly less waste in public projects. And among low-income countries, the share of the budget dedicated to education and health is one-third lower in more corrupt countries. That reduces the effectiveness of social spending.

So how do we address these problems?

That's where the IMF aims to make a difference. We have worked closely with national authorities, multilateral bodies, and the private sector for nearly two decades to combat money laundering and the financing of terrorism. We have been at the forefront of the effort to strengthen fiscal transparency and, increasingly, to confront corruption.

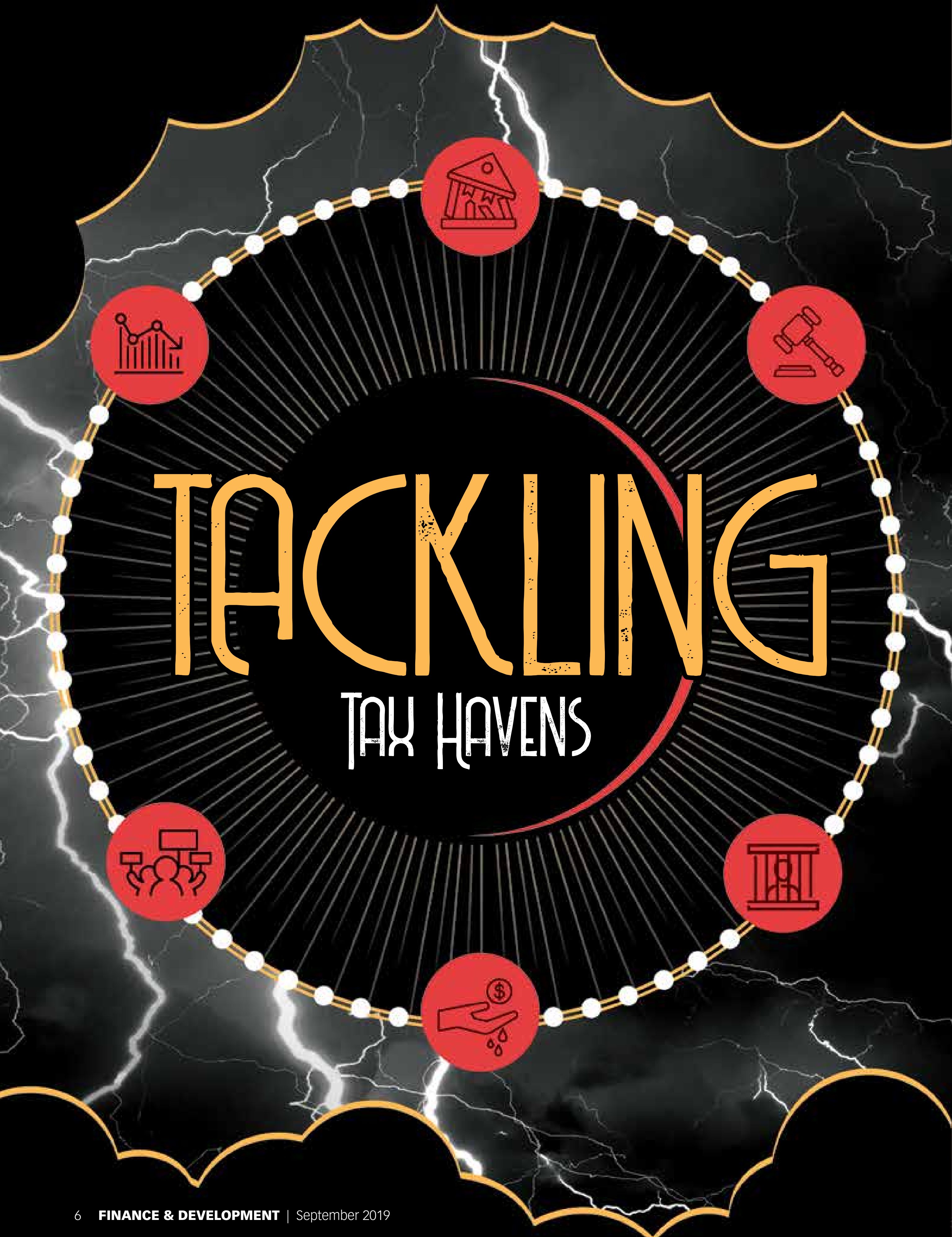
It comes down to the core notion of governance—how a country defines and implements its economic policies in all their myriad detail and how it adheres to the rule of law. Last year, the IMF adopted a comprehensive framework for enhanced engagement on governance that encompasses the functions most relevant to the economy, things like tax collection, central banking, and financial sector oversight and market regulation.

Improving governance isn't easy; it requires sustained effort over the long term. It's not only the right thing to do, it also brings tangible benefits to millions of people. Joint action will help ensure success. FD

DAVID LIPTON is the acting managing director of the IMF.

PHOTOS: ISTOCK / RICHLEGG; KATIV

TACKLING TAX HAVENS



The billions attracted by tax havens do harm to sending and receiving nations alike

Nicholas Shaxson

Until the 2008 financial crisis, tax havens were generally seen as exotic sideshows to the global economy, Caribbean islands or Alpine financial fortresses frequented by celebrities, gangsters, and wealthy aristocrats. Since then, the world has woken up to two sobering facts: first, the phenomenon is far bigger and more central to the global economy than nearly anyone had imagined; and second, the biggest havens aren't where we thought they were.

Tax havens collectively cost governments between $500 billion and $600 billion a year in lost corporate tax revenue, depending on the estimate (Crivelli, de Mooij, and Keen 2015; Cobham and Janský 2018), through legal and not-so-legal means. Of that lost revenue, low-income economies account for some $200 billion—a larger hit as a percentage of GDP than advanced economies and more than the $150 billion or so they receive each year in foreign development assistance. American Fortune 500 companies alone held an estimated $2.6 trillion offshore in 2017, though a small portion of that has been repatriated following US tax reforms in 2018.

Corporations aren't the only beneficiaries. Individuals have stashed $8.7 trillion in tax havens, estimates Gabriel Zucman (2017), an economist at the University of California at Berkeley. Economist and lawyer James S. Henry's (2016) more comprehensive estimates yield an astonishing total of up to $36 trillion. Both, assuming very different rates of return, put global individual income tax losses at around $200 billion a year, which must be added to the corporate total.

These highly uncertain estimates vary widely because of financial secrecy and patchy official data and because there's no generally accepted definition of a tax haven. Mine boils down to two words: "escape" and "elsewhere." To *escape* rules you don't like, you take your money *elsewhere*, offshore, across borders. I prefer such a broad definition because these havens affect far more than tax: they provide an escape route from financial regulations, disclosure, criminal liability, and more. Because the main corporate users of tax havens are large financial institutions and other multinationals, the system tilts the playing field against small and medium enterprises, boosting monopolization.

Political damage, while unquantifiable, must be added to the charge sheet: most centrally, tax havens provide hiding places for the illicit activities of elites who use them, at the expense of the less powerful majority. Tax havens defend themselves as "tax neutral" conduits helping international finance and investment flow smoothly. But while the benefits for the private players involved are evident, the same may not be true for the world as a whole; it is now widely accepted that in addition to tax losses, allowing capital to flow freely across borders carries risks, including the danger of financial instability in emerging market economies.

As a general rule, the wealthier the individual and the larger the multinational corporation—some have hundreds of subsidiaries offshore—the more deeply they are embedded in the offshore system and the more vigorously they defend it. Powerful governments also have a stake; most major havens are located in advanced economies or their territories. The Tax Justice Network's Corporate Tax Haven Index ranks the top three as the British Virgin Islands, Bermuda, and the Cayman Islands—all British overseas territories. The organization's Financial Secrecy Index ranks Switzerland, the United States, and the Cayman Islands as the top three jurisdictions for private wealth.

To grasp why rich jurisdictions top the lists, ponder how many rich Nigerians might stash secret assets in Geneva or London—then consider how many rich Swiss or Britons would hide assets in Lagos. Offshore capital tends to drain from poor countries to rich ones.

UNTIL A DECADE OR SO AGO THERE WERE FEW POLITICAL BRAKES ON THE EXPANSION OF TAX HAVENS.

And the offshore system is growing. When one jurisdiction crafts a new tax loophole or secrecy facility that successfully attracts mobile money, others copy or outdo it in a race to the bottom. That has contributed to a dramatic decline in average corporate tax rates, which have decreased by half, from 49 percent in 1985 to 24 percent today. For US multinationals, corporate profit shifting into tax havens has risen from an estimated 5 percent to 10 percent of gross profits in the 1990s to about 25 to 30 percent today (Cobham and Janský 2017).

The principles of the international corporate tax system were laid down under the League of Nations almost a century ago. They treat multinational enterprises as loosely connected "separate entities." This is a fiction: multinationals in fact draw great strength from their unitary nature, reaping market power and economies of scale. If the whole is worth more than the sum of its (geographically diverse) parts, which countries get to tax that extra value? It is rarely lower-income countries, since the system tends to give preference to the place where multinationals have their headquarters, usually rich countries.

What is more, multinationals can manipulate the so-called transfer prices of transactions between these affiliates to shift profits from high- to low-tax jurisdictions. For example, a firm's affiliate may hold a patent in a low-tax haven and charge exorbitant brand royalties to affiliates in high-tax countries, thus maximizing profits in the low-tax jurisdiction. In theory, transfer prices are meant to reflect market prices that would prevail in arm's length transactions between two unrelated parties. But such prices often cannot readily be established: try valuing a unique widget for a jet engine that isn't sold on the open market, or a drug patent. In practice, the value is often what the company's accountants say it is.

The main alternative to "arm's length, separate entity" is something called "unitary tax with formulary apportionment." This system considers a multinational to be a single entity and apportions profits geographically according to a formula reflecting real economic activity, which could be a mix of sales, employment, and tangible assets. In theory, this method cuts out tax havens: if a firm has a one-person office in Bermuda, the formula allocates a minuscule portion of its global profits there, so it hardly matters whether Bermuda taxes its portion at a zero rate. In practice, this system also suffers technical difficulties, and the choice of formula is highly political—but it is simpler, fairer, and more rational than the current system.

Indeed, many US states, Canadian provinces, and Swiss cantons have for some time used limited versions of the system for subnational taxes, even though it is not yet used internationally. A move is already underway to require multinationals to break down and even publish financial and accounting information on a country-by-country basis, which could provide relevant data for an international allocation formula. Many other incremental stepping-stones toward the alternative are possible, so change can be evolutionary rather than revolutionary.

Until a decade or so ago, there were few political brakes on the expansion of tax havens. After the 2008 crisis, however, governments came under pressure to close large budget deficits and to placate voters furious about taxpayer-funded bank bailouts, widening inequality, and the ability of multinationals and the wealthy to escape tax. The *Panama Papers* and Luxembourg Leaks revealed the use of tax havens for often nefarious purposes and reinforced the pressure to *do* something. So the Organisation for Economic Co-operation and Development (OECD), the rich-country group that is the main standard-setter for international tax matters, launched two big projects.

One is the Common Reporting Standard (CRS), a regime to exchange financial information automatically across borders so as to help tax authorities track the offshore holdings of their taxpayers. But the CRS contains many loopholes; for example, it allows people with the right passport to claim residence in a tax haven, rather than in the country where they live. The United States constitutes an even bigger, geographic loophole: under the Foreign Account Tax Compliance Act, it collects information from overseas on its own taxpayers, but it shares little information the other way, so nonresidents can hold assets in the country in conditions of great secrecy, making the United States a major tax haven.

Still, the CRS brought some results. The OECD estimated in July 2019 that 90 countries had shared information on 47 million accounts worth €4.9 trillion; that bank deposits in tax havens had been reduced by 20 to 25 percent; and that voluntary disclosures ahead of implementation had generated €95 billion in additional tax revenue for members of the OECD and the Group of 20, which includes major emerging market economies.

The other big initiative was the base erosion and profit shifting (BEPS) project, aimed at multinational corporations. This was the OECD's effort to "realign taxation with economic substance" without disrupting the long-held international consensus supporting the arm's length principle, which was bolstered by tax-escaping multinationals and their allies. While BEPS did improve transparency for multinationals, it was ultimately seen as something of a failure by the OECD, especially for the digitalized economy.

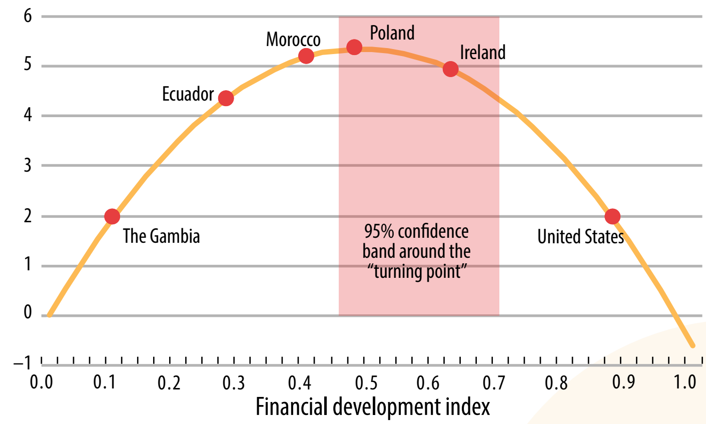
The United States also belatedly recognized that, with a consumption-heavy economy, it made sense to shift taxing rights toward the place where sales occur. And emerging market economies, including Colombia, Ghana, and India, which gained more clout starting in 2016, have pushed for new approaches. The OECD began considering sales-only formulas, but some lower-income countries favor a formula that includes employees and tangible assets, which would give them greater taxing rights. These shifts away from arm's length orthodoxy represent a step toward tax campaigners' demands for formula apportionment.

In January 2019 the dam began to break. For the first time, the OECD conceded publicly a need for "solutions that go beyond the arm's length principle." In March, Christine Lagarde, then managing director of the IMF, called the method "outdated" and "especially harmful to low-income countries." She urged a "fundamental rethink" with moves toward formula-based approaches to allocating income. In May, the OECD published a "road map" proposing reforms based on two pillars: first, determining where tax should be paid and on what basis, and what portion of profits should be taxed on that basis; and second, getting multinationals to pay a minimum level of tax. Professor Reuven Avi-Yonah, of the University of Michigan Law School, said the plan was "extraordinarily radical" and would have been "almost inconceivable" even five years ago.

Too much finance?

Most advanced economies, including the United States, are past the point at which financial sector growth is beneficial.

(effect on GDP growth rate, percentage points)



Source: Sahay and others (2015). Data updated in July 2019.

We are now at the start of the most significant period of change to the international corporate tax system in a century. Progress will hinge on power struggles: between countries, rich and poor, and within countries, between ordinary taxpayers and those that profit from the current system. But radical change is feasible. The Tax Justice Network, which I have worked with, now sees its four core demands, initially dismissed as utopian, gaining global traction: automatic exchange of financial information across borders, public registers of beneficial ownership of financial assets, country-by-country reporting, and now unitary tax with formula apportionment.

But corporate tax is just a start. To understand the broader issues, we must consider the forces that make the offshore system tick. Switzerland's example is illustrative. In past decades, politicians in Germany, the United States, and elsewhere have clashed with Switzerland over banking secrecy, with little success. In 2008, however, after discovering that Swiss bankers had helped US clients evade tax, the Department of Justice took a different tack: it targeted not the country, but its bankers and banks. In response, the embattled private players became major lobbyists for reform, and Switzerland soon made major concessions on banking secrecy for the first time. The lesson: any effective international response must include strong sanctions against the private enablers, including accountants and lawyers—especially when they facilitate criminal activity such as tax evasion.

FOR MANY ECONOMIES HOSTING AN OFFSHORE FINANCIAL CENTER IS A LOSE-LOSE PROPOSITION.

On a deeper level, consider this. The engine of the offshore system is competition among jurisdictions to provide the best ways to avoid taxes, disclosure, and financial regulation. Traditionally, such a race to the bottom is framed as a collective action problem requiring collaborative, multilateral solutions. But cooperative approaches have flaws. Some jurisdictions feel inclined to cheat as they seek to attract mobile capital, so collective action can be like herding squirrels on a trampoline. Moreover, it is tough to mobilize voters in support of complex cross-border collaboration, especially when the goal is to help foreigners or low-income countries.

There is a radically different, more powerful, approach. The relevant question is, Do the financial flows attracted by tax havens help the receiving countries? They certainly help *interest groups* there—typically in the banking, accounting, legal, and real estate professions—but do they benefit the *jurisdiction as a whole?*

A new and growing strand of research by the IMF, the Bank for International Settlements, and others suggests that the answer is no. This "too much finance" literature argues that financial sector growth is beneficial up to an optimal point, after which it starts to harm economic growth (see chart, previous page). Most advanced economies, including the United States, the United Kingdom, and other major tax havens, passed that point long ago. For them, shrinking the financial sector to remove harmful financial activities should boost prosperity.

Alongside this research, John Christensen, a former economic advisor to the British tax haven Jersey, and I have developed the concept of a finance curse, which afflicts jurisdictions with an oversize financial sector and is analogous to the resource curse that vexes some countries dependent on commodities such as oil. This "paradox of poverty in the midst of plenty" has multiple causes: a brain drain of skilled people from government, industry, and civil society into the high-paying dominant sector; rising and growth-sapping inequality between the dominant and the other sectors; an increase in local prices that renders other tradables sectors less competitive with imports; recurrent booms and busts in prices of commodities and financial assets; and an increase in rent seeking and loss of entrepreneurship at the expense of productive, wealth-creating activities as easy money flows in. Some scholars also decry "financialization," or a shift from wealth-creating activities toward more predatory, wealth-extracting activities such as monopolization, too-big-to-fail banking, and the use of tax havens.

Financial flows seeking secrecy or fleeing corporate taxes seem likely to be exactly the kind that exacerbate the finance curse, worsening inequality, increasing vulnerability to crises, and dealing unquantifiable political damage as secrecy-shrouded capital infiltrates Western political systems. And as financial capital flows from poorer countries to rich-world tax havens, labor migration will follow.

As ever, more research is needed here. Yet it seems that for many economies hosting an offshore financial center is a lose-lose proposition: it not only transmits harm outward to other countries, but inward, to the host. Countries that recognize this danger can act *unilaterally* to rein in their offshore financial centers, simply stepping out of the race to the bottom and curbing tax haven activity while also improving their own citizens' well-being. This is a powerful, winning formula. FD

NICHOLAS SHAXSON is author of *Poisoned Wells*, a book about the resource curse in west Africa; *Treasure Islands*, about tax havens; and most recently *The Finance Curse*, about countries with oversized financial sectors.

References:

Cobham, Alex, and Petr Janský. 2017. "Measuring Misalignment: The Location of US Multinationals' Economic Activity versus the Location of their Profits." *Development Policy Review* 37 (1): 91–110.

———. 2018. "Global Distribution of Revenue Loss from Corporate Tax Avoidance: Re-Estimation and Country Results." *Journal of International Development* 30 (2): 206–32.

Crivelli, Ernesto, Ruud A. de Mooij, and Michael Keen. 2015. "Base Erosion, Profit Shifting and Developing Countries." IMF Working Paper 15/118, International Monetary Fund, Washington, DC.

Henry, James S. 2016. "Taxing Tax Havens." *Foreign Affairs*, April 12.

Sahay, Ratna, and others. 2015. "Rethinking Financial Deepening." IMF Staff Discussion Note 15/08, International Monetary Fund, Washington, DC.

Zucman, Gabriel. 2017. "How Corporations and the Wealthy Evade Taxes." *New York Times*, November 10.

THE RISE OF PHANTOM INVESTMENTS

Empty corporate shells in tax havens undermine tax collection in advanced, emerging market, and developing economies

Jannick Damgaard, Thomas Elkjaer, and Niels Johannesen

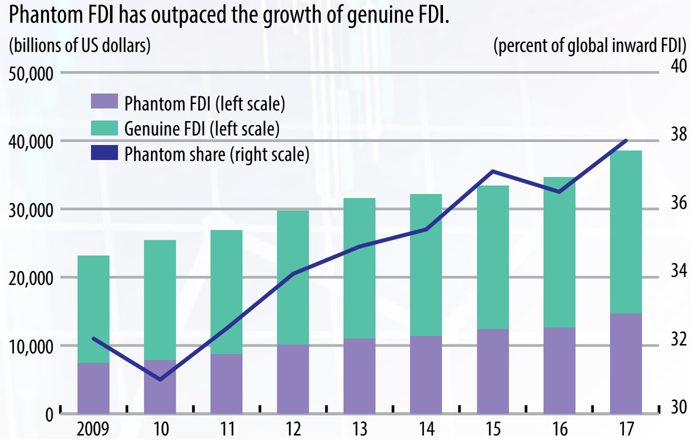
PHOTO: ISTOCK / GOPIXA

According to official statistics, Luxembourg, a country of 600,000 people, hosts as much foreign direct investment (FDI) as the United States and much more than China. Luxembourg's $4 trillion in FDI comes out to $6.6 million a person. FDI of this size hardly reflects brick-and-mortar investments in the minuscule Luxembourg economy. So is something amiss with official statistics or is something else at play?

FDI is often an important driver for genuine international economic integration, stimulating growth and job creation and boosting productivity through transfers of capital, skills, and technology. Therefore, many countries have policies to attract more of it. However, not all FDI brings capital in service of productivity gains. In practice, FDI is defined as cross-border financial investments between firms belonging to the same multinational group, and much of it is phantom in nature—investments that pass through empty corporate shells. These shells, also called special purpose entities, have no real business activities. Rather, they carry out holding activities, conduct intrafirm financing, or manage intangible assets—often to minimize multinationals' global tax bill. Such financial and tax engineering blurs traditional FDI statistics and makes it difficult to understand genuine economic integration.

Reaching new heights

Phantom FDI has outpaced the growth of genuine FDI.



Source: Damgaard, Elkjaer, and Johannesen (forthcoming).
Note: FDI = foreign direct investment.

'Double Irish with a Dutch sandwich'

Better data are needed to understand where, by whom, and why $40 trillion in FDI is being channeled around the world. Combining the Organisation for Economic Co-operation and Development's detailed FDI data with the global coverage of the IMF's Coordinated Direct Investment Survey, a new study (Damgaard, Elkjaer, and Johannesen, forthcoming) creates a global network that maps all bilateral investment relationships—disentangling phantom FDI from genuine FDI.

Interestingly, a few well-known tax havens host the vast majority of the world's phantom FDI. Luxembourg and the Netherlands host nearly half. And when you add Hong Kong SAR, the British Virgin Islands, Bermuda, Singapore, the Cayman Islands, Switzerland, Ireland, and Mauritius to the list, these 10 economies host more than 85 percent of all phantom investments.

Why and how does this handful of tax havens attract so much phantom FDI? In some cases, it is a deliberate policy strategy to lure as much foreign investment as possible by offering lucrative benefits—such as very low or zero effective corporate tax rates. Even if the empty corporate shells have no or few employees in the host economy and do not pay corporate taxes, they still contribute to the local economy by buying tax advisory, accounting, and other financial services, as well as by paying registration and incorporation fees. For the tax havens in the Caribbean, these services account for the main share of GDP, alongside tourism.

In Ireland, the corporate tax rate has been lowered substantially from 50 percent in the 1980s to 12.5 percent today. In addition, some multinationals take advantage of loopholes in Irish law by using innovative tax engineering techniques with creative nicknames like "double Irish with a Dutch sandwich," which involves transfers of profits between subsidiaries in Ireland and the Netherlands with tax havens in the Caribbean as the typical final destination. These tactics achieve even lower tax rates or avoid taxes altogether. Despite the tax cuts, Ireland's revenues from corporate taxes have gone up as a share of GDP because the tax base has grown significantly, in large part from massive inflows of foreign investment. This strategy may be helpful to Ireland, but it erodes the tax bases in other economies. The global average corporate tax rate was cut from 40 percent in 1990 to about 25

A few well-known tax havens host the vast majority of the world's phantom FDI.

percent in 2017, indicating a race to the bottom and pointing to a need for international coordination.

Globally, phantom investments amount to an astonishing $15 trillion, or the combined annual GDP of economic powerhouses China and Germany. And despite targeted international attempts to curb tax avoidance—most notably the G20 Base Erosion and Profit Shifting (BEPS) initiative and the automatic exchange of bank account information within the Common Reporting Standard (CRS)—phantom FDI keeps soaring, outpacing the growth of genuine FDI. In less than a decade, phantom FDI has climbed from about 30 percent to almost 40 percent of global FDI (see chart). This growth is unique to FDI. According to Lane and Milesi-Ferretti (2018), FDI positions have grown faster than world GDP since the global financial crisis, whereas cross-border positions in portfolio instruments and other investments have not.

While phantom FDI is largely hosted by a few tax havens, virtually all economies—advanced, emerging market, and low-income and developing—are exposed to the phenomenon. Most economies invest heavily in empty corporate shells abroad and receive substantial investments from such entities, with averages across all income groups exceeding 25 percent of total FDI.

Investments in foreign empty shells could indicate that domestically controlled multinationals engage in tax avoidance. Similarly, investments received from foreign empty shells suggest that foreign-controlled multinationals try to avoid paying taxes in the host economy. Unsurprisingly, an economy's exposure to phantom FDI increases with the corporate tax rate.

Better data for better policies

Globalization creates new challenges for macroeconomic statistics. Today, a multinational company can use financial engineering to shift large sums of money across the globe, easily relocate highly profitable intangible assets, or sell digital services from tax havens without having a physical presence. These phenomena can hugely impact traditional macroeconomic statistics—for example, inflating GDP and FDI figures in tax havens. Prominent cases include Irish GDP growth of 26 percent in 2015, following some multinationals' relocation of intellectual property rights to Ireland, and Luxembourg's status as one of the world's largest FDI hosts. To get better data on a globalized world, economic statistics also need to adapt.

The new global FDI network is useful to identify which economies host phantom investments and their counterparts, and it gives a clearer understanding of globalization patterns. Such data offer greater insight to analysts and can guide policymakers in their attempt to address international tax competition.

The taxation agenda has gained traction among the G20 economies in recent years. The BEPS and CRS initiatives are examples of the international community's efforts to tackle weaknesses in the century-old tax design, but the issues of tax competition and taxing rights remain largely unaddressed. However, this seems to be changing with emerging widespread agreement on the need for significant reforms. Indeed, this year the IMF put forward various alternatives for a revised international tax architecture, ranging from minimum taxes to allocation of taxing rights to destination economies. No matter which road policymakers choose, one fact remains clear: international cooperation is the key to dealing with taxation in today's globalized economic environment. FD

JANNICK DAMGAARD is currently advisor to the executive director in the IMF's Office of the Nordic-Baltic Executive Director. Most of this research was carried out in his previous role as senior economist at the National Bank of Denmark. **THOMAS ELKJAER** is a senior economist in the IMF's Statistics Department, and **NIELS JOHANNESEN** is a professor of economics at the University of Copenhagen's Center for Economic Behaviour and Inequality.

The views expressed here are those of the authors; they do not necessarily reflect the views of the institutions with which they are affiliated.

References:

Damgaard, Jannick, Thomas Elkjaer, and Niels Johannesen. Forthcoming. "What Is Real and What Is Not in the Global FDI Network?" IMF Working Paper, International Monetary Fund, Washington, DC.

Lane, Philip R., and Gian Maria Milesi-Ferretti. 2018. "The External Wealth of Nations Revisited: International Financial Integration in the Aftermath of the Global Financial Crisis." *IMF Economic Review* 66 (1): 189–222.

TAXING TIMES

The head of Greece's tax collection agency is on a mission to improve compliance

Maria Petrakis

It is the height of a hot Greek summer, and Athens is mobbed by tourists. Dressed in shorts and sandals, they cram the shops lining the narrow cobblestone alleyways of the historic Plaka district, at the foot of the Acropolis, in search of olives, magnets, T-shirts, and other trinkets. One man haggles with a street vendor over the price of a tote bag. It is the kind of cash transaction that George Pitsilis is trying to stamp out.

If tourist arrivals match last year's numbers, some 30 million people will visit Greece this year, buying Greek coffees and Greek salads, renting cars and beach umbrellas, and boosting the country's shrunken economy with €16 billion in spending. Pitsilis, Greece's chief tax collector, is determined to make sure the value-added tax—a crucial source of revenue for the cash-strapped state—is collected on those transactions.

By law, retailers and other service providers are required to accept credit, debit, and payment cards and issue receipts. But with a 24 percent value-added tax—among the highest in Europe—the temptation to cheat is strong.

So the Greek revenue administration has launched a public relations campaign, dubbed "Apodixi, please," encouraging tourists to use plastic and ask for a receipt, or *apodixi*. Pitsilis has also ordered audits and inspections

Tourists stroll through the streets of Athens.

PHOTO: ISTOCK / HOLGS

PHOTOS: MICHAELIS KARAGIANNIS

Above left: George Pitsilis, head of Greece's Independent Agency for Public Revenue. At right, a shopkeeper in Athens issues a receipt.

of businesses and has no qualms about shutting down famous restaurants on Mykonos that don't issue receipts. Publicity is good.

"You increase the awareness, you pass on a message," Pitsilis says in an interview. Tourists can "do their bit to help the country stand on its own feet."

Ballooning deficit

Tax evasion is a particular problem for Greece, which significantly lags other EU countries in tax collection efforts. The result is tax rates that are too high and are applied to too few. In 2009, the country saw its budget deficit rocket to more than 15 percent of GDP.

Improving compliance is the key to lowering tax rates and paying for things like better social safety nets and higher public investment. All that would help Greece recover from an eight-year economic crisis that cut its GDP by 25 percent and led to €289 billion in international bailouts.

The problems were myriad at the onset of the crisis. Greece's shadow, or undeclared, economy was estimated to account for as much as 27 percent of GDP—among the highest percentages in Europe. Some 75 percent of self-employed professionals declared income below the taxable threshold, an IMF study estimated. The tax collection system was antiquated and vulnerable to political interference. Corruption was commonplace. The tax code changed frequently. Disputes got entangled in Greece's slow-moving court system.

Attempts to doctor the government's fiscal statistics couldn't hide the problem. In 2010, Greece promised to slash its bloated budget deficit as part of the emergency assistance package. But the task became harder as the financial crisis deepened. More bailouts followed. In 2015, seeking to prevent a collapse of the banking system, the country imposed capital controls, which included daily limits on how much cash could be withdrawn from automated teller machines.

After efforts to boost collection fell short, the Greek government created the Independent Agency for Public Revenue, aiming to insulate revenue administration from political pressure and free it from some of the complex labor rules that bedevil the Greek bureaucracy. Pitsilis, a 44-year-old lawyer who was born in the United States, raised in Greece, and educated in Greece and France, took charge when the agency opened for business on January 1, 2017.

Pitsilis works in an eighth-floor office in a nondescript Finance Ministry building in downtown Athens. The agency has a separate entrance, a nod to the need to keep it at arm's length from the political appointees running the ministry. On a recent Friday at 5 p.m., he returns to his office from a meeting, puts on a tie, and gets back to work. His day usually ends at 9:30 p.m.

In May, a day after the government announced that snap parliamentary elections would be held in the summer, Pitsilis convened his staff to deliver a message: for them, it would be business as usual. There would be no relaxation of tax administration, unlike in the past, when tax collectors eased up to help the government curry favor with voters.

Surveillance drones

This summer season, inspectors are fanning out to conduct 50,500 on-the-spot audits and inspections. Surveillance drones hover over Santorini to make sure tour boat operators provide receipts to visitors who come to see the island's sea-filled volcanic crater. A monthly lottery offers taxpayers rewards of €1,000 for using payment cards in their daily transactions.

Other, more mundane innovations have made a difference. Tax officials have better access to third-party information such as bank accounts, and a dispute resolution system deals with complaints more quickly. The customs unit's mobile squads, which work on land and sea to conduct random inspections, are being brought under a new central organization; a special unit will focus on investigations in three major sectors: big business, smaller firms and the self-employed, and high-net-worth individuals.

"Tax evasion is not one monolithic thing," Pitsilis says. "It takes many forms. It's clear that there is no one-size-fits-all approach."

Still, it's clear that the proliferation of point-of-sale terminals, which underpins the new "Apodixi, please" campaign, has been a key to improved tax collection. The number of terminals more than doubled, to some 700,000, in the two years ending in December 2018, according to Cardlink, which runs the country's largest card acceptance network. The value of transactions jumped to €31.5 billion from €19 billion.

Cash limits

The sudden popularity of plastic coincided with the imposition of capital controls in 2015, when Greeks coped with limits on cash withdrawals by using debit cards to buy gasoline and groceries. The government later moved to require the terminals for a range of professions and businesses.

As the use of point-of-sale terminals soared, so did value-added tax receipts, because payments are collected automatically. Electronic payments contributed at least half of the increase in value-added tax revenue recorded in 2017, according to a study by IOBE, a Greek think tank.

In 2018, those payments jumped by 24 percent to €31 billion, according to a European Commission report, boosting collection of the value-added tax, which accounts for one-third of government revenue. Spending cuts, along with higher revenue, helped generate a budget surplus of 1.1 percent of GDP last year, compared with a deficit of 11.2 percent in 2010.

Electronic payments "have helped because they empower the individual," Pitsilis says. "It has given individuals the ability to remove themselves from some conversations, to allow them to say, 'I want to pay by card.'"

Even so, Greece has plenty of room for additional gains; card usage as a percentage of private consumption was 14.8 percentage points below the EU average in 2017, according to IOBE. Annual value-added tax revenues would be 21 percent, or €3.3 billion higher, if Greece were to reach the average EU level, it says.

With the easing of capital controls and limits on cash withdrawals, there's concern that still-weak tax compliance could suffer. A quarter of the terminals installed in 2017 and 2018 remain inactive, Cardlink representatives told a conference earlier this year.

One reason: unlike their younger, urban counterparts, older Greeks and people living in rural areas still prefer cash. Self-employed professionals routinely offer discounts to customers who pay cash—an agreement that is easier to make in the privacy of the doctor's office or lawyer's chambers. That is a serious problem, because the self-employed make up almost 30 percent of the Greek workforce, according to Eurostat—the highest proportion in the European Union and double the EU average.

As a result, the main tax burden was carried by easy-to-tax salaried employees and pensioners, while relatively wealthier self-employed groups evaded the tax net. Promises to ease the tax burden contributed to the election victory in July of Prime Minister Kyriakos Mitsotakis.

"Taxation cannot just be a source of income—it must evolve into a lever of growth," Mitsotakis said in his first policy speech in Parliament, announcing cuts to property taxes and corporate tax rates. Electronic payments and obligatory electronic invoicing and bookkeeping will broaden the tax base, he said.

Attitude shift

For shopkeepers like Ilias Tsingas who depend on overseas visitors, electronic transactions are a necessity. "Tourists don't use cash," he says.

Tsingas, 57, runs a kiosk in central Athens, minutes from Parliament House and on the path of members of the Presidential Guard, who march in their regalia to stand watch outside the Tomb of the Unknown Soldier. His kiosk, which sells everything from facial tissue to plastic soccer balls, is festooned with signs in English proclaiming that he accepts debit and credit cards. Among Greeks, however, only politicians and civil servants are regular users of the terminal because they need to justify expenses, he says.

For Pitsilis, changing that sort of attitude is key to success. It's time for Greeks to develop a sense of personal responsibility, he says, and avoid the temptation to accept a discount in exchange for a cash payment intended to avoid tax.

"It is incumbent on all of us to understand that such a proposal harms our future, the future of our children, our pensions, and affects whether our child, or our grandchild, finds a job tomorrow," Pitsilis says. "Because at the end of the day, we all end up paying." FD

MARIA PETRAKIS is a freelance journalist based in Athens.

PHOTO: ISTOCK / GYRO

Privacy vs Transparency

Countries must strike the right balance as they combat illicit financial flows

Jay Purcell and Ivana Rossi

In 2011, Pakistan's finance minister gave a budget speech to the National Assembly, explaining that the country's ratio of tax revenue to GDP, at 9.2 percent, was ranked lower than that of all but 1 of 154 jurisdictions. In a country of 180 million, just 1.2 million people and firms filed income tax returns.

Widespread tax evasion started at the top; 70 percent of Pakistani lawmakers had not filed returns that year, the Center for Investigative Reporting in Pakistan found. So stiffening existing laws and penalties would have been a challenge. And increased enforcement would ultimately depend on action by Pakistani judges—many of whom had also neglected to pay their taxes.

Undeterred, the Ministry of Finance took a bold step. In 2014, it authorized the Federal Board of Revenue to make public how much income tax every company and individual pays each year. This unusual approach appears to have had an effect; while compliance remains low, there is some evidence that it improved as a result of the ministry's transparency initiative. Still, that improvement came at a price. To shame tax evaders into paying their fair share—and enable civil society and journalists to hold them to account if they do not—all Pakistanis had to give up some of their privacy.

Around the world, national authorities are increasingly aware of the value—and cost—of

Despite the benefits of transparency, some countries are still reluctant to make useful information equally accessible.

using transparency to combat illicit financial flows. Transparency improves enforcement, brings better accountability and trust in processes and institutions, and deters wrongdoing by increasing the risk of detection. Inevitably, though, it also brings some loss of privacy for people who may have legitimate reasons to keep their financial dealings discreet, such as fear of nosy neighbors, gossip columnists, and even kidnappers.

But before we explore the tradeoffs that come with the solution, let's define the problem. "Illicit financial flows" is an umbrella term generally understood to encompass at least three types. First, there are funds *generated by* illegal acts, such as corruption, smuggling, and drug trafficking. Next are funds whose *transfer* constitutes an illegal act; for example, transferring money to hide income from the authorities constitutes tax evasion, even if the income was generated legally. Finally, there are *funds destined for an illegal purpose*, such as the financing of terrorism.

Turning to transparency to stem these flows isn't a new idea, even if countries are still working to refine their use of this powerful tool. The following examples provide a range of approaches to managing the resultant loss of privacy as an admittedly complex but nevertheless critical component of success.

Disclosure by public officials

World Bank statistics show that more than 90 percent of countries have introduced legislation requiring financial disclosure by at least some public officials. However, the specific requirements and level of implementation vary widely. Most often, the officials must disclose all income, assets, and liabilities held by them or close family members, such as a spouse, whether in the country or abroad. In other cases, they must also disclose assets for which they are the ultimate or "beneficial" owners. Such disclosures can help to advance multiple anti-corruption objectives, from prevention to enforcement. They can also help fight money laundering; for example, by helping determine if a customer is a politically exposed person, facilitating customer due diligence procedures, or advancing asset-tracing and recovery efforts.

In modern internet-speak, providing public access to financial disclosures represents a valuable crowdsourcing opportunity. Watchdogs, journalists, and others monitor declarations alongside dedicated civil servants, often generating leads and findings that spur or strengthen significant corruption investigations. For example, in 2009 a Croatian prime minister had to resign in the wake of media reports questioning the source of his wealth; the reports themselves were prompted by photos showing him wearing expensive watches that were not listed in his declaration of assets. Similarly, it was members of the media who found Swiss bank accounts a French budget minister had not declared to the fiscal authority. That scandal not only led to an investigation and, ultimately, the minister's conviction on charges of tax fraud and money laundering, it also triggered a comprehensive reform of the French asset declaration system for public officials, incorporating public access for the first time. In short, public access improves accountability and enhances disclosure's impact on the discovery and prosecution of corrupt acts.

Despite the benefits of transparency, some countries are still reluctant to make useful information easily accessible; only about 50 percent of those that require disclosure allow public access by law, and a much smaller percentage actually grant that access in practice. Preserving privacy is a common reason; another concern is that information could be exploited by would-be thieves or kidnappers. However, it is certainly possible to strike the right balance between those concerns and the clear benefits of public access. Here are some important considerations:

- Public access does not necessarily mean publishing the entire content of declarations submitted by public officials. Highly sensitive information, such as bank account numbers, is always kept confidential.
- Ways of approaching public access may be tailored to a country's specific circumstances. One

example: making public only the declarations of high-level public officials.
- There is growing recognition, including in case law, that the public interest outweighs personal privacy for high-level officials.

Beneficial ownership

Revealing the owners of companies and other legal entities, such as trusts, is another way to combat illicit financial flows. Research by Damgaard, Elkjaer, and Johannesen (2018) estimated that $12 trillion—almost 40 percent of all foreign direct investment—passes through empty corporate shells associated with no actual economic activity (see "The Rise of Phantom Investments" in this issue of *F&D*). While not all of these flows are illicit, a lack of information about the real person who ultimately owns, controls, or benefits from these structures—the so-called beneficial owner—can be used to mask questionable dealings.

The international anti–money laundering standard issued by the Financial Action Task Force (FATF), which helps stem illicit financial flows, includes specific recommendations for enhanced transparency of legal entities and their beneficial ownership. Basic information typically held in company registers, such as the company name, type of incorporation, legal status, address, and list of directors, should be public. Beneficial ownership information should always be available to the competent legal authorities, whether it is held in a registry, by financial institutions, or by the companies themselves. Building on the FATF standard, other salient international efforts, including on the part of the Group of Twenty and the Organisation for Economic Co-operation and Development's Global Forum, have also focused on enhancing the transparency of beneficial ownership.

Yet the continued misuse of anonymous companies for illicit purposes has prompted growing calls for governments to accelerate efforts and go a step further by making beneficial ownership information available to the public. Heeding those calls, the European Union decided that member states must establish publicly available beneficial ownership registries as of 2020.

Public access has myriad benefits. It supports financial institutions in conducting due diligence on their customers. It also enables the public to monitor and analyze purchases of goods and services by government agencies (to see, for example, whether contractors have ties to public officials), check the financial disclosures of officials, and help verify the accuracy and timeliness of the information in registries.

A few countries, including the United Kingdom and Denmark, are pioneering the creation of public beneficial ownership registries. Many others have committed to developing them. To prioritize transparency and open data, while managing privacy concerns, due consideration should be given to providing enough information to identify beneficial owners without offering unnecessary details and establishing ways to request case-by-case exemptions from publication, such as when there is evidence of a serious risk of violence or intimidation.

Geographic targeting orders

Buying and selling real estate can be a particularly effective way to move, launder, and invest illicit proceeds. The reasons are straightforward: it is often possible to launder or invest large sums of money in a single transaction while obscuring the identity of the beneficial owner via the use of corporate vehicles. This risk has not escaped the notice of national authorities, especially in countries where property markets are large and open and prices are rising fast.

Enter geographic targeting orders, a tool harnessed by the US Treasury Department to address this risk. In early 2016, the department's Financial Crimes Enforcement Network (FinCEN) issued temporary orders requiring "certain US title insurance companies to identify the natural persons behind companies used to pay 'all cash' for high-end residential real estate" in parts of New York and Florida. The objective was to pierce the veil of secrecy surrounding cash purchases of luxury real estate in the name of shell corporations and other legal entities. Of course, secrecy may safeguard the privacy of legitimate actors just as it obscures the actions of illegitimate ones. Some of the affected homeowners would surely be celebrities or other public figures seeking a reasonable degree of privacy; others might be criminals attempting to hide their dealings from law enforcement.

FinCEN's solution, which, in other countries, could be implemented with respect to land

Tradeoffs can and should be managed, not used as an excuse for inaction on illicit financial flows.

registries, was to require beneficial ownership information to be provided to the government but not to the general public. This means that relevant US (and through them, relevant foreign) authorities have access to this sensitive data, whereas potential stalkers, solicitors, and protestors do not. In 2017, FinCEN indicated that more than 30 percent of the purchases reported pursuant to its geographic targeting orders were conducted by people already suspected of involvement in questionable dealings. Meanwhile, FinCEN has consistently renewed the orders and expanded their scope to cover other major metropolitan areas—all without unduly compromising the privacy of buyers.

Tax records

Tax evasion costs governments more than $3 trillion a year, according to a 2011 estimate by the United Kingdom–based Tax Justice Network. Lower tax revenue diminishes the resources available for productive purposes, such as building roads, schools, and hospitals, which makes it difficult for governments to deliver sustainable and inclusive growth. That is why national authorities invest substantial efforts in combating tax evasion, including by auditing tax returns and exchanging relevant information with other countries.

One little-used approach to promoting tax compliance is to make taxpayers' incomes and returns public, as Norway has done since at least 1863 and Pakistan started doing, to a somewhat lesser degree, 150 years later. Unsurprisingly, what is generally promoted as a measure to strengthen transparency, equity, and accountability has also been decried as an invasion of privacy that engenders envy and promotes "salary snooping" by colleagues and neighbors. Indeed, November 1, the day the Finnish government publishes citizens' income and tax payments, is known as "National Jealousy Day."

To help address privacy concerns, Norway requires individuals to log in to a dedicated system that tracks their searches; taxpayers can see who has viewed their information, and users are limited to searching 500 records a month. Sweden maintains similar controls. These attempts to improve the balance between transparency and privacy may have achieved the intended result: frivolous record requests appear to have declined after controls were introduced, while members of the media, who are able to search anonymously in certain cases, have continued to perform a critical investigative function in furtherance of the public interest.

Potent weapon

These examples show that transparency is a potent weapon in the battle against illicit financial flows, in part because it allows journalists, academics, and others to scrutinize large amounts of data and report possible abuses. It also builds trust in institutions, increases accountability, and may diminish perception of public corruption. Yet concerns about privacy should not and cannot be ignored. Failing to address them can fuel fierce opposition to transparency initiatives, both from well-intentioned activists and from cynical actors who may cite privacy in a disingenuous attempt to obscure questionable dealings.

There is no universal formula for achieving a perfect balance between transparency and privacy, but there are international standards and broadly applicable good practices to guide the process. The relevant authorities must have ready access to complete information and should aim to maximize public availability, considering how best to tailor that availability to different stakeholders, safeguard certain personal details, and discourage frivolous searches or commercial data mining.

Trade-offs can and should be managed, not used as an excuse for inaction on illicit financial flows. FD

JAY PURCELL and **IVANA ROSSI** are financial sector experts in the IMF's Legal Department.

Reference:

Damgaard, Jannick, Thomas Elkjaer, and Niels Johannesen. 2018. "Piercing the Veil." *Finance & Development* 55 (2).

THE TRUTH ABOUT THE DARK WEB

Intended to protect dissidents, it has also cloaked illegal activity

Aditi Kumar and Eric Rosenbach

In the late 1990s, two research organizations in the US Department of Defense drove efforts to develop an anonymized and encrypted network that would protect the sensitive communications of US spies. This secret network would not be known or accessible to ordinary internet surfers. And while the original clandestine intention was never fully realized, some of the researchers saw a different value proposition at hand—launching a nonprofit focused on anonymity for human rights and privacy activists.

Enter the Tor network, short for "The Onion Router," given the many layers of encryption that guard passing information. Tor lives on the fringe of the internet and serves as the underlying technology of the dark web—a collection of hidden sites inaccessible via a regular browser and not indexed by search engines such as Google. The Tor browser—a free download—is all you need to unlock this hidden corner of the web where privacy is paramount. Radical anonymity, however, casts a long shadow.

The truth about the dark web is that in addition to offering extreme privacy and protection from the surveillance of authoritarian governments, it facilitates a growing underground marketplace that sophisticated criminals use to traffic drugs, stolen identities, child pornography, and other illicit products and services. And with untraceable cryptocurrency as the primary means of payment, close cooperation between law enforcement, financial institutions, and regulators around the world is required to tighten the screws on nefarious activity.

The gray areas

Today, over 65,000 unique URLs ending with .onion exist on the Tor network. A 2018 study by computer security firm Hyperion Gray catalogued about 10 percent of these sites and found that the most prevalent functions facilitate communication via forums, chat rooms, and file and image hosts, as well as commerce via marketplaces. These functional roles, particularly related to communication, support many uses that are considered legal and legitimate in free societies. Furthermore, a 2016 study by research firm Terbium Labs analyzing 400 randomly selected .onion sites suggests that over half of all domains on the dark web are in fact legal.

For individuals living under oppressive regimes that block large parts of the internet or punish

political dissent, the dark web is a lifeline that provides access to information and protection from persecution. In freer societies, it can be a critical whistle-blowing and communication tool that shields people from retribution or judgment in the workplace or community. Alternatively, it can simply deliver privacy and anonymity for those wary of how corporations and governments are tracking, using, and potentially monetizing their data. Today, many organizations maintain a hidden website on Tor, including nearly every major newspaper, Facebook, and even the US Central Intelligence Agency (CIA). This is because a Tor website demonstrates a (sometimes symbolic) commitment to privacy. The *New York Times* and the CIA, for example, are both hoping to facilitate communication with virtual walk-ins who can provide sensitive information.

On the flip side, the same privacy and anonymity that deliver protection from tyrants and targeted advertisements also make the dark web a springboard for crime. Some of the more prevalent illicit activities include arms trafficking, drug dealing, and the sharing of exploitative content—often involving children—such as pornography and images of violence and other types of abuse. Websites support the rhetoric of neo-Nazis, white supremacists, and other extremist groups.

The pairing of dark web services with cryptocurrencies has led to expectations of a boom in crime. A decade ago, an unknown cryptography expert (with particular expertise in cracking passwords) who used the alias Satoshi Nakamoto developed the world's first currency and payment network not controlled by a national government: Bitcoin. Originally a niche medium of exchange for the technology community, Bitcoin emerged in 2011 as the currency of choice for drug dealers conducting transactions on a dark-web site known as the Silk Road. Over the past five years, the combination of an encrypted network hidden from most of the world and a transactional currency that is nearly untrackable by law enforcement officials resulted in a small, but significant, marketplace of illicit vendors selling illegal wares.

For individuals living under oppressive regimes that block large parts of the internet or punish political dissent, the dark web is a lifeline.

Of the close to 200 domains catalogued as illegal by Terbium Labs, more than 75 percent appear to be marketplaces. Many of these are fueled by Bitcoin and other cryptocurrencies, such as Monero. Recreational and pharmaceutical drugs

ART: ISTOCK / TETIANA LAZUNOVA

Many of the most corrosive threats to society today operate in the shadows of the Tor network and thus merit the attention of international investigators.

are the most popular products, followed by stolen and counterfeit documents such as identities, credit cards, and bank credentials. Some sites offer hacking and technological crime services, including malware, distributed denial of service attacks, and hacking for hire. A good number offer a mix of these and other products, including pornography and counterfeit goods.

Although the serious nature and rapid growth of illicit transactions on the dark web should concern governments and global financial institutions, the overall portion of worldwide commerce transacted on the dark web is minuscule compared with global illicit commerce. A recent report by a leading crypto-payment analytic firm, Chainalysis, shows that Bitcoin transactions on the dark web grew from approximately $250 million in 2012 to $872 million in 2018. The firm projected that Bitcoin transactions on the dark web will reach more than $1 billion in 2019. If correct, it would represent a record-setting level of illegal transactions in this arena. The report also noted that the proportion of Bitcoin transactions tied to illicit deals has declined by 6 percent since 2012 and now accounts for less than 1 percent of all Bitcoin activity. Even more broadly, the United Nations estimates that the amount of money laundered globally in one year is 2 to 5 percent of global GDP—between $1.6 trillion and $4 trillion.

Even though the total economic volume of illicit dark web activity remains relatively small, many of the most corrosive threats to society today operate in the shadows of the Tor network and thus merit the attention of international regulators, financial institutions, and law enforcement agencies.

Policing the shadows

Protecting political dissidents, privacy advocates, and whistle-blowers should not come at the expense of empowering child abusers, arms traffickers, and drug lords. Therein lies the challenge for regulators and law enforcement agencies: to devise approaches that walk the fine line of protecting liberal principles in an age of information control while identifying and eradicating the most insidious activities on the dark web. Over the past several years, the international community has made significant progress addressing these challenges by improving information sharing, sharpening law enforcement's technical capabilities to take down major illicit marketplaces, and regulating the transfer of cryptocurrency transactions.

Addressing the most nefarious activities on the dark web starts with improved information sharing among law enforcement agencies and financial institutions. The global nature of the dark web makes international cooperation imperative. During 2018–19, Interpol and the European Union brought together law enforcement agencies from 19 countries to identify 247 high-value targets and shared the type of operational intelligence necessary for enforcement. The results are promising: just this year, efforts allowed members of the group to make arrests and shut down 50

illicit dark-web sites, including Wall Street Market and Valhalla, two of the largest drug markets.

The growth of illegal dark web transactions has also spurred many governments around the world to disrupt criminal activities by improving the capabilities of domestic law enforcement agencies such as the US Federal Bureau of Investigation (FBI). For example, the FBI has reportedly conducted operations that allow it to "de-anonymize" Tor servers. The FBI does this by establishing nodes in the network that allow the agency to see the identities and locations of some illegal Tor-based webpages. The first significant action was the FBI's takedown of the "Silk Road 2.0" website, the leading illicit dark web marketplace in 2014. The investigation revealed that, during its two and a half years in operation, the site had been used by several thousand drug dealers and other unlawful vendors to distribute hundreds of kilograms of illegal drugs and other illicit goods and services to well over 100,000 buyers. The site was used to launder hundreds of millions of dollars from these unlawful transactions. All told, the site had generated sales totaling more than 9.5 million in Bitcoin valued, at the time, at approximately $1.2 billion. AlphaBay and Hansa market, two of the biggest successors of Silk Road, were shut down in 2017.

Dark web enforcement capabilities have continued to grow, including a recent Dutch operation to hijack a leading dark web merchant, anonymously run it for a month, and then use the information collected to disrupt dozens of other dark web merchants.

Need for new regulations

In addition to conducting disruption operations, governments and international institutions are attempting to directly regulate the cryptocurrencies that are fueling dark web marketplaces. In June 2019, for example, the Financial Action Task Force issued guidance that urges companies processing cryptocurrency transfers to identify both the sender and receiver of fund transfers. The guidance follows the recommendation of the 2018 G20 Summit, in which leaders asked international regulatory agencies to consider policy responses for crypto assets, particularly related to know your customer, anti–money laundering, and countering the financing of terrorism. The start-up ecosystem of exchanges, wallets, and other crypto payment facilitators is far from having the necessary infrastructure to adopt such financial-sector-like standards, but supervisors need to begin laying the groundwork for enhanced scrutiny. The impending launch of Libra, Facebook's cryptocurrency, will only make this a more pressing concern as the barriers to adopting virtual assets are lowered for Facebook's nearly 2 billion-plus users.

A fine line

Authoritarian regimes will continue efforts to block access to the dark web and the threats to legitimacy that it poses by enabling dissidents and activists. Faced with this threat, the natural reflex of liberal civil societies will be to advocate that Tor remain unmonitored and unpoliced to protect free expression and privacy. The reality of the dark web is much more complicated, requiring a nuanced approach from supervisors and law enforcement agencies to thwart activities that are considered illegal and immoral in free societies, all the while protecting the very real benefits of an anonymized network. FD

ADITI KUMAR is the executive director of the Belfer Center for Science and International Affairs at Harvard University's John F. Kennedy School of Government. **ERIC ROSENBACH** is codirector at the Belfer Center and was previously US assistant secretary of defense for global security.

The **Cost** Of Corruption

Graft results in lost tax revenue, but it also takes a social toll

Paolo Mauro, Paulo Medas, and Jean-Marc Fournier

In 2013, Brazilian investigators working on a routine money-laundering case stumbled onto something far bigger: a bribery and bid-rigging scheme involving state-controlled oil giant Petrobras. Operation Car Wash, as the probe came to be known, discovered that some of Brazil's largest construction and engineering firms had paid billions of dollars in bribes over a period of years to secure lucrative contracts from Petrobras. The scandal implicated dozens of government officials and politicians.

Such shady dealings aren't limited to emerging market economies like Brazil, of course. In one spectacular case in the 1970s, politicians in Japan accepted bribes to approve contracts to buy US military aircraft. This scandal was one of the motivations for the passage of a law forbidding US companies to pay bribes abroad. But wherever it appears, corruption, or the abuse of public office for private gain, distorts the activities of the state and ultimately takes a toll on economic growth and the quality of people's lives.

Depending on its extent, corruption can have a profoundly detrimental effect on public finances as governments collect less in tax revenue and overpay for goods and services or investment projects. But the cost of corruption is greater than the sum of lost money: distortions in spending priorities undermine the ability of the state to promote sustainable and inclusive growth. They drain public resources away from education, health care, and effective infrastructure—the kinds of investments that can improve economic performance and raise living standards for all.

Public trust diminished

How does corruption limit revenue? For one thing, it can harm the ability of governments to collect taxes in a fair and efficient way. Corrupt legislators may introduce tax exemptions or other loopholes in exchange for bribes, reducing revenue potential. And the more complex and opaque the tax system, the easier it is for officials to exercise discretion in its administration and demand bribes or kickbacks in return for a favorable outcome. An example: in a 1996 case reported by the *New York Times,* municipal workers allegedly accepted bribes to make it appear that unpaid taxes had actually been paid. More broadly, the distortion of tax laws and corruption of tax officials reduce public trust in the state, weakening the willingness of citizens to pay taxes.

Curbing corruption can yield significant fiscal benefits. Our research suggests that revenues are higher in countries perceived to be less corrupt; the least corrupt governments collect 4 percent of GDP more in taxes than those at the same level of economic development with the highest levels of corruption. Some countries have made progress over the past two decades, and if all countries were to reduce corruption in a similar way, they could gain $1 trillion in lost tax revenues, or 1.25 percent of global GDP.

Hot spots

While corruption can occur almost anywhere, it is most prevalent in a few hot spots. One involves natural resources, especially oil and mining. The outsized profits associated with extraction of natural resources are strong incentives for payment of bribes, or even state capture, where public policies and laws are influenced by corrupt practices to secure control over a country's natural wealth. Indeed, resource-rich countries tend to be more corrupt because they struggle with weaker institutions and poor accountability in the use of their natural wealth.

Corruption is also prevalent among state-owned enterprises, where management may be susceptible to undue influence by civil servants and elected officials. As a result, state-owned enterprises in vital sectors like energy, utilities, and transportation are less profitable and efficient in countries with more corruption. Several high-profile corruption probes involving such firms underscore the risk of abuse of public resources, including Petrobras in Brazil, Elf Aquitaine in France (before it was privatized), and Eskom and Transnet in South Africa. Research suggests, moreover, that corruption is one of the main reasons private companies tend to be more productive than state-owned firms. Strikingly, in countries where corruption is less prevalent, the type of ownership is much less relevant to the explanation of the difference in performance between firms (Baum and others, forthcoming).

The outsized profits associated with extraction of natural resources are strong incentives for payment of bribes, or even state capture.

Government purchases of goods and services are another hot spot, partly because of the large amounts of money involved; public procurement accounts for 13 percent of GDP, on average, among members of the Organisation for Economic Co-operation and Development, which represents 36 advanced economies. Procurement related to public investment is particularly susceptible because big projects often have unique features, which make it harder to compare costs and easier to conceal bribes and inflate costs.

This is why grand corruption is usually associated with complex and costly projects such as construction and defense equipment. By comparison, it is harder to collect bribes on teachers' and health care workers' wages. As a result, spending on education and health is likely to be lower where corruption is high, making it less likely that worker productivity and living standards will improve. Among low-income countries, the share of the budget dedicated to education and health is one-third lower in more corrupt countries (see chart, next page).

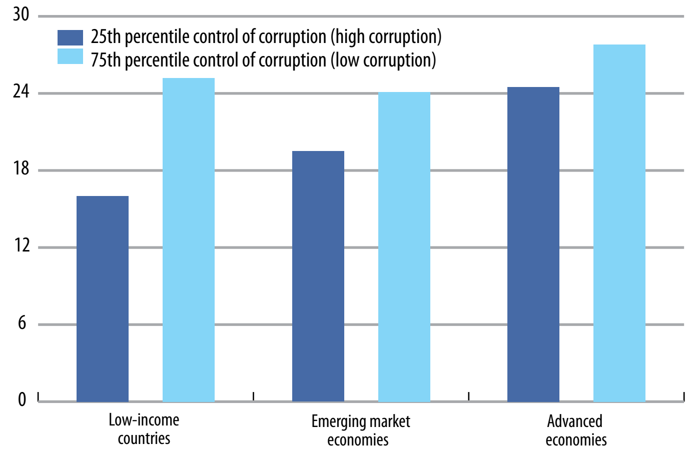
It should come as no surprise, then, that test scores tend to be lower in countries where corruption is more prevalent. While students in more corrupt countries

PHOTO: ISTOCK/ DIMDIMICH

Skewed priorities

Public spending on education and health is lower in countries where corruption is higher.

(percent of total spending)



Sources: IMF, Government Finance Statistics; and IMF staff estimates.
Note: Data are for 2016.

may spend as much time in the classroom as those in other countries, the quality of instruction is worse. This is not just about spending less on education. In some countries, access to teaching jobs in public schools is influenced by bribes or connections. Teacher absenteeism is a widespread form of petty corruption in several developing economies, and a study in Brazil found evidence that where federal transfers to local governments for education spending are partially lost to corruption, dropout rates are higher and test scores worse.

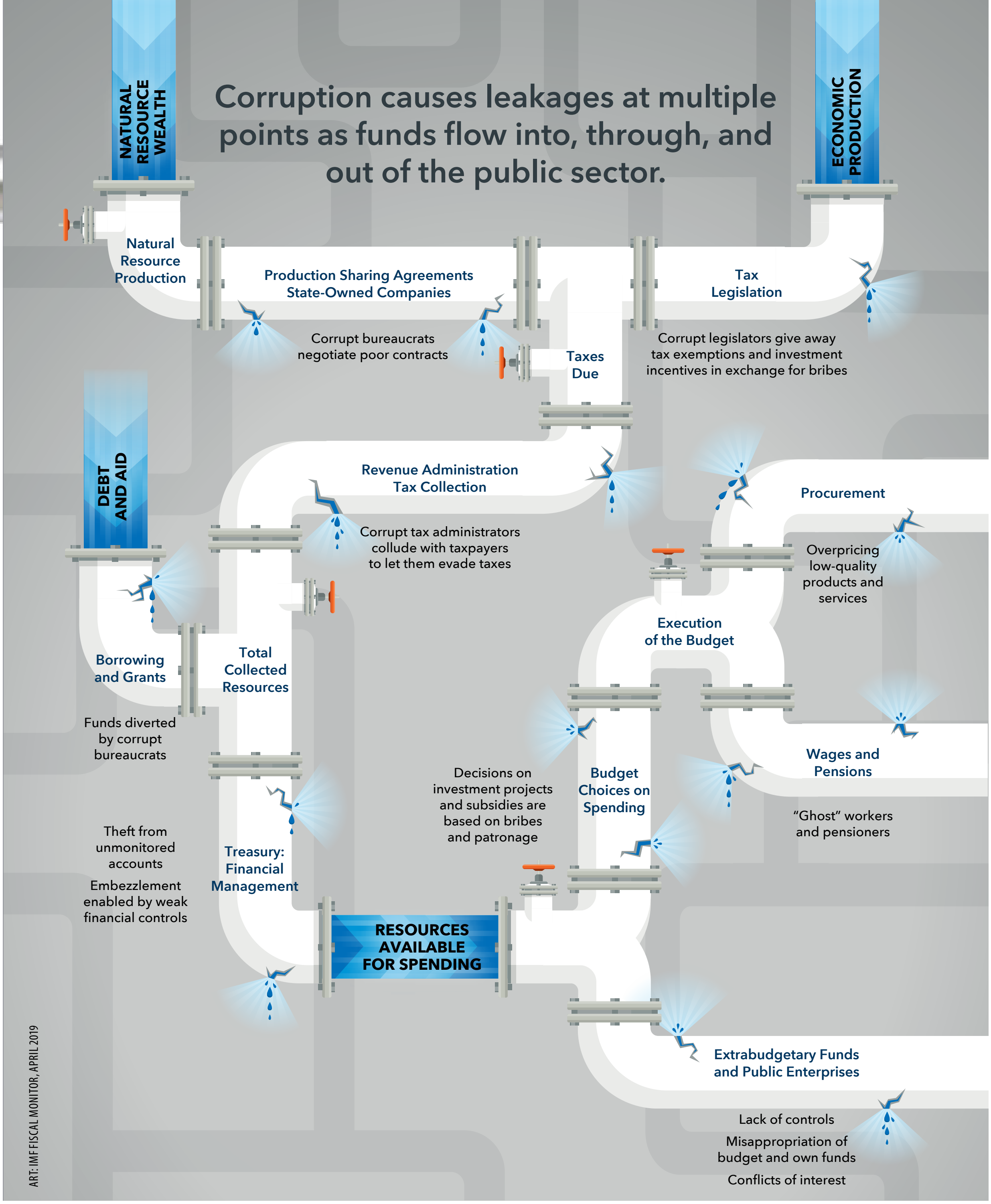
Georgia's success

Reducing corruption is a challenge, but it can bring substantial benefits. Countries that reduce corruption significantly are rewarded with surges in tax revenue. This was the case in Georgia, where in 2003 a new government launched an aggressive campaign to reduce corruption from very high levels. The result: tax revenue jumped from 12 percent to 25 percent of GDP in five years, even as tax rates were lowered.

Georgia's success reflected a new culture of tax compliance: the share of people who felt it was never justifiable to cheat jumped from about 50 percent to almost 80 percent. Improvements in services, including lower crime rates and fewer power outages, and renewed trust in government made people more willing to pay taxes. Higher revenue also made it possible to clear wage and pension arrears, further bolstering confidence in government.

What's the best way to combat corruption? Major political changes occasionally present opportunities for ambitious reforms and rapid improvements, as in Georgia. But in most cases, progress is likely to be gradual. Success requires political will, perseverance, and a commitment to continuously upgrade institutions over many years. To better understand the institutional characteristics that are important in promoting integrity and accountability, we studied a large set of countries. Our analysis yielded some specific lessons for policymakers:

- *The chances of success are greater when countries improve several mutually supporting institutions to tackle corruption.* They should start with areas of higher risk—such as procurement, revenue administration, and management of natural resources—as well as effective internal controls. A fiscal governance framework also requires a professional and ethical civil service as a key pillar. The heads of agencies, ministries, and public enterprises must promote ethical behavior by setting a clear tone at the top.
- *Governments need to keep pace with evolving technology and opportunities for wrongdoing.* Our analysis found that when governments invest in information and communication technologies and transparency increases, there are fewer opportunities to ask for bribes. For example, in Chile and Korea, electronic procurement systems have been powerful tools to improve transparency and curtail corruption.
- *Promoting transparency and a free press helps increase accountability.* Colombia, Costa Rica, and Paraguay are using an online platform that allows citizens to monitor the physical and financial progress of investment projects. Our cross-country analysis shows that a free press enhances the benefits of fiscal transparency in curbing corruption. It is not enough to release data; it must also be widely disseminated and explained. In Brazil, the release of the results of audits affected the reelection prospects of officials suspected of misuse of public money, and the impact was greater in areas with local radio stations.



In addition to efforts to strengthen domestic institutions within countries, international cooperation is crucial. More than 40 countries have made it a crime for their companies to pay bribes to gain business abroad. Countries can also aggressively crack down on money laundering and reduce transnational opportunities to hide corrupt money in opaque financial centers.

Curbing corruption can be a daunting task, but it is necessary to restore public trust in government. The fight against corruption can also bring significant economic and social gains over time. It starts with domestic political will, continuous strengthening of institutions to promote integrity and accountability, and global cooperation. FD

PAOLO MAURO is deputy director, **PAULO MEDAS** is a deputy division chief, and **JEAN-MARC FOURNIER** is an economist, all in the IMF's Fiscal Affairs Department. This article draws on "Curbing Corruption," Chapter 2 of the IMF's April 2019 *Fiscal Monitor.*

Reference:

Baum, A., C. Hackney, P. Medas, and M. Sy. Forthcoming., "Governance and SOEs: How Costly Is Corruption?" IMF Working Paper, International Monetary Fund, Washington, DC.

THE ART OF MONEY LAUNDERING

The loosely regulated art market is rife with opportunities for washing illicit cash

Tom Mashberg

Matthew Green was raised in the heady world of fine arts, surrounded from boyhood by the works of Old Masters and Impressionists. His father, Richard, the owner of two of London's most illustrious galleries, dealt in legendary names like Picasso, Constable, Chagall, and Brueghel. Matthew Green, 51, was preparing to take over the family business so his father could pursue new passions.

But in late 2017, US prosecutors say, Green fell in with the owners of a Mauritius-based investment company, Beaufort Securities, that engaged in fraud, stock manipulation, and money laundering. For Beaufort's owners, duping investors into buying worthless securities was the easy part. The hard part was making the ill-gotten profit appear legitimate to regulators. Beaufort had done so in the past by depositing money under false names in offshore banks, then slipping it into the global banking system little by little. The company had also used the time-tested trick of buying real estate and quickly selling it off, often at a loss, to convert illegal proceeds into assets that could be accounted for as the fruit of a property deal.

Now, money launderers like Beaufort were searching for less obvious ways to scrub their cash, and Matthew Green knew how to trade in multimillion-dollar works of art. Approached in late 2017 by the Beaufort conspirators—one of whom was in fact an undercover US federal agent who had infiltrated Beaufort—Green allegedly said he would accept £6.7 million (about $9 million at the time) in what he knew to be the yield of securities fraud in exchange for a 1965 Picasso, *Personnages*. Green would draw

PHOTO: GETTYIMAGES / BLOOMBERG / CONTRIBUTOR; ISTOCK/THEMACX; HERKISI; JOHNWOODCOCK

Workers move Red Skull, *a 1982 painting by Jean-Michel Basquiat.*

PHOTO: GETTYIMAGES / JACK TAYLOR / STRINGER

The art market is an ideal playing ground for money laundering.

up phony ownership papers saying the work had been sold, all the while keeping the Picasso stored away. Down the road he would pretend to buy it back from his coconspirators at a lower price, keeping 5 to 10 percent of the laundered cash for himself.

"Art is a very attractive vehicle to launder money," says Peter B. Hardy, a former US prosecutor who now advises corporations and industries on compliance with anti-money-laundering requirements. "It can be hidden or smuggled, transactions often are private, and prices can be subjective and manipulated—and extremely high."

After a slew of recent cases in the United States and Europe, the momentum toward a crackdown on illicit art and antiquities deals is growing. The legitimate art market is itself enormous—estimated at $67.4 billion worldwide at the end of 2018. According to the United Nations Office on Drugs and Crime, the underground art market, which includes thefts, fakes, illegal imports, and organized looting, may bring in as much as $6 billion annually. The portion attributed to money laundering and other financial crimes is in the $3 billion range.

For Green, dabbling in the dark art of money laundering has ended poorly. He has been indicted in the United States on six counts of attempted money laundering, and his gallery in the Mayfair district of London has been declared insolvent by British regulators. Although Green has not been identified as a fugitive, court records indicate that US prosecutors have disclosed his indictment and arrest warrant to law enforcement agencies in the United Kingdom, Hungary, Saint Vincent and the Grenadines, and Mauritius. He has also been ordered to surrender the Picasso. The tactics used by Green and the others charged in the Picasso scheme remain easy to replicate, at least for now. Green was taking advantage of a regulatory loophole that US and European legislators are working hard to close. Unlike banks, life insurance companies, casinos, currency exchangers, and even precious-metals dealers, auction houses, and art sellers have no obligation to report large cash transactions to a governing authority. In fact, dealers can keep the names of buyers and sellers anonymous. And unlike US businesses that deal in large sums of money, they do not have to file so-called suspicious activity reports with the US Treasury Department if they have doubts about the origins of the money they are being paid.

Bill in Congress

Under the Illicit Art and Antiquities Trafficking Prevention Act under consideration in Congress, the US government would require "dealers in art and antiquities" to establish anti-money-laundering programs, keep records of cash purchases, and report suspicious activity and transactions exceeding $10,000 to federal regulators. In addition, the art industry would be required to look into a client's background and examine purchases and sales for evidence that the money might be tainted.

In the European Union, under its Fifth Anti-Money Laundering Directive, art businesses would be obliged to augment efforts to vet customers and to discern "as far as reasonably possible" the purpose of all large, unusually complex, or secretive transactions.

In the view of many art dealers, the legal changes in both the United States and the European Union would strip the vendors of a major selling point—the ability to offer anonymity to clients and preserve the opacity of the art market. In years past, when the fine arts market was seen as a more genteel pursuit, there was no real inclination by the authorities to police it as strenuously as the banking or brokerage trades. All that has changed in the past decade or so because of the enormous amounts of money pouring into art collecting and the growing focus on stymieing the clandestine trafficking in looted and smuggled artifacts from war-torn nations.

Law enforcement officials and even some art merchants now say that excessive secrecy has become a drawback because more and more money launderers have discovered that the art market can be used as an easy conduit. As noted by the FBI and Interpol, "in comparison with other trade sectors, the art market faces a higher risk of exposure to dubious financial practices" because "the volume of legally questionable transactions is noticeably higher than in other global markets."

The indictment filed against Matthew Green and his confederates even recounts a conversation, tape-recorded by an undercover agent, in which Green allegedly crows that "the art trade is the only market that is this unregulated." A client "could even buy the art under a false name with no repercussions," Green is quoted as saying.

"More cases involving artwork and money laundering undoubtedly would be uncovered by law enforcement if art and antiquities dealers were added to the list of businesses legally liable for reporting suspect payments," says Rick St. Hilaire, a former US prosecutor and an expert on art and antiquities law. "For now, it's wide open."

Supporters of expanded regulation say all they want is for the trade in fine art, cultural property, and ancient artifacts to be subjected to the same financial regulations that banks and other industries face.

"The art market is an ideal playing ground for money laundering," says Thomas Christ, a board member of the Basel Institute on Governance, a Swiss nonprofit that has proposed anti-money-laundering standards for art market operators. He added, "We have to ask for clear transparency, where you got the money from and where it is going."

The industry objects

Not surprisingly, the art industry is fighting the regulations. Some sectors are asserting that examples of actual money laundering via the art trade are rare or exaggerated by law enforcement agencies eager to generate sensational headlines. Others, like the International Confederation of Art and Antique Dealers Associations, say the reporting requirements are too burdensome for smaller players in the art market.

At a conference on money laundering last year, James McAndrew, a former Department of Homeland Security special agent who now lobbies on behalf of dealers and collectors, said that "there has not been an art dealer or collector convicted for laundering money through art. The idea that auctions are nefarious or evil is outrageous because it hasn't been proven." Peter Tompa, director of the Global Heritage Alliance, which supports coin

Advocates say the stratospheric valuations placed on artwork by even second-tier artists leave them no choice but to impose constraints on a vulnerable industry.

dealers and the bullion industry, warned that many in the trade would exit the market because the new standards would be too costly to adopt.

And the Committee for Cultural Policy, which represents large and small art dealers and buyers in the United States, said that "it is not practical to use art to launder money, especially antiques and antiquities, because art sells slowly, and buyers are usually collectors," not criminals seeking a quick deal to "legitimize" dubious money.

But advocates say the stratospheric valuations placed on artworks by even second-tier artists leave them no choice but to impose constraints on a vulnerable industry at a time when drug kingpins, oil oligarchs, and assorted kleptocrats are desperate to turn their dirty money into a clean or fungible asset. For now, the momentum is with them, and there are enough money laundering prosecutions to justify those concerns.

A 2014 case known as *U.S. v. Ronald Belciano et al.*, for example, involved both the distribution of marijuana and a conspiracy to launder the profits using artwork. Police seized over $4 million in cash and confiscated approximately 125 pounds of marijuana and 33 paintings worth more than $619,000 from a storage warehouse in Pennsylvania. Prosecutors said the drug dealers had accepted the artworks in lieu of cash after being promised that they could sell them back for laundered money once the art dealers had buried the transactions in their books. In 2015, Belciano was sentenced to five years in prison.

In another high-profile case, a Brazilian financier was accused of embezzling millions from his bank and trying to launder the money by acquiring expensive art, including Jean-Michel Basquiat's *Hannibal* (1981). According to federal prosecutors in New York, the financier, Edemar Cid Ferreira, tried to smuggle the Basquiat and about 90 other high-value works of art into the United States using papers that declared the value of each object at $100. Even though he was convicted and sentenced to 21 years in 2006, appeals and complexities in the legal system meant the United States could not repatriate the works to Brazil until 2017.

And small-scale scams occur every day. Indian officials, for example, say antiquities looted from remote temples and tombs are used as a means of currency exchange. The items are shipped to dealers in Hong Kong SAR or Bangkok—often falsely listed in manifests as replicas worth a few rupees. Collectors and traders are standing by to pay thousands of dollars for the relics, which come with fake documents attesting to their legal purchase. The dealers keep a share of the take and filter the rest of the money back to crime rings in India through unregulated nonbank financial companies.

Deborah Lehr, chairman of the Antiquities Coalition, a Washington, DC–based organization fighting trafficking in artifacts, warns that terrorist groups are already using the art and antiquities industry to raise money by plundering ancient cultural sites and employing intermediaries to sell off the looted goods. "A key priority is shutting the US market to illicit antiquities while encouraging responsible trade practices," she says.

Given that upward of 70 to 90 percent of auction catalog listings for valuable antiquities provide scant information about the seller, art merchants would be wise to accept the inevitable and move toward greater transparency and more due diligence, says Hardy, the former prosecutor. The proposed regulations, he says, would simply enshrine into law the steps that art dealers ought to be taking in the first place to stave off criminal acts.

"Sometimes," he says, "the provenance of the funds can be more critical than the provenance of the art." FD

TOM MASHBERG is a veteran journalist who writes about art and antiquities crimes for the *New York Times* and other publications.

MORE SAND THAN OIL

Sub-Saharan Africa stands to gain more from reducing corruption than any other region

Nelson Sobrinho and Vimal Thakoor

A new wave of leaders in sub-Saharan Africa has expressed renewed commitment to fighting corruption. This trend reflects a recognition that good governance is key to fostering growth and economic development. The link between growth and governance is especially strong on this resource-rich continent, where people stand to gain more economically from reducing corruption than anywhere else in the world.

Our research shows that the governance dividend for countries in sub-Saharan Africa is two to three times larger than for the average country in the rest of the world—even in regions perceived to have equally weak governance. Bringing sub-Saharan Africa's governance to the world average could increase GDP per capita by an estimated 1 to 2 percentage points a year.

Low corruption and good governance are not the sole drivers of growth, of course. Some countries perceived as having weak governance have experienced episodes of strong growth driven by other factors—for example, natural resource wealth. In other cases, countries with good governance have not necessarily enjoyed strong growth. But we find that corruption tends to undermine economic growth, behaving more like sand than oil in the economic engine.

ART: ISTOCK / FILO; STARCEVIC

The governance landscape varies significantly around the world, with most developing regions performing poorly. Sub-Saharan Africa is a case in point: only 2 of the 30 countries from the region included in the *International Country Risk Guide*'s 2017 governance index scored above the average for the rest of the world (see chart).

Some African governments are already showing a clear commitment to fighting corruption and strengthening governance. For instance, various segments of the South African government apparatus and institutions were made subservient to a select group of people during the so-called state capture episode. Since 2018, the government has been engaged in a bold fight to reverse the damage by improving procurement, fighting smuggling, and rebuilding the capacity of critical institutions such as the revenue authority and the anti-corruption agency.

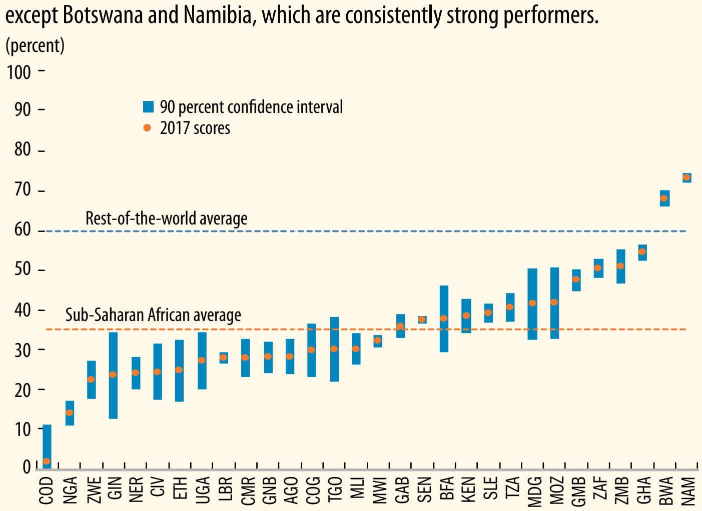
Similarly, Angola had lost control over billions of dollars from its sovereign wealth fund. The money was siphoned off by a rogue fund manager, with others complicit, through complex financial transactions moving through offshore financial centers and invested in ventures of personal interest. The new Angolan government elected in 2017 changed the management and placed the previous management under investigation. The fund's assets have since been recovered and are now being reinvested for the benefit of the Angolan people.

In other instances, however, retrograde processes such as kickbacks in the allocation of uncompetitive oil and gas contracts and the expropriation of private assets are still in place, undermining the sanctity of property rights and the rule of law, with damaging effects on investment and growth. In a few cases, the independence of central banks is under attack from politicians seeking expedient solutions to finance the budget or boost growth through monetary easing instead of reforms.

Improving governance is difficult, as the beneficiaries of corruption often fight back. It is a complex, drawn-out battle among the various players—government, institutions, civil society, media, and the private sector. Strong political commitment is thus an absolute requirement for success.

Below average

Almost all African countries score lower on governance than the rest of the world, except Botswana and Namibia, which are consistently strong performers.



Source: *International Country Risk Guide.*
Note: Data labels in the figure use International Organization for Standardization (ISO) country codes.

Conventional policies

From an economic perspective, there are some basic principles that apply across countries and can boost governance, such as strengthening laws, improving government effectiveness, and shoring up fiscal and anti-corruption institutions.

In countries such as Botswana, Chile, Estonia, and Georgia that have managed to lower corruption, multiple factors contributed to their success. These include political will, measures to reduce corruption opportunities (such as cutting red tape and lowering trade barriers), measures to constrain corrupt behavior (such as an independent judicial system or a strong anti-money laundering framework), and improved fiscal institutions (with greater transparency and controls).

Building expertise and empowering employees in institutions designed to fight corruption will improve their prosecution capability and bridge the gap between public opinion and the court of law. Corruption prosecution cases often fail when governments lack adequate legal capacity. Enhancing corporate governance and a system of checks and balances, particularly through a better governance structure for state-owned enterprises, will also help.

Institutional reform takes time, but more rigorous enforcement of existing regulations would be a step in the right direction.

Digitalization is opening up new ways of fighting corruption by providing governments with new platforms for engaging with citizens and entrepreneurs. It also promotes greater transparency and accountability by facilitating access to information. Many African countries are using this opportunity to improve service delivery and governance in a variety of ways.

In the area of taxation, for example, electronic processing of tax submissions, refund payments, and customs declarations saves time and lowers costs—as well as reducing corruption opportunities. Data analytics make risk-based auditing possible, allowing for faster processing of tax claims.

Digitalization can also improve spending efficiency. Biometric technologies and electronic payment systems are helping cut bureaucratic inefficiencies, better target people in need, produce fiscal savings, and facilitate the delivery of benefits. People are using digital payments—for example, for school fees—to reduce the scope for fraud and corruption by bypassing public officials.

Digitalization can also make procurement more transparent, inclusive, and efficient. Centralized procurement can reduce conflicts of interest and abuse, including at the level of state-owned enterprises, provinces, and local governments.

HOW IS GOVERNANCE MEASURED?

Governance is a multifaceted issue cutting across politics, economics, and institutions. The indicators with the most significant economic ramifications include *corruption* (abuse of public office for private gain), *government effectiveness* (quality of public policies and services), *regulatory quality* (ability of the government to formulate and implement business-friendly policies and regulations), and the *rule of law* (respect for contract enforcement, property rights, and law enforcement).

Bringing the various governance dimensions into one indicator can be challenging, as aggregating subjective measures may not fully capture the reality on the ground, either due to cultural differences—corruption in one country may be a customary practice in another—or the fact that distinct attributes of governance are lumped together in one indicator. While corruption perceptions tend to be the main component of interest, most measurements are broad enough to be useful proxies for the quality of political institutions, government regulations, and policies.

Concrete benefits

What exactly would this governance dividend mean for the people of sub-Saharan Africa? Better governance and less corruption would result in more revenue for the government, more efficient use of this revenue, increased private investment and job opportunities, and more money to spend and invest in services vital to long-term development, such as health and education. We would expect it to bear fruit in a few different ways:

- ***Enhanced revenue collection through improved tax compliance.*** Customs and revenue authorities are better able to combat smuggling and illicit flows when tax officials adhere to strong governance principles. Citizens are more likely to pay their taxes when they trust the effectiveness of government spending.
- ***More efficient government spending thanks to stronger budgetary processes.*** Good governance reduces the risk of harmful shifts in government spending toward items subject to graft (white elephants, for instance).
- ***Improved developmental outcomes and social inclusion.*** More revenue overall means governments can spend more on their people. Improved governance is likely to benefit the poor disproportionately as they rely more on social services. And increased spending on education and health supports economic and social inclusion and reduces vulnerability.

The continent is at a turning point, reflecting a confluence of factors. A young population with access to real-time information through digitalization and open-access data is demanding transparency and accountability from elected officials. Moreover, to attract foreign investment and integrate with the global economy, countries will need to adhere to good governance principles. Irrespective of the path countries choose to improve governance, the dividends that result will be significant and worth pursuing. Good governance is more relevant than ever. FD

NELSON SOBRINHO and **VIMAL THAKOOR** are economists in the IMF's African Department. This article is based on IMF Working Paper 19/1, which the authors produced jointly with Amine Hammadi, Marshall Mills, and Ricardo Velloso.

NONPROFITS INVESTIGATE **PROFITS**

Investigative journalists play a key role in bringing corruption to light

Andreas Adriano

In 1971, whistle-blower Daniel Ellsberg discovered the so-called *Pentagon Papers* and spent countless nights photocopying over 7,000 pages before delivering them to the *New York Times* and the *Washington Post.* Four decades later, when an anonymous source gave German journalist Bastian Obermayer a flash drive with 11 million files taken from a Panamanian law firm, detailing shady dealings and tax avoidance schemes used by the rich and powerful, it was too much for even his entire newsroom to process. Obermayer asked for help from the International Consortium of Investigative Journalists (ICIJ), mobilizing 250 reporters in 90 countries.

Published in April 2016, the *Panama Papers* revealed a large, complex, and very well-hidden corner of the global economy. The scandal resulted in the resignations of prime ministers and senior officials from Iceland to Mongolia.

From the Pentagon to Panama, with other major discoveries in between, investigative journalism has made major contributions in bringing to light what some would rather keep in the dark. But it has been a bumpy ride: while there are more areas to investigate, there are fewer outlets to publish the results. The carnage of the traditional media around the world has been well documented. According to one study, 1,800 local newspapers have disappeared in the United States alone since 2004. The internet and other technologies offer new platforms, but they have muddied the waters too. Many discoveries are now the product of hacking—as opposed to an insider acting out of conscience—which raises ethical and legal questions.

Charles (known by many as "Chuck") Lewis has seen the highs and lows of investigative journalism throughout his career. From Senate intern during the Watergate scandal to a stint with the legendary Carl Bernstein at the ABC television network, he eventually became a senior investigative producer for CBS's *60 Minutes*. He quit the show in 1989 and founded the Center for Public Integrity. Years later, he founded the ICIJ.

Lewis helped found a few of the over 200 nonprofit news organizations active in the United States. Now a journalism professor and executive editor of the Investigative Reporting Workshop at American University in Washington, DC, Lewis sat down with *F&D*'s Andreas Adriano to talk about investigating financial issues, the bleak outlook for news organizations, and the ethical implications of hackers as the new whistle-blowers.

Local newspapers are all but extinct now. How does their disappearance affect investigation at the local level?

I started in the sports department of the *Wilmington News-Journal* newsroom in Delaware in the early 1970s. It was one of the best of the small and mid-size papers. But everything went to hell. They went from 187 people to around 35 now. The number of reporters today is the same as in 1972, while the federal budget increased nearly twentyfold. Tens of thousands of journalists lost their jobs in the United States. Most laws here are passed at the

PHOTO: IMF/STEPHEN JAFFE

state level, but there are one-third fewer journalists in the state capitals. In Washington, nobody is covering members of Congress for 27 states. There are also what I call "news deserts"—vast areas of the country lacking dedicated daily news coverage, whether by radio or local or state newspapers.

Is it possible to know what is not being covered?
No. There are over 100 federal agencies in Washington. The elite media—*Washington Post*, *New York Times*, and *Wall Street Journal*—don't cover all of them. You end up sometimes with obscure newsletters, thousands of them, covering different industries, and they may just represent private interests.

How does that affect financial and economics reporting specifically?
My worry, to be blunt, is that the only people with access to substantive information are the highly educated elites. They will be subscribing and reading all the information from the leading media, and doing it partly to make money, of course. While the rest of the public, including the educated public, are not reading or consuming news to the same extent. There is this dichotomy between the haves and the have-nots with regard to reading material with actual substance.

Are nonprofit news organizations making up for the loss?
There are now 205 nonprofit investigative journalism organizations in America, and 27 internationally. Philanthropic institutions and individuals have stepped up and donated over a billion dollars in recent years to create coverage in areas where the local newspapers can no longer do it. It doesn't make up for the carnage and loss of jobs, but it could have been even worse. I estimate these nonprofits employ up to 3,000 journalists.

Around 2008, when the Pulitzer Prize started losing applicants, they allowed nonprofit organizations to apply. Two organizations that I founded—ICIJ and Center for Public Integrity—have won Pulitzers, and nonprofits like ProPublica have won about a dozen so far.

Does it trouble you that a lot of investigative journalism today is based on hacking, a crime, compared with whistle-blowers acting out of conscience (like Daniel Ellsberg and the *Pentagon Papers*)?
First, on the *Panama Papers*, nobody really knows who the source is. It may have been hacking, or it may have been an insider—like an embittered employee or someone who knew an insider. There are new books and a movie coming out, so we may learn more about it.

On the broader point, there's a grayness to it. Some time ago, during an investigative journalism conference in Europe, the organizers intentionally sat me and other famous journalists, like Seymour Hersh [investigative reporter for the *New Yorker* magazine], together with a group of hackers for a dinner. It was fascinating to hear from them. Some are hacking precisely because they believe there is something wrong with society or an agency protecting a company, so it's the same as a government employee who starts leaking because they are offended by what they see.

I agree that some hackers can be venal and criminal. But again there is a grayness. If there are abuses of power and the only way the public knows about it is through leaked documents, isn't that useful? The *Pentagon Papers* were immensely valuable to be released. But if we had just waited for the Pentagon, they'd still be holding them.

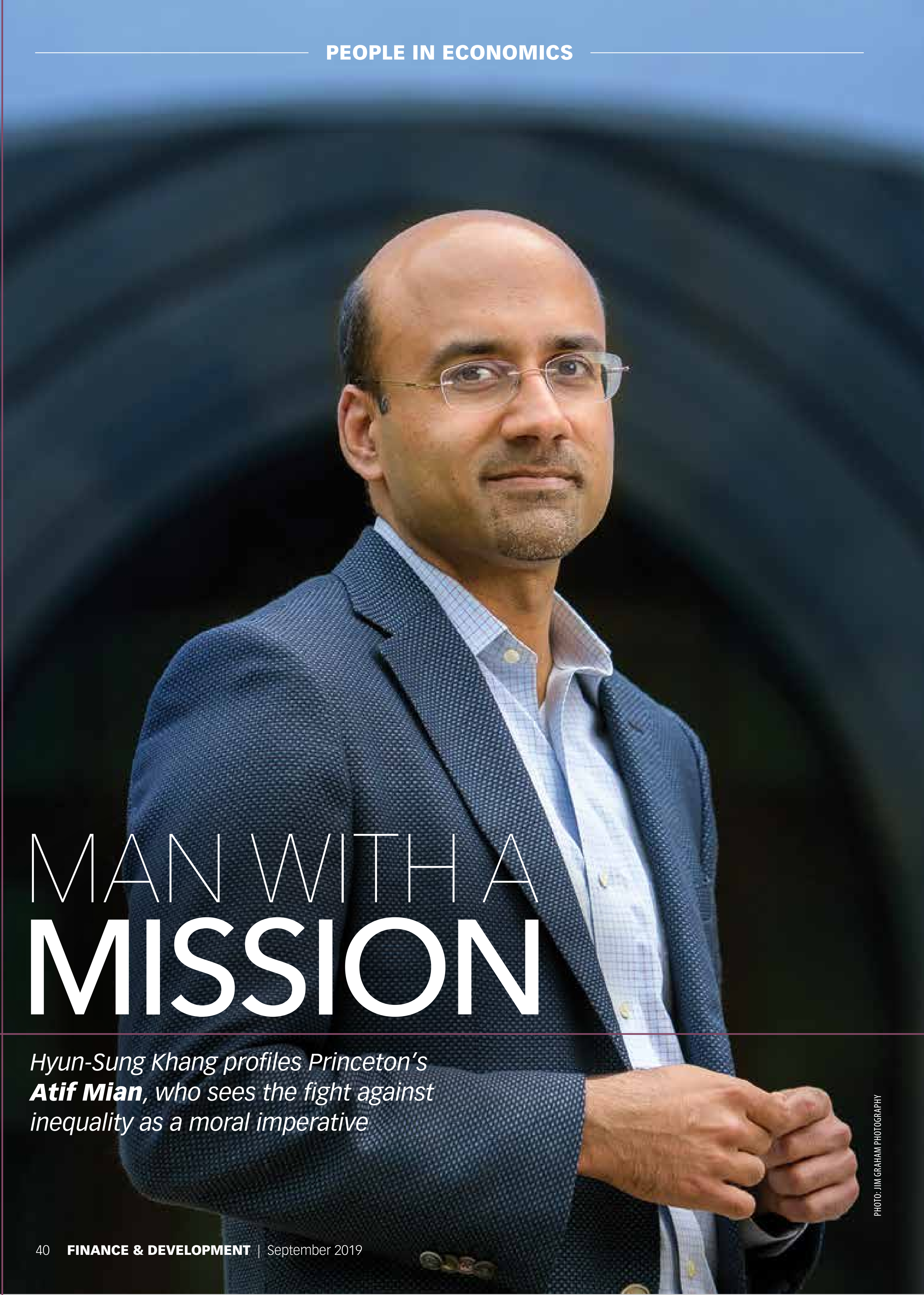
I'm not saying there aren't abuses. Admittedly, I'm an investigative journalist and I think that the public has a right to know what is going on. It really comes down to individual cases and specifically analyzing what comes out. There are occasions when people actually do things out of conscience, and what they're releasing might be useful for society at large.

If you could advise governments on improving transparency, what would you tell them?
I think that every democratic, or minimally accountable, government should have great concerns about offshore jurisdictions. If US-chartered banks are doing "extralegal" things, or maybe even outright illegal things, in these 60 to 90 offshore jurisdictions, that should bother the US government, Congress, and the Internal Revenue Service. Instead, everyone kind of looks the other way.

This is a global problem. We need more discussion, reporting, understanding, and accountability by all these entities. FD

ANDREAS ADRIANO is a senior communications officer in the IMF's Communications Department.

This interview has been edited for length and clarity.



MAN WITH A MISSION

*Hyun-Sung Khang profiles Princeton's **Atif Mian**, who sees the fight against inequality as a moral imperative*

PHOTO: JIM GRAHAM PHOTOGRAPHY

Everyone knows someone who buys more than he or she can afford. This has been characterized mockingly as millennials spending beyond their means on avocado toast and expensive lattes, often borrowing to fund those wants. But in the modern era, dependence on credit isn't a sign of profligacy, according to Atif Mian, a Princeton professor of economics, public policy, and finance. Rather, he argues, excessive borrowing is evidence of an economic system that has become distorted by widening income inequality.

"It's almost as though the modern economy has become addicted to credit," Mian says. "We need to understand how, and why, that happened."

The 44-year-old Pakistani-American has done much to shed fresh light on our modern-day addiction to debt, and in the process, to proffer a new thesis for the greatest economic downturn in more than half a century. He and coauthor Amir Sufi, a University of Chicago finance professor, offer a novel take on the Great Recession in their 2014 book, *House of Debt*. The book helped land Mian on that year's list of the world's 25 most influential young economists, compiled by the IMF.

The authors parse vast amounts of data to show that a dramatic rise in household debt among borrowers least able to repay helped precipitate the greatest global financial crisis since the Great Depression. In their book, they argue that policymakers erred by focusing excessively on the banking system and in bailing out banks, not borrowers.

Sufi says their research has helped put household debt much more prominently on the radar of the IMF, the Federal Reserve, the Bank of England, and central banks of Australia, China, and Israel.

In the five years since the book's publication, Mian and Sufi have broadened the scope of their research, focusing on household debt and economic inequality. Their more recent work links the worsening of household debt since 1980 to the rise of the superrich. They connect increased income inequality to the concentration of vast amounts of wealth, which has flooded the economic system with easy credit that fuels consumption, rather than contributing to economic growth through real investment.

Passion for efficiency

In broadcast interviews and in the presence of his coauthor, Mian's quieter, more reserved style is overshadowed by his fluent, fast-talking writing partner. But in person, and away from the camera, Mian's mildness comes across as kind, thoughtful, and charming. He brings an easily overlooked passion to the dismal science and is attracted by the allure of the greater efficiencies it promises.

"The reason I get so excited about economics is—and this is my definition of economics: how can we better organize ourselves to do something where the sum is bigger than the parts?" says Mian. "I think economics is the unique field that exactly focuses on those kinds of questions."

Mian's wife of almost 20 years, Ayesha, jokes that the pursuit of efficiency prevails even in his personal life, manifesting itself in an obsession with "space utilization around the house," during frequent evenings hosting guests.

"If there's a three-seater [sofa], he wants three people to sit on it," she says with a laugh. "But if there are two people sitting comfortably on it, he sees it as inefficient. Small things like that, he cannot get out of his head."

And if a third person fails to fill the allotted slot? "You can see the pain on his face."

Mian came to economics by accident. Born into a solidly upper-middle-class family in Pakistan as the only son of government physicians, Mian typically would have been expected to become either a doctor or an engineer, he says. As he had no interest in medicine, he chose engineering. Such was the value the family attached to education that Mian's mother moved to Lahore, Pakistan's second largest city, for the children's education while his father remained posted a couple of hundred miles away.

At the age of 17, encouraged by his father, the young Mian applied to a handful of US schools and won a full scholarship to study electrical engineering at the Massachusetts Institute of Technology. He describes receiving MIT's letter of acceptance as "one of the happiest (and luckiest) moments of my life."

MIT was Mian's first real exposure to life outside Pakistan and his first experience of independent living. Although he was a diligent student, engineering didn't inspire him. Mian switched to mathematics and computer science and stumbled across economics while fulfilling his humanities requirement.

He saw in economics a field of study where he could address the big sociopolitical questions growing out of his childhood in 1980s Pakistan, a nation emerging from dictatorship, riven by violence, extremism, and internal sectarian tensions.

"You're sort of wondering, like, is this really how the world is supposed to work in terms of the violence, in terms of the way the society seems to be splitting apart, and can one do better?" Mian says. "That was something that always resonated with me, that I wanted to do something about."

After completing his undergraduate degree in mathematics and computer science with a perfect grade-point average and following a short sojourn at Princeton, Mian opted to return to MIT for his PhD. He earned his degree in 2001 with a dissertation on banking and governance. He then served as an assistant and associate finance professor at the University of Chicago business school until 2009 and as a professor of economics, finance, and international business at the University of California, Berkeley, until 2012, before coming to Princeton.

Research partnership

The partnership with Sufi, a Pakistani-American born in Detroit and reared in Topeka, Kansas, emerged from an introduction by a mutual friend, who suggested they had similar interests. According to Sufi, that interest was in "using applied microeconomic techniques to answer important questions at the intersection of finance and macroeconomics."

It is this use of micro, or granular, data to answer macroeconomic questions that the authors view as their special contribution to economics. "This empirical approach has really taken off since our early work on the 2008 recession," says Mian.

From that shared interest grew their book, which was short-listed for the *Financial Times* 2014 Business Book of the Year, although Thomas Piketty's *Capital in the Twenty-First Century* ultimately won.

Former US Treasury Secretary Larry Summers suggested that the work "could be the most important book to come out of the 2008 Financial Crisis and subsequent Great Recession." In a review, Summers expresses some sympathy for the authors' assertion that there should have been greater consideration given to households during the Great Recession.

In discussions with Mian, there is almost a sense of a philosophical underpinning to his work, a belief that the well-being of a community or society depends on all individuals thriving. "When we talk about stuff like the Great Recession, you know, it really matters that we are able to absorb each other's shocks, that we realize how we're all ultimately connected to each other," he says.

Summers agrees that all future work on financial crises will have to consider household balance sheets. At the same time, he defends the policymakers of the day.

"Mian and Sufi's error is a common one among academic economists, many of whom are unwilling to try to understand policy choices that arise from considerations outside simple models," Summers writes.

"This is exactly the kind of political timidity and failure to understand the gravity of the situation that has led to these kinds of problems," retorts Mian.

Mian and Sufi write that policymakers could have done a better job of managing the financial crisis if they had facilitated bailouts for indebted households. The authors are sharply critical of the determination to rescue banks at the expense of households that were underwater.

"You could have said to the banks: 'We, the central bank and the Treasury, we are giving you free money. You must pass that on to the borrower,'" Mian says. In addition, the government could have ordered a moratorium on house foreclosures. "There was no one to absorb the 4 million homes that were actually put on the market by banks." Mian knows that because the data tell him so.

Data is always king, wife Ayesha says, but Mian is open to reasoned argument. When their two young daughters resisted attending a private school on the grounds that it was elitist, they spoke to their father and explained their views.

His response, according to Ayesha, was "There's no way we are sending the girls there. As long as they give me a good reason, I'm OK with any decision they make."

The two have known each other from a young age. They married in Lahore after Mian visited Pakistan to propose. Ayesha describes her husband as very serious and straightforward. Even as a student in his early 20s, "it was like talking to a 40–45-year-old." She describes their early relationship as "practical" and "pragmatic." "The romance came later," she says.

Late last year, their 14- and 12-year-old daughters were joined by a brother. According to Ayesha, with the security of tenure and a major publication under his belt, Mian is relishing this third experience of fatherhood.

"It really matters that we are able to absorb each other's shocks, that we're all ultimately connected."

"He's always been a phenomenal father, but now he's lightened up more and is much more accessible," she says.

Inequality and household debt

Mian's and Sufi's work on debt focuses on the reasons for and consequences of the steady and continued rise in debt relative to GDP. At the beginning of the 1980s, debt to GDP in the United States was about 30 percent. Since then, the figure has ballooned to more than 100 percent, a pattern duplicated in countries around the world.

The metanarrative the researchers are now exploring is the notion that the wealthiest in societies around the world make more money than they can possibly spend consuming. Rather than funding investment, the surplus is channeled through financial markets for lending to fuel consumption, Mian says.

"We've become a global economy dependent on credit creation to generate sufficient demand for growth," he says.

With ever-increasing credit flowing through the system, to encourage more borrowing, interest rates are driven lower and lower, Mian suggests. But with interest rates at record low levels, there is a limit to how much further they can fall, creating the current liquidity trap, with low growth bedeviling countries around the globe. Mian suggests ominously that this credit "supercycle" is nearing an end.

From this thesis flow dismaying sociopolitical repercussions, including growing inequality, widespread discontent, and angry populism around the world, Mian says.

"You now have a relatively struggling global economy, against the background of more inequalities and inequities," he says. "And so that raises political tensions. There's something wrong. People sense that, and they want answers."

Mian identifies unequal growth as the "fundamental disease" behind this credit supercycle, leading to a sense of disenfranchisement from society. The social costs are high and far-reaching. He cites examples ranging from child hunger in the United States, to high incarceration rates among black men, to low public investment in infrastructure.

"If you were to come from Mars and look at this situation, you would say, 'What? Are these people crazy?'" Mian says."'They are forgetting millions of their population who have huge potential to make a difference; they are literally throwing them off the curbside.' To the extent people like me matter, I see our role as trying to convey what is happening and why it's happening."

Inclusive prosperity

While pondering these questions, Mian became embroiled in a bitter, personal controversy in his native country. Last September, Pakistan's newly elected Prime Minister Imran Khan named Mian to the Economic Advisory Council. Though widely praised internationally, Mian's nomination was vehemently attacked by the religious right in Pakistan because of his membership in the minority Ahmadi religious community. After three days of street protests, the government reversed its decision. It was a bitter disappointment to Mian, who was looking forward to being of service to a country he loves.

Mian's research, fueled by moral conviction, has led him to passionate advocacy for the fruits of growth to be shared more widely because, he says, economics shows us that our fortunes are linked.

Earlier this year, he added his name as one of 11 founding members of "Economics for Inclusive Prosperity," a network of economists pledged to come up with policy solutions that will generate prosperity for all.

"While prosperity is the traditional concern of economists, the 'inclusive' modifier demands both that we consider the interest of all people, not simply the average person, and that we consider prosperity broadly, including nonpecuniary sources of well-being, from health to climate change to political rights," the group's website declares.

The reason for his support of the group? "Because we are all in it together," Mian says. "Whatever 'it' is, we are all in it together." FD

HYUN-SUNG KHANG is a senior communications officer in the IMF's Communications Department.

PHOTO: COURTESY OF THE EUROPEAN CENTRAL BANK

Convincing the Markets

Peter Praet *revisits the ECB's unconventional monetary policy response to the euro crisis*

Rebecca Christie

BELGIAN CENTRAL BANKER Peter Praet retired in June 2019 after an eight-year run on the executive board of the European Central Bank (ECB), where he served as chief economist. Reflecting on his time on the front lines, Praet shared with journalist Rebecca Christie the high points of his tenure. The interview takes us behind the scenes of Europe's sovereign debt crisis leading up to ECB President Mario Draghi's famous July 2012 promise to do "whatever it takes" to protect the euro—an unprecedented pledge designed to quell market panic and give policymakers time to follow through on their crisis-fighting commitments—and the subsequent challenge of reviving the euro area economy in a time of negative interest rates.

F&D: What was the atmosphere like at the ECB when you arrived?

PP: I came to ECB in June 2011, a few years after the crisis began, and I became chief economist in January 2012. It was not pleasant because it was a panic environment similar to what I had lived through during the Belgian banking crisis of 2008 and 2009. But this time it was a market panic. In these situations, you have to be mentally prepared for the worst and be ready to take bold measures. When I came in 2011, the first decision we faced, in July, was whether to increase interest rates. I was not chief economist at that time. I can tell you now that I was in favor.

The mind-set then was still, in spite of the financial crisis, very much to avoid certain second-round effects related to oil price increases. Inflation was at about 3 percent at that time, and there were some wage pressures. That was one part of the story.

The other part of the story was the follow-up of the financial crisis, and we had tensions in the sovereign debt markets at that time as well. The stance in 2011 became a bit more restrictive. The first interest rate hike was in the spring, and then there was a second hike in July when I came. But the financial crisis was still considered at that time as something manageable by abundant liquidity provision to the financial sector.

Now we know that things didn't go that way.

F&D: What happened when you realized that things weren't getting better, even after oil prices started to fall?

PP: The situation was totally different by then. And so we started to talk about a radically different sort of framework for monetary policy, given a situation that was more akin to disinflation, or worse.

F&D: How much could European leaders accomplish with their plans to create a banking union, with common euro area supervision and a sovereign debt firewall, the European Stability Mechanism? What could be done only by the ECB?

PP: The market panic of 2012 could only be stopped by Mario Draghi. Of course, the background for the success of his "whatever it takes" line was the June European Council meeting of heads of state and governments, about putting in place the banking union and crisis management mechanisms. So that was the political background.

To give credit to Mario, when you have to stop a panic you need strong communication skills. You have to be able to convince markets. "Whatever it takes" was well chosen.

F&D: Were you relieved when it worked?

PP: When we ended 2012 the panic had stopped. It created a feel-good factor, of course. It showed that you can do things to change the course of events and take control. I think that was extremely important in motivating us to press on with our work.

But then we started to be confronted with a slowing economy following all these episodes, and we had to think about unconventional tools. This was a third crisis I've dealt with—the first was the banking crisis in Belgium, the second was the euro crisis—and this one was of a different nature. It was more insidious, unfolding progressively. Deflationary pressures were building up as a result of a persistent weak economy and dysfunctioning credit markets.

We had to think about how to support aggregate demand at a time when interest rates were already at very low levels. What do you do? We came up with plenty of innovations and nonstandard measures.

F&D: What kind of leadership and preparation is needed in this situation?

PP: You have to be very open with your staff and collaborators. You have to think outside the box and allow your staff to do the same. In all stressful situations, acting as a team is of the essence. I was always surprised that I was relatively calm. I think that the key reason is that I was always part of cohesive teams.

F&D: How do you see the role of the IMF during the crisis?

PP: I remember one IMF mission that was trying to evaluate the merits of doing a separate Article IV evaluation for the euro area, and there was a question about whether there was too much agreement between the Fund and the ECB's monetary policy. The evaluation team didn't see a lot of contradiction or friction. They found us to be very much in line, asking: "Aren't you too close and not critical enough?" I strongly denied that.

When you deal with unconventional measures, you don't have much experience, by definition. Certainly not in the euro area. There was a little bit of knowledge in Japan and the United States, but the context was different. So I met with top economists who had a lot of policy experiences in other countries, a process I found extremely enriching. It was also necessary to have this dialogue with a qualified external partner such as the IMF.

F&D: What are the lessons of this relationship going forward?

PP: There is value in investing more in people with experience in monetary policymaking, and the IMF could be mindful of this. The reason is very simple: we are in a low-interest-rate environment where, at the peak of the cycle, you may need to cut rates that are already close to zero or even negative. You need to have a lot of people thinking about that not just theoretically but also from a practical standpoint. It's different than classical interest rate policy because you're buying assets or making promises on the future—what we call forward guidance.

There are a lot of debates about unconventional becoming conventional. That's something we need to explain and communicate to the public. The link between financial stability and monetary policy in a zero-lower-bound environment deserves particular attention. When rates remain low for a long period of time, how do you operationally integrate more financial stability considerations into your monetary policymaking? It is not obvious, because when you do that you increase the risk of losing the focus on your primary objective, which is price stability.

> "When you have to stop a panic you need strong communication skills."

F&D: What are the communication challenges facing the central bankers of tomorrow? Is there a balance between the simplicity of Twitter and the less immediate channel of, say, speeches?

PP: I'm not much in favor of tweets in general, especially central bank tweeting, because you cannot simplify to the extreme. Nor can you say it's too difficult for the average person to understand what's really going on. You must make an effort at communication to the public, but you have to be careful not to use too simplistic terms to describe a complex situation. FD

REBECCA CHRISTIE is a visiting fellow at Bruegel, the European economic affairs think tank, and a former reporter for Bloomberg News and Dow Jones/*The Wall Street Journal*.

This interview has been edited for length and clarity.

GIMME SHELTER

Counting wealth in offshore tax havens boosts estimates of inequality

THE AMOUNT OF WEALTH stashed in offshore tax havens has big implications for inequality. Why? Unless you can account for hidden riches, it's difficult to know how wide the disparities in wealth really are. So economists led by Berkeley's Gabriel Zucman decided to find out who owns the wealth in tax havens.

They estimated total offshore wealth at about 10 percent of world GDP in 2007, or $5.6 trillion. About half was kept in Switzerland, the world's premier offshore banking center since the 1920s. Conveniently, the central bank of Switzerland publishes country-by-country breakdowns of offshore wealth in the nation's banks.

But what about other tax havens? In 2016, the Bank for International Settlements started to release data on the origin of bank deposits held in offshore banking centers like Jersey and Luxembourg. That made it possible to see how much money residents of Germany, for example, held in accounts in Hong Kong SAR. Zucman and his collaborators used the two data sources to estimate the ratio of offshore wealth to GDP by country.

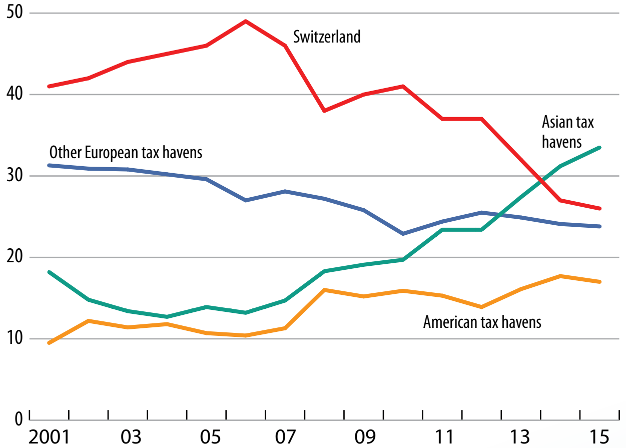
The figures vary dramatically, from just a small percentage of GDP in Scandinavia to as much as 60 percent in Russia, the Gulf states, and Latin America. Interestingly, they found connections between offshore wealth and the presence of natural resources, a history of political instability, and proximity to Switzerland.

Other data—including a leak of confidential records from the Swiss subsidiary of HSBC in 2007—suggest that the distribution of offshore wealth is heavily skewed toward the rich: about 80 percent belongs to the top 0.1 percent of households. The conclusion: accounting for offshore assets substantially boosts the wealth share of the very richest people. In other words, inequality may be far greater than other studies have found. FD

*Prepared by F&D's **LIJUN LI** and **CHRIS WELLISZ**, based on "Who Owns the Wealth in Tax Havens? Macro Evidence and Implications for Global Inequality," by Annette Altstadsaeter, Niels Johannesen, and Gabriel Zucman, published in September 2017 by the National Bureau of Economic Research. See https://www.nber.org/papers/w23805.pdf*

Shifting shares

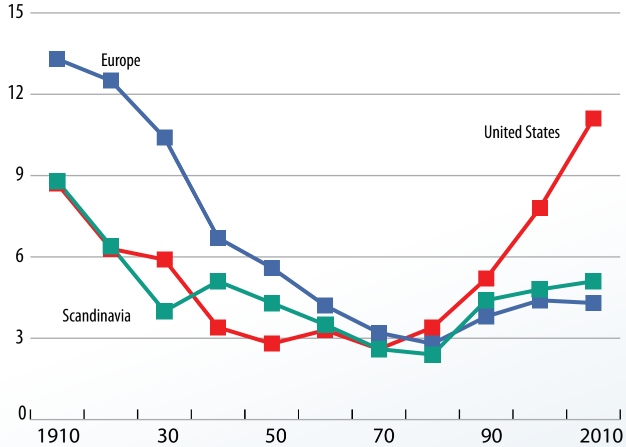
Switzerland's share of offshore bank deposits has been declining since the global financial crisis of 2008–09, while those of Asian offshore centers have been rising.
(percent of the wealth held in all tax havens)



Note: American offshore centers = Cayman Islands, Panama, United States; Asian offshore centers = Bahrain, Hong Kong SAR, Macao SAR, Malaysia, Singapore as well as The Bahamas, Bermuda, and Netherland Antilles; other European centers = Austria, Belgium, Cyprus, Guernsey, Jersey, Isle of Man, Luxembourg, United Kingdom.

Time warp

In Scandinavia and Europe, the wealth of the top 0.01 percent has returned to the levels of the 1950s. In contrast, wealth is much more concentrated in the United States, where the share of the top 0.01 percent has surpassed levels of the early 20th century.
(top 0.01 percent wealth share, including offshore wealth)

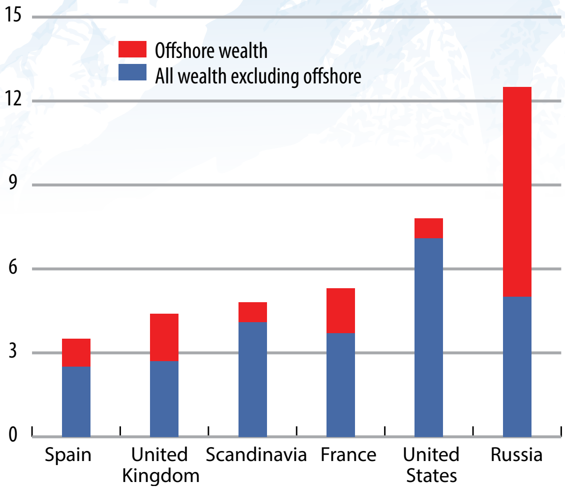


Note: Europe is the arithmetic average of France, Spain, and the United Kingdom; Scandinavia is the average of Denmark, Norway, and Sweden. Each square represents a decennial average: 1910 denotes the average of 1900, 1901, . . . , 1909; 2000 denotes the average of 2000, 2001, . . . , 2009.

Topping off

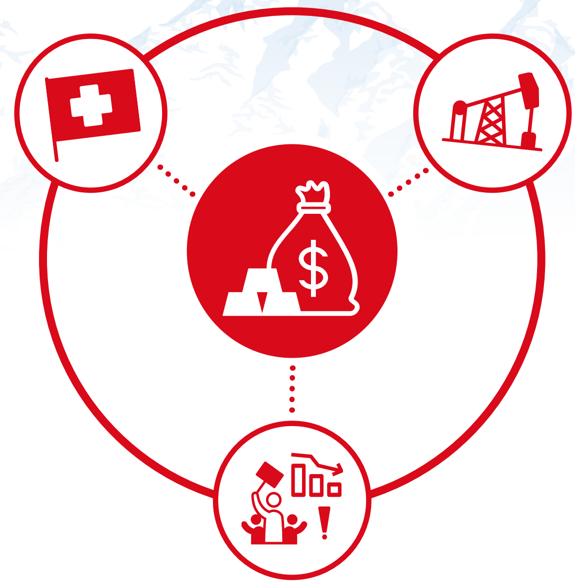
The share of wealth owned by the top 0.01 percent of society grows substantially when offshore assets are counted.

(top 0.01 percent wealth share and its composition, 2000–09 average, percent of total household wealth)



What matters?

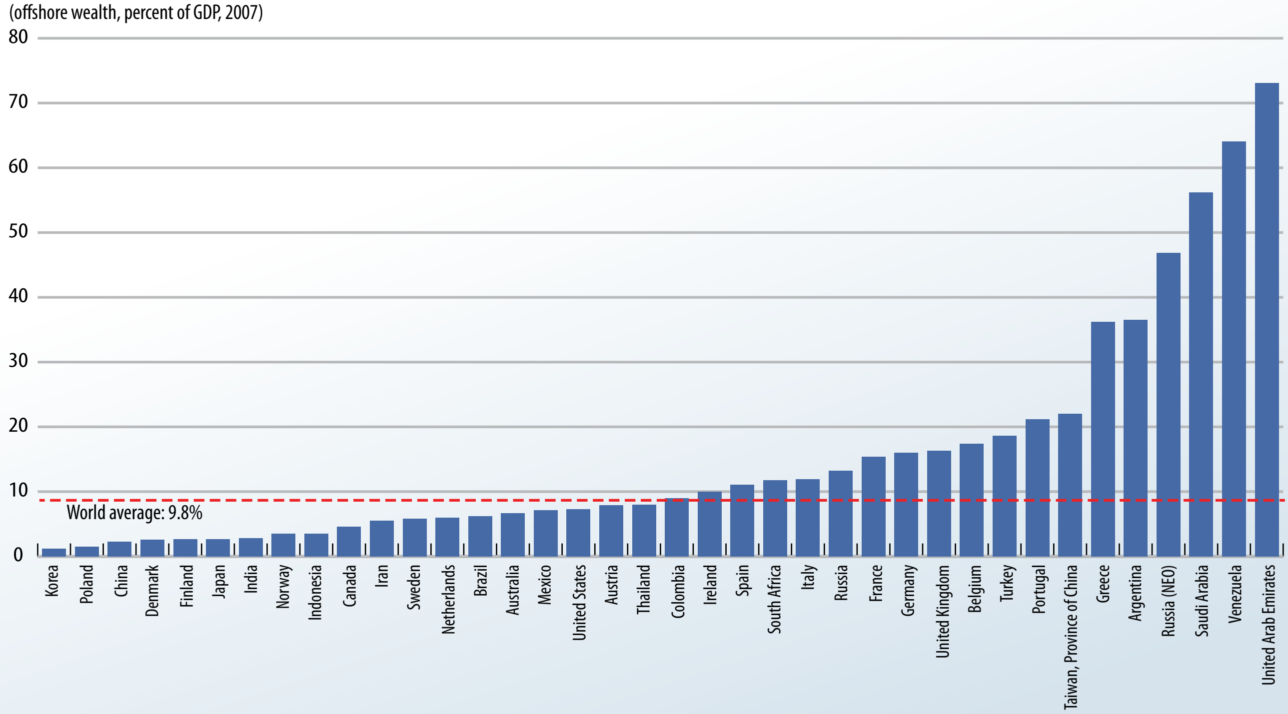
Proximity to Switzerland is associated with higher offshore wealth. So is the presence of natural resources and political and economic instability.



Global variation

The fraction of wealth held in tax havens varies considerably by country.

(offshore wealth, percent of GDP, 2007)



Note: The sample comprises all countries with more than $200 billion in GDP in 2007. Offshore wealth is estimated by allocating the global offshore wealth estimated on the basis of the geographic distribution of bilateral cross-border bank deposits in offshore centers. Russia (NEO) denotes an alternative estimate obtained by cumulating net errors and omissions in the balance of payments.
NEO = net errors and omissions.

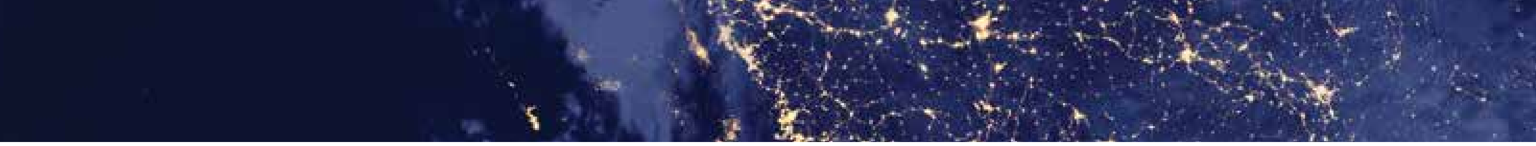
ILLUMINATING ECONOMIC GROWTH

Satellite images of the earth at night reveal the pace of economic growth and much more

Jiaxiong Yao

Scientists have been using satellite images of Earth at night—often referred to as "night lights"—to study human activity and natural events for almost 30 years. In the past decade, economists have followed suit, realizing that night lights can help gauge economic growth, map poverty, analyze inequality, and tackle numerous questions otherwise impossible to answer, especially in places where data are lacking. In fact, if aliens were ever to approach Earth from its dark side, they would already know some basics about the global economy long before reaching our atmosphere.

Human light shows, exotic seen from space, have recurrent themes. Take a look at the Korean peninsula and gasp at the stark difference between the north and the south (see Image 1). It is a contrast of darkness and brightness, of isolation and connectedness. Travel back in time and marvel at how fast China and India have been lighting up. It is a story of development and growth, openness and globalization.



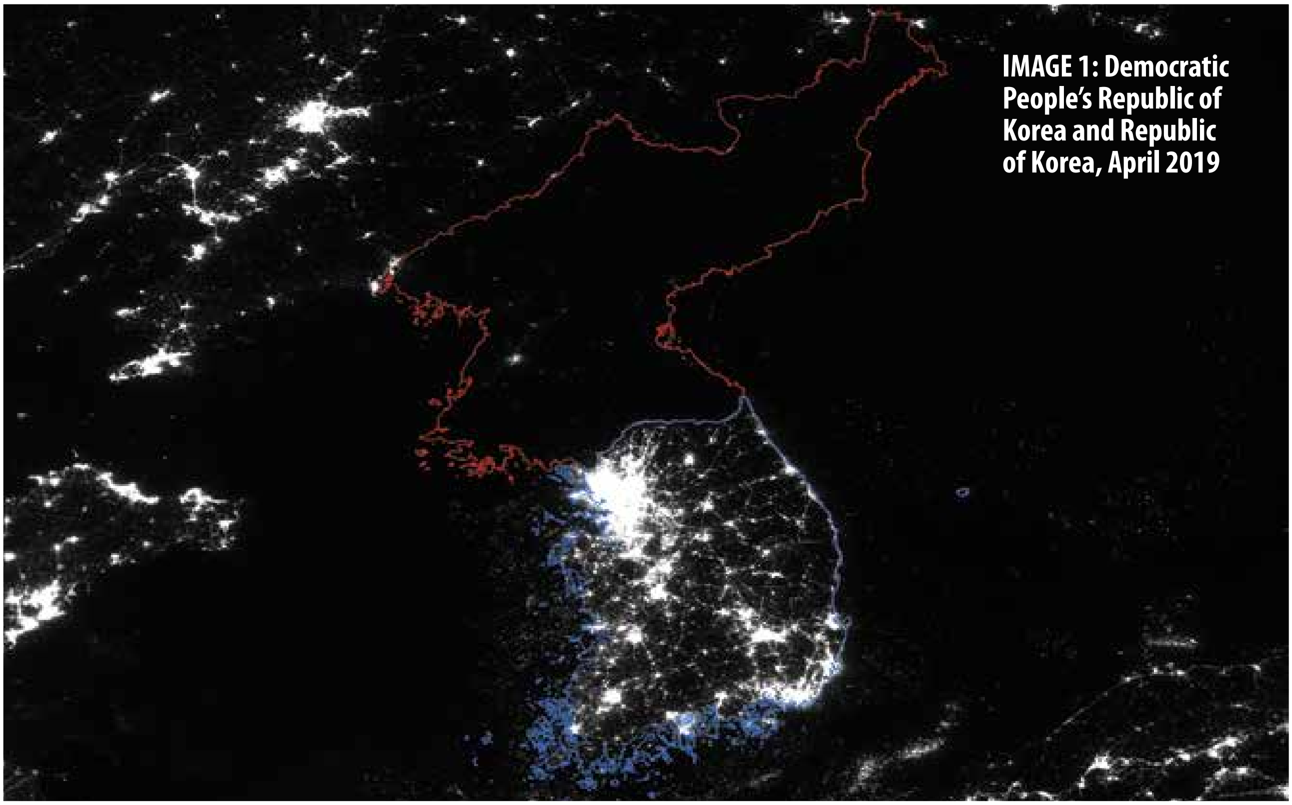


IMAGE 1: Democratic People's Republic of Korea and Republic of Korea, April 2019

PHOTO: NASA/NOAA

How are night lights being used in economics? To understand this, we need to go back to the satellite images and gain some basic knowledge about their composition. Each pixel of a satellite image represents an area of less than one square kilometer on Earth. It is associated with a digital number that measures the brightness at night. The brighter the spot, the higher the number for that pixel. When these numbers are aggregated over all pixels in one country, it becomes an indicator that measures the activities of that country at night. When such an indicator is compared across countries and over time, it turns into a barometer of economic development and fluctuations.

Reflecting the changing economy

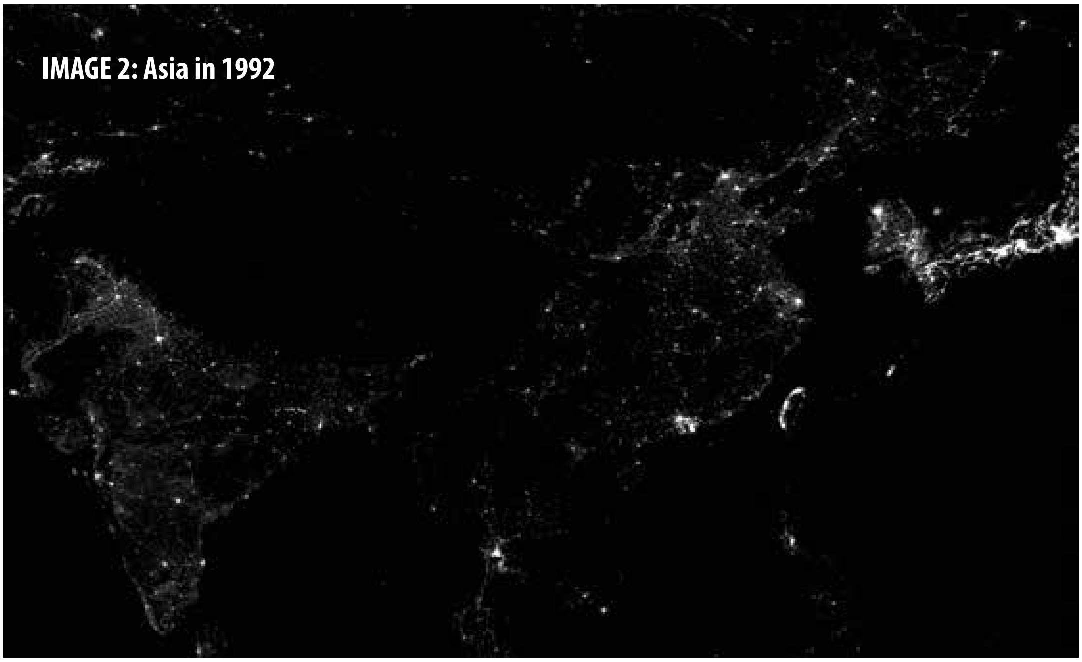
The relevance of night lights for economics is predicated on their strong correlation with economic activities, even though most of these occur during the day. Night lights broadly capture two aspects of the changing surface of an economy: expansion across space or, less often, spatial contraction. In growing economies, more areas are lit up over time and more pixels start to record light (see Images 2 and 3). By contrast, in regions mired in conflict, more patches of land become dark, and more pixels begin to lose light.

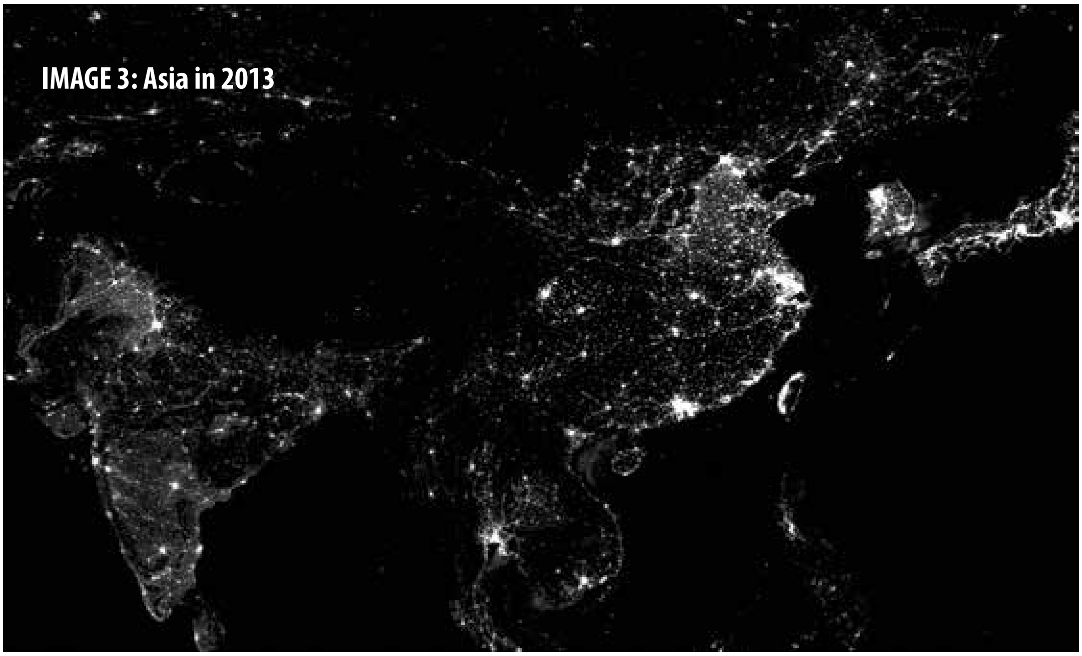
If aliens were ever to approach Earth from its dark side, they would already know some basics about the global economy.

The other aspect is intensification. As rural areas urbanize, cities agglomerate, and infrastructure modernizes, the same night sky brightens, and more intense light is registered by satellite sensors.

The relationship between night lights and economic development, however, is not always straightforward. In my study with Johns Hopkins University's Yingyao Hu, we compare night lights with GDP, the official and most commonly used measure of an economy's performance. We find that rich countries are indeed brighter than less developed countries, but there is no lack of exceptions. On a per capita basis, Nordic countries have almost always been the brightest spots on Earth. On the other hand, Japan, despite being

PHOTO: ISTOCK / WAEL ALREWEIE





PHOTOS: NASA/NOAA

a rich country, looks scarcely brighter than Syria did before the Arab Spring, most likely because of its energy conservation habits and high population density.

When we account for country-specific characteristics of night lights, an interesting relationship emerges that reveals the remarkable transition from building physical capital to cultivating human capital that we observe as a country develops.

Countries at rudimentary stages of development focus mostly on *infrastructure*—building roads and bridges, constructing railroad stations and airports, and upgrading power grids and telecommunications, all of which emit light at night. As a result, the night sky appears increasingly bright in satellite images as the economy grows.

Advanced economies, on the other hand, power their economy through *scientific and technological innovation*, and the resulting productivity growth often has less to do with lights at night than the infrastructure that underpins this innovation. In fact, night lights grow only about half as fast as GDP in advanced economies.

While night lights have been illuminating the Earth for more than a century, they have just started illuminating our understanding of it.

What about countries whose official statistics are uncertain?

There is probably nowhere on Earth where good economic data are scarcer than in countries afflicted by conflict—yet these economies are among the places we need to track and understand the most. Statistics agencies in these countries may have long stopped functioning properly, but satellites are still witnessing economic activity.

It turns out that we can use night lights to reestimate the GDP of a conflict-stricken country, based on its similarities with other countries at various stages of development. When we do so, we find that the night-light-based GDP measure often points to faster economic deterioration during conflict than the official data show, but this measure also suggests a stronger bounce-back after the conflict ends. There is good reason to suspect that the ebb and flow of the informal economy plays a role in this postconflict environment.

The usefulness of night lights is not limited to a single indicator in economics. In fact, if we view each pixel of a night-light satellite image as a data point, an individual country such as the United States alone consists of hundreds of millions of data points. With more than 200 countries and regions in the world, the Earth's land surface contains almost a billion data points.

That is a massive amount of data, and that count is only for one early satellite image with very coarse resolution. The number would grow exponentially with more frequent releases of satellite images of ever-finer resolution, which technology is making possible today. With hundreds of them already taken in the past and many more to be taken in the future, the images' information is, to put it mildly, exploding. In that sense, night lights are no longer about the dark side of the Earth, they are about the digital side of the Earth.

Gaining new insights

With big data come new technologies to extract information and new insights to gain into this world. It is not hard to imagine that advances in data science, such as machine learning, can be used to analyze patterns and help decision-making with such data—many companies, such as DigitalGlobe and Orbital Insight, do just that. As data science progresses, the granularity of this type of data can be harnessed to study local effects, spatial spillovers, and economic activities in the far reaches of Earth where the only reliable information comes from hundreds of miles above.

And it is not just night lights. Countless data points hold stories we are only beginning to tell. Through the lens of satellite data, geospatial data, text data, and infinite other emerging sources of information, we will be able to gain new perspectives and form new ways of thinking about economics.

Suspended in a sunbeam, Earth is a delicate place in the vast expanse of cosmic darkness. But for our civilization, its dark side would have remained dark, as it was for billions of years. While night lights have been illuminating the Earth for more than a century, they have just started illuminating our understanding of it.

As we enter the age of big data, opportunities abound. We should seize this moment to leap forward, harnessing the power of big data to gain a keener understanding of the economy, guide smarter policies, and make this world a better and brighter place. FD

JIAXIONG YAO is an economist in the IMF's African Department.

This article draws on IMF Working Paper 19/77 by Yingyao Hu and Jiaxiong Yao.

What Is Stress Testing?

Checking the health of banks is crucial to financial stability

Martin Čihák, Hiroko Oura, and Liliana Schumacher

HOW DO WE KNOW if a financial system is healthy? Can banks survive a recession if half of their mortgage clients lose their jobs and stop paying their debts? Do insurers have enough money to pay out claims if a magnitude 8 earthquake hits Tokyo? Answers to these types of questions lie in stress tests.

Attention to stress testing shot up during the 2008 global financial crisis, when banks and other financial firms lost vast sums of money. Major long-established institutions—such as Lehman Brothers—went belly-up. Others required multi-billion-dollar taxpayer-funded bailouts. People did not know if their bank would be around tomorrow. National authorities of crisis-hit economies started to use stress tests extensively to reduce uncertainty over bank health and decide what to do about vulnerable banks.

Stress tests typically cover solvency—whether banks have enough capital to absorb losses—and liquidity, whether they have enough cash to pay out their deposits and other debts. Let's say a bank loses $1 billion when house prices drop by 50 percent. The bank can survive—remain solvent—if its capital is $10 billion but not if it is $1 billion. What if a bank's depositors panic and suddenly withdraw $50 million? If the bank is unable to borrow money to replace those deposits, it can survive if it owns assets, such as government bonds, that it can sell quickly.

Severe but plausible

A key stress testing ingredient is an adverse scenario that is severe yet plausible. A severe scenario supposes a low-probability event that nevertheless has potentially catastrophic consequences. Examples include a once-in-a-century earthquake, a repeat of the 2008 financial crisis, or a government debt default. Plausible scenarios exclude absurd hypotheticals, such as a Martian invasion. Historical scenarios are useful but may not capture novel risks. For example, major disruptions caused by new financial technology or climate change have not yet happened, but they are plausible.

Designing scenarios starts with a list of potential risks specific to a country. Examples include a major decline in manufacturing in an economy that relies heavily on factory production or a terrorist attack in a country dependent on tourism. Stress testers then develop a story line for the scenario and estimate how variables such as GDP and interest rates react.

To understand how an adverse scenario affects bank health, stress testers first gauge how bank clients would behave under such circumstances. To do that, they may need to calculate how many households and companies would continue paying their debts if the economy were to take a dive, and how they might draw down their bank deposits. Stress testers then measure how this behavior would affect banks' liquidity and capital.

Because of the connections among banks, the failure of some of them could ripple through the financial system, doing damage to the broader economy. What would happen, for example, if banks stopped lending? Companies might need to shrink their operations and lay off employees. Without mortgages, families might not be able to buy homes.

Emerging risks

Stress tests often focus on banks because of their size and importance to the economy. But other financial service providers and sources of finance, such as bond sales, have been growing rapidly. So stress tests increasingly cover mutual funds, insurance companies, and other nonbank service providers as well as novel sources of risk. For example, recent IMF stress tests have examined how the rise of new financial technologies could squeeze the profits of existing financial service firms. Banks' growing dependence on third parties for services such as cloud computing raises new challenges for stress testing.

Another evolving challenge is climate change, which poses two types of risk, physical and transitional. Physical risks can already be seen in the increasing frequency and intensity of floods, droughts, and other natural disasters. Insurers selling building and disaster insurance could lose money. Or they may increase premiums so much that many households can no longer afford coverage. Transitional risk could stem from the decline of the coal industry in response to the adoption of a carbon tax. As these companies lose money, they may default on their loans, reducing their banks' profits. Bonds and equities issued by these firms would lose value, inflicting losses on investors.

The IMF adopted stress testing in response to the Asian financial crisis of 1997 and was among the first institutions to do so. Stress tests figure in the Financial Sector Assessment Program for member countries run jointly by the IMF and the World Bank since 1999. A distinctive feature of IMF stress tests is their focus on the financial system as a whole rather than on individual institutions. Once identified, the assessment recommends ways national authorities can reduce risks before they materialize and control the damage if they come to pass.

When the global financial crisis struck in 2008, authorities in the United States, the euro area, and elsewhere adopted stress tests and made the results public as a way of bolstering confidence in the financial system. Unlike IMF tests, their main focus is to identify weaknesses in individual banks and consider measures to restore them to health or close them.

Use only as directed

To be useful, stress tests must employ reliable, timely, and detailed data. Historical data should cover turbulent episodes as well as periods of calm. Incomplete or inaccurate data yield unreliable results that may provide a false sense of comfort.

Finally, stress tests are not stand-alone tools. Full-fledged risk analysis should combine stress tests with other quantitative and qualitative tools. Moreover, assessments of financial stability should be complemented by an examination of a country's financial sector policies, oversight framework, and financial safety nets (for example, the existence and scope of deposit insurance). When carried out as part of such a comprehensive, in-depth assessment, stress tests are quite powerful. FD

MARTIN ČIHÁK is a division chief, **HIROKO OURA** is a deputy division chief, and **LILIANA SCHUMACHER** is a senior economist, all in the IMF's Monetary and Capital Markets Department.

To learn more about stress testing, visit www.elibrary.imf.org and type "stress testing" in the search bar.

IMF ECONOMIC REVIEW

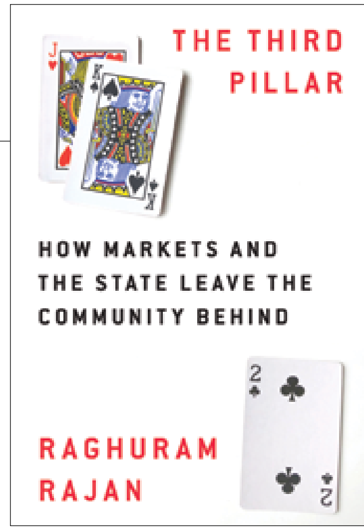
IMF Economic Review, the official research journal of the IMF, is a leading journal in the field of international economics. The journal has influenced academia, the broader research community, and policymakers worldwide. It provides a rigorous analytical forum for discussing some of the most important policy questions of our time.

For more information visit www.palgrave.com/us/journal/41308

"The IMF Economic Review *is still the best place to go for analysis of international economic issues that is both rigorous and policy relevant."*

— Barry Eichengreen, George C. Pardee and Helen N. Pardee Professor of Economics and Political Science, University of California, Berkeley

Fixing Capitalism



Raghuram Rajan
The Third Pillar: How Markets and the State Leave the Community Behind
Penguin Press
New York, 2019, 464 pp., $30.00

MARKETS AND THE STATE have long competed to control what Lenin called the commanding heights of the economy. After the Berlin Wall fell, markets seemed to reign supreme. Even many on the left, traditional supporters of a strong state, became champions of free markets. The brilliant economist Larry Summers professed "grudging admiration" for Milton Friedman and, while at the US Treasury in the 1990s, pushed for financial globalization, the free flow of capital across national borders.

Raghu Rajan never succumbed to the euphoria. While a firm believer in free markets and their benefits, he has been vocal about their costs. In *Saving Capitalism from the Capitalists* he wrote that the victims of competition should get help to ease their pain and secure their future: "Markets need a heart for their own good." In 2005, in a now-famous speech, he warned that the excesses of financial globalization raised the odds of a "catastrophic meltdown," earning a rebuke from Summers that Rajan was "slightly Luddite" and "largely misguided."

The global financial crisis and recent discontent with globalization have proved Rajan prescient. His latest book attempts to go beyond warning of the dangers of unfettered capitalism to what can be done to fix it. Rajan suggests restoring the third pillar of society, the community, which he defines as a social group residing in a specific area that shares government and often a common heritage. Markets and the state remain indispensable, but "when the three pillars of society are appropriately balanced" … "society has the best chance for providing for its people," particularly those who lose out from the effects of trade and technology.

Rajan points up the damage from international trade. US job loss from increased foreign competition, for instance, has contributed to lowering the life expectancy of middle-aged non-Hispanic white males. "It is as if ten Vietnam wars were simultaneously taking place, not in some faraway land, but in homes in small-town and rural America," Rajan writes. Yet these communities' fate was largely neglected by the mainstream establishment parties, who Rajan laments "do not even admit to the need for change" and tend to castigate losers from the effects of trade and technology as belonging to a basket of deplorables.

Rajan of course knows that communities too can pose dangers. The book contains a fascinating account of how markets and the state overcame the shortcomings of feudal communities, which provided stability but did little to spare most from abject poverty. Modern communities also erect walls, and overemphasis on tradition and fear of strangers and new ideas can leave people "trapped by the past."

Power must devolve from global and national levels to the community.

Still, Rajan argues, markets and the state have usurped communities' power, and the balance needs to be reset. Power must devolve from global and national levels to the community. Rajan notes that as machines and robots begin to produce more of our goods and services, human work "will center once again around inter-personal relationships." Communities could well be the workplace of tomorrow. FD

PRAKASH LOUNGANI is assistant director of the IMF's Independent Evaluation Office.

A Money Makeover

Japan spruces up its currency with holograms, trailblazers, and iconic art

Melinda Weir

PICK UP A 1,000 yen bill in a few years and you'll likely encounter a 3D holographic image of a groundbreaking microbiologist on one side and one of the world's most recognizable ukiyo-e woodblock prints on the other. On the 5,000 and 10,000 yen bills, you'll find 3D images of a women's education pioneer and the man known as the father of Japanese capitalism.

The Japanese government recently announced a complete makeover for much of its currency. In April 2019 the finance ministry revealed redesigns of the three most commonly used banknotes (the 1,000, 5,000, and 10,000 yen bills) along with 500 yen coins, marrying cutting-edge anti-counterfeiting tech with world-renowned artwork and honoring pioneers in science, business, and education.

The banknotes, which are redesigned every 20 years, will go into circulation in 2024, while the new coins will debut earlier.

Umeko Tsuda, founder of one of Japan's first women's colleges, will be featured on the new 5,000 yen note.

Trio of leaders

The new banknotes honor a trio of 19th and 20th century leaders in the development of early modern Japan.

- **Eiichi Shibusawa** (1840–1931), the "father of Japanese capitalism," will be featured on the 10,000 yen note, the most widely circulated banknote in Japan. Shibusawa was a business leader and entrepreneur who founded the country's first bank, along with approximately 500 other business and economic organizations, including the Tokyo Stock Exchange and a number of businesses still in existence. He was also a champion of civil society, believing that public interest should come before profits, and was involved in the founding of hundreds of organizations promoting social welfare, education, and international exchange. He once observed that an economy has no national borders.
- **Umeko Tsuda** (1864–1929), a pioneer in women's education, will be featured on the 5,000 yen note. As a young child in 1871, Tsuda was one of the first female students sent overseas to study on a government diplomatic program, just two decades after Japan's 200-year-plus period of isolation ended. She returned to Japan and fought for women's higher education, eventually founding one of the country's first women's colleges in 1900 (now Tsuda University).
- **Shibasaburo Kitasato** (1853–1931), a physician and bacteriologist, will be the face of the 1,000 yen note. Kitasato discovered a method

The iconic image Great Wave off Kanagawa graces the back of the new 1,000 yen bill.

to prevent tetanus, codiscovered the infectious agent responsible for bubonic plague, founded the Institute for Infectious Diseases, and laid the groundwork for modern medicine in Japan. He was nominated for the Nobel Prize in 1901.

The Great Wave

While the banknotes' new fronts will feature some trailblazers in Japanese history, the back of the 1,000 yen bill will highlight an innovative and influential work of art: Hokusai's *Great Wave off Kanagawa*, an iconic example of the traditional Japanese ukiyo-e art form.

Finished around 1830, the striking image of an enormous ocean wave was painstakingly enhanced by the artist with a new shade of blue known as "Prussian blue," imported from Europe during a time when Japan was largely isolated from the rest of the world. Hokusai's dramatic waves, frothing with sea-foam talons, frame Mt. Fuji in the background and sweep up fishermen crouching in boats in the foreground, conveying at once movement and stillness. Many of Hokusai's prints eventually left Japan and influenced artists abroad, including Claude Monet, Mary Cassatt, and Vincent Van Gogh.

Images of wisteria flowers and a historic Tokyo train station building will appear on the backs of the 5,000 and 10,000 yen notes, respectively.

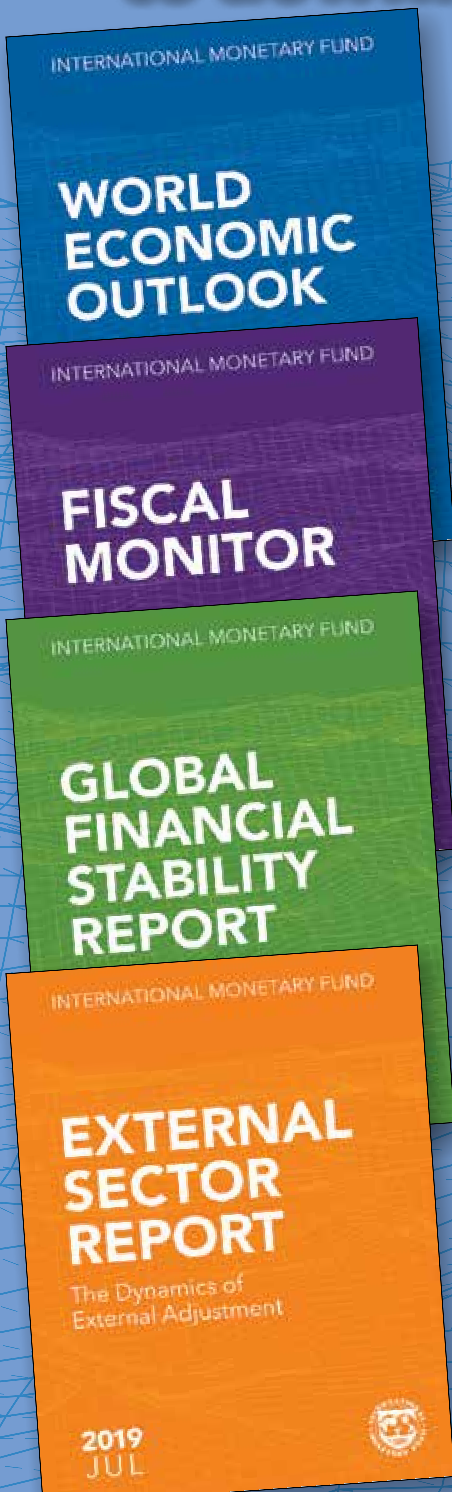
Whereas the movement of an enormous wave is conveyed on the back of the 1,000 yen bill, the fronts of all three new banknotes will capture movement via sophisticated 3D holographic portraits. According to the Japanese Ministry of Finance, the new banknotes' holographic portraits, which rotate when tilted, are an international first.

Additional new security components of the redesigned bills include high-definition watermarks, holographic stripes, and a holographic patch. The material used for the banknotes will incorporate fibers native to Japan.

Although the government has taken steps to promote cashless transactions, cash remains very popular in Japan compared with other countries. While the cashless payment rate is rising, the amount of currency in circulation is increasing, in part because of saving habits. So there is still a need, according to Ministry of Finance representatives, to continue to provide currency with high confidence. These new designs, they expect, will do just that. FD

MELINDA WEIR is on the staff of *Finance & Development*.

PHOTOS: GETTY IMAGES/KYODO NEWS



Finance & Development, September 2019
MFIEA2019003