

FOREIGN AFFAIRS

The Innovative Finance Revolution: Private Capital for the Public Good

by Saadia Madsbjerg and Georgia Keohane

*Innovations that
Broaden the Scope of
Financial Capitalism*

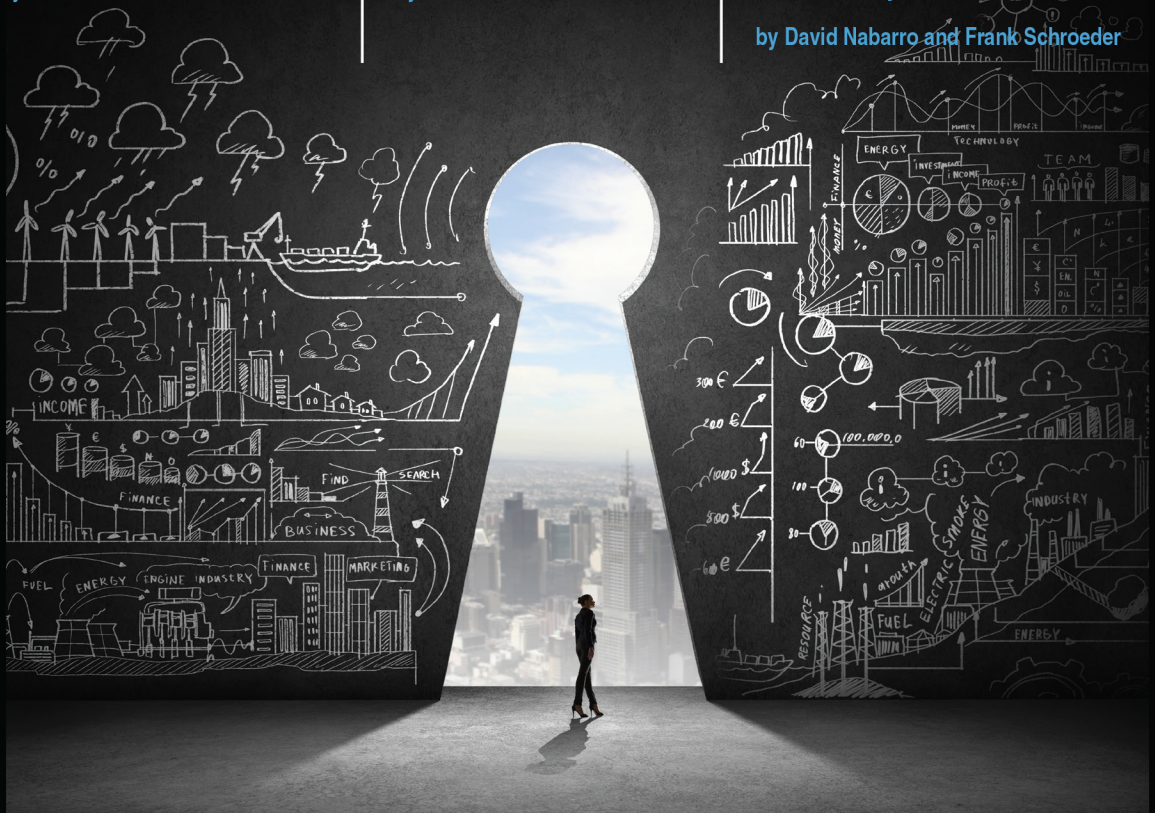
by Robert Shiller

*From Sector to
System: Reshaping
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Development Goals
through the Breathtaking
Power of Innovation*

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THE INNOVATIVE FINANCE REVOLUTION

Private Capital for the Public Good

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Closing the Funding Gap

Development in the 21st Century is About Financing, Not Giving

By Judith Rodin and Saadia Madsbjerg

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In 2015, the world had set ambitious targets for addressing global challenges, agreeing on the Sustainable Development Goals (SDGs) and the Paris Climate Agreement. The cost of implementing these agreements, however, will be astronomical. Over the next decade, the UN estimates that implementing the SDGs will cost between \$50 trillion and \$70 trillion; the Paris Climate Agreement will cost over \$12 trillion over 25 years. At a time when the world economy is in a fragile state, Overseas Development Assistance is in decline and being redirected towards peace and security efforts. Philanthropy provides a few hundred billion dollars a year, but that is far less than what is needed. The critical question is: how will we pay for it all? The answer is to leverage innovative finance mechanisms that can tap into the over \$200 trillion in private capital invested in global financial markets and effectively deploy these funds towards development efforts.

Development in the 21st century needs to be about *financing*, not just pledges and giving—given the scale of the social, environmental, and economic challenges that we face today. Innovative finance represents a set of financial solutions that create

scalable and effective ways of channeling private money from the global financial markets towards solving pressing global problems. These financing solutions take a variety of forms across sectors and geographies, from insurance-linked securities and pay-for-success structures to advanced market commitments.

As society's provider of risk capital, philanthropy has over the years championed the development of innovative finance solutions that have shown how to successfully enable, accelerate, and harness private capital markets for public good. We have seen early success with the adoption of innovative finance mechanisms such as pooled risk insurance, social impact bonds, and green bonds. Yet this early success isn't enough to meet increasing need. Globally, more than 800 million people still live on less than \$1.25 a day; 2.4 billion people lack access to sanitation. Further, 795 million people are estimated to be chronically undernourished.

The Rockefeller Foundation is committed to using our philanthropic risk capital to develop the next generation of innovative finance solutions that are needed to close the gap between global development's funding needs and the resources that are currently available. We call this initiative Zero Gap. Working at the intersection of finance and international development, Zero Gap provides one model for how the development community can support and de-risk new and innovative financing mechanisms—including financial products and public-private partnerships—to mobilize large pools of private capital that have the potential to create out-sized impact.

Zero Gap is a collection of bold ideas that we have sourced from around the world for how to scale funding for critical development objectives such as energy access in Sub-Saharan Africa or restoring natural infrastructure in the Americas. A core value of Zero Gap is that finance can be a powerful tool for good. Imagine a forest resilience bond investing in wildfire prevention in California, a micro-levy that creates a stable funding stream for alleviating malnutrition in Africa, or insurance being harnessed to not only respond to the next Ebola crisis but also to ensure better preparation for disease outbreaks.

To fully unlock the potential of innovative finance, new financial mechanisms must be structured to meet the needs of investors such as return on investment, level of risk, and portfolio diversification. To encourage investors to go from

allocating billions of dollars for social good to *trillions* we need to align with financial principles without sacrificing the social or environmental objectives. For example, investments that provide poor and vulnerable people with access to energy must also meet the risk/return expectations of institutional investors. To be successful, we must continue to structure these financial mechanisms for and with the international financial community.

The only way to close development's precarious funding gap is to make a sustained commitment to innovation — innovation in developing novel financing mechanisms and enabling public policy interventions that collectively have the power to mobilize new and additional private sector capital. This collection of essays draws on the expertise of practitioners and leading thinkers in the innovative finance field to explore the role of global capital markets in driving social impact and the underlying policy framework required to foster greater collaboration between the private and public systems.

Framing

Innovations that Broaden the Scope of Financial Capitalism

By Robert J. Shiller

ROBERT J. SHILLER is Sterling Professor of Economics, Yale University and President of the American Economic Association. He was co-winner of the Nobel Prize in Economics in 2013, has authored ten books and is co-developer of the S&P/Case-Shiller Home Price Indices.

Critics of financial capitalism are correct in some of their indictments. Related to our financial institutions are issues of persistent and often increasing economic inequality; of political influence from financial interests; and of speculative bubbles and crises.

But the changes that must be made need to *broaden* its scope, rather than constrain the innovative power of financial capitalism. We have the potential to support the greater goals of good societies—prosperous and free societies in the industrialized as well as the developing world—if we expand, correct, and realign financial capitalism.

We have seen great evidence of this potential. Financial technology has been spreading throughout the world by imitation, through the adoption and transformation of successful financial ideas initially pioneered as isolated experiments. Dependence on traditional economic systems has fallen in most of the world to financial capitalism. The socialist market economy, with its increasingly advanced financial structures, was introduced to China by Deng Xiaoping starting in 1978, adapting to the Chinese

environment the examples of other highly successful Chinese-speaking cities: Hong Kong, Singapore, and Taipei. The economic liberalization of India, which allowed freer application of modern finance, was inaugurated in 1991 under Prime Minister P. V. Narasimha Rao by his finance minister Manmohan Singh, who later became prime minister. The voucher privatization system introduced to Russia in 1992–94 under Prime Minister Boris Yeltsin by his minister Anatoly Chubais, following a modification of the Yavlinsky plan, was a deliberate and aggressive strategy to transform Russia's economy.

Such sudden integrations of sophisticated financial structures, originally designed for other countries, were not introduced smoothly into these countries; there was a degree of anger about the inequality of benefits that accrued to some, as opportunists amassed great wealth quickly during the transitions. But China, India, and Russia have seen a flourishing of financial sophistication and staggering economic growth rates, but these three countries were not the only ones to benefit. According to International Monetary Fund's data, the entire emerging world—including the Commonwealth of Independent States, the entire Middle East, Sub-Saharan Africa, and Latin America—has proved to be able to generate annual gross domestic product (GDP) growth of over 6% during the past decade, when not compromised by world financial crises.

In addition, a host of international agreements have created institutions that work for the betterment of humankind using sophisticated financial tools. The World Bank, founded in 1944, uses financial tools to remediate poverty and has since expanded into the massive World Bank Group. It has engraved on its headquarters in Washington, D.C. the motto, "Working for a world free of poverty." The World Bank was the first of more multilateral development banks: the African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, the Inter-American Development Bank Group.

Modern financial institutions are pervasive throughout the world today. Moreover, it is not just stocks or bonds that represent financial markets. One might not at first consider the price of agricultural commodities as relevant to a discussion of financial instruments, but the prices that they fetch on futures exchanges are analogous to prices in the stock and bond markets. Wheat and rice markets are also financial markets, in the sense that they engage in similar activities and rely on comparable

technical apparatus, and they are similar in their fluctuations and their impact on the economy. The scope of such markets has been expanding and can further expand in a new big data world as outcomes of risks are increasingly well measured and as we bring more and more risks into such markets.

It is true that social barriers prevent many people from using financial institutions to realize—and profit from—their talents. An illiterate farm boy from a remote area finds it difficult and may not know he has access to a bank in a big city to ask for capital to start a business. These barriers to entry are being transformed in the Internet Age, with innovations such as crowdfunding, cryptocurrencies and the like, but they still remain. There is a very real barrier to many people's ability to access capital, and there is substantial evidence of such a barrier in the extreme variation in interest rates paid by borrowers in different regions and different categories.

This is not a fundamental problem of financial capitalism; it is rather a problem of *democratizing and humanizing and expanding the scope of financial capitalism*. We do indeed live in the age of financial capitalism. We should not regret that. Regulations and restrictions can and need to be placed on financial institutions to help them better function in the best interests of society, though the underlying logic and power of these institutions remains central to their role. Financial institutions and financial variables are as much a source of direction and an ordering principle in our lives as the rising and setting sun, the seasons, and the tides.

Our task, both in the financial sector and in civil society, is to help people find meaning and a larger social purpose in the economic system. This is no small task, with all the seemingly absurd concentrations of wealth the system brings about, the often bewildering complexity of its structures, and the games—often unsatisfying and unpleasant—it forces people to play.

At its broadest level, finance is the science of *goal architecture*—the structuring of the economic arrangements necessary to achieve a set of goals and the cultivation of the stewardship of the assets needed for that achievement. The goals may apply to those of households, small businesses, corporations, civic institutions, governments, and of society itself. Once an objective has been specified—such examples include the payment for a college education, a couple's comfortable retirement, the opening of a restaurant, the addition of a new wing on a hospital, the creation of a social security system, or a

trip to the moon—the parties involved need the right financial tools and often expert guidance to help achieve the goal. In this sense, finance is analogous to engineering. It is a curiously overlooked fact that the very word *finance* derives from a classical Latin term for “goal.” The dictionary tells us that finance derives its name from the classical Latin word *finis*, which is usually translated as *end* or *completion*. One dictionary notes that *finis* developed into the word *finance* since one aspect of finance is the completion, or repayment, of debts. But it is convenient for our purposes to recall that *finis*, even in ancient times, was also used to mean “goal,” as with the modern English word *end*.

Most people define finance more narrowly, yet financing an activity is creating the architecture for reaching a goal—and providing stewardship to protect and preserve the assets needed for the achievement and maintenance of that goal.

The goals served by finance originate from within us. They reflect our interests in careers, hopes for our families, ambitions for our businesses, aspirations for our culture, and ideals for our society; finance, in and of itself, does not tell us what our goals should be. Finance does not embody a goal. Finance is not about “making money” per se. It is a “functional” science in that it exists to support other goals—those of a society. The better aligned a society’s financial institutions are with its goals and ideals, the stronger and more successful the society will grow. If its mechanisms fail, finance has the power to subvert such goals, as it did in parts of the subprime mortgage market of the past decade. But if it is functioning properly it has a unique potential to promote great levels of prosperity.

The attainment of significant goals and the stewardship of the assets needed for their achievement almost always require the cooperation of many people. Those people have to pool their information appropriately. They must ensure that everyone’s incentives are being aligned. Imagine the development of a new laboratory, the funding of a medical research project, the building of a new university, or the construction of a new city subway system. Finance provides structure to these incentives and other enterprises and institutions throughout society. If finance succeeds for all of us, it helps to build a good society. The better we understand this point, the better we will grasp the need for ongoing financial innovation.

An essential part of what finance professionals actually do is *deal making*—involving the structuring of projects, enterprises, and systems, convergence for individuals’

often divergent goals. Financial arrangements—including the structuring of payments, loans, collateral, shares, incentive options, and exit strategies—are just the surface elements of these deals. Deal making means facilitating arrangements that will motivate real actions by real people—and often by very large groups of people. Most of us can achieve little lasting value without the cooperation of others. Even the archetypal solitary poet requires financing to practice her or his art: income, publishers, printers, the booking of public readings, the construction of suitable halls for public readings, for examples. There is a hidden financial architecture behind all of this.

All parties in an agreement have to want to embrace the goal, do the work, and accept the risks; they also have to believe that others involved in the deal will actually work productively toward the common goal and complete all that should be done. Finance provides the incentive structure necessary to tailor these activities and secure these goals.

In addition, finance involves discovery of the world and its opportunities, which ties it into our rapidly expanding information technology. Whenever there is trading, there is price discovery—that is, the opportunity to learn the market value of what is being traded. This in turn involves the revelation of people’s feelings and motivations and of the opportunities that exist among groups of people, which may make even more ambitious goals possible.

The economic inequality that we see in the world today is sometimes viewed as having been caused by our financial institutions. But financial institutions that deal with risk and incentivize people to be productive have exactly the opposite effect.

The insurance industry that we have today is a part of the world’s financial system that deals explicitly with the random shocks to individual wealth, and that therefore has the effect of reducing inequality. The history of insurance, over centuries and to the present day, has reached milestones in advancing the scope of insurance. In the future, in the coming information age, we can expect insurance to cover more risks when outcomes in the past could not be measured properly and objectively—risks that concern our homes, our health, our careers, our livelihoods.

The banking and investments sector are another element of the world’s financial system that reduces poverty and inequality. Innovations make it easier and easier to

sort through economic activities. The institutions of this sector continue to develop through more diverse derivative markets and risk-management contracts. Despite past progress, many risks are not being hedged or diversified today. Ancillary professions, like accounting and auditors, play a role in this, as do regulators and business associations. In the future, we may see new institutions and investment vehicles that allow for vastly better economic outcomes.

The institutions of public finance, with their implicit insurance features and their creation of a progressive tax system, health care systems, can also innovate. Governments can stabilize speculative markets against bubbles and bursts either through discretionary stabilization policy or towards regulatory safeguards. They can impose regulations that deal with the problems of phishing broadly construed: phishing meaning manipulation and deception that seems to accompany the development of financial institutions until they are corrected. Governments can help deal with risks for which the private sector is inadequate. Nations can share risks much more than they do today, and they can incentivize each other for better behavior.

This technology is certainly not perfect. We need forward-thinking innovators, who are willing to do controlled experiments and tabulate the outcome so that the best experiments can be applied. Finance, when suitably configured for the future, can be the strongest force for promoting the well-being and fulfillment of an expanding global population and for achieving the greater goals of society.

1 This chapter derives from Robert Shiller's book *Finance and the Good Society* (Princeton, 2012).

The Innovative Finance Revolution

Private Capital for the Public Good

By Georgia Levenson Keohane and Saadia Madsbjerg

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Assessments of how governments and international organizations have dealt with global challenges often feature a familiar refrain: when it comes to funding, there was too little, too late. The costs of economic, social, and environmental problems compound over time, whether it's an Ebola outbreak that escalates to an epidemic, a flood of refugees that tests the strength of the EU, or the rise of social inequalities that reinforce poverty. And yet governments and aid groups rarely prove able to act before such costs explode: indeed, according to some estimates, they spend 40 times as much money responding to crises as they do trying to prevent them.

One reason for this is that complex international problems tend to be dealt with almost exclusively by governments and nonprofit organizations, with the private sector typically relegated to a secondary role—and with the financial sector playing a particularly limited part. Stymied by budgetary constraints and political gridlock,

the traditional, primarily public-financed system often breaks down. Government funds fall short of what was promised, they arrive slowly, and the problem festers.

Innovative finance has the potential to transform the way developing countries manage the costs of natural disasters.

In recent years, however, a new model has emerged, as collaborations among the private sector, nonprofit organizations, and governments have resulted in innovative new approaches to a variety of global challenges, including public health, disaster response, and poverty reduction. Instead of merely reacting to crises and relying solely on traditional funding, financiers—working closely with governments and nongovernmental organizations—are merging private capital markets with public systems in ways that promote the common good and make money for investors as well. By relying on financial tools such as pooled insurance and securitized debt, these efforts—which have come to be known as “innovative finance”—can unlock new resources and lead to cost-effective interventions. At the same time, such solutions generate profits and give investors an opportunity to diversify their holdings with financial products whose performance isn’t tied to that of the overall economy or financial markets.

Technological advances and creative thinking have led to a boom in innovative finance. To realize its full potential, however, solving public problems by leveraging private capital requires more attention from policymakers, who should consider a series of steps to encourage even more progress in this area.

A Shot in the Arm

A wide range of players have begun to embrace innovative finance, including treasury departments, multilateral development agencies, nonprofit financial firms, and traditional investment banks. In most cases, philanthropic foundations have stepped up with seed money. Government aid agencies have then put new concepts into practice by providing funds to create new financial vehicles.

The term “innovative finance” suggests complexity, but it’s less complicated than it sounds. Three recent examples help demonstrate what it means—and what it can do.

In the summer of 2002, the United Kingdom's Treasury concluded that the government's budget had not provided enough funding to honor the country's commitment to the Millennium Development Goals, a set of ambitious global efforts to tackle poverty and its many effects. The British were hardly alone in this conundrum: in many of the 189 countries that had agreed to the MDGs, officials had realized that good intentions and bold aid pledges would not yield enough money to make good on their promises. Gordon Brown, then the British chancellor of the exchequer, believed that private-sector expertise and capital markets might be able to help, and he approached the investment bank Goldman Sachs. The firm's bankers turned to the tool kit of so-called structured finance to transform pledges for future aid spending into immediate funding for MDG projects.

In essence, Goldman Sachs' plan was one that would be familiar to people who hold home mortgages, and who thus borrow from their future selves to pay for the housing they need today. Although at that moment, governments in the United Kingdom and elsewhere were short of cash for their MDG spending, they had pledged to devote substantial amounts to MDG projects over the course of the next 15 years. That promised future spending represented a kind of underlying asset—similar to a mortgage holder's home—which Goldman Sachs wagered investors would find attractive. The innovation was to conceive of a new type of financial product: a bond whose yields would be furnished by future government development aid rather than by the proceeds of a specific project, such as road tolls or water-usage fees.

The British government and its banking partners also identified what they believed to be the best way to spend the money they would raise by selling such bonds: on immunization campaigns that would help reach the MDGs' public health targets. In 2006, they founded the International Finance Facility for Immunisation (IFFIm) and developed the world's first "vaccine bonds." Fitch Ratings, Moody's Investors Service, and Standard & Poor's gave the bonds a AAA (or equivalent) rating, and IFFIm conducted its first bond issue in November 2006, raising \$1 billion. Institutional investors such as pension funds and central banks, as well as retail investors, purchased bonds that matured after five years and that offered an annual yield of five percent—31 basis points above the benchmark rate offered at that time by the five-year U.S. Treasury bond. In the years since, IFFIm has issued 30 bonds in a range of currencies and term lengths for a variety of investors, from institutions to private individuals, and has raised \$5.25 billion. IFFIm recently

further expanded its investor base by issuing \$700 million worth of *sukuk*, or Islamic bonds, which adhere to Islamic lending rules by eschewing interest charges or payments.

To help ensure that this money would be spent in the most cost-effective way, IFFIm partnered with Gavi, the Vaccine Alliance, a nonprofit that is funded in part by the Bill & Melinda Gates Foundation and that specializes in large-scale immunization programs and creative ways to fund them. IFFIm's bond issues helped Gavi increase its annual budget from \$227 million in 2006 to \$1.5 billion in 2015 and expand programs such as a polio eradication initiative that has financed the development and testing of new vaccines and the stockpiling of proven ones in places such as the Democratic Republic of the Congo and India.

A 2011 evaluation of IFFIm conducted by the health-care consulting company HLSP (now part of Mott MacDonald) credited IFFIm with saving at least 2.75 million lives and improving the quality of millions more. All the while, IFFIm has allowed the United Kingdom and other donor countries to make good on their MDG commitments and has provided investors with healthy, reliable returns. Two representative examples include a three-year, floating-rate *sukuk* that IFFIm issued in 2015, which received a AA rating, offered investors a quarterly coupon payment that was 14 basis points higher than the benchmark three-month U.S. dollar LIBOR rate, and raised \$200 million, and a five-year "kangaroo bond" (denominated in Australian dollars and subject to Australian laws and regulations) that IFFIm issued in 2010, which received a AAA rating, offered investors a 5.75 percent fixed rate (76 basis points over the benchmark Australian Government Bond rate), and raised \$400 million in Australian dollars.

Make It Rain

The semi-arid Sahel region, which stretches across northern Africa, is no stranger to droughts—nor to the famines that can follow in their wake. There have been three major droughts in the area in the last ten years, which have reduced the food security of millions of people. The traditional response to such emergencies consists of a UN appeal to donor countries for financial aid, which usually arrives too late to prevent the worst effects of a drought. But last year, something different happened.

In January 2015, soon after a drought struck the region, three countries—Mauritania, Niger, and Senegal—received an unusual set of payments totaling \$26 million. Rather than aid donations, they were payments resulting from claims the countries made on drought insurance policies they had purchased the previous year. The total dollar amount might seem modest, but the money's effects were magnified by the speed with which it arrived: the countries received their payments even before the UN had managed to issue an appeal for aid. Mauritania used the money to make timely food deliveries to those most in need in the Aleg area, preventing many families from deserting their homes in a desperate attempt to survive. Authorities in Niger used the money to fund work programs for farmers in the Tillabéri region who could no longer afford to feed their families after their crops failed. Senegal used its funds to distribute food to the hardest-hit households and also to give subsidies to ranchers who otherwise might have lost their livestock.

These payouts were made possible by the African Risk Capacity (ARC), a specialized agency of the African Union, and its financial affiliate, the ARC Insurance Company, which is jointly owned by the union's member states. Launched in 2012 with funding from the Rockefeller Foundation and other organizations, and born out of frustration with the inefficiencies of the international emergency aid system, ARC was established to help African countries build up their resilience to natural disasters. Capitalized with development assistance from the KfW Development Bank, which is owned by the German government, and from the United Kingdom's Department for International Development, the ARC Insurance Company was established in 2014. Kenya, Mauritania, Niger, and Senegal were the first African countries to sign up for a so-called pooled risk insurance product. For annual drought coverage of up to \$60 million, each country paid an annual premium of between \$1.4 million and \$9 million: around half the amount that any one country would have had to pay on its own for a similar level of coverage. ARC has since been backed by some of the world's largest reinsurance companies, including Swiss Re and Munich Re.

In addition to providing access to insurance, ARC encourages preparedness. Before countries can purchase a policy, they must produce detailed plans demonstrating that they will use any payments they receive in a timely and effective manner. The planning relies heavily on Africa RiskView, a software platform that was initially developed by the UN World Food Program with funding from the Rockefeller

Foundation and that projects crop losses and the cost of weather-related difficulties using advanced satellite data and detailed records of past droughts and subsequent emergency-response operations.

Innovative finance leads to cost-effective international aid, generates profits, and lets investors diversify their holdings.

ARC has the potential to transform the way developing countries manage the costs of natural disasters, demonstrating that it is possible to shift the burden from governments (and poor and vulnerable populations) to global financial markets, which are much better equipped to handle risk. To date, ARC has issued \$500 million in drought insurance to ten countries, and by 2020, ARC aims to provide \$1.5 billion in coverage to approximately 30 countries, helping protect some 150 million Africans against a variety of environmental risks, including extreme heat, droughts, floods, cyclones, and even pandemics.

Paying For Success

Innovative finance is not just a developing-world phenomenon. In wealthier economies, new financial tools have been brought to bear on a wide range of challenges, including public health, an area in which traditional approaches often fail to meet the urgent need for prevention and early intervention. Consider the case of the Nurse-Family Partnership, a nonprofit organization in the United States that sends nurses to make home visits to low-income, first-time-mothers, working with them from pregnancy until their child is two years old. The NFP has an impressive track record of improving maternal and child health and supporting self-sufficiency. Indeed, it is one of the most rigorously tested antipoverty interventions in U.S. history; 30 independent evaluations have measured its effects. A 1997 study published by researchers at three American universities found that 15 years after participating in the NFP's first-time-mother program, children were 79 percent less likely to have suffered state-verified abuse or neglect, and mothers spent 30 fewer months on welfare, on average. In 2013, the Pacific Institute for Research and Evaluation found that the program had a pronounced positive impact, contributing to healthy birth outcomes, child health and development, and even crime prevention, and estimated that for each family served, the government saved \$40,000 in spending on things such as criminal justice systems, special education, and Medicaid.

Yet despite this track record, the NFP, like so many effective social programs, has had trouble securing the public dollars it needs to serve more families in the 37 states in which it operates. So the NFP has begun to explore partnerships to secure new sources of private funds in some of the states with the most need, including South Carolina, where 27 percent of the state's children live in poverty. In February 2016, the NFP, the South Carolina Department of Health and Human Services, and the Children's Trust of South Carolina entered into a groundbreaking "pay for success" contract structured and overseen by a nonprofit financial organization called Social Finance. (As part of the initiative, the state has also received technical support from experts at the Harvard Kennedy School's Government Performance Lab.) The contract calls for private investors to provide the NFP with \$17 million—money that, along with around \$13 million in federal Medicaid reimbursements, the group will use to expand its services to 3,200 mothers in South Carolina. If the NFP's interventions succeed in demonstrably improving the lives of the participants by hitting specific targets—reducing the number of pre-term births, decreasing child hospitalizations and emergency-room use, promoting healthy spacing between births, and serving more first-time mothers in the lowest-income communities—the investors can be repaid with money set aside by South Carolina and can expect to receive a return of somewhere between five and 13 percent, assuming a performance similar to those of previous pay-for-success arrangements. If the NFP fails to meet the goals, the investors will lose their principal and the government will owe them nothing. The outcomes will be measured against a randomized control trial, and the evaluation will be overseen by the Abdul Latif Jameel Poverty Action Lab at the Massachusetts Institute of Technology.

The U.S. Congress should pass the Social Impact Partnership Act, which would fund public-private innovative financial initiatives.

Such arrangements—of which the NFP's is one of the largest, but not the first—are sometimes called "social-impact bonds." That is a bit of misnomer: a contract such as this is less like a bond and more like an equity investment, since its returns depend on performance and investors share in both the potential upside and the risk. In the past five years, public-private coalitions have entered into more than 50 of these kinds of pay-for-success agreements in Asia, Europe, the Middle East, and North America, addressing a variety of issues, including

public health, work-force development, foster care, military veteran reentry, housing, education, and criminal justice. Current estimates place the global market for such investments at around \$150 million and predict that it will grow to somewhere between \$300 million and \$500 million over the next few years.

More Bang For The Buck

A number of factors favor the advance of innovative finance. First among them are the exceptionally low interest rates in recent years, which have whetted capital markets' appetite for new kinds of investment vehicles, especially those whose performance doesn't necessarily depend on broader economic or financial trends. Innovative finance can provide value to investors even when more traditional equity and bond markets falter. Even if interest rates begin to rise, as many expect they will, innovative financial solutions have already proved their value and will likely endure.

But to grow and expand, such products must reach a wider pool of capital, moving beyond the institutional investors who currently represent the sector's most active players. Some innovative financial products are already available to retail investors, primarily through specialized investment funds, such as the Goldman Sachs Urban Investment Group, and through donor-advised funds that manage investments for major charities. And a growing number of products, including vaccine bonds offered by IFFIm in Japan, have become even more easily available to retail investors.

To achieve larger scale, the developers of innovative financial products must continue to provide attractive yields and further mitigate the risks—real or merely perceived—posed to investors who want to enter this still unfamiliar terrain. Financial professionals who design these products need to take better advantage of government guarantees and government insurance, such as the Development Credit Authority program run by the U.S. Agency for International Development, which provides partial debt guarantees to investors and is backed by the U.S. Treasury. Yet fostering greater participation will require more than competitive returns. Investors also need reliable data to assure them that innovative finance will help them do well while doing good. Here, technological innovation is complementing financial innovation. Consider, for example, recent advances in remote sensors, which can measure the effects of complex processes such as deforestation. The new availability of such data has made it possible to design pay-for-success contracts that depend

on rigorous monitoring. Meanwhile, more accurate and comprehensive satellite imagery has also made it possible to better assess the threats posed by bad weather and natural disasters, allowing financiers to develop more sophisticated insurance-based investment products, such as the natural-disaster protection plans now spreading in Africa.

Government policy is also beginning to shift in ways that will encourage more innovative finance. For example, in October 2015, the U.S. Department of Labor repealed restrictive rules that had prevented U.S. pension funds from considering social, environmental, and good-governance factors when making investment decisions. This “ERISA reform”—a reference to the Employee Retirement Income Security Act—has the potential to catalyze investment in innovative financial products by pension funds that must follow ERISA guidelines: a huge source of potential funding. Meanwhile, in 2015, at a summit at Schloss Elmau, in Germany, the G-7 countries adopted the InsuResilience Initiative, a collaboration between the G-7 and a number of countries that are particularly vulnerable to the effects of climate change; the initiative seeks to extend insurance protection against climate disasters to 400 million people. Further progress will require leadership from donor countries and coordinated international policy efforts; one good model is the Social Impact Investment Taskforce, a G-8 initiative that was launched by British Prime Minister David Cameron in 2013 and that tracks and reports on global trends in impact investing.

Investor confidence in innovative finance would also improve if there were clearer rules and norms regarding how financial analysts should measure and assess environmental and social factors and integrate their findings into their reporting. One important step in this direction was the establishment, in 2011, of the Sustainability Accounting Standards Board, a U.S.-based nonprofit that develops industry-specific methods for addressing such factors in their accounting procedures and financial filings.

In addition, governments must improve their ability to make long-term decisions about spending on investment in social and economic development, at home and abroad. Budgeting processes in most rich countries do not allow for strategic commitments to long-term development aid: the creation of IFFIm would have been impossible had the participating countries not made exceptions to their own

budgeting rules. In the United States, Congress should pass legislation—such as the Social Impact Partnership Act, which was proposed in 2015 with bipartisan sponsorship—that would direct federal funding to public-private innovative financial initiatives at the state and local levels.

Capitalize On Capital

In February, international donors met in London and made an impressive pledge of roughly \$11 billion in aid and another \$40 billion in loans to deal with the enormous costs of the Syrian civil war, including the migrant flows currently overwhelming the Middle East and Europe. “Never has the international community raised so much money on a single day for a single crisis,” boasted UN Secretary-General Ban Ki-moon. But veterans of humanitarian aid and crisis response watched the conference with a sinking feeling, knowing that a great deal of promised funding fails to materialize and that even the best-intentioned aid frequently falls short of achieving its goals.

Innovative finance can help improve the international community’s response to some of the most costly aspects of such crises. Imagine, for example, how pay-for-success contracts or approaches similar to IFFIm’s could allow governments to raise funds quickly for the health-care, housing, and educational needs of refugees by securitizing future spending. Such proposals might once have seemed far-fetched; not any longer. With continued philanthropic support and sustained commitment from governments, innovative finance can put the power of private capital markets to work for the public good.

In Defense of Financial Innovation

Creative Finance Helps Everyone— Not Just the Rich

By Andrew Palmer

ANDREW PALMER is the Business Affairs Editor at The Economist. He is also author of Smart Money: How High-Stakes Financial Innovation is Reshaping Our World—For the Better.

At a 2013 conference held by The Economist in New York, business and policy leaders debated whether talented university graduates should join Google or Goldman Sachs. Vivek Wadhwa, a serial entrepreneur, spoke up for Google. “Would you rather have your children engineering the financial system [and] creating more problems for us, or having a chance of saving the world?” he asked. He had a much easier time pitching his case than Robert Shiller, the Nobel Prize-winning economist who advocated for Goldman Sachs by arguing that every human activity, even saving the world, had to be financed. No use; in the end, the audience voted heavily in favor of Mountain View and against Wall Street.

Such bias reflects the profound shift in public attitudes toward Wall Street that followed the 2008 financial crisis. In the decade before the meltdown, bankers were lionized. Policymakers applauded the efficiency of financial markets, and widespread

praise for financial innovation drowned out any criticism. But when the crisis hit, the pendulum swung too far in the opposite direction. The new consensus now portrays bankers as villains whose irresponsible practices and shady techniques unleashed disaster. This view holds that only a small part of the financial industry actually benefits society—the one that doles out loans to individuals and businesses. The rest constitutes dangerous, unnecessary gambling, and so financial ingenuity of all kinds is highly suspect.

Such anger is well founded; finance certainly did a bad job of applying itself to big problems in the run-up to the crisis, and the popular myth of the industry's invincibility contributed to this failure. Eliminating this misperception was entirely for the best. But demonizing finance is also a mistake, and restricting the sector to its most familiar elements would do nothing to mend its flaws. Worse, such a course could wreak damage outside the banking industry, because financial ingenuity reaches far beyond Wall Street. Innovative financiers are currently helping solve an array of socioeconomic problems—including those related to the strength of social safety nets, the poor's ability to save, and the capacity of the elderly to support themselves—that weigh heavily on governments around the world. Instead of fearing such innovation, policymakers and the public should welcome it, with prudent oversight.

Reality Check

For critics of Wall Street, the financial crisis served as a warning against experimentation. Financial innovation, they argue, has approached a point of diminishing returns. If only finance could turn back the clock, all would be well. Gone would be toxic practices such as securitization, the banks' way of bundling mortgages, credit-card loans, and other financial assets into bonds that they resell to investors—a technique seen as having triggered the crisis. The out-of-control financial wizardry that generated skyrocketing amounts of consumer debt would come to an end. And stock exchanges would stop serving as the playthings of algorithms.

Some skeptics go so far as to argue that “banking should be boring”—a slogan adopted by Elizabeth Warren, the senior Democratic senator from Massachusetts, who has demanded tighter restrictions on finance. In 2013, Warren launched a

campaign to separate U.S. banks into two distinct groups. The first would include the comfortably familiar retail businesses that accept deposits and provide mortgages. The second would contain investment firms that raise money and manage risks through obscure capital-market practices, and they would be barred from taking insured deposits to fund themselves. Although the bill that Warren introduced has stalled on Capitol Hill, it counts plenty of sympathizers.

Going one step further, a few prominent observers have suggested that financial creativity has reached the limits of its utility. They point to a host of seemingly out-of-control pre-crisis financial forces, from the blinding speed of high-frequency traders to the exploding volume of credit default swaps, a type of insurance policy written against borrowers going bust. In 2009, for example, Paul Volcker, the former Federal Reserve chair, said that no financial innovation of the pre-crisis period was as useful as the simple automatic teller machine. Similarly, the economist Paul Krugman admitted in a 2009 *New York Times* column that he had trouble thinking of a single recent financial breakthrough that had aided society. Rather, he wrote, “overpaid bankers taking big risks with other people’s money brought the world economy to its knees.”

To be fair, the motives behind many new financial products are far from pure, and greater scrutiny would help stave off crises in the future. But widespread criticism of particular Wall Street innovations has had the effect of unfairly smearing the reputation of finance as a whole, and it has given rise to proposed solutions that could do more harm than good. Calling a halt to financial inventiveness—freezing finance in place; no bright ideas allowed—would not solve the problems associated with the industry. In fact, the greatest dangers to economic stability often lurk in the most familiar parts of the financial system.

After all, retail and commercial banks accounted for some of the most massive write-downs recorded during the crisis. The biggest bank failure in U.S. history was that of Washington Mutual, which collapsed in 2008 with \$307 billion in assets and a pile of rotting mortgages on its books. The largest quarterly loss for a bank was suffered in 2008 by Wachovia, which was brought down by bad loans. And the product that caused the most damage during the financial crisis was mortgages, the most familiar instrument of all. The amount of mortgage debt in the United States had roughly doubled between 2001 and 2007, to \$10.5 trillion. Real estate was by far the biggest asset held by U.S. households, reaching \$22.7 trillion in value in 2006, when house prices were at their

peak. The United States was not alone in this vulnerability; wide holdings of residential and commercial property were the common denominator across the countries most affected by the crisis, including Ireland, Spain, and the United Kingdom.

Part of the reason is that property has inherently destabilizing characteristics. This asset thrives on debt: in many housing markets, buyers routinely take out loans worth more than 90 percent of the property's value. Virtually the entire worldwide rise in the ratio of private-sector debt to GDP in the past four decades has been caused by rising levels of mortgage lending. Yet banks tend to see this type of secured lending as safe, even though it could involve decisions made solely on the basis of collateral offered by the borrower (say, a house) rather than the borrower's creditworthiness.

Indeed, the great irony of the property bubble was that many banks and investors had thought that concentrating on housing was a prudent bet. Although the financial sector has since been criticized for recklessness, it was its pursuit of safe returns that brought trouble. An insightful study by the economists Nicola Gennaioli, Andrei Shleifer, and Robert Vishny revealed that much financial-sector creativity—from the invention of money-market funds to the pre-crisis surge in mortgage-backed securities—is rooted in a search for safety as well as profit. The reason investors sought out mortgage-backed securities was that these instruments offered slightly higher returns than more traditional assets (such as U.S. Treasury bonds) while also appearing to be low risk. This pattern holds across a wide range of other financial products; the siren song of safety is a recurring theme in finance.

The property market thus offers a lesson for the financial industry more broadly: studying the ways in which people and companies manage money and risk—and harnessing these behaviors for more constructive ends—could help address the dangers that still lurk in plain sight. Rather than being a warning against innovation, the crisis was a clarion call for creative thinking of a different kind. Indeed, when it comes to property, finance is already demonstrating how using new techniques could forestall future shocks.

Some entrepreneurs, for example, are exploring ways to temper the adverse effects that fluctuations in housing prices carry for both borrowers and lenders. A housing downturn can reduce the price of a property to less than the value of the mortgage holder's outstanding loan, triggering a loan default that hurts both the buyer and

the bank. One answer is to offer borrowers no interest on their mortgages in return for allowing the lenders to share in the gains or losses from movements in house prices. If prices fall, owners are more protected; if they rise, lenders reap some of the rewards. As for the adverse effects that market downturns can have on lenders, one firm, London-based Castle Trust, has found a clever solution: tying its funding to the national house price index in a way that makes assets and liabilities on its balance sheet rise and fall in unison. The Castle Trust model is a radical break from the norm—but one that is entirely welcome.

The Ideas Machine

Even the most ardent critics of Wall Street do not dispute the value of financial innovation over the long sweep of human history. The invention of money, the use of derivative contracts, and the creation of stock exchanges all represent smart responses to real-world problems. These advances helped foster trade, create companies, and build infrastructure. The modern world needed finance to come into being.

But this world is still evolving, and the demand for financial creativity is as strong today as ever. Fortunately, despite all the recent criticism, the financial sector has been evolving as well. Today, this industry is home to not only big banks skimming fat fees but also visionary innovators that are rethinking the ways in which money, livelihoods, and technology relate to one another.

To take just one example, many countries, including the United States, face unprecedented pressure to trim their budgets by cutting public spending. As a result, social programs—say, rehabilitating prisoners and training the unemployed—can fall by the wayside. Even where such initiatives do continue, they often end up wasting taxpayers' money, because they either fail to tie spending to desired outcomes or focus on the wrong outcomes altogether. Many job-training programs, for example, focus on the number of people they enroll and graduate rather than the number of participants who subsequently find jobs. Flaws of this kind are common across state-funded initiatives. According to the Brookings Institution, out of ten rigorous evaluations of social programs run by the U.S. federal government in 1990–2010, nine found that the programs either produced weak positive results or had no impact at all.

Finance has stepped in with answers to both the funding problem and the shortfalls of planning and monitoring. One innovative tool, known as a social-impact bond, channels private investment to programs that track measurable social benefits. For instance, a social-impact bond focused on rehabilitating prisoners might monitor the number of new convictions of former inmates one year after they were released from prison. Fewer repeat convictions means less spending by the government, which can then use the cash it saves to pay back investors. The first initiative of this kind was introduced in 2010 by the city of Peterborough in the United Kingdom, and that program has already reduced reoffending rates vis-à-vis the national control group. Other countries, including the United States, have introduced similar programs of their own. New York City launched a social-impact bond in 2012 focused on adolescents incarcerated at Rikers Island; the program counts Goldman Sachs as an investor. And Massachusetts has announced two social-impact bonds, one of which will fund a seven-year effort to reduce prisoner recidivism with a budget of \$27 million.

The reason finance has a shot at solving problems of such complexity is its ability to align the incentives of diverse market participants—in this case, governments that commission services, social organizations that provide them, and investors that supply capital. Governments are attracted to social-impact bonds because they require payouts only when the programs they fund achieve results. Social organizations come on board because these initiatives involve private investment with longer time frames than federal contracts usually offer. And investors benefit from detailed data on how well the programs are performing. Social-impact bonds will never be the only answer to the shrinking state. But they are an extremely promising avenue to explore.

The Next Frontier

Governments are not alone in facing an enormous financial squeeze; individuals must grapple with similar challenges. Today, ordinary people in developed economies expect to live longer than any generation did before them, yet they generally do not save nearly enough for retirement. Too many of these people put far too little money aside as protection against unexpected shocks. And a large share have trouble accessing credit, especially if they find themselves on the periphery of the economic system.

Finance has been providing ingenious answers to these kinds of problems by drawing on the insights of behavioral economics. Recent years have given rise to the birth of a subfield known as behavioral finance, which studies the different prompts and nudges that help people achieve more financially efficient outcomes. This field already counts one remarkable achievement: getting more Americans to save for retirement by enrolling them in 401(k) pension plans automatically. People have a tendency to dither, so requiring them to opt out of a scheme, rather than make the effort to opt in, draws in scores of new customers. U.S. companies that have introduced auto-enrollment mechanisms have reported sharp rises—of as much as 60 percent—in average 401(k) participation rates.

A more recent application of behavioral economics has allowed society's least creditworthy people to build up their savings accounts. Millions of people in developed economies lack any sort of financial cushion. A 2012 survey by the Financial Industry Regulatory Authority asked Americans whether they'd be able to come up with \$2,000 if an unforeseen need arose; almost 40 percent said no or probably not. Nearly two-thirds did not have three months' worth of emergency funds on which they could draw if they fell ill or became unemployed. And whereas the housing boom had once disguised these problems—as long as prices kept climbing, people in distress could refinance or sell their homes—today, average Americans have no choice but to save more.

When money is tight, of course, saving is difficult. To make matters worse, new regulations discourage mainstream banks from reaching low-income households by capping the credit-card penalties and overdraft fees that banks can levy. Once again, innovative financial players have moved in to fill the gap. Some, such as the Massachusetts-based Doorways to Dreams (D2D) Fund, have managed to motivate savers via a simple trick: offering prizes for putting money aside. After all, humans love lotteries, and the prospect of winning awards instantly makes saving seem more attractive.

In 2009, the D2D Fund launched a prize-linked savings program in Michigan (one of the few places that permits private lotteries) called Save to Win. For each \$25 in deposits, savers earn raffle tickets that give them a chance to win quarterly prizes of as much as \$5,000, as well as smaller monthly rewards. Nebraska, North Carolina, and Washington State have since introduced versions of the program, and D2D

hopes to eventually tap into state lottery systems directly in order to reach more people. Meanwhile, in Michigan, its strategy has helped customers set up more than 50,000 accounts and put away over \$94 million in new savings—a small amount by the financial industry’s standards but a significant achievement for scores of low-income families.

It’s not just the poor who have trouble accessing credit. At all levels, potential borrowers get turned away by banks; other people get deterred by high interest rates on bank-offered loans. One solution involves peer-to-peer lending, which allows suppliers and consumers of credit to connect directly rather than rely on a bank to intermediate. Leading the charge is a San Francisco–based firm named Lending Club, which was launched in 2007; many others are following its example.

Lending Club invites borrowers to make a pitch for loans and then allows lenders to choose those individuals they would like to fund. Both parties get a better deal than they would at an established bank. Peer-to-peer lending does not carry the heavy costs of the legacy information technology systems and branch networks that weigh down established banks, so it can offer borrowers lower interest rates than a bank can provide. The average rate that Lending Club borrowers paid on loans in 2013, for example, was 14 percent—well below typical credit-card rates. Allowing for a default rate of four percent and Lending Club’s service fees, the returns to investors were nine to ten percent—not bad given how low interest rates have been.

Peer-to-peer platforms are designed to address some of the flaws of mainstream finance. A firm such as Lending Club is inherently more resilient than a bank because it does not run a balance sheet on which it incurs debts in order to fund lending of its own. If there are defaults on a bank’s loan book, its creditors still expect to be paid back. But when a customer defaults on a Lending Club loan, the investors absorb the costs. Moreover, Lending Club locks up lenders’ money for the duration of the loan. After investors fund a three-year consumer loan, for example, they can’t demand the money back one month later in the way that bank depositors can. The borrower, therefore, will not face a sudden call for cash and the scramble to raise money that it entails.

Admittedly, the numbers involved in this new sector remain tiny. Lending Club had facilitated loans totaling more than \$7 billion by the end of 2014—an amount

that pales in comparison to the outstanding credit-card debt of roughly \$700 billion in the United States that same year. Nevertheless, peer-to-peer lending is gaining wide credibility. Lending Club was valued at \$5.4 billion when it went public in 2014, and institutional investors now account for more than two-thirds of its loan volume. Some insurers and sovereign wealth funds have made allocations of as much as \$100 million.

The success of these new lending platforms, of course, does not mean that mainstream banks are about to disappear. Banks may be slower to innovate, but they can mobilize an awful lot of money and operate across borders. They also offer their customers many unique advantages, such as the ability to access savings instantly, that make them hard to dislodge.

But banks have good reason to worry. For one thing, regulators are pushing them to reduce their leverage—their ratios of debt to equity, a rough proxy for financial fragility—which means that banks must find other ways to increase returns to their investors. To do so, they could try cutting expenses, but it is hard to imagine that they could ever run leaner ships than the innovators competing with them. Banks could also increase the cost of credit, but that measure would simply create more opportunities for the likes of Lending Club to exploit.

In the end, the two groups will probably drift closer. Financial innovators will gradually eat away at the banks' activities, and the banks will slowly evolve to become more efficient. Some peer-to-peer platforms are already collaborating with mainstream lenders; others will end up being bought by them.

Banking On Creativity

Anyone who defends the financial industry must recognize its inherent failings. There is a destructive logic to the way that the seething brains of finance innovate, experiment, and standardize. Even a banking sector populated by saints would tend toward excess, and modern finance is rather short of halos. The words that finance immediately conjures up—"bonuses," "recklessness," "greed," "bastards," "greedy bastards"—are all part of the industry's narrative.

The banking industry has certainly not lost its destructive tendencies in the wake of the crisis. Beyond a certain scale and beyond a certain point in their evolution, good ideas have a tendency to run wild. But suppressing financial innovation is the wrong answer to the problems facing Western societies. Instead, regulators and financiers must strike a careful balance between watchfulness for the risks that can cause economic damage and tolerance for creativity that can yield real benefits.

Two warning signs, in particular, ought to cause alarm among regulators. The first is rapid growth. When a financial technology or product truly takes off, the surrounding infrastructure often fails to keep pace. This pattern manifests itself in many different ways, from the ability of high-speed traders to outrun the stock exchanges on which they operate to the opacity of the credit default swap market in the run-up to the financial crisis. During periods of quick growth, the front offices of financial firms often sell at a breakneck pace, while the back offices struggle to cope and the rapid flow of money relies on jerry-built plumbing. Regulators must be wary of market overheating of this sort and seek to ensure that the infrastructure of finance keeps pace with its innovators.

The second pitfall is the assumption of safety. Policymakers should remember that the false comfort of the familiar helped precipitate the crisis in the first place. In the United States, home buyers and lenders fell for the faulty notion that property prices couldn't crash nationwide and that AAA credit ratings represented a gold-plated promise of creditworthiness. Such misconceptions are hard to uproot; after all, the Western financial system remains heavily skewed in favor of providing supposedly safe mortgages to affluent households. Introducing higher capital requirements even for those assets that appear to be low risk could be one answer.

For all the problem-solving power of finance, growth and greed can distort any good idea. But when the next financial crisis hits, its triggers will likely come from an established market, such as property, in which mainstream investors and profit-maximizing institutions have once again gotten carried away. The true innovators of finance will not be the ones to blame. They are the reason the world should look at finance with a clear eye.

The Risk of Small Goals

By Zia Khan

ZIA KHAN is Vice President for Initiatives and Strategy at The Rockefeller Foundation.

There is a growing consensus that innovative finance mechanisms are needed to mobilize private sector capital towards solving the world's most pressing problems. Philanthropic capital has played an important role in developing these solutions by investing in early-stage, yet-to-be-proven opportunities that traditional private sector investors tend to avoid. This is conventionally how people think about the role of philanthropic capital: taking on the risk of early-stage failures. However, it doesn't fully capture the full potential of philanthropic capital's impact.

Generally speaking, "risk capital" is the capital used to invest high-risk, high-reward opportunities. Every now and then, one of those opportunities succeeds, providing a significant return that can compensate for losses in an investment portfolio.

A risk is usually defined as an exposure to a negative outcome. For private sector investments, the negative outcomes are investments that don't generate adequate returns for a given level of risk.

In philanthropy, there are some additional considerations when determining what is meant by "adequate" returns. With a capital grant, there is no expectation of a financial return once funds are granted to an individual or an organization. Instead, return is measured in the ultimate social and environmental impact that is realized. This impact may be directly attributed to the grant, such as the number of water wells that have become operational. The impact may also be indirect, such as how

access to water wells contributes to improvements in overall health in a community. This is the key difference between philanthropic and private sector investments: while the private sector focuses on direct returns on capital for investors, philanthropic investments are intended to catalyze indirect impact that improve social and environmental well-being.

These indirect returns are generated not only by the *amount* of philanthropic capital that is deployed, but also by the *flexible nature* of that capital. Compared to others who invest in realizing social and environmental impact, philanthropies have more leeway when making their investment decisions. Governments are constrained by bureaucratic and political considerations. The nonprofit sector is constrained by donors' expectations and environmental funding conditions. The private sector is constrained by financial and competitive imperatives imposed by the market.

The flexibility of philanthropic capital is a unique asset that can generate two kinds of additional returns. The first is the broad, and often unpredictable, benefits generated by innovation. These benefits come from having the freedom to address problems that have been avoided or are controversial; to seek disruptive instead of incremental improvements; and to generate knowledge from well-designed, but ultimately unsuccessful, attempts that can inform future efforts. When philanthropy capital is invested in innovation, the returns can resemble those from government investments into fundamental research.

The second kind of return is the ability of philanthropic capital to target, attract, and productively coordinate resources from government, nonprofit, and private sectors. Leveraging other resources based on initial philanthropic investments is critical because no significant problem can be addressed, at scale, with philanthropic capital alone. The flexibility of philanthropic capital allows it to fill specific gaps or market failures that, if addressed, allow for the leveraged deployment of an entire system of resources.

It is to be expected that, due to its flexible nature, the indirect returns for philanthropic capital should include the benefits of innovation and leverage—and not realizing those benefits should be seen as a negative outcome. In other words, a risk for grant capital should be insufficient returns in terms of innovation and leverage. Therefore, the real “risk” of philanthropic capital comes from setting our sights too low.

This is why Rockefeller Foundation is committed to innovative finance. We believe that our grant capital and other assets—reputation, relationships, and knowledge—can realize significant returns by creating new partnerships that lead to innovative financial products, and these in turn can be implemented and leveraged with significantly more capital than what we could ever invest. This helps us catalyze outsized impact on the problems that we care about most.

For example, we provided seed support for the research and development of the first Social Impact Bond (SIB), a pay-for-success financing tool that harnesses private capital for the delivery of innovative social services in partnership with government. The Rockefeller Foundation was also an investor in the first SIB transaction in the United Kingdom focused on reducing recidivism. Since this first SIB transaction was implemented five years ago, there has been an explosion of growth around SIBs, with 60 deals launched across 15 countries as of June 2016, and a strong pipeline of new projects forthcoming. The Foundation's investment around SIBs has also spurred the creation of derivative solutions, which we continue to support as part of our Zero Gap portfolio. These solutions include the Forest Resilience Impact Bond, a new pay-for-success mechanisms to fund environmental conversation, and the Social Success Note, a pay-for-success mechanism for crowd-in return-seeking capital to social enterprises.

Investment capital from the private sector will always require a financial return, and the ingenuity of most innovative finance solutions lies in how to generate those financial returns while still realizing social and environmental impact—this is the promise of innovative finance. Philanthropy has a critical role to play in helping innovative finance to quickly drive innovative solutions to our hardest problems. We can't risk a smaller ambition.

Innovative Finance Solutions

No Pain Big Gain. How Micro-levies Save Lives

By Philippe Douste-Blazy and Robert Filipp

PHILIPPE DOUSTE-BLAZY is Under Secretary-General of the United Nations in charge of Innovative Financing for Development and is a former Minister of Health and Minister of Foreign Affairs of France.

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When travelers surveyed at a Paris airport were asked if they were fine with paying a dollar more for their air ticket if the proceeds went toward AIDS medicines in a poor country, the vast majority said, “Yes, no problem, as long as the money is spent well and reaches the people.” Global travelers have been saving lives for more than ten years now. How?

Solidarity micro-levies are small taxes on transactions, such as travel, that benefit the most from globalization. They are a social contract between those who benefit the most from the global economy and those who still live in extreme poverty. Because micro-levies are very small and involve high-volume activities, they generate significant new revenues for humanitarian, developmental, and social objectives without burning a hole in our pockets. They are painless to travelers.

Air ticket micro-levy to fight HIV/AIDS, tuberculosis, and malaria

Created in 2006, the air ticket levy—essentially a one-dollar surcharge on the civil aviation tax—was the first global solidarity micro-levy. France championed this new

financing tool and together with other supporters, such as Brazil, Chile, Norway, the UK, and the Gates Foundation, created UNITAID, a fund hosted by the World Health Organization (WHO). This fund collects the proceeds from the levy, and other contributions, and uses them to finance innovations in the fight against HIV/AIDS, tuberculosis and malaria.

To-date, ten countries have introduced the air ticket levy: Cameroon, Chile, Republic of Congo, France, Madagascar, Mali, Mauritius, Morocco, Niger, and the Republic of Korea. The largest share of revenues, about \$300 million per year, comes from France, where fliers are charged \$1 on top of economy class tickets within the EU, and up to \$42 on international first and business class.

Since 2006, UNITAID has raised over \$2.5 billion. Thanks to its partnership model working with organizations on the ground including the Clinton Health Access Initiative (CHAI), Doctors Without Borders, Global Fund to Fight AIDS, Tuberculosis and Malaria, UNICEF and others, eight out of ten children with AIDS are receiving treatment, two million newborns and eight million pregnant women have been tested for HIV/AIDS, 345 million anti-malaria treatments have been distributed, and two million tuberculosis patients have been treated. UNITAID has also been able to reduce the price of HIV/AIDS drugs for children by 80% and for adults by 60%, the price of a new drug against malaria based on artemisinin by 85%, and the price of tuberculosis tests by 40%. UNITAID also created the Medicines Patent Pool (MPP), a vehicle that compensates major pharmaceutical companies for contributing patents to produce low-cost versions of AIDS medicines and formulations suitable for children.

UNITAID is paradigmatic of innovative financing for development. The organization raises its funding in an innovative way, is governed in a participatory manner, and spends its funds in innovative ways by leveraging its funding to achieve impact in the market place for the benefit of patients in the poorest countries of our planet, and ultimately for the security of us all.

Extractive industries micro-levy to fight malnutrition

In September 2015, four African countries decided to create the extractive industries micro-levy covering oil, gold, bauxite and uranium to help finance the fight against

malnutrition in sub-Saharan Africa. The Republic of Congo agreed to collect \$0.10 on the barrel of oil, Guinea on bauxite, Mali on gold, and Niger on uranium from state-owned companies. This levy is the first innovative financing instrument created entirely by developing countries. If expanded to eight oil-producing African countries, a 10-cent levy on state-owned companies would generate between \$100-200 million per year, and a global oil levy of ten cents would generate at least \$1.64 billion a year.

Nearly a quarter of Africa's GDP is based on extractive industries, the highest ratio among all regions. There is considerable debate over how best to deploy natural resource revenues. The most accepted model involves the creation of a sovereign wealth fund (SWF) but if children are not nourished and educated, they cannot reach their full potential, rendering the prospect of future wealth somewhat meaningless to them. The extractive industries' micro-levy is a way to advance a portion of resource wealth to the present by targeting a major impediment to development: severe malnutrition leads to stunting, a condition that leaves children's brains and bodies underdeveloped. In Africa, the countries producing the most oil have the highest number of stunted children.

The extractive industries' levy is paid into the UNITLIFE fund, modeled after UNITAID, but used this time to finance evidence-based solutions for malnutrition, including breastfeeding, with intake of vitamins and minerals, adequate complementary and therapeutic feeding with specialized foods, and assured access to health services and sanitary environments. While it may be too early to speculate about the exact impact of the innovative financing approach on distributive justice for natural resource wealth, it is certain that the participation of African countries in an initiative that directs natural resource wealth towards life-saving interventions for millions of children is a "game changer".

Financial Transaction Tax (FTT) to fight extreme poverty

In 2010, a coalition of more than 50 civil society organizations came together under the umbrella of the *Robin Hood Tax* campaign and proposed an FTT to finance development and poverty alleviation, while at the same time reducing speculation in international financial markets. In 2011, the campaign gained momentum when the European Commission presented an FTT proposal with a tax level of 0.1% on

shares and bonds, and 0.01% on derivatives when traded between two financial institutions, of which at least one resided in the EU. The additional revenues were estimated at around 50 billion Euros a year.

To-date, the EU has not reached a unanimous agreement on the introduction of the FTT. However, 11 member states representing more than 90% of Eurozone GDP, have agreed to cooperate to introduce the tax. So far, only France and Italy introduced the FTT with their own rates and stipulations, France for example went beyond the original rate setting the tax as 0.2%. Looking at the scope and history of the FTT, it is critical to ensure that at least 30% of the FTT revenue in each implementing country is directed towards humanitarian, developmental, and social objectives, the very reason the FTT was proposed in the first place.

Big Gain

Despite progress in lifting people from poverty, and the emergence of a middle class in many developing economies, there are still more than 800 million people living on less than \$1.25 a day. No matter where one stands on the political spectrum, there is consensus that the fulfillment of basic human needs—food, health care, education, shelter, and water—is not only an ethical imperative, but also the basis for economic growth, development, and an investment in peace and stability.

Solidarity micro-levies have proven that it is possible to achieve real impact through small, painless contributions—and the impact is not limited to money. By virtue of design, unique stakeholders and networks, innovative financing mechanisms stimulate innovation and efficiency. While no panacea for financing of humanitarian, developmental, and social objectives, innovative financing is a creative solution that is in tune with the realities of the twenty-first century.

Making Innovation Boring: The Key to Low-Cost Finance for “Public Goods”

By Kenneth G. Lay

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The world is facing a growing number of complex social, economic and environmental challenges. A tremendous amount of creative thinking has been going into innovative ways to meet these challenges, often in projects that can generate financial returns or avoid future costs. These initiatives have been attracting capital from a broad array of sources; however and almost without exception, this capital has come from the public and charitable sources. And the scale has been modest, especially in relation to the scope, complexity and importance of the challenges confronting us. This is understandable: Governments face numerous conflicting demands on public resources. Development finance institutions (DFIs) such as The World Bank and its national-level equivalents, meanwhile, have been creative and effective in leveraging public credit, but their sovereign owners find it difficult to add to the equity that forms the foundation for their activities. So, how can we access funds at the scale we need and a cost we can afford in order to address key global issues, such as climate change mitigation, renewable energy, and sustainable agriculture and fisheries?

As many have noted, one practical solution is to attract low-cost, long-term, and large-scale resources from the institutions that hold and invest an estimated

\$100 trillion of the global savings pool. These institutional investors—including pension funds, insurance companies, mutual funds, endowments and foundations and sovereign wealth funds—have been clear about what this will take: investments that are competitive in risk-adjusted returns with the other choices available. The reason is clear as well: they are fiduciaries for their beneficiaries and their investments often are subject to extensive regulation.

In the following article I examine this issue in more detail, looking first at where institutions are investing their assets. I focus on the liquid, high-grade bond portfolios that are among their largest allocations and for which they require the lowest return, other than for cash. We need to be doing a much better job of structuring the crucial projects seeking these “global public goods” so that they can access these bond portfolios while making as efficient use of public credit as possible, and preferably without needing more of it at all. The bond markets have the tools to do this, through pooling and securitization to achieve scale and diversification.

Getting this done won't be easy. The committed and highly creative developers of today's small-scale and broadly differing activities are going to have to share one another's best approaches and move toward defined project criteria and robust and consistent legal frameworks in order to facilitate the needed aggregation. Bankers—whether in the public or private sectors—will be essential to making investable deals out of these often-disparate activities. But taken together, these steps have the potential to establish a viable framework and the trust required for the international finance community to step up their social impact investments and allow funds to flow to critical social, economic and environmental projects around the world.

The Problem: Public Credit Alone Can't Meet the Biggest Challenges

The two most important tools required to tackle the many critical issues facing the global community are the technical capacity to design effective solutions for environmental and social problems, and equally important, the money to pay for them.

IBRD: Efficient Leverage of Global Public Credit

From its establishment early in the process of institutionalization of savings in developed countries, the International Bank for Reconstruction and Development's (IBRD) capital structure and business model have offered brilliant solutions to the challenge of leveraging global public credit to mobilize savings for public purposes. The IBRD capital structure, coupled with conservative financial management, has enabled it to offer a triple-A, fixed-income investment opportunity even though (1) only a handful of its members carry that rating themselves, (2) its loan assets are obligations of unrated or much less highly rated emerging market countries, and (3) IBRD leverages more than three times its paid-in capital and retained earnings. The contingent obligation on the books of IBRD's owners—its "callable capital"—has never been drawn, even through successive emerging market and global financial crises.

A key point for the present discussion is that IBRD's triple-A-rated bonds go into the high-grade, liquid part of institutional investors' portfolios—the asset class for which investors expect the lowest return, given the high credit rating, relatively low price volatility, and good liquidity of the instruments comprising it.

IBRD's public-sector equity (provided by members with no expectation of returns) and low borrowing costs give it a weighted average cost of capital that has enabled it over most of its history to lend to members at "concessional" rates far below market. Even so, the interest margin it has maintained on its loans, together with returns on its reserves, have been sufficient to fund the world's preeminent development resource management capacity (country teams and the teams orchestrating solutions to GPGs—the signature business of the institution) and an extensive consultancy across every major development-related discipline that it offers essentially for free to members. Moreover, after funding its share of World Bank Group knowledge and development resource management work, IBRD generates a profit that, even after additions to reserves, enables its owners to direct a dividend to the aid agency, the International Development Association (IDA), that they asked IBRD to administer since 1960.

The principal constraint on the financial side, of course, is that political as well as fiscal and macroeconomic realities make it nearly impossible for direct, unlevered government money sourced from taxes and government borrowing to provide resources at the scale required. This problem has become more evident over the past several decades for two major reasons: the international community has come to appreciate the full cost of dealing with issues such as climate change and government resources have been stretched in response to developments such as aging populations and the need for basic infrastructure to improve the standard of living in emerging market countries.

At the same time, it has been challenging for the international community to develop the consensus needed to repurpose the World Bank Group and similar institutions and broaden their respective franchises to address issues beyond economic development and poverty alleviation in developing countries. The World Bank and other institutions are already moving in this direction: they created the Climate Investment Funds (“CIF”)—and notably among them the Clean Technology Fund (“CTF”)—which are up-and-running and achieving their goal to catalyze additional investments by the World Bank and other multilateral development banks in climate-related initiatives. The “green bonds” issued by the European Investment Bank and IBRD that were pioneered late in the last decade are all examples of innovative finance mechanisms directed toward a specific set of global priorities. It is important to keep in mind, however, that even if a consensus were reached on repurposing these institutions, the scale of sovereign capital investment required to fully address the broader set of global priorities would be infeasible even in the most financially efficient of these public institutions.

Global Savings: The Resource, Its Potential and Constraints

Given these circumstances, the challenge is to develop ways to access at scale the much larger pools of public- and private-sector savings that have accumulated and become extensively institutionalized in many countries since World War II. Institutional investors (pension funds, insurance companies, mutual funds, endowments/foundations, and sovereign wealth funds) now hold roughly \$100 trillion in assets, managed for various beneficiaries that are the ultimate owners

of these pools of resources.¹ This is a vast pool of assets that could be redirected to key global challenges and critical investment needs. To do that, however, would require restructuring their financing to meet the needs of the institutions managing these savings.

A surprisingly large amount of this \$100 trillion is managed pursuant to relatively consistent fiduciary standards and a more-or-less common investment approach. These strategies are grounded in the obligation of institutional investors to serve the financial objectives of their beneficiaries, and they are broadly informed by the tenets of modern portfolio theory (“MPT”), in which practitioners diversify holdings across assets to optimize return for a given level of portfolio volatility and risk. MPT and its variants, despite a number of criticisms, remains core to the investment process for most institutions managing shares of the pool of global savings.

Within this fiduciary and theoretical framework, institutions typically manage their investments on a portfolio basis in order to achieve long-term savings objectives or fund long-term liabilities (as in the case of pension funds and insurance companies). Within the portfolio, most continue to make allocations to “asset classes,” each of which has a characteristic risk and return profile. Historically, these have been variations (e.g., public and private equity, investment-grade and non-investment-grade debt) on equity and debt. In many cases, investors seek exposure to the average performance of the asset class as a whole. Other investors attempt to select the best-performing individual investments within the asset class or engage third-party specialists to make the investment selection for them.² These asset allocations

1 Traditional commercial bank lending has never been a great source for low-cost, long-term financing needed to finance GPGs. Although total assets in the global banking system are immense—roughly US\$80 trillion based on BIS statistics—most of that is sourced from deposits and other short-term liabilities, and the term transformation that banks provide necessarily comes at a significant cost. That said, commercial banks play an important role in the early stages of project financing and, of course, in the underwriting and distribution process that facilitates access to the long-term investment discussed in the text.

2 In the interest of completeness, it is worth noting that the highly-correlated behavior of traditional asset classes during the recent financial crisis and its aftermath is leading some investors to seek to better-diversify their portfolios by allocating to “factors”—e.g., macroeconomic performance and its constituents, real interest rates, currency exchange rates, credit, commodity prices etc. It remains to be seen to what extent this approach gains traction.

and investment decisions also take into account the appropriate time horizon and degree of tolerance for price volatility and principal loss given the objectives of the investment within the portfolio as a whole.

Similarly, within this asset-management framework, institutional investors face predictable challenges when considering using these funds for social impact, or global public goods such as climate change mitigation or adaptation, sustainable agriculture and forestry, marine conservation and the like. The key issue, of course, is a relatively common assessment that these investments yield lower returns for a given level of risk, and thus may be inconsistent with institutions' fiduciary obligations to beneficiaries.³ This concern, ironically, sometimes is exacerbated by public discourse in which institutional investors can feel pressured to make these investments, notwithstanding this potential issue of fiduciary responsibility.⁴

The table below is a summary of total-portfolio asset allocations, variations of which are typical in the portfolios of institutionally managed savings pools. It is intended to be broadly illustrative, not precise or exhaustive. There are categories of savings not included, and within each there are many individual institutions whose allocations and return expectations will diverge—often substantially—from those shown here. It is based on my experience and observation, validated with reference to many sources.

3 Not surprisingly, an industry of sorts has grown up around the issue described in the text, with nongovernmental organizations (NGOs), academics, consultancies, and “sustainable” asset managers striving to demonstrate that some sacrifice of conventional risk-adjusted return is warranted in return for achieving broader public goods. These public goods—so the arguments often go—serve to reduce risks to institutional investors' beneficiaries in other ways, a risk reduction that should be valued (“priced”) and taken into account in asset allocation and investment selection.

4 In this context, it is worth recalling the difficult experience of some institutional investors, for example, when authorities in jurisdictions sponsoring investment funds have sought to pursue local economic development objectives by directing fund investments into favored businesses or other activities. Well-intentioned special pleading of this kind can give way to wholesale departure from sound investment practice as authorities find it difficult to say “yes” to one or several ostensibly salutary purposes while saying “no” to others.

Institutional Investors' Allocations and Return Expectations

Investor Category	Asset Classes, Typical Expected Real Returns (% annualized) and Typical Allocations (% of total portfolio)				
Asset Class (expected real return)	Public equity (5-6%)	Liquid fixed income ^a (1.5-2%)	Private equity (8-10%)	Other illiquid (5%)	Cash (-1-2%)
Type of institution					
Pension funds	50	25	10	10	5
Insurance companies	10	70	5	10	5
Endowments/foundations	50	15	15	15	5
Sovereign wealth funds	45	40	10		5
Mutual funds (U.S.)	45	25	Not material	Not material	20

Notes: **a.** 10-year maturities. **b.** Asset allocations among sovereign wealth funds vary widely depending on their respective purposes and on the authorizing environment in which they operate. Stabilization funds invest much more heavily in fixed income, while long-term national savings funds invest in fully diversified portfolios similar to pension funds or endowments.

The good news is that liquid fixed income, which is the asset class with the lowest expected return and thereby producing the lowest cost of capital for borrowers, is also one of the largest.. Worldwide, the bond market totals roughly \$100 trillion in outstanding securities, with new-issue long-term debt volumes in the neighborhood \$5 trillion per annum.

The bad news is that a relatively small proportion of the financing for GPGs has been drawn from investors' high-grade fixed-income allocations, and much

of that has come from bond issues by international institutions such as IBRD and the regional development banks. These institutions have allocated only a modest proportion of their own long-term lending to fund these major global priorities given their historic focus on national development programs.

To date, most of the financing of renewable energy, energy efficiency, sustainable forestry and agriculture, and other sectors that address global concerns has produced assets that draw investment from the illiquid private equity or “real assets” parts of investors’ portfolios. As evident in the foregoing table, these represent a relatively small part of the portfolios; moreover, given the illiquidity and other characteristics of the risk profile, investors’ return expectations are relatively high. Therefore, the question facing the international community is how to attract large-scale, low-cost, long-term financing into these sectors.

The allocation that competes in scale (though with a much higher expected return) with high-grade fixed income is, of course, public equity, i.e., the broadly distributed stocks of major private-sector companies for which there is a continuous two-way market on established exchanges or over-the-counter. Institutional asset owners can influence management decisions by these companies through their decisions to purchase, hold or sell these companies’ securities and by exercising their rights as shareholders to participate in governance. Increasingly, asset owners and the investment managers they hire are doing both as they make investment and divestment decisions based on risks related to climate change, quality of corporate governance and the like. This can and does alter corporate behavior, but it is not a substitute for measures that need to be taken to dramatically increase the flow of new, low-cost financing into priority GPG-related activities.

Tapping the High-Grade Fixed-Income Resource: Quality and Liquidity Needed

What will encourage investors to put a material part of their high-grade fixed-income (HGFI) portfolios in GPG assets? We need financial instruments with three characteristics: credit quality, liquidity, and competitive return.

Credit Quality

The source for each periodic payment and for redemption at maturity must meet minimum standards of reliability to achieve an investment-grade (Moody's Baa3/S&P and Fitch BBB-, or better) credit rating from major rating agencies. There are two essential foundations of credit quality:

Economics of the business. The business or activity itself has to generate a cash flow, covering both interest and principal, predictable and reliable enough to warrant investment-grade rating. A single project can achieve this on its own, or the same outcome can be achieved through a diversified portfolio of a number of projects of varying creditworthiness.

Enforceability of the obligation. The legal arrangements surrounding the activity and the financing, and the legal system and political economy in which they are grounded, must provide a reliably enforceable obligation in favor of investors.

When in doubt, credit enhancement will have to be applied from a public or private source.

Liquidity

Investors have to anticipate that there are likely to be reliable offers for their holdings at a narrow spread to the price at which the same position then could be bought—in short, on a tight bid-offer spread. Given the scale of institutional investors' holdings, moreover, this bid-offer spread has to work for trades of, say, \$5 million or more.⁵ This level of liquidity or better is routinely achieved in conventional bond issues by governments and their agencies, IBRD and other MDBs, and major corporate

5 Bid-offer spreads in the institutional-scale market (for example, a plain-vanilla 5-year bond) can be in the neighborhood of 5 basis points (.05%) for a \$5 million ticket in high-grade corporate debt, to well under one basis point (that is, less than .01%) for tickets in the tens of millions in “on-the-run” U.S. Treasuries. It is important to note, of course, that compared with government-bonds, liquidity in other sectors of the fixed-income market can vary widely—it is especially name-specific and tiered by credit rating, and it can improve or deteriorate with much greater sensitivity to overall market conditions. It also is significantly more exposed to the impact of declining balance sheet commitments by traditional market makers in the current climate of uncertainty around the structure and regulatory capital requirements in the banking sector.

borrowers. It is provided by entities with capital committed to market-making in these instruments—typically, the investment banks that underwrite and distribute securities in the high-grade fixed-income market.

Competitive Return

Most institutions will want to see a financial return for an investment within a given credit risk and liquidity that is as good or better than others available.

Virtually without exception, instruments that meet these three criteria are offered or guaranteed by entities such as developed country governments, supranational institutions, and major corporations that themselves carry investment-grade credit ratings. Typically, they are issued in large transactions (say, \$300 million or more) originating in established global financial centers.

Quality and Liquidity in GPG Finance: Pooling and Securitization

The challenge is that most of the important work currently being done to provide financing for GPGs is local, relatively small-scale, and idiosyncratic. This is probably unavoidable given widely varying demographics, economies and ecosystems. One solution is to assure a minimum degree of consistency that will enable the resulting diversified assets to be aggregated (“pooled”) and turned into relatively high-quality, easily tradable bonds, with any required application of public credit enhancement occurring in the most efficient manner to reach investment grade.

The basic mechanism for delivering these solutions—pooling and securitization—is certainly not novel and in certain sectors supports a major financial industry.⁶ But despite extensive discussion, pooling and securitization have not developed to the extent needed to support large-scale investment in key areas of global concern, including sustainable energy, energy efficiency and infrastructure development. To do this would require credible sponsorship and consistency of approach across projects and sectors, as well as countries, that could permit pooling projects into

6 Variations on the pooling/securitization theme include mortgage-backed securities, asset-backed securities, and their collateralized debt obligation variants, as well as covered bonds (issued as plain-vanilla debt, carrying the credit of an issuing institution, but with backing as well from a specified pool of assets held by the institution).

the kind of large-scale, high-grade, liquid financial instruments that command the highest prices from investors and achieve the lowest cost of capital for these crucial undertakings.⁷ In addition, these characteristics have to be met while providing certainty for project developers that this form of long-term financing will be available to justify the risk they take and the cost they incur in the development stage.⁸

Achieving this goal is simply not possible for all of the myriad activities supporting delivery of GPGs. But it certainly can be achieved in important areas if the international community is willing to coalesce around a few of the more promising, scalable approaches to tackling significant global challenges. And if it also adopts simple, standardized implementation and legal arrangements and diversifies projects globally, as well (across both developed and developing countries), pooling and securitization could be accomplished with the creditworthiness, size, and liquidity necessary to dramatically reduce the cost of capital for these activities.

For this to occur the following conditions are required:

Agreement on HPAs: Broad international agreement on a limited number of high-priority activities (HPAs) that would benefit from pooling and securitization. The criteria for inclusion on this list are straightforward: An HPA must (a) have the potential for major positive impact in a high-priority area; (b) generate cash flow to service debt or cost avoidance that can enable the funds thus freed-up to be directed to service debt; and (c) be susceptible to a standardized approach across jurisdictions. Some examples are urban conversion to LED street lighting, distributed generation of renewable energy, bio-shield restoration, and multi-peril/multi-jurisdiction catastrophe risk insurance.

7 Pooling and securitizing assets has been employed widely and often without creating the “plain-vanilla” investment grade instruments that enable financing at the lowest cost. In the United States, for example, conventional mortgage-backed securities, carrying federal agency guarantees, nevertheless require market participants to undertake complex modeling to allow for prepayment risk and disparate cash-flow patterns among the mortgages in a pool.

8 A recent effort by individual renewable energy developers in vehicles known as “yieldcos” should be distinguished from the approach discussed in the text. Yieldcos offers dividend-paying equity investments in pools of projects and more explicitly the prospect of rising yields and prices as project development continued. Experience with these instruments has been difficult, and, in any event, they never sought to access the liquid, high-grade fixed-income allocations in investors’ portfolios. [cite to the CPI/Rockefeller report “Beyond YieldCos”, June 2016]

Defined project criteria: Each HPA needs a set of minimum criteria to create a “conforming” project that can be pooled with others and securitized. Part of the objective in limiting the HPA universe to high-impact activities that are susceptible to standardization is to minimize the impact of idiosyncratic local approaches to essentially similar challenges. This *ex ante* classification of activities should make it possible to develop in each activity or category a small number of essential criteria for pooling, while allowing significant variation across jurisdictions in all other aspects of projects.

Minimum legal standards: Similarly, for each participating jurisdiction there will need to be a set of minimum legal standards to ensure enforceability of each project’s obligations to investors in the pool. Meeting these standards *ex ante* would qualify a national or subnational jurisdiction to originate HPA projects for pooling and securitization.

Established issuing vehicle: Each HPA needs an established vehicle to act as an issuer of the fixed income instruments created from the aggregated and securitized projects while meeting the requirements of items 2 and 3 just above. In most cases, an HPA vehicle would outsource project and jurisdiction validation functions (tasks 2 and 3) as well as the execution of financing and other aspects of financial management. In addition, each HPA vehicle could provide modest intermediation services, maintaining sufficient liquidity derived from borrowings to accommodate timing differences between receipt of HPA project revenues, interest and principal payments on HPA vehicle bonds. To the extent that project-related cash flows may not be sufficiently reliable to warrant investment-grade credit rating, an HPA vehicle could be an appropriate and efficient recipient of bilateral or multilateral public credit, for example, in the form of guarantees, participation in financings, hedging facilities, or capital contributions.^{9 10}

9 An example of a vehicle of this kind is the International Finance Facility for Immunisation (“IFFIm”), which pools and securitizes future aid commitments of up to 20 years from several countries to support issuance of high-grade bonds in the international capital markets. IFFIm is organized as a UK charitable corporation. It outsources to the GAVI Alliance (formerly the Global Alliance for Vaccines and Immunisation) the delivery of vaccination services, and outsources to IBRD implementation of its bond issue program, liquidity management, accounting, and other financial services.

10 An alternative approach to pooling and securitizing GPG-related financing is to establish a separate “special-purpose vehicle” for each transaction. This has been the approach in, for example, in a “multi-cat” parametric catastrophe risk bond issue arranged by the World Bank Treasury.

Obviously, the devil is in the details in the foregoing approach, and the details are highly dependent on the specifics of the activities being financed, the characteristics of the institutions undertaking them, forms of available credit enhancement (to the extent necessary), and the complexity of the governance arrangements which, if not handled well, can vastly and unnecessarily increase administrative costs. Simplicity is key.

Having said this, we still are entitled to ask why so little of this work is getting done. The answer in part market dynamics: For the investment banks that traditionally would have undertaken it, the sheer efficiency of modern capital markets means that the fees available for designing, underwriting and distributing an HGFI instrument from multiple disparate initiatives are so small that the “heavy lift” required isn’t worth the cost. And, as noted above, the MDBs and other public institutions, with few exceptions, have found it difficult to adapt their existing business models (originating projects for financing on their own balance sheets) to include development of off-balance-sheet transactions that would attract major allocations from institutional investors.

All of this creates a need—and an opportunity—for other parties to advance the product development costs to “housebreak” key environmentally and socially important initiatives for inclusion in investors’ HGFI portfolio allocations.

In conclusion, there is an urgent need—and an opportunity—for the international community to come together to make financing GPGs a compelling investment for the managers of the global savings pool. These investments can work both for the immediate beneficiaries of that savings pool and for the long-term environmental and social sustainability essential to the future of humanity. The money is there. Now is the time for the public and private sectors to do the heavy lifting and reach agreement on a consistent framework and workable vehicles that can aggregate the highest-priority activities into diversified pools offering investors truly competitive, risk-adjusted returns.

**From the World Bank used by permission.*¹¹

11 J. Warren Evans and Robin Davies, eds. 2015. *Too Global to Fail: The World Bank at the Intersection of National and Global Public Policy in 2025*. Directions in Development. Washington, DC: World Bank

African Risk Capacity: An African-led Strategy for Managing Natural Disasters

By Dr. Ngozi Okonjo-Iweala

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Natural disasters can strike at any time, and no region is more vulnerable than Africa to weather-related events such as droughts, floods and tropical cyclones. The usual response when disaster strikes has been for national governments to appeal for aid and humanitarian handouts after the fact—a process that has inevitably led to delays in relief efforts and more misery for the afflicted population. Such an approach has also led, to some extent, to an erosion of public national systems for response delivery. This is perhaps a less obvious but critical piece in the dialogue needed around supporting African governments as they seek to develop national risk management capacities and the broader shift required to bridge the gap between on-going humanitarian response and actual development.

In 2014, however, a different scenario unfolded, which has heralded a transformation in the way that African countries manage natural disasters. This transformation was demonstrated after a significant rainfall deficit brought on drought conditions in regions of Senegal, Mauritania and Niger, and led to poor performance of their agricultural seasons. This time however, the governments were ready: the drought triggered immediate pay-outs of just over \$26.3 million in early 2015 from weather-risk insurance policies these countries had purchased from the African

Risk Capacity (ARC), a Specialized Agency of the African Union and Africa's first sovereign disaster insurance pool.

Instead of waiting for the slow process of international aid through the appeals system, African nations had access to funds to quickly implement pre-planned drought relief programs to affected populations. Mauritania received \$6.3 million for food distribution to 250,000 people in food-insecure areas. Senegal's pay-out was \$16.5 million for food distribution for 925,000 people as well as subsidized sales of animal feed for 570,000 cattle. Niger received \$3.5 million for conditional cash transfers, food distribution for 175,000 people, and rice distribution to 42,000 people. In total, the early response program in the three countries assisted around 1.3 million people, saving lives and supporting livelihoods through the delivery of food, cash, or livestock fodder. It also demonstrated the importance of empowering national governments to be able to respond to the needs of their people.

The \$26.3 million ARC pay-outs came weeks ahead of a UN appeal in February 2015 for \$2 billion to help more than 20 million people affected in the Sahel by drought, conflict and other risk factors, and enabled national governments to push ahead with and take full control of relief efforts. In many ways, it also upended traditional ways of dealing with natural disasters. Historically, Africa and its partners have lacked the appropriate financial mechanisms to respond effectively to natural disasters with the unfortunate status quo being for governments to scramble to reallocate funds from national budgets after the disaster has occurred, thereby depleting assets and reversing hard won economic gains. In addition, many African nations did not have advanced systems in place to determine when drought conditions were approaching or contingency plans to deal with the impact and ultimately the resources to deliver response to those affected. ARC's model has helped to address these roadblocks.

ARC was established in 2012 to challenge the status quo of how natural disaster response is managed by establishing the first sovereign insurance pool on the continent. More importantly, it catalyzed the creation and improvement of risk management systems in individual countries: governments could not only buy insurance policies for natural disasters such as drought but committed to building capacity to define their risk profile and establish a well-defined preparedness program. A foundational idea of ARC is that African governments know what they need to do and when they need to do it, and with readily available funds they can

put contingency plans into action. Pay-outs from insurance policies arrive in the national treasury within two to four weeks, significantly decreasing the timeline for assistance to reach needy households.

One critical component of managing risk is ensuring that reliable early warning systems are in place. On the continent, millions of dollars have been invested into the development of these systems. Their effectiveness is, however, contingent on their link to actual response plans and resources needed to implement. Simply being aware of an impending disaster is not a good enough strategy. Linking this to strong national response systems supported with adequate financing is the goal and more in line with better risk management. To participate in the ARC insurance scheme, every country is able to harness the power of early warning technology using ARC's software, which translates satellite-based rainfall data into near real-time estimates of number of people affected and the cost of response. The system interprets different types of weather data, such as rainfall estimates, and information about crops, such as soil and cropping calendars. This data is converted into meaningful indicators of agricultural production and pasture and applied to the vulnerable populations that depend on rainfall for crops and rangeland forage their livelihoods. The information is customized by each country, and provides decision-makers with expected and maximum costs of drought-related responses before an agricultural season begins and as the season progresses.

Countries must also demonstrate the ability to effectively use potential pay-outs as part of an early intervention program to mobilize domestic resources. This is a key element because evidence indicates that providing early assistance to households before they deplete productive assets, skip meals, and eventually leave their homes and migrate elsewhere, far outweighs the cost of insurance premiums if countries pool their risk through a facility like ARC. In fact, with risk pooling and reduced response times, every dollar spent through ARC during a drought saves \$4.40 in traditional humanitarian assistance costs, according to a cost-benefit analysis study based on work by the International Food Policy Research Institute (IFPRI) and Oxford University. Effective contingency planning linked to early pay-outs is therefore key to protecting livelihoods and ensuring a country fully realizes the benefits of the ARC program.

The long-term benefits are potentially even greater. Predictable and well-planned responses to events will help protect agricultural investments and GDP. Most

farmers in Africa are small-scale farmers who pour considerable investments into their crops. If a disaster turns into a catastrophe, they may be inclined to take drastic measures that could be devastating to their livelihoods, such as selling off productive assets. On the sovereign level, disasters cause serious, sometimes catastrophic fiscal strain, can worsen the balance of payments, reduce income, and impact economic growth, as limited budget resources are reallocated to emergency response efforts.

Insurance policies and the risk pool that supports pay-outs are the main financial foundation of ARC, and they can address the problems of spreading risk and delivering funding to national governments in a timely way. ARC operates on mutual insurance principles through a financial affiliate, ARC Insurance Company Limited (ARC Ltd), which was created in 2013 with \$200 million in risk capital and is owned by member countries and capital contributors, including the U.K. and German governments. Risk pooling combines the risk of drought and, in the future, other extreme climate events occurring across several countries to take advantage of the natural diversity of weather systems across Africa. The ARC pool then takes on the risk profile of the group rather than the individual country, combining the uncertainty of individual risks into a calculable risk for the group.

ARC has an innovative structure under international law, as it is an international organization providing governmental services and a nationally regulated company conducting financial operations. The design facilitates intergovernmental capacity building and peer review through the Agency by setting and enforcing standards for early intervention while also allowing complex financial operations to be conducted by the company under an established and robust regulatory framework. Parallel to the capital contributions that supported the establishment of the insurance company, several donors including the UK Department for International Development, KfW, the Swiss Agency for Development and Cooperation, the Swedish International Development Coordination Agency, the International Fund for Agricultural Development, the United States Agency for International Development, the Rockefeller Foundation, and the United Nations World Food Programme, have supported the work of the Agency and continue to do so. These contributions have been crucial as they have facilitated the essential research and development activities of the ARC and also the necessary capacity building work of the Agency towards improving risk management understanding and systems in member states.

For a facility like ARC to be successful in the long term, continued expansion is required to scale up weather-related risk transfer. Three additional countries joined the pool in May 2015, increasing drought coverage to almost \$180 million for the 2015-16 rainfall seasons for a total premium of \$26 million. In a sign of increasing self-sufficiency and confidence, participating governments paid almost all of these premiums out of their national budgets, thereby providing strong evidence that nations are taking control of their risk planning and relief efforts. While this represents significant progress, the goal is for ARC to reach as many as 30 countries by 2020 with \$1.5 billion in coverage against drought, flood and cyclones, as part of an expansion that would indirectly insure around 150 million Africans. This is an ambitious target that reflects a broader initiative launched by the G7 countries, which pledged in June 2015 to provide climate risk insurance to an additional 400 million people worldwide by 2020.

African governments have shown their commitment to this initiative through support for ARC. However, experiences have also shown that there is a need for continual support for these governments if we are to achieve this goal of 150 million Africans insured by 2020. There are currently 32 African governments which have endorsed the ARC initiative at the Head of State level. All of these countries need to translate this commitment into participation in the insurance mechanism as the more countries participate in the pool the lower the cost of the insurance coverage. For the governments, integrating premium into national fiscal strategy, including integration into the portfolio with IFIs, is essential to ensure sustainability of these payments and the growth of ARC's comprehensive risk management footprint. Despite significant interest in accessing parametric insurance coverage from ARC Ltd, one of the major barriers countries face in ensuring their participation in the ARC Ltd pool is the mobilisation of premium funds in the early years of participation as they seek to build this cost into national budgets. In the traditional natural disaster response universe, African sovereign budgets and response systems are often bypassed as international humanitarian actors both finance and execute assistance. The cost of natural disaster risk, in both direct losses and impact on economic development, is thus not often recognized or fully embedded into most national financial systems, and budgetary provisions to manage risk for resiliency against such costs are not made. ARC therefore presents an opportunity for international organizations and partners to support this risk systemization process that African governments are embarking on through their participation in ARC.

Together, these efforts would radically transform the way weather risks are managed by embedding disaster preparedness and financing in sovereign risk management systems. The case for such support for the most fragile and vulnerable states is strong. It will mean pushing the boundaries around how disaster risk management is undertaken on the continent and breaking down silos within this community. It will mean a commitment to working with African governments to strengthen their systems and broaden the dialogue around disaster risk management into non-traditional spaces such as Ministries of Finance so that there can be a critical analysis of how these risks are managed through the strategic budgeting required to address these scenarios and an exploration of legislative options to support improvement in national resilience. It will also mean working with the international development community to support a strategy that builds on the systems of these governments, identifies the weaknesses and develops solutions that are in line with the strategic policies of countries. It is a long-term strategy and reformation conversation which the ARC process has catalysed in countries.

Within this context, it is also important to recognize the fact that the total ARC disaster funding now provides only 10 percent to 30 percent of total disaster funding requirements, with the remainder largely coming from the UN appeals process. To overcome this problem, ARC recently launched Replica Coverage, an initiative that allows UN agencies and NGOs to take out similar policies that match policies purchased by a government. This would immediately result in a doubling of the coverage in a particular country and the amount of people who can be assisted when a disaster occurs. In addition, it helps align the government's contingency plans with those of international organizations and non-governmental organisations operating in the country and in turn supports better risk management through the strengthening of government systems and coordinating capacity, which is a fundamental component of the ARC ethos. Support for African Governments is therefore not only simply about ensuring participation in the ARC mechanism but ensuring that partners that are engaged in this space are also aligned with the broader vision of system and coordination improvement to ensure timely response when a disaster occurs.

As African nations increasingly use this new financial mechanism to confront cyclical weather crises, it is necessary to also build resilience to future climate shifts and extreme weather events that happen due to climate change. It is a cruel irony that Africa contributes least to climate change but stands to suffer most from its impact. Africa

is recognized as the region most vulnerable to weather risks, which could undermine record growth across the continent and threaten development gains and the future of agriculture. Increasing climate volatility could also counteract investments made by countries to mitigate, prepare for and manage current weather risks. The World Bank estimates an adaptation investment cost between \$14 billion to \$17 billion per year over the period 2010-2050 for sub-Saharan countries to adapt to an increase of approximately 2 degrees Centigrade warmer climate forecast for 2050. Climate change is particularly threatening to the future of African agriculture, which impacts global food security and the economic livelihoods of hundreds of millions of Africans.

To confront this threat, a multi-year funding mechanism called the Extreme Climate Facility (XCF) was launched by ARC in 2014 at the UN Climate Summit in New York. XCF is an African-led initiative using public and private funds to provide financial support to African countries to build climate resilience to multi-hazard weather events. It is designed to access private capital, diversify the sources, and increase the amount of international funding for climate adaptation. Using ARC as a platform, XCF will issue climate change catastrophe bonds to help governments respond to the impacts of increased climate volatility. Still in the R&D phase, XCF will be structured to issue more than \$1 billion in African climate change bonds over the next thirty years, which will be made available to participating countries for their own use if weather shocks such as extreme heat, droughts, floods or cyclones increase in occurrence and intensity.

Innovative financial models like ARC have proven that pooling risk and resources, contingency planning, and early intervention provide the tools and resources for African nations to take control of their disaster relief efforts. This framework can also be applied to other crises, including disease outbreaks and epidemics. After the devastating Ebola epidemic in 2014 in the West African countries Sierra Leone, Guinea and Liberia, the member states asked ARC to establish outbreak and epidemic insurance to support immediate, country-led action to manage infectious disease outbreaks before they become global threats. This new ARC facility is expected to become operational by 2018 with the first participating states.

ARC's mission is to use modern finance mechanisms such as risk pooling and risk transfer to create pan-African response systems that enable African countries to meet the needs of people harmed by natural disasters. With insurance pay-outs,

early warning systems, and contingency plans for emergencies in place, national governments have the tools and resources to initiate and take control of relief efforts long before international aid arrives. In that sense, ARC empowers governments to transform their emergency response systems; increase capacity to face the challenge of weather events and other disasters, including pandemics; and to ultimately save lives and support the livelihoods of those most affected. It is truly an African-led solution to address African problems.

ARC has made a strong start, yet its value and impact will grow exponentially as more countries purchase policies and integrate its core principles into disaster planning and financing, as the international community lends its support to scale up coverage in poorer and more fragile states. This unique financial mechanism demonstrates the power of insurance to manage loss and damage from natural disasters and shift the focus to fast, efficient and locally-led responses. At a time of growing concern about future limitations on international resources and humanitarian aid, ARC will help African nations be better prepared, stronger financially, and more resilient in the face of natural disasters, wherever and whenever they may arise.

Investing in the Transformation of Financial Access in India

By Sucharita Mukherjee, Deepti George and Nikhil John

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NIKHIL JOHN leads new business strategy at IFMR Holdings.

India has had a long history of attempting to solve the problem of financial exclusion and to bring its citizens, their households, and their enterprises under the fold of formal financial services. Despite a combination of interventions and institutional reforms introduced to accelerate the process of financial inclusion, India has a long road to cover.

As of 2015, only 42% of adult Indians hold active bank accounts.¹ Rural branches, which constitute 37% of the banking system, contributed only 10% and 8% to banks' deposit and credit respectively.² As of 2014, credit depth for India, which is measured by the credit to GDP ratio, stands at almost 76%.³ However, the regional variations in financial access and depth are vast at the district level. For instance, credit to GDP for Maharashtra

1 [India Wave Report, FII Tracker Survey, Financial Inclusion Insights](#), March 2016

2 RBI Basic Statistical Returns, 2015

3 Domestic credit provided by financial sector (% of GDP), World Bank, 2014

(excluding Mumbai) is comparable to that of the more rural state of Bihar at 16%. The districts in the North-Eastern States have a median credit to GDP ratio of 6% (for rural) and 18% (for urban) with the lowest values of 0.40% (for rural) and 1.15% (for urban).

Individuals and enterprises are hardly protected from risks that insurance products can mitigate. As of 2015, only 13% of Indian adults had insurance, largely by life insurance (10 out of the 13%).⁴ Non-life insurance penetration⁵ stood at 0.8% in 2013 for India—the lowest compared to other emerging economies—meanwhile it is 2.7% for South Africa, 1.8% for Brazil and 1.4% for China.⁶ Households save predominantly in physical assets. NSSO (National Sample Survey Office) data indicate that for both rural and urban India physical assets form 86.55% and 82.27% of their asset portfolios, respectively. This finding is validated by service area data from IFMR Holdings' retail financial services delivery arm which show households that rely on agriculture labor typically have 90% of its asset portfolio in three categories of physical assets, namely land, house and gold.⁷ The ubiquitous absence of financial assets as an important component of household asset portfolios is further reflected in the fact that 74% of assets under management for the mutual fund industry is concentrated in the top 5 cities of the country. From the lens of public policy, one of the pivotal roles of financial services is to cover for unforeseen catastrophic events through market-driven approaches in order to reduce the fiscal burden on governments. Estimates indicate that India faced losses that accounted for up to 2% of its GDP due to natural disasters.⁸ There is no catastrophe risk insurance market that exists to help households, businesses, institutions or governments protect themselves against these potential losses. The Uttarakhand floods of 2013 saw the state lose 11% of its GDP with losses to tourism pegged at USD 1 billion⁹ for the same year.¹⁰

4 India Wave Report, FII Tracker Survey, Financial Inclusion Insights, March 2016

5 Insurance penetration is measured as the ratio of premium to GDP

6 Sigma Volumes 3/2014, SwissRe

7 How much can Asset Portfolios of Rural Households Benefit from Formal Financial Services? Vishnu Prasad, Anand Sahasranaman, Santadarshan Sadhu, Rachit Khaitan, NSE Working Paper Series No. WP-2014-2

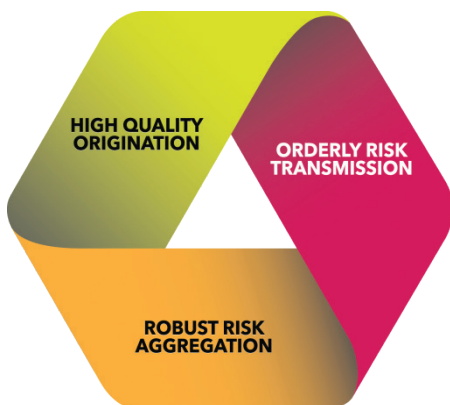
8 Government of India Planning Commission Report of the Working Group on Disaster Management for the Twelfth Five Year Plan (2012-2017), October 2011

9 Exchange rate is assumed throughout is USD 1 = INR 65

10 Rapidly Assessing Flood Damage in Uttarakhand, India, World Bank, 2013

The above numbers reflect the innumerable challenges that a well-functioning financial system can effectively mitigate for India's individuals, households, enterprises and local governments. A design for such a well-functioning financial system can be considered to have three pillars, namely, high-quality origination, orderly risk transmission and robust risk aggregation.

A Vision for the Financial System



To elaborate further, **High Quality Origination** is understood to be the design and delivery of financial services that provide households and firms the ability to manage liquidity (moving resources across time) and risk (moving resources across “states of the world”) in a smooth, convenient and affordable manner. Origination spans activities and functions such as the design of products to overcome moral hazard and

adverse selection, establishment of the identity of the customer, underwriting of risk, and servicing on an on-going basis. Financial institutions that deliver the service of origination are called originators. India needs thousands of high quality originators across the length and breadth of the country that can fully understand each and every household they serve and offer financial services that maximise their financial well-being. **Orderly Risk Transmission** in the financial system involves the movement/assignment of risk from entities that originate risk to entities that are best placed to manage these risks, in return for a compensatory payment at a market-determined rate, thus improving the overall capability to manage risk. **Robust Risk Aggregation** involves the movement of risk to external, well-capitalized and well-diversified counterparties that are better positioned to hold those risks. Any well-functioning financial system should have robust risk aggregation capacity with a range of institutions, such as commercial banks, insurance companies and mutual funds, and the appetite and the ability to play the role of aggregators.

IFMR Holdings was set up to establish and strengthen the three pillars elucidated above. It operates, invests in and provides strategic direction to commercially operating companies and other business opportunities that further its mission to

ensure that every individual and every enterprise has complete access to financial services. Today, IFMR Holdings provides the following services:

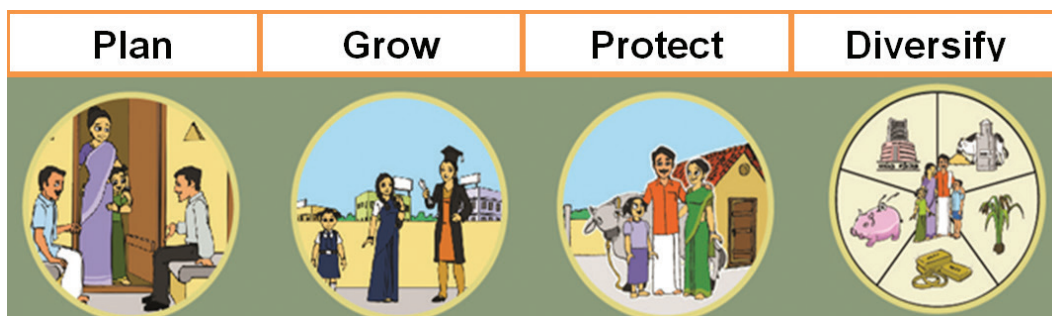
- a complete suite of financial products and services to remote rural India through a wealth management approach
- complete access to debt capital markets to high quality financial institutions that serve the financially excluded
- technology and product platforms that enable the growth of highly customer-centric financial institutions

A subsidiary company, IFMR Rural Channels (IRCS) operates a network of rural financial institutions called KGFS (Kshetriya Gramin Financial Services) that offer a full suite of financial services and cumulatively reach more than 650,000 customers across 4,200 villages through 236 branches in remote rural India. Another subsidiary is IFMR Capital, which is a debt capital markets platform serving 105 originators offering micro-loans, small business finance, agricultural finance, affordable housing and commercial vehicle finance, that reaches more than 19 million financially excluded people. Relevant to the overall mission of IFMR Holdings is its co-subsidiary,¹¹ IFMR Finance Foundation (IFF), a non-profit research and advocacy entity that carries out nonpartisan, evidence-based policy research and dialogue with policy makers and regulators across the important themes of financial systems, design customer protection and household finance.

IRCS delivers financial services at a retail level through its network of KGFS branches in remote rural areas that offer a complete suite of financial products and services through a ***wealth management approach***. The wealth management approach has been a core part of the financial services offering since its inception in 2008, and is designed to ensure financial planning, asset growth, asset protection, and risk diversification for rural households and enterprises only after obtaining a comprehensive understanding of the customer's needs and aspirations. The most important part of the approach is the conversation that the wealth manager (the field staff of a KGFS branch) has with the customer about her financial needs and

11 Both IFMR Holdings and IFF are subsidiaries of IFMR Trust, a private trust and controlling shareholder in IFMR Holdings. IFF is the ultimate beneficiary of the IFMR Trust

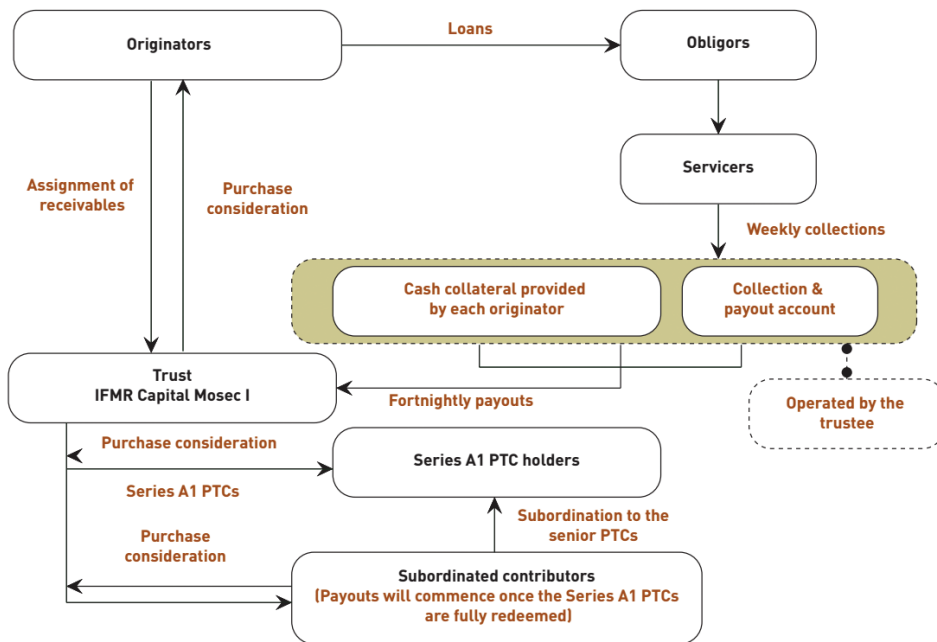
goals, both immediate and long-term. This is supported by a robust customer management system, which enables the capturing of all household income, expense, asset, liability, and cash flow details, to generate a **Financial Wellbeing Report (FWR)**. This system-generated comprehensive financial plan highlights the unique aspects of the individual customer’s and household’s risk profile and helps in making specific financial recommendations for the household along a pre-specified pathway (Plan, Grow, Protect, and Diversify) for household financial wellbeing.



Critical to the delivery of financial services through a wealth management approach is IFMR Rural Finance (IRF), which offers technology and product platforms that enable the growth of highly customer-centric financial institutions. It also forms the technological backbone of the KGFS. IRF’s technology and financial product solutions provide originators with the infrastructure to become customer-centric by facilitating deeper conversations with their customers as well as enabling them to potentially offer multiple products to serve their customers’ varying needs. The technology platform also provides vital business intelligence capability that helps originators continuously learn from their customers’ financial behaviour as well as mobility solutions that offer the full functionality of all its technology products on mobile devices, reducing the effective distance to the customer.

IFMR Capital sits squarely in the risk transmission pillar. IFMR Capital’s aim is to provide efficient and reliable access to capital markets to high-quality originators serving financially excluded sectors. Loan pools contributed by a single originator are often too small and too geographically concentrated to take to the capital market. A secure pool must have a minimum critical size in order to make them financially viable and hence only large originators can traditionally access capital

through securitization. Small originators, therefore, are most in need of access to capital markets. Spurred by the overarching need, IFMR Capital developed the **Multi-Originator SECuritization** or MOSEC. MOSECs allow smaller MFIs (microfinance institutions) to participate actively in securitization transactions and collectively access capital markets when they are too small to access capital markets individually, and by pooling loans across originators and geographies, a well-diversified portfolio is achieved which provides an attractive risk-return trade-off to investors.



The first MOSEC closed in January 2010. Since then, MOSEC has transformed the way financial inclusion focused originators access capital markets in India. The small MFIs that participated in the first MOSEC in 2010 had on average loan assets of USD 5 million and have since grown to a balance sheet size of USD 234 million in the past six years, representing an annual growth rate of more than 80%. One of the largest MOSECs IFMR Capital executed had nine MFIs contributing a pool of almost 45,000 loans. Since the launch of the first MOSEC in January 2010, IFMR Capital has structured, arranged and invested in 88 such transactions. The structure is flexible enough to accept a wide range of underlying loans with varying sizes and tenures. The MOSEC structure gained a higher level of prominence in January 2013 when the senior securities issued under IFMR Capital MOSEC XXII were listed on the Bombay Stock Exchange. This was the first instance of listing of securitized debt in India and marked a significant step towards greater disclosure, liquidity, transparency, and sustainability in IFMR Capital's efforts towards financial inclusion and simultaneously marking a milestone for debt securitization in India. Similar to the evolution of the MOSEC, **IFMR Investments** emerged from two underlying needs. Indian MFIs primarily have access to Priority Sector Lending (PSL) bank-funding, which is primarily motivated by regulatory obligations, and is short-term and expensive in nature. Since India has the largest microfinance sector in the world, the opportunity to expand financial services and deepen bond markets is substantial. As a natural externality from this construct, there was a clear dearth of access to affordable long-term debt funding for MFIs and other originators. To meet this need, IFMR Holdings set up IFMR Investments, an asset management company that would help bridge this gap in access to long term funding. IFMR Investments has launched three funds so far with total assets under management at USD 62 million.

Each of the pillars that IFMR Holdings has focused on has had several innovations. In time, these innovations will reach their full potential when other stakeholders interested in financial inclusion replicate each one and truly scale their impact. There are some innovations that traverse all three pillars and one such innovation that is critical to hold together the fabric of the Origination-Transmission-Aggregation framework is the tenet IFMR Holdings strongly believes in: the ***Suitability of advice and sale of financial products and services***. Suitability entails placing a primary responsibility on financial services providers for recommending and selling products that are 'suitable' for their customers, given their goals, needs and financial

situation, and IFF has been advocating for this protection.¹³ This is important because India has so far had a customer protection regime for retail financial services that overwhelmingly emphasised a combination of disclosure requirements (of product terms and conditions) otherwise called *caveat emptor* or buyer beware, and customer education measures, both of which have been inadequate to prevent rampant mis-sale of products and services. Under the ‘suitability’ regime, accountability and supervision are to be driven by the extent to which providers adhere to processes laid down in their own policies instead of (traditionally) placing such responsibility on customers to decide for themselves. IFF performed the function of the Technical Secretariat to the Reserve Bank of India’s (RBI’s) Committee on Comprehensive Financial Services for Small Businesses and Low-Income Households,¹⁴ and within this, provided a detailed rationale and set of recommendations for moving towards a suitability-based customer protection regime of regulation and supervision. Thereafter, the newly published RBI’s Charter of Consumer Rights,¹⁵ for the first time enshrined such a Right to Suitability. The provision of such a Right for retail customers will pave the way for customer protection to shift from being an *ex-post* redressal process to becoming an *ex-ante* feature of product advice and sale.

Way Forward

Over the past 8 years, IFMR Holdings, through its direct operations via IFMR Rural Channels covering 650,000 rural customers, has been able to assess households’ liquidity needs, taking into account their unique financial situations and goals, and deliver efficient and suitable financial solutions to help meet their individual goals. In the last fiscal year, an average of 62% of all active customers and 80% of all loan customers had an active insurance cover for their human capital or for other income earning assets—a level of protection that simply did not exist before. By essentially bringing to market viable debt capital markets products in financial inclusion, IFMR Capital has, in the last financial year itself, provided almost USD 2 billion in debt financing to 105 high quality local and/or specialised originators, indirectly impacting

13 [A New Framework for Financial Customer Protection in India—IFMR Finance Foundation Position Paper](#). Anand Sahasranaman, Deepti George, Darshana Rajendran, Vishnu Prasad, 2013

14 [Report of the RBI Committee on Comprehensive Financial Services for Small Businesses and Low-Income Households](#) (Chair: Dr. Nachiket Mor), 2014

15 [RBI Charter of Customer Rights](#), 2014

more than 18 million people. Prior to the existence of IFMR Capital, debt capital markets infrastructure for financial inclusion originators was not present. In the last fiscal year, structured products enabled partner originators to raise more than seven times the amount IFMR Capital invested from its own balance sheet in their transactions. Furthermore, IFMR Capital has helped partner originators grow into mature institutions. For example, MFI Satin Creditcare Network went from managing under USD 3 million of loan assets in 2009, to more than USD 54 million today. Eight out of the ten small finance banks (regulatory structure specifically created by the RBI to serve the underbanked) are partner originators of IFMR Capital.

Although we have come a long way toward fostering financial inclusion in India, more work can be done towards this goal by amplifying and scaling-up existing IFMR Holdings' businesses. Still many critical challenges remain:

1. How do we ensure that there are many more multi-product customer-centric originators delivering financial wellbeing for their customers?
2. How do we protect households and enterprises against risks beyond their control such as life, accident, health and catastrophes?
3. How do we better facilitate access to finance for SMEs (small and medium-sized enterprises) and vital sectors such as agriculture and local infrastructure?
4. How do we implement a workable suitability regime for originators that is not prohibitively expensive and yet provides value to both customer and originator?

It is clear that many more game-changing innovations are required. Some of the answers lie in innovating to leverage several enabling mega trends currently seen in the Indian regulatory, infrastructural and market landscape. More than one billion Indians now have a unique biometric identification number called the Aadhaar number, which makes it possible to enable real-time paper-less self-authentication through biometrics such as iris and fingerprint matching. This, along with other specific components of the IndiaStack¹⁶ such as the Aadhaar e-sign, an online electronic signature service, and the Digi-Locker, a secure online e-document storage space, makes possible paperless signing of contracts and the authentication of financial transactions as a 3rd party utility. The RBI has also

16 <http://www.indiastack.org/>

provided 21 new bank licenses including 11 payments banks and 10 small finance banks, dramatically increasing the number of banking transaction points, and providing likely competition to incumbent banks. India has 76 million smartphone users, and this is expected to cross 700 million by 2020¹⁷. Since its inception in 2013-14, IMPS (Immediate Payment Service, an electronic funds transfer service) has overtaken debit card POS volumes by 2015-16, an indication of the grand shift towards electronic payments by Indians. The unprecedented generation of rich customer data through various digital and payment channels, is finding its way to applications in financial intermediation and credit and insurance underwriting. Better understanding of the customer due to the presence of specialized credit bureaus with in-depth data on customers in the informal sector as well as rich customer data owned by several financial inclusion focused originators will become much more valuable in underwriting. We are convinced that by capitalizing on these mega trends, we will make faster strides than ever before towards our mission of achieving complete access to finance for every individual and enterprise.

17 [Indian Financials Sector](#), Credit Suisse 2016

Meeting the World's Infrastructure Investment Gap: Innovate or Perish

By Lorenzo Bernasconi

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The world is in desperate need of infrastructure investment. Our future economic growth and prosperity as well as our ability to address the world's most critical global challenges, from inequality to climate change, depend upon our ability to increase investment into areas such as power generation and transmission, roads, ports, railroads, water and sanitation, telecommunication systems, schools and hospitals. According to a 2016 McKinsey report, we need an estimated \$3.3 trillion in infrastructure investment annually through 2030 just to support projected economic and industrial growth. Yet, global investment into infrastructure is currently only \$2.5 trillion annually, jeopardizing future productivity and growth. The size of this investment gap more than triples when we consider the infrastructure investment needed in areas such as health, education, agriculture, and climate change mitigation and adaptation to meet the United Nations Sustainable Development Goals (SDGs).

Why are we so underinvested? The traditional view is that while there is plenty of capital to invest, there are not enough attractive, “bankable” projects. But this masks the real and often overlooked problem: we are stuck with outdated financing mechanisms and approaches that hinder rather than promote investment. Investment flows into infrastructure remain subscale not because there are too few

opportunities, but because investors cannot invest in projects in cost effective ways. We need to dramatically scale up investments—and that requires innovative 21st century investment models.

The core problem is a lack of fit-for-purpose investment vehicles that effectively address the needs of long-term institutional investors looking for the type of stable, inflation-protected cash flows that infrastructure projects can provide. For the most part, mainstream investment vehicles are too costly, short-term, and risky for institutional investors, although they offer attractive fees to asset managers. Creating fit-for-purpose investment vehicles is a critical first step, but it is still not enough to meet our global needs: we also require public sector innovation and, in particular, new public-private partnership models that can effectively drive private sector investment into infrastructure. Such innovation would deliver value to both tax-payers and investors while also helping address our most pressing social, economic and environmental challenges.

Government cannot meet the challenge

Traditionally, governments have funded infrastructure development and are still the largest source of global capital. However, increased public debts, low economic growth, and budgetary pressures have led to a reduction of government investment into infrastructure, despite increased need and clear evidence of its direct and indirect socioeconomic benefits. In advanced economies, average public investment as a percentage of GDP declined from 5 percent in the late 1960s to an average 3 percent by 2012 (IMF, 2015). In emerging markets and low-income economies, investment increased in the late 1970s and 1980s to 8 percent of GDP but declined to between 6 percent and 7 percent by 2012 (IMF, 2015). Since the most recent financial crisis, infrastructure investment has declined in a majority of G20 countries including the United States, UK, Japan and the Euro area (OECD, 2016). At the same time, banks have retreated from infrastructure due to increased regulation around capital requirements introduced through Basel III, and only in selected cases still provide long-term financing.

Against this backdrop, institutional investors—such as the world’s pension funds, insurance companies and sovereign wealth funds—stand out as ideal candidates for infrastructure investment. They represent the largest pool of investment capital globally, controlling an estimated \$91 trillion in assets under

management (CPI, 2015). In addition, institutional investors favor the kinds of long-term investment opportunities that infrastructure can provide in order to match their long-term liabilities.

Infrastructure projects such as airports or mass-transit systems are natural monopolies with high barriers-to-entry, which means that once built, they offer predictable, relatively low-risk cash flow over time. Returns from infrastructure are only indirectly correlated with stock market movements, allowing for portfolio diversification. Another attractive feature of infrastructure investments is that they tend to be protected against inflation as revenues or concession agreements are generally linked to price increases.

Despite these advantages, institutional investors remain reluctant to invest in infrastructure. According to a 2015 OECD analysis of the 99 largest pension funds, only 1.1 percent of these funds—which have over \$10 trillion in assets under management—are dedicated to infrastructure. Moreover, all the pension funds that set an allocation goal for infrastructure failed to meet their targets, achieving only between 51 percent and 64 percent of their intended funding (using the high and low end of targeted ranges).

A lack of fit-for-purpose investment solutions

One obstacle facing institutional investors when considering investing in infrastructure is scale. Building an in-house investment team is costly and only makes sense for investors with deep pockets. An industry analysis by the Climate Policy Initiative (CPI, 2013) suggests that a portfolio of between \$40 billion and \$50 billion is the minimum necessary to justify the costs of building the team and capacity for direct investments. This precludes almost all but the very largest investors.

The alternative approach for institutional investors is to use pooled, externally managed “infrastructure funds.”¹ The promise of these funds is that they overcome

1 Investing through public corporations such as utilities is also an option to gain exposure to infrastructure. However, these investments do not generally fall into the infrastructure allocation target of investors as they are correlated with movements in equity and/or bond markets. In addition, investing in a public company introduces risks related to corporate strategy (e.g. around the purchase and sale of assets) and dividend policy (e.g. around whether to reinvestment or distribute profits). These factors dampen two core features that make infrastructure particularly attractive: uncorrelated and predictable cash-flows.

the prohibitive costs of investing directly in infrastructure while providing access to a diversified pool of assets. In theory, these features are attractive and should drive investment. In reality, infrastructure funds are designed in a way that prevents investors from benefiting from the true promise of infrastructure as an investment proposition, dampening its attraction as an asset class and limiting desperately needed investment into both new projects and the maintenance of existing infrastructure.

The reason is structural. Mainstream pooled infrastructure funds follow the model of private investment funds that were designed and popularized with the emergence of venture capital and private equity a half-century ago. A wave of technological innovation in the late 1960s and 1970s led to a new breed of high-risk, high-potential start-ups. At the time, however, institutional investors did not have a way to invest in these companies. In response to this growing opportunity, a set of entrepreneurial asset managers developed a novel private investment fund structure which has come to be known as the private equity model (PE model).² The standard PE model is an illiquid fund with a time horizon of seven to ten years, in which investors pay a management fee of between 1 and 2 percent on committed capital, and the asset manager receives 20 percent of profits over a typical pre-determined hurdle rate of 8 percent.

This PE model remains largely unchanged since it was first introduced in the 1960s, and has grown in prominence to become an asset class in its own right. Today, the PE model represents the main conduit through which institutional investors gain exposure to private, more illiquid investment opportunities. These opportunities include infrastructure, even though infrastructure could not be more different than the high-risk, high-return opportunities for which the PE fund model was originally designed.

It is not surprising, then, to find that fitting infrastructure investments into the PE fund model creates a number of challenges for realizing its true promise as an investment.

First, the attraction of the long-term investment horizon of infrastructure is limited.

2 My reference to the “private equity” model is meant to be general and also encompasses venture capital (VC).

The traditional PE fund model has an investment time-horizon of roughly seven to ten years, which precludes institutional investors from matching their long-term liabilities through this structure.

Second, because of the need to sell or “exit” underlying investments at the end of the fund life in order to pay back investors, the PE model also reduces the low-risk promise of investing in infrastructure. Selling an infrastructure project is not an easy task—interest rates changes, market volatility, financing availability, regulatory uncertainty, socio-political stability and so on are all factors that can hamper the sale of an asset. These factors introduce risk as asset managers in the PE model face the challenge of needing to exit their investments before the end of the fund life. Moreover, to justify the high fee and compensation structure of the PE model, asset managers need to achieve outsized returns through these exits. The challenge here is that as opposed to innovative, start-up companies with disruptive new technologies, not many infrastructure assets double, let alone triple, in value over a five to seven year period.

Finally, and most critically from a societal perspective, the pressure of the PE model to deliver outsized returns means that the universe of investible infrastructure projects is significantly restricted. When investors evaluate whether to invest in a traditional infrastructure fund, they evaluate this opportunity against other investment opportunities sharing the PE fund model (and fee structure) such as, for example, technology venture capital or growth capital private equity which are designed to offer outsized returns in return for their higher risk. As a result, infrastructure asset managers are incentivized to cherry pick only the most commercially attractive infrastructure projects that will deliver the most value in the short-to-medium term. In practical terms, this means that only a small subset of the vast universe of potential infrastructure projects meet the restrictive criteria of being “bankable” or “attractive” to traditional asset managers. A 2014 study published by INSEAD and Harvard Business School professors Lily Fang, Victoria Ivashina and Josh Lerner, reports that traditional PE funds pick less than 5 percent of deals available to them (Fang, Ivashina, Lerner, 2014). This, however, only reflects the limitations of the employed investment model and not the true opportunities for infrastructure investment on the ground.

The innovation imperative

Just as entrepreneurial asset managers in the 1960s and 1970s identified a new financing model to allow institutional investors to effectively invest in high-technology start-ups, we need new models for channeling institutional investment into infrastructure. Momentum is slowly building for such approaches and a number of new investment models have already been launched to address this challenge.

One example is the investment model spearheaded by Meridiam, a global infrastructure asset manager. Founded in Paris in 2005 by Thierry Deau, an engineer and former manager of infrastructure projects (not an investor), Meridiam's approach disrupts the traditional PE model through four key features. For one, Meridiam's funds have a time horizon of 25 years as opposed to the standard seven to ten years. Two, investment returns are based entirely on contracted cash flows generated from infrastructure assets under management rather than returns on exits.³ Three, Meridiam not only acts as an investor, but it also designs, builds and manages the projects in its portfolio. Finally, Meridiam works in partnership with public authorities using an innovative results-based contracting approach to develop projects that would traditionally not be funded by the private sector.

In aggregate, these factors make the Meridiam model better suited than the traditional PE model for realizing the potential of infrastructure investments for institutional investors. Similar to the PE model, investors benefit from access to a diversified portfolio of projects without making large single investments into individual projects. But unlike the PE model, Meridiam allows institutional investors to match their long-term liabilities with dependable returns from stable, long-dated infrastructure assets while avoiding the exit risk of the traditional PE model. An additional benefit of the Meridiam model is that it does not compete with traditional private equity or venture capital investment funds. Instead, Meridiam's funds represent an alternative to investments in long-dated government bonds. In today's unprecedented low-interest rate environment, where one-third of all government debt is negative-yielding and

3 These contracted cash flows come from user fees such as in the case of toll roads and airports or, in cases where there are no direct revenue streams from users, such as in the case of a school or court house, Meridiam is paid back by on the basis of performance based contracts for the construction, operation and maintenance of projects on behalf of public procuring entities.

the supply of long-duration bonds is limited, Meridiam's promise of stable, positive returns over the long-term satisfies a critical unmet need for institutional investors.

The Meridiam model is also more attractive from a societal perspective. With its less aggressive, longer return profile than the traditional PE model, the universe of attractive or bankable projects expands. In eleven years, for example, Meridiam has engaged in 48 greenfield public infrastructure projects across 15 countries with a total value of more than \$40 billion—projects that would not be considered bankable using the traditional PE model.

In addition to the lower investment return requirements, Meridiam has unlocked these opportunities through the implementation of innovative Performance-Based Infrastructure (PBI) procurement contracts with public entities. With this model, responsibility for all the key phases of a project's life cycle—from design to financing, construction and maintenance—are transferred to the private sector through a performance-based contract. The infrastructure assets remain in public ownership and the private partner is compensated only if it delivers on the contracts as promised. This model leverages the financial expertise and managerial acumen of the private sector and shifts construction and operational risk away from the public sector. Results suggest that this model not only opens up new investment opportunities for the private sector, but it also delivers value-for-money to the public sector. Research suggests that taking into consideration the full cost of project delivery, publicly built infrastructure costs, on average, 20 percent more than private financed projects due to systemic cost overruns (EDHEC, 2013).

Finally, the Meridiam model—with its focus on financing as well as operating and maintaining infrastructure projects—provides an incentive for full life cycle thinking. The full range of costs and risks that affect the quality and use of an infrastructure asset throughout its productive life are factored in. The result is better alignment of interests between public and private stakeholders and ultimately better quality infrastructure for the benefit of society at large.

While Meridiam reforms the traditional PE fund asset management model, another innovative approach is to bypass investing through an intermediary altogether and instead invest directly into infrastructure via a shared, low-cost platform that pools together the investments of several investors. Over recent years, this

“disintermediated” approach has gained traction among institutional investors as it promises more aligned incentives, lower fees, and higher net returns. One notable example of this approach is Industry Funds Management (IFM), founded in 1995 and owned by 29 Australian pension funds.

IFM acts as an in-house investment team collectively owned by the pension funds to invest directly in infrastructure projects. In this way, the IFM model overcomes the cost hurdle of building a dedicated internal team that individual pension funds face. By pooling the capital of several funds, it also provides the diversification benefits of traditional funds.

The IFM fee structure is also more attractive than the traditional PE model as the platform is wholly owned by the pension funds and, as such, there are no incentives to create additional asset management-generated fees. Moreover, IFM’s infrastructure funds differ from traditional ones in that they are open-ended, meaning that they have no predetermined divestment date. This allows IFM to invest in long-term assets that match its pension funds’ long-term liabilities while also removing the exit risk of the traditional PE model.

Meridian and IFM are evidence that alternatives to the PE model can work at scale. IFM currently manages \$24 billion in infrastructure assets across Australia, North America and Europe in sectors that include transportation, energy, water, education and healthcare. IFM has also attracted major investments from other institutional investors including CalSTRS, the largest pension fund in the United States.

Similar disintermediated models include the Pensions Infrastructure Platform in the UK, the Canadian-based Global Strategic Investment Alliance, and the recently launched Aligned Intermediary in the United States. Another innovative, disintermediation model under development is the Clean Energy Investment Trust (CEIT), a proposed listed investment vehicle under the auspices of the Climate Policy Initiative (CPI) with support of The Rockefeller Foundation, to facilitate large-scale institutional investment into renewable energy.

While all of these models hold promise to mobilize the institutional investment into infrastructure that we need, they are still not sufficient. We also require public sector innovation.

Public-Private Partnership Innovation

The widespread consensus around the role of government in attracting greater private sector investment into infrastructure is the need to reduce policy and regulatory risks. To be sure, large, long-term investments are particularly sensitive to these risks and it is important for governments to establish long-term stability and security. But creating a stable regulatory environment is not enough. To unlock the full potential of institutional investment, there is also a need to implement more effective partnership models with the private sector.

The traditional approach to public-private partnerships is for public entities to seek one-time private investment for the development of individual projects. This is generally done on the basis of detailed public-sector project designs which are then awarded to the lowest bidder. This approach is neither efficient nor maximizes value for taxpayers. For one, it incentivizes bidders to strategically underestimate initial budgets to win bids knowing that once a project is initiated, it is rarely halted and there is room for price inflation. In addition, it keeps all operational risks with the public and fails to incentivize development contractors to think about the life-cycle costs or performance outcomes of the projects.

A second challenge with the traditional approach is the lack of public sector capacity and expertise to develop a strong pipeline of projects for public-private partnership. Public infrastructure investment generally happens at the sub-national level and is managed across many agencies or departments. In the United States, for example, most of the over \$500 billion in annual infrastructure spending takes place at the state and municipal level with responsibility spread across various agencies such as the Environmental Protection Agency (EPA) responsible for water, and the Army Corps of Engineers, responsible for ports. The resultant decentralized nature of decision-making and permitting adds complexity that not only hampers the creation of effective public-private partnerships but also breeds inefficiencies as there is no single public center of expertise responsible for the coordination, structuring and delivery of projects.

In recent years, we have witnessed the emergence of “infrastructure accelerators,” or dedicated public sector entities focused on facilitating private sector project development and investment into infrastructure that help address these challenges.

Infrastructure accelerators serve local, regional and/or national interests by providing expert advice on the planning, delivery and oversight of complex infrastructure projects with the private sector.

The Canadian province of British Columbia was the first public entity to introduce the accelerator model when it launched Partnerships BC in 2002. Partnerships BC is a one-stop-shop for all public-private infrastructure projects, offering an array of services including pre-development analysis and feasibility studies; sharing and development of best practices; project development and oversight; and the implementation of performance based infrastructure contracting with the private sector. The agency has been instrumental in mobilizing private sector financing and expertise into more than forty public infrastructure projects worth \$7 billion. This model has been replicated in other Canadian provinces and has more recently taken root in the US with the launch of the West Coast Infrastructure Exchange (WCX) in 2012 focused on spurring infrastructure investment in California, Oregon and Washington. Similar accelerators are under development in other regions of the United States and the model has been successfully exported to the United Kingdom and Australia.

The next step is to translate this infrastructure acceleration model to the developing world where most of the world's future infrastructure will be built and where there is an even more critical need for creating an effective translation point between the public and private sectors. Across the developing world, there is a lack of public sector expertise and capacity when it comes to preparing and executing complex infrastructure projects, much to the detriment of private sector investment. No amount of insurance or credit enhancements can resolve this problem. The creation of accelerators at regional levels across Africa, South and South-East Asia, and Latin America would be a game changer, allowing for the implementation of best practices, the strengthening of public sector capacity and project preparation, and most crucially, the facilitation of effective private sector investment through innovative PBI approaches benefiting both taxpayers and investors.

Conclusion

The stakes could not be higher if we fail to close the infrastructure investment gap. We risk losing generations of economic growth and prosperity while intensifying political strife, socio-economic inequality, and environmental degradation. We

have, however, the financial resources to meet our critical investment needs and an emerging set of fit-for-purpose investment vehicles to jumpstart investment into productive infrastructure. If this can happen, it will put the world on a path towards more inclusive and sustainable growth. This requires political will and changing the status quo, a difficult task in the face of large vested economic interests.

But it can be done if institutional investors double down on their commitment to infrastructure and innovate around how they invest through better solutions that truly meet their long-term investment needs. On the other hand, politicians must acknowledge that there are trillions of dollars in private sector capital sitting on the sidelines that could be mobilized for investment into infrastructure if only there existed a more conducive enabling environment and more effective conduits for private sector partnerships and investment.

No specific outcome is pre-ordained. The good and the bad news is that it all depends on the choices we make.

Technology Innovation

Bitcoin for the Unbanked

Cryptocurrencies That Go Where Big Banks Won't

By Paul Vigna and Michael J. Casey

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Roughly 2.5 billion adults in the world don't have access to banks, which means somewhere in the order of 5 billion people belong to households that are cut off from a financial system that the rest of us take for granted. They can't start savings accounts. They don't have checking accounts. They can't get credit cards. They live in places where banks don't want to go, and because of this, they remain effectively walled off from the global economy. They are called the unbanked. But they are not unreachable, not by a long shot, and one of the biggest and most exciting prospects bitcoiners talk about is using their cryptocurrency to bring these billions of people roaring into the twenty-first century.

The Caribbean is an area of the emerging-market world where a strong case can be made for locals to use bitcoin to get around a restrictive financial system.

Jamal Ifill, a young, soft-spoken artist with a head full of dreadlocked hair and a warm smile, has been blowing glass in Barbados for 11 years and has had his own one-room studio-cum-showroom for five years. One of his latest pieces is a two-foot-high, rectangular, latticework lamp that to our New York eyes looked like one of the Twin Towers. He sells his artwork locally and has attracted some attention; a piece he made was presented to Princess Anne when she visited the island in 2011. He wants to expand into the U.S. market, but the logistics and costs of moving money from there to here are prohibitively high, so most of his business remains local.

“I tried everything,” Ifill says, sitting at the desk that doubles as his office and workspace in his small glass-blowing studio in Bridgetown, Barbados. “Credit cards, PayPal, Western Union. They’re too expensive.”

Leroy McClain, managing director of the government-run Barbados Investment Development Corp., explained why that is: The big international banks are happy to provide merchant-banking services to companies in the United States and Canada, but they make island businesses jump through far more hoops for the same services.

Ifill understands the problem all too well. In fact, he has all the problems of an international business. The particular glass he uses must be imported from Ukraine. His customers are not only on the island, but overseas. He is competing with foreign artists who aren’t hamstrung by the costs that tie him up. He tried e-commerce—through a local company—but gave up on it because not enough customers were using it, which meant he wasn’t getting any business out of it. A vicious circle. “I even tried Etsy,” he says, the online arts-and-craft site. Again, he couldn’t compete on costs with U.S. artists.

Ifill’s problem stems in part from the difficulty in shifting money around the region’s island nations, which requires constant and costly currency exchanges. Barbados and virtually every nation in the British West Indies has its own, separately printed currency—each called the dollar, each fluctuating in value against the others and against the better-known U.S. dollar. And the former Spanish, Dutch, and French colonies all have their own pesos, guilders, and gourdes. The governments of the

region have long talked about creating a monetary union to deepen the region's free-trade arrangement, the Caricom common market. But as with the development of that free-trade area, progress toward building a single monetary authority and the other institutions needed for a common currency has been fitful. A Caribbean dollar remains a pipe dream.

To make matters worse, a number of central banks impose capital controls on their citizens. Barbadians such as Ifill, for instance, are limited in the amount of foreign currency they can buy. That Barbados, the Cayman Islands, the Bahamas, and other Caribbean nations serve as tax havens for hedge funds and other foreign financial institutions is an irony not lost on the region's tightly controlled residents. This mix of monetary systems and financial regulations, and the frustration that it breeds, make the sunny islands of the Caribbean ripe for bitcoin—or so says Gabriel Abed.

Abed, 27, turned to cryptocurrencies as the answer to a problem: how to expand e-commerce. He is the CEO of Web Designs, a local business that sells Internet domain registrations, Web site designs, maintenance, and e-commerce platforms. The last has been a particularly tough sell. Because of the costs of foreign exchange, credit cards, and PayPal, which can add up to eight or nine percent, he said, most merchants—Ifill was one of them—simply avoid selling abroad.

Abed learned of bitcoin early on and saw its potential to solve this problem. He began with the idea of a Caribbean cryptocurrency, which he dubbed CaribCoin, but realized quickly it was a bigger project than he wanted to take on. He pivoted to the idea of a bitcoin exchange, and a merchant service that he could bundle with his Web-design and hosting service, and began building Bitt (the URL is actually bi.tt, the .tt being the domain for neighboring Trinidad and Tobago). He also began mining his own bitcoins—in Trinidad, taking advantage of relatively low electricity costs there, and using the profits from that and from Web Designs to fund Bitt.

Bitt is designed as a Caribbean-focused online exchange and merchant service, providing trading between different cryptocurrencies and fiat currencies, as well as a module for helping local businesses adopt digital currencies for payment. His appeal to them is simple: What if I can give you a payment option that costs only one percent?

The catch is that the one percent fee comes with bitcoins, which as of this writing can't buy you much in Barbados. To say that cryptocurrencies are not big in Barbados would be an understatement. They effectively don't exist on the island, and neither does mobile commerce. While virtually everybody has a cell phone, the proverbial badge of a digital citizen, people use them only for texting and talking. E-commerce is barely getting started, as is online banking.

The way to get over the chicken-and-egg problem and encourage adoption, Abed believes, is to focus on the merchants. He believes that if he can offer them a dramatically cheaper payment method, they can be talked into accepting that method at their shops. But he has his work cut out for him.

Early Adopters

The chicken-and-egg dilemma will require incentives. The promise of saving money is certainly one of them. But there are others. As in the developed world, one hope is that if big firms or institutions whose relationships run deep in the economy start using bitcoin, they can create incentives for their suppliers and customers to use it.

Patrick Byrne, the CEO of Salt Lake City-based online retailer Overstock.com, which began accepting bitcoin in early 2014 to become what was then the biggest revenue-earning merchant to do so, believes his firm can play such a catalytic role creating a bitcoin "ecosystem" in the developing world.

When we met in June 2014 in Utah, Byrne explained that he viewed bitcoin as a way to widen economic opportunity, if only he could get people to accept it. He was still figuring out the carrots he would use, but he had some ideas. "In the world of payments and dealing with vendors, there's all this sensitivity around the terms of payment. Vendors will sometimes give you a two percent discount for shaving off 20 days, because to them that's like a 36 percent cost of money over the year. That affects all kinds of things. The very fact that vendors offer those terms means there's an enormous opportunity for bitcoin to step up in this area." A few weeks later, Byrne announced he would not only be paying bitcoin-accepting vendors one week early, but that he'd also pay his employee bonuses in bitcoin.

What companies such as Overstock are trying to do with digital-currency payments has parallels with what Walmart achieved by pioneering communications technology to revolutionize supply-chain management in the 1990s and early 2000s. The Arkansas-based retailer famously developed a sophisticated network with which to tie all of its suppliers worldwide into a single, integrated database for managing the goods and services flowing in and out of Walmart's warehouses. Along with big improvements in shipping logistics, this allowed the company to optimize its just-in-time inventory management, which drastically cut costs. Walmart parlayed those cost savings into the cheapest prices anywhere in the United States, which turned it into the iconic and, to some, infamous behemoth that now dominates American suburbia.

Just as important, its high-tech network had a feedback effect on suppliers, contributing to the concentration of manufacturing in hubs such as China's Pearl River Delta. As Walmart became an increasingly powerful but relentless hunter of the cheapest manufacturing sources, and as other Western buyers caught on to its high-tech lead, factories paying low wages in the developing world would congregate in locales where it was most efficient to tap into Walmart's network. Byrne now sees similar opportunities for firms like his to build influence by leveraging bitcoin in its international payment relationships and thus creating a tipping point from which change starts rippling over the global economy. As a group of businesses in one region begins adopting the currency, it will become more appealing to others with whom they do business. Once such a network of intertwined businesses builds up, no one wants to be excluded from it. Or so the theory goes.

“Just as American retail collapsed into Walmart, who knows how much can collapse into us? And I don't mean Overstock. I mean bitcoin,” Byrne said. “You start getting network effects. You are incentivizing everyone—it's like we have the first fax machine but nobody else has a fax machine, so it doesn't do you any good. But you start adding other nodes and making incentives to add nodes and eventually get a critical mass. Now people aren't just faxing us, they are faxing each other.”

From M-Pesa To Bitpesa

The remittance business, where emigrants and expats living abroad send money home, is another market that should be ripe for disruption by low-cost cryptocurrencies. The current business model relies on electronic transfers over the old banking rails,

and its practitioners charge high fees for that privilege. Globally, it's a huge business.

Emigrants are expected to send home more than \$500 billion in 2016, according to the World Bank. "Those are only the official flows," says Dilip Ratha, an expert on the subject who tracks it for the World Bank. Another estimated \$200 billion is sent that isn't tracked by the bank. Those numbers dwarf the roughly \$125 billion the developed world sends annually in aid. For many countries, more money comes in through remittances than through exports. Moreover, the totals are net of the charges and fees emigrants pay to transfer agents such as Western Union; on average those costs are about 8.5 percent globally, but in many countries, it's roughly 10 percent or more. In countries where annual salaries can be counted in hundreds of dollars, those costs are a serious burden.

Kenya's living abroad who want to send money home can choose between, say, Western Union and MoneyGram, but both charge high fees. Although at 42 percent the proportion of Kenyan adults with a formal banking relationship exceeds that of many countries, a majority in the country are still unbanked. But Kenya's experience with microfinance and telecommunications has inspired people's imaginations over how to address some of these problems. In particular, the excitement revolves around one key product: M-Pesa.

M-Pesa (the *M* is for "mobile," and "*pesa*" is Swahili for "money") started out as an experiment by Kenya's biggest telecom company, Safaricom. Because many more Kenyans had phones than bank accounts, microfinance experts realized during the 2000s that they could use those phones to deliver loans to borrowers and receive repayments from them. So in 2007, Safaricom began a pilot program that allowed users to send money via their phones—effectively converting the standard units of prepaid calling minutes into a form of currency. The system proved wildly popular. Today two-thirds of Kenyans use it, and about 25 percent of Kenya's GDP flows through it.

M-Pesa had a few things going for it. For one thing, Safaricom already had a massive infrastructure in place, not just the telecommunications equipment, but also thousands of agents. M-Pesa was also lucky enough to escape government regulation early on.

But here's the rub: M-Pesa is not a frictionless system, and what appears automatic to the user has a massive, unwieldy, and expensive infrastructure behind it. Safaricom's agents must deal with huge amounts of cash daily. This is not only cumbersome, but can also be dangerous. When agents run out of money, they have to either stop what they're doing, close the shop, and go to a bank, or stop what they're doing and send somebody on their behalf. Agents in rural areas, where the customers are more likely to be withdrawing money rather than depositing it, face a special challenge: Not only is their liquidity—their literal cash pile—drained faster, but the odds are higher that they are farther away from a bank branch, meaning a trip there takes longer and leaves less time to do actual business.

Then there's the question of how to import funds into the M-Pesa system from overseas. It is not borderless. Its mobile, phone-linked system offers an easier “on-ramp” for remittances than other countries' more traditional financial systems, but it's still going through traditional pipelines. Vodafone has partnerships with MoneyGram, Western Union, and other payment networks—with all their routine fees and banking-system dependent costs. With bitcoin, it is possible to send money via a mobile phone, directly between two parties, to bypass that entire cumbersome, expensive system for international transfers.

Perhaps inevitably, then, someone like Duncan Goldie-Scot, a veteran of microfinance, would come to see Kenya as the right place to start a full-scale remittance business. He approached fellow microfinance expert Elizabeth Rossiello, a native of Queens, New York, who was then working as a consultant in Kenya, with an idea: How about combining M-Pesa with a digital currency? It would offer all the advantages of M-Pesa, but would make the costs to users even cheaper for those who import money into that system from abroad, because those remittances from relatives in London or New York would arrive via bitcoin rather than the traditional banking system. Call it BitPesa.

They would begin with a simple and achievable goal: Take a single “corridor” in the remittance business—between the United Kingdom and Kenya—and build a bitcoin-based money-transfer business around it. They hired a development team to build the initial prototype, then a coder to revamp it. Next, they sent a staff member to London, to go into the cafés in the Kenyan neighborhoods and recruit beta testers for the initial trials. They began their beta test in the summer of 2014 with about two dozen emigrants.

Rossiello hadn't even heard of bitcoin until Goldie-Scot mentioned it to her. But she quickly caught on to the possibilities and now has ambitions for BitPesa that go beyond bitcoin, or digital currencies. For all the good it has done, the microfinance industry pioneered by Nobel Peace Prize-winning Muhammad Yunus's Grameen Bank still operates within what she described as "a busted financial system." An alternative based on cryptocurrency could bypass a lot of the costs of the existing system, and it offers the promise of doing more than just allowing cheap remittances.

Rossiello sees bitcoin as a way to spark not just a financial revolution in Kenya, but a technological one as well. The idea is that cryptocurrency fosters innovation, as we've seen in San Francisco and other places. She has started a meetup culture and teaches coding to schoolchildren. Five people were at her first meetup; six months later, there were 40, and they were doing coding and coming up with their own apps. "People are responding, people are excited about it," she says.

As is the case with all efforts of outsiders attempting to better the lives of distant people, an uneasy awareness exists of the legacy of colonialism and the fine line between assistance and paternalism. It's important to resist the impulse to view cryptocurrencies' technology, or any technology, as a panacea. For all the promise that technology holds—this idea that developing nations are going to "leapfrog" decades of development thanks to cheap, distributed, decentralized technology—the reality on the ground resists easy solutions. What M-Pesa has achieved, and what BitPesa promises, matter because they are effective tools for promoting economic activity, and thus development. This is why the stories coming out of Silicon Savannah are important—not only for Kenya but for the developing world as a whole. "There's a much bigger story here," Rossiello says. "We're just getting started."

From The Age of Cryptocurrency by Paul Vigna and Michael J. Casey.

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The Mobile-Finance Revolution

How Cell Phones Can Spur Development

By Jake Kendall and Rodger Voorhies

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The roughly 2.5 billion people in the world who live on less than \$2 a day are not destined to remain in a state of chronic poverty. Every few years, somewhere between ten and 30 percent of the world's poorest households manage to escape poverty, typically by finding steady employment or through entrepreneurial activities such as growing a business or improving agricultural harvests. During that same period, however, roughly an equal number of households slip below the poverty line. Health-related emergencies are the most common cause, but there are many more: crop failures, livestock deaths, farming-equipment breakdowns, even wedding expenses.

In many such situations, the most important buffers against crippling setbacks are financial tools such as personal savings, insurance, credit, or cash transfers from family and friends. Yet these are rarely available because most of the world's poor

lack access to even the most basic banking services. Globally, 77 percent of them do not have a savings account; in sub-Saharan Africa, the figure is 85 percent. An even greater number of poor people lack access to formal credit or insurance products. The main problem is not that the poor have nothing to save—studies show that they do—but rather that they are not profitable customers, so banks and other service providers do not try to reach them. As a result, poor people usually struggle to stitch together a patchwork of informal, often precarious arrangements to manage their financial lives.

Over the last few decades, microcredit programs—through which lenders have granted millions of small loans to poor people—have worked to address the problem. Institutions such as the Grameen Bank, which won the Nobel Peace Prize in 2006, have demonstrated impressive results with new financial arrangements, such as group loans that require weekly payments. Today, the microfinance industry provides loans to roughly 200 million borrowers—an impressive number to be sure, but only enough to make a dent in the over two billion people who lack access to formal financial services.

Despite its success, the microfinance industry has faced major hurdles. Due to the high overhead costs of administering so many small loans, the interest rates and fees associated with microcredit can be steep, often reaching 100 percent annually. Moreover, a number of rigorous field studies have shown that even when lending programs successfully reach borrowers, there is only a limited increase in entrepreneurial activity—and no measurable decrease in poverty rates. For years, the development community has promoted a narrative that borrowing and entrepreneurship have lifted large numbers of people out of poverty. But that narrative has not held up.

Two trends, however, indicate great promise for the next generation of financial-inclusion efforts. First, mobile technology has found its way to the developing world and spread at an astonishing pace. According to the World Bank, mobile signals now cover some 90 percent of the world's poor, and there are, on average, more than 89 cell-phone accounts for every 100 people living in a developing country. That presents an extraordinary opportunity: mobile-based financial tools have the potential to dramatically lower the cost of delivering banking services to the poor.

Second, economists and other researchers have in recent years generated a much richer fact base from rigorous studies to inform future product offerings. Early on, both sides of the debate over the true value of microcredit programs for the poor relied mostly on anecdotal observations and gut instincts. But now, there are hundreds of studies to draw from. The flexible, low-cost models made possible by mobile technology and the evidence base to guide their design have thus created a major opportunity to deliver real value to the poor.

Show Them The Money

Mobile finance offers at least three major advantages over traditional financial models. First, digital transactions are essentially free. In-person services and cash transactions account for the majority of routine banking expenses. But mobile-finance clients keep their money in digital form, and so they can send and receive money often, even with distant counterparties, without creating significant transaction costs for their banks or mobile service providers. Second, mobile communications generate copious amounts of data, which banks and other providers can use to develop more profitable services and even to substitute for traditional credit scores (which can be hard for those without formal records or financial histories to obtain). Third, mobile platforms link banks to clients in real time. This means that banks can instantly relay account information or send reminders and clients can sign up for services quickly on their own.

The potential, in other words, is enormous. The benefits of credit, savings, and insurance are clear, but for most poor households, the simple ability to transfer money can be equally important. For example, a recent Gallup poll conducted in 11 sub-Saharan African countries found that over 50 percent of adults surveyed had made at least one payment to someone far away within the preceding 30 days. Eighty-three percent of them had used cash. Whether they were paying utility bills or sending money to their families, most had sent the money with bus drivers, had asked friends to carry it, or had delivered the payments themselves. The costs were high; moving physical cash, particularly in sub-Saharan Africa, is risky, unreliable, and slow.

Imagine what would happen if the poor had a better option. A recent study in Kenya found that access to a mobile-money product called M-Pesa, which allows clients to

store money on their cell phones and send it at the touch of a button, increased the size and efficiency of the networks within which they moved money. That came in handy when poorer participants endured economic shocks spurred by unexpected events, such as a hospitalization or a house fire. Households with access to M-Pesa received more financial support from larger and more distant networks of friends and family. As a result, they were better able to survive hard times, maintaining their regular diets and keeping their children in school.

To consumers, the benefits of M-Pesa are self-evident. Today, according to a study by Kenya's Financial Sector Deepening Trust, 62 percent of adults in the country have active accounts. And other countries have since launched their own versions of the product. In Tanzania, over 47 percent of households have a family member who has registered. In Uganda, 26 percent of adults are users. The rates of adoption have been extraordinary; by contrast, microlenders rarely get more than ten percent participation in their program areas.

Mobile money is useful for more than just emergency transfers. Regular remittances from family members working in other parts of the country, for example, make up a large share of the incomes of many poor households. A Gallup study in South Asia recently found that 72 percent of remittance-receiving households indicated that the cash transfers were "very important" to their financial situations. Studies of small-business owners show that they make use of mobile payments to improve their efficiency and expand their customer bases.

These technologies could also transform the way people interact with large formal institutions, especially by improving people's access to government services. A study in Niger by a researcher from Tufts University found that during a drought, allowing people to request emergency government support through their cell phones resulted in better diets for those people, compared with the diets of those who received cash handouts. The researchers concluded that women were more likely than men to control digital transfers (as opposed to cash transfers) and that they were more likely to spend the money on high-quality food.

Governments, meanwhile, stand to gain as much as consumers do. A McKinsey study in India found that the government could save \$22 billion each year from digitizing all of its payments. Another study, by the Better Than Cash Alliance, a nonprofit

that helps countries adopt electronic payment systems, found that the Mexican government's shift to digital payments (which began in 1997) trimmed its spending on wages, pensions, and social welfare by 3.3 percent annually, or nearly \$1.3 billion.

Savings And Phones

In the developed world, bankers have long known that relatively simple nudges can have a big impact on long-term behavior. Banks regularly encourage clients to sign off on automatic contributions to their 401(k) retirement plans, set up automatic deposits into savings accounts from their paychecks, and open special accounts to save for a particular purpose.

Studies in the developing world confirm that, if anything, the poor need such decision aids even more than the rich, owing to the constant pressure they are under to spend their money on immediate needs. And cell phones make nudging easy. For example, a series of studies have shown that when clients receive text messages urging them to make regular savings deposits, they improve their balances over time. More draconian features have also proved effective, such as so-called commitment accounts, which impose financial discipline with large penalty fees.

Many poor people have already demonstrated their interest in financial mechanisms that encourage savings. In Africa, women commonly join groups called rotating savings and credit associations, or ROSCAs, which require them to attend weekly meetings and meet rigid deposit and withdrawal schedules. Studies suggest that in such countries as Cameroon, Gambia, Nigeria, and Togo, roughly half of all adults are members of a ROSCA, and similar group savings schemes are widespread outside Africa, as well. Research shows that members are drawn to the discipline of required regular payments and the social pressure of group meetings.

Mobile-banking applications have the potential to encourage financial discipline in even more effective ways. Seemingly marginal features designed to incentivize financial discipline can do much to set people on the path to financial prosperity. In one experiment, researchers allowed some small-scale farmers in Malawi to have their harvest proceeds directly deposited into commitment accounts. The farmers who were offered this option and chose to participate ended up investing 30 percent more in farm inputs than those who weren't offered the option, leading to a 22

percent increase in revenues and a 17 percent increase in household consumption after the harvest.

Poor households, not unlike rich ones, are not well served by simple loans in isolation; they need a full suite of financial tools that work in concert to mitigate risk, fund investment, grow savings, and move money. Insurance, for example, can significantly affect how borrowers invest in their businesses. A recent field study in Ghana gave different groups of farmers cash grants to fund investments in farm inputs, crop insurance, or both. The farmers with crop insurance invested more in agricultural inputs, particularly in chemicals, land preparation, and hired labor. And they spent, on average, \$266 more on cultivation than did the farmers without insurance. It was not the farmers' lack of credit, then, that was the greatest barrier to expanding their businesses; it was risk.

Mobile applications allow banks to offer such services to huge numbers of customers in very short order. In November 2012, the Commercial Bank of Africa and the telecommunications firm Safaricom launched a product called M-Shwari, which enables M-Pesa users to open interest-accruing savings accounts and apply for short-term loans through their cell phones. The demand for the product proved overwhelming. By effectively eliminating the time it would have taken for users to sign up or apply in person, M-Shwari added roughly one million accounts in its first three months.

By attracting so many customers and tracking their behavior in real time, mobile platforms generate reams of useful data. People's calling and transaction patterns can reveal valuable insights about the behavior of certain segments of the client population, demonstrating how variations in income levels, employment status, social connectedness, marital status, creditworthiness, or other attributes shape outcomes. Many studies have already shown how certain product features can affect some groups differently from others. In one Kenyan study, researchers gave clients ATM cards that permitted cash withdrawals at lowered costs and allowed the clients to access their savings accounts after hours and on weekends. The change ended up positively affecting married men and adversely affecting married women, whose husbands could more easily get their hands on the money saved in a joint account. Before the ATM cards, married women could cite the high withdrawal fees or the bank's limited hours to discourage withdrawals. With the cards, moreover, husbands could get cash from

an ATM themselves, whereas withdrawals at the branch office had usually required the wives to go in person during the hours their husbands were at work.

Location, Location, Location

The high cost of basic banking infrastructure may be the biggest barrier to providing financial services to the poor. Banks place ATMs and branch offices almost exclusively in the wealthier, denser (and safer) areas of poor countries. The cost of such infrastructure often dwarfs the potential profits to be made in poorer, more rural areas. In contrast, mobile banking allows customers to carry out transactions in existing shops and even market stalls, creating denser networks of transaction points at a much lower cost.

For clients to fully benefit from mobile financial services, however, access to a physical office that deals in cash remains critical. When researchers studying the M-Pesa program in Kenya cross-referenced the locations of M-Pesa agents and the locations of households in the program, they found that the closer a household was to an M-Pesa kiosk, where cash and customer services were available, the more it benefited from the service. Beyond a certain distance, it becomes infeasible for clients to use a given financial service, no matter how much they need it.

Meanwhile, a number of studies have shown that increasing physical access points to the financial system can help lift local economies. Researchers in India have documented the effects of a regulation requiring banks to open rural branches in exchange for licenses to operate in more profitable urban areas. The data showed significant increases in lending and agricultural output in the areas that received branches due to the program, as well as 4–5 percent reductions in the number of people living in poverty. A similar study in Mexico found that in areas where bank branches were introduced, the number of people who owned informal businesses increased by 7.6 percent. There were also ripple effects: an uptick in employment and a seven percent increase in incomes.

In the right hands, then, access to financial tools can stimulate underserved economies and, at critical times, determine whether a poor household is able to capture an opportunity to move out of poverty or weather an otherwise debilitating financial shock. Thanks to new research, much more is known about what types of features

can do the most to improve consumers' lives. And due to the rapid proliferation of cell phones, it is now possible to deliver such services to more people than ever before. Both of these trends have set the stage for yet further innovations by banks, cell-phone companies, microlenders, and entrepreneurs—all of whom have a role to play in delivering life-changing financial services to those who need them most.

Policy

Advancing Universal Development Goals Through the Breathtaking Power of Innovation

By David Nabarro and Frank Schroeder

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One year ago, the world embarked on a collective journey. Leaders agreed to implement a new plan for the future of people and the planet that has the potential to transform our world and make it a place fit for coming generations. The plan reflects four agreements adopted by the United Nations Member States in 2015: the Sendai Framework for Disaster Risk Reduction, the Addis Ababa Action Agenda, the 2030 Agenda for Sustainable Development, and the Paris Agreement on climate change.

The stakes are high: global prosperity, equity, a healthy planet, and peace. Implementation calls for ambitious, creative thinking and innovative solutions. It also requires sustained partnerships that bring together businesses, science, civil society, and government.

The 2030 Agenda can enable the world to rise to this moment in history if we tap into the full potential of all actors, promote financial innovation, and correct unsustainable behavior. The power of financial markets can catalyze the innovation and entrepreneurialism required to meet human needs sustainably and to deliver the goods and services for a growing global population.

The United Nations is evolving to help build the capacity that will harness financial markets to support commercial innovations that deliver on the Sustainable Development Goals. This is more than an exciting opportunity to bring partners together for the greater good; it is a matter of survival for the planet and all people.

The agreements that were reached in 2015 are a triumph of multilateralism, offering a vision for renewed international cooperation for a better world that leaves no one behind. The imperative now is for that agreed vision to become manifested through smart investments in people and the planet at the scale that they are needed.

The financing required to bring about the global transformation needed to realize the aspiration captured in the 17 Sustainable Development Goals, which aim to make our world more inclusive, peaceful, and prosperous, are estimated to be in the order of trillions of dollars annually. This redirection of capital flows can be realized through a combination of means including efforts to attract, leverage and mobilize investments of all kinds—public and private, national and global. This will require scaling-up existing solutions, finding new financial mechanisms, and harnessing capital markets, including all asset classes.

There are more than enough savings in the global economy to drive this transformation, but they need to become better aligned with sustainable development. Moreover, incentive structures in financial markets, both at the level of institutions and the individual decision-maker, often do not seek to achieve social returns. As a result, large disparities have become evident in all countries, with particular significance in developing economies.

By realizing the full potential of all actors, it is possible to achieve a world where all people live in dignity. The benefits will reverberate back to the investors in the form of secure markets, thriving consumers, and natural resources that have not been depleted.

The case for innovation

History tells us that ideas and new concepts have been a driving force in human progress, and they may be the most important legacy of the United Nations.¹ At the beginning of the 21st century and in response to the adoption of the Millennium Development Goals, innovative finance was on the top of the UN agenda. The MDGs marked a momentous turn that offered political leaders an opportunity to revise the terms of global cooperation. That spirit gave rise to the Monterrey Consensus at the UN Conference on Financing for Development in 2002. The conference document recognized “the value of innovative sources of finance,” stimulating a wide range of efforts to build and implement a variety of new and innovative financing mechanisms, and it mobilized countries on innovation at a number of levels. It was an extraordinary time of political leadership and inspired the Presidents of Brazil, France, and Chile in 2004 to launch the initiative “Action Against Hunger and Poverty” with the concept of “New Innovative Sources of Development Finance” as the central reference point. This unique initiative grew quickly to a global leaders group comprising 66 countries from North and South, and brought forward a number of financial innovations: a levy on air tickets that was in support of the drug purchasing facility UNITAID, a finance facility for immunization, advanced market commitments for vaccines, the debt to health initiative, and a financial transaction tax.

All of these financial innovations, while carried out in partnership with the private sector and civil society, were predominately financed through public resources. Their successes were tangible, but scalability remained at the uncertain whim of budget and election cycles.

The newly adopted Sustainable Development Goals present a very different picture. The principle of universality is one of the centerpieces of the new goals, holding all nations accountable for conditions among their most needed and vulnerable populations. That is a refreshing and positive message. Unlike their predecessors, the MDGs, which only applied to those countries deemed to be “developing,” the SDGs will require *all* nations to work towards them. This is an important

1 Richard Jolly, Louis Emmerij, and Thomas G. Weiss (2009): UN Ideas That Changed the World, New York

and unprecedented global acknowledgement that the pursuit of prosperity and inclusiveness is not just something for people inhabiting one part of our global and interconnected economy.

Sustained investment will be the crucial driver of economic growth and development in line with the SDGs. Investment in infrastructure and innovation are explicitly called for in SDG 9, and an integrated approach on all 17 Goals will be crucial for progress across the board.

Several trillion US dollars must be redistributed annually to bring about the future that world leaders want. The sheer scale of this challenge makes it abundantly clear that the majority of financing will need to come from private sources. There is hope that the SDGs can in particular become a catalyst for leaders in the financial and banking sector as they review the contribution of their respective institutions to the common good. The financial and banking sector has the potential to deliver innovations that have positive social returns while improving the use of underutilized economic resources in developing countries. The economist Mohamed El-Erian underscored this point by referring to the fact that it took a leading US hotel corporation 100 years to deliver their clients 700,000 rooms globally, while the internet platform AirBnb took 6 years to deliver 1 million accommodations.² To achieve this accelerated progress, financial innovation in support of the SDGs will have to focus beyond creating new assets to leveraging underutilized ones.

That innovation goes to the heart of development as an enterprise. Recent breakthroughs in financial technology, both from within and beyond the financial services industry, are unleashing a wave of change that promises to transform every aspect of financial services. The transformative agenda of the SDGs calls for ingenuity and innovation. The financial sector can play a major role in achieving the results-focused, risk-informed creativity that can drive SDG implementation.

The United Nations welcomes a willingness on the part of the financial service sector to engage in the SDG process—along with the determination of companies to make finance work for the less advantaged.

² Mohamed El-Erian, Milken Conference, May 1, 2016

The sector itself stands to gain enormously. If it showcases that financial talent is realizing new market opportunities and delivering on SDG solutions instead of engaging in innovative efforts directed at circumventing regulations, taxes, and accounting standards, that could dramatically change public perception.

Various sources suggest that innovative thinking is already driving decision-making at the global and national level. Approaches to development cooperation increasingly prioritize the interests of local communities. The submission of Intended Nationally Determined Contributions (INDCs) by 189 countries in the climate context indicates government priorities at the country level and signals investors to where funding for climate action is most urgently needed. Countries are moving equally fast in aligning their national plans with the SDG agenda. They are supported in this task by the United Nations and backed by a global movement of civil society and business organizations.

Broadening the investment horizon

Private investors—often supported by public policy and finance—are driving global development efforts by channeling billions of dollars into many countries around the world. Individual projects are bringing renewable energy to communities, improving agriculture yields for small-holder farmers, spurring economic growth, and helping countries to tackle climate change and poverty eradication. To accelerate more private flows, it will be necessary to unpack new investment opportunities imbedded in the transition stimulated by the SDGs but also to scale-up the results-focused creativity of pioneers and innovators who are already active within the business sector.

In recent years, a small group of bold financiers, policy-makers, development experts, and entrepreneurs have offered new models for cooperation. With support from philanthropic organizations, these pioneers have developed new solutions for harnessing additional capital, or improving the efficiency of capital, for addressing the world's most critical social, economic, and environmental problems.³ These solutions have taken varied shapes and forms—from novel securitizations to micro-levies—and have addressed a wide range of development challenges that

3 Saadia Madsbjerg/ Lorenzo Bernasconi (2015): Development Goals Without Money Are Just a Dream

are at the heart of the SDG challenge. In the process, these initiatives have laid down the blueprints for public policy interventions and new forms of collaboration between private sector corporations, institutional investors, governments, and the philanthropic and nonprofit sector.

In aggregate, these financial innovations represent only a very small fraction of the financing needed to realize the 2030 Agenda. Development organizations can help to bring these SDG solutions to scale through promotion, opportunities for networking, and connecting to relevant stakeholders that can provide seed financing. Implementing these strategies will inevitably require novel thinking on the part of development organizations, NGOs, governments and donors. It will require close cooperation with the private sector, a willingness to learn from—and even acquire and internalize—social enterprises, and the flexibility to integrate new methods and ideas that adapt to new forms of development cooperation.

Tapping into local wealth and providing channels for high net worth individuals into direct investments in the SDGs presents another area with growing potential. Wealth has been accumulating in many countries and some of the asset owners are looking for social investment opportunities. “Impact investing” is catching on among investors who seek market-based solutions to the world’s most pressing challenges, including sustainable agriculture, affordable housing, affordable and accessible healthcare, clean technology, and financial services for the poor.

While the social impact investment market has been growing significantly and has drawn increasing interest and attention, it is still in the early stages of development and represents a very small share of the global capital markets today. The OECD states in a recent report that given the intergenerational transfer of wealth, estimated at \$41 trillion over the next 50 years, nearly \$6 trillion of that is expected to be directed towards social issues.⁴ A growing range of actors is emerging in the social impact investment market to form ecosystems made up of social ventures, intermediaries, and investors committed to addressing social needs. Governments will play a key role in support of these ecosystems, in terms of setting conditions for enabling environments as well as for indirect or direct engagement in the market. The United Nations system will play a catalytic role in promoting social impact

4 OECD (2015): Social Impact Investment- Building the Evidence Base

investment by advocating for a conducive regulatory environment, encouraging greater transparency and promoting concrete steps to help develop the market in support of targeted SDG interventions.

There is increasing interest particularly among younger investors to support financial instruments designed to have positive social impact. This reflects their wish to address important issues such as social justice, climate change or income inequality. The United Nations system can help harness this motivation by embracing and promoting innovative finance and bringing sustainable development to the mainstream of financial markets. The first movers in this field are already helping the financial sector to encourage positive change.

Aligning capital markets with the SDGs

The vision set out in the SDGs—for people, planet, prosperity, and peace—will not fully succeed if shocks and stresses in our financial system are not properly addressed, systemic and interconnected risk is not correctly priced, and the value of assets is not aligned with the SDGs. The notion that financial markets are self-regulating seems dangerously misguided, contradicting key lessons from history and theory. For generations, policy-makers have sought to align the interests of financial markets and society. Nowhere is this tension more keenly and persistently felt than in capital markets. With over US\$200 trillion in assets⁵ and annual growth advancing at a very fast pace, they represent the largest pool of potential financing for the SDGs. The question on how to shape financial markets so that they will deliver on the SDGs is getting to the heart of the issue.

The difficult truth is that capital markets are characterized by short-term biases, risk management blind spots, and investors that tend to allocate capital to unsustainable uses. Regulators can create enabling conditions for investor decisions to take account of longer-term objectives; recognize the importance of environmental and social issues, such as poverty, climate change and human rights; and ensure that the risk enshrined in these issues is adequately priced. If capital markets factor in sustainability, capital will be better allocated on a massive scale. Governments can

5 UNEP Inquiry (2015): The financial system we need- Aligning the financial system with sustainable development , UN Environment Programme (UNEP)

mandate the internalization of environmental and social costs into companies' profit and loss statements. As a consequence, capital markets would then incorporate companies' full social and environmental costs.⁶ This means governments can have the potential to promote a capital markets regulation that integrates sustainable development factors in the mandates of financial supervision agencies, listing rules and financial stability and in so doing redress what Mark Carney referred to as the Tragedy of the Horizons.⁷

One particular area of concern is the scale of economic losses caused by natural disasters, which have risen significantly as a direct result of climate change. Despite this growing challenge, the reflection of natural disaster risk in the regulation of capital and the protocols of accounting has been insufficient, with little movement to address the problem emanating from governments and regulators.

The desirable result is for disaster risk to be revealed in all financial transactions and incorporated into capital and reflected in every transaction, such as infrastructure investment, bank loans and the equity price on stock exchanges as well as into the accounts of every country and city. Populations are increasing, wealth is growing and the climate is changing, and without appropriate reforms, risk will grow significantly in the decades to come, at the cost of trillions of dollars in loss and damage and, worse, the cost of millions of lives and livelihoods.

The UN system is well placed to work with others to develop initial suggestions for how public policy-makers can move capital markets onto a more sustainable basis. Representatives of several governments have indicated, to the UN Secretary-General, their interest in promoting greater private sector investment in the SDGs: to this end the Secretary-General is exploring options for a multi-stakeholder Financial Innovation Platform. This global initiative will support the identification and piloting of innovative SDG finance instruments that can drive this investment and turn innovative initiatives and ideas into strong, actionable, and well thought-

6 Steve Waygood (2015): How to Harness the Global Capital Markets for the Sustainable Development Goals

7 Mark Carney (2015): Speech at Lloyds London, 29 September: "With better information as a foundation, we can build a virtuous circle of better understanding of tomorrow's risks, better pricing for investors, better decisions by policy makers, and a smoother transition to a lower-carbon economy."

out SDG interventions. In addition to launching innovative financing solutions it will also engage key development actors, such as leaders from governments and civil society, philanthropic organizations, entrepreneurs, institutional investors, banks, project developers, and development finance institutions.

With the right spirit of enlightened self-interest, the private sector can more than match this advocacy by accelerating its own significant progress towards global sustainability. The momentum generated would be self-perpetuating, triggering a virtuous cycle of investment and reward that demonstrates the symbiotic relationship between advancing development and thriving economically. As societies become more inclusive, stability will take root and the environment will flourish thanks to this new approach; both the private sector and the people it depends on will realize the promise of the SDGs—a transformation of our planet by 2030 that ensures dignity for all and leaves no one behind.

Finance, Growth and Sustainable Infrastructure: The Shifting Logic of Climate Change

By Thomas Heller

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It has been nearly two decades since policy-makers and the international community first began taking climate change seriously. Even then, the indissoluble link between growth and climate change was clear. Emissions-intensive growth, primarily in the energy, agriculture, and industrial sectors, threatens the natural resources upon which future growth trajectories depend. Without solutions, the prosperity of both current and future generations is at stake.

Now, in 2016, we have made real and significant progress toward addressing climate change: public subsidies have resulted in declining costs and rapidly increasing deployment of renewable energy so that today, even without subsidies, renewables are often as cheap or cheaper than fossil fuels in many markets. Policy has also made variable, though usually lesser, progress driving down emissions through energy efficiency, curbing deforestation, and improving industrial processes.

This progress has created a virtuous cycle for policy contexts, allowing both advanced and emerging economies to expand their national mandates to move toward low-carbon economic systems. These new mandates were directly reflected in the Paris Agreement made by world leaders late last year, which aims to keep warming to “well below” 2°C. This target makes sense—climate science experts are clear that warming beyond 2°C, say in the 4°C or 6°C range pathway we are on right now, would have disastrous consequences for humanity’s ability to survive in large parts of the currently populated earth.

Still, implementing the Paris Agreement will be replete with new challenges. To name just a few, analysts suggests that financing renewables at the scale and pace compatible with political targets will require an approximate doubling of the current annual investment in sustainable infrastructure. Indeed, many estimates, including those from the New Climate Economy, project that through the next twenty years, total investments for renewable energy and energy efficiency must grow from the current ~1.5 to 2.0 to ~3.0 to 3.5 trillion dollars per year. Furthermore, it is clear that much of this investment will need to come from public sources. Currently, even advanced economies rely on average on public finance for more than 40% of their clean energy investment; in emerging economies, where the need for clean energy investment is most intense and capital markets are often plagued by high cost debt, this figure is even higher—projects in these markets regularly rely on more than 65% public finance. In addition, renewable energies, while having close to zero operating costs once built, are more capital intensive to build than the fossil technologies with which they compete, and therefore require different ways of thinking about financing infrastructure than those used in the past.

Given the still widespread practice of public budgeting and development banking in infrastructure supplies; the political importance of energy access and affordability; public sector control of the regulatory risks associated with tariffs, currency, and transmission; the aversion of institutional investor portfolio models to direct investment in illiquid assets and unfamiliar technologies, and the sheer volume of capital for needed to build out the new infrastructure platforms of a 2 degree world, innovative finance needs to aim to more efficiently align global private flows with public finance, than to sharply shrink the roles public capital will continue to play.

There are many reasonable solutions for bridging these next gaps. Some of these

solutions include special purpose institutions like the Green Climate Fund or the Global Innovation Lab for Climate Finance that can facilitate specific financial instruments for land use, renewable energy, and energy efficiency; calls for green bonds and monitoring to ensure their impacts; normative calls for deepening carbon taxes or linking carbon markets; UNFCCC monitoring, enforcement, and more ambitious targets; more development aid to low income countries or for conditional national pledges like forest conservation; requests for higher public funding or impact investor funding in blended project finance; more assistance to project pipelines in low income countries; more focus on off-grid projects in low income countries; and more funds from national development banks or multilateral financial institutions for support of national commitments.

All of these solutions are necessary features of a more successful climate implementation program. However, questions remain as to where any of these large increases in (primarily public) funding will come from, why should public funds be used this way when there are so many calls for similar financial commitments, and under what conditions could sustainable infrastructure be targeted as a means to grow the economies and public treasuries that could supply these multiple demands.

Thus, an interesting outcome of the Paris Agreement is that the central focus of climate politics and policies must shift from microeconomic questions to a macroeconomic context. In the face of declining incremental costs and projected near doubling of demand for public investment in new energy infrastructure, instead of asking “How much more will it cost and who will pay,” policy-makers and finance ministers should now be asking, “How can we ensure adequate and affordable capital for the world’s growing sustainable infrastructure needs given current conditions?”

In essence, climate politics are moving from the sidelines to the mainstream of capital and infrastructure, and the work now is to ensure these systems work together to sustain growth.

These new questions get to the core of the political and organizational mandates of treasuries, central banks, financial regulatory agencies, and development finance institutions, which are charged to ensure financial stability and promote steady growth. These goals are in theory well aligned with sustainable infrastructure. Just as climate change threatens future growth by threatening resources, the connection

between growth and climate is equally clear in reverse, the lack of credible actions to address higher economic growth threaten the renewal of infrastructure essential to reduce climate risk.

However, unfortunately, as climate politics move to the mainstream, it means that climate advocates must also confront mainstream problems of economic growth, the most pressing of which include restoring growth rates to pre-2005 levels, managing multiple competing claims for public money, and ensuring the institutional and systemic conditions necessary for effective delivery and expected returns of efficient public investment.

To the first problem of restoring growth rates, it is imperative that advocates recognize that since the financial crisis of 2008, public finance communities have been preoccupied with macroeconomic problems associated with prolonged low growth at rates well below long-term historical averages. These challenges have plagued advanced economies as well as emerging markets.

Policy to regenerate pre-crisis rates of growth has been troubled by assertions that the era of high growth (1870-1970) has ended, the overburdened state of monetary instruments, multiple competing demands for a proposed fiscal expansion, and pervasive uncertainties about the relationship between scale investment in targeted asset classes and output, particularly with regard to countercyclical and signaling effects. Operating under these constraints, and in the face of a pervasive search for liquidity and deleveraging by private investors, unconventional monetary and macro-prudential policies have failed to stem macroeconomic decline, restore rates of higher growth, or mitigate intense debate over both the causes of slow recovery and appropriate policies to accelerate investment consistent with better long-term growth expectations.

Variants of all classical explanations for growth—including technology-led, improved access to capital and land, institutional and organizational innovation, public goods coverage and quality, and more equal income distribution—are regularly cited as offering exceptional productivity returns when appropriately adjusted to fit contemporary political and economic conditions. However, with prolonged low growth, pleas for increased flows of targeted public resources for income transfers, education and health, financial inclusion, research and development, and security

budgets proliferate. Since attempts to target a wide portfolio of such pleas for scarce public capital will likely preclude the scale of investment consistent with substantial productivity gains at system level, demands to substantially expand rates of public investment in sustainable infrastructure must be evaluated against credible evidence for growth and revenue effects, impacts on short- and long-term investor behavior, political incentives salient to public finance officials, public institutional capacity to deliver funds effectively, and the probability of enacting complementary policy reforms required to realize potential productivity gains.

In this context, fiscal prescriptions that promise exceptional macroeconomic growth through investment in cost and resource-saving technology applications in sustainable energy, transport, and agricultural infrastructure would present strong claims for increased public support that can equally appeal to climate advocates.

Such growth benefits are frequently expressed in terms of continued falling costs, stocks of new jobs, relief from resource price volatility, and reduced health and work absence losses. There are *prima facie* correlations between national income and infrastructure, especially in the early stages of industrial development, which would underlie this hypothetical proposition. However, recent empirical analyses by the International Monetary Fund argue that infrastructure, more and less sustainable, as an asset class has a mixed record of short- and long-run stimulus to economic output, which varies with different stages of economic and institutional development.

The contribution of environmental sustainability to growth as conventionally measured is equally contested. It is widely acknowledged that avoided environmental damages have non-monetized benefits that could be counted in a more comprehensive assessment of well-being and growth. Still, in practice, valuation of these effects has proven to be sporadic and difficult. Although cost-benefit analysis of regulation and judicial decisions have in some countries assigned relatively high shadow prices to ecosystem effects, explicit carbon prices have been stable at very low levels, even when packaged with other benefits from renewable energy development. Generally, there is evident political willingness to mandate price or quantity controls on emissions when the incremental costs of low carbon energy projects are close to parity with fossil and to postulate much higher values when climate damages would imminently render unstable broader systems of economic production. Between these extremes,

there is little clear indication of how avoided damages or environmental quality ought be estimated for growth accounting. Climate policy must continue to wrestle with the questionable record of political response to the issue of avoided costs in order to move forward in the next phase of implementation.

Furthermore, climate advocates must also acknowledge that the value in theory of expanded public funds for targeted asset classes, such as low-carbon infrastructure, depends in practice on the institutional quality of the public institutions and instruments through which the portfolio of public investments is defined, delivered, and aligned with private co-investment.

Yet IMF and other analyses of the performance of public finance vehicles often show large post-deployment discounts in expected productivity gains returned by these investments due to poor institutional quality tied to routinized organization, weak planning in and between government financial agencies, misaligned internal incentives, gaming and corruption. This finding is often more pronounced in emerging markets and in financial systems where state banking remains the near dominant supplier of infrastructure finance—systems where energy demand and carbon intensive production have grown more rapidly in the past decade.

Without improved appraisal, understanding, and assurance of the quality of public finance institutions, there is little hope for the productivity gains that justify targeted expansion in sustainable infrastructure, enhanced investment in other asset classes, or alternative fiscal policy programs that yield macroeconomic gains and credibly raise investor expectations that are essential to sustain long-term growth.

The final piece of the implementation puzzle stems from the mixed performance of stimulus programs in infrastructure in the age of digital innovation. Some argue that the advent of renewables is just one aspect of a larger transformation in telecoms, energy, mobility, and agriculture, with the next stage of climate action increasingly being shaped by systems transformation and driven by disruptive digital technologies. Among growth economists, there is open debate about the contribution of free and network goods to productivity since 1990, the proper measurement of these innovation effects on market and non-market welfare, and their impacts on fiscal returns and the incentives of private investors. However, to-date, new energy investment and renewable generation has been inserted into the

margins of existing systems long organized around the dominant fossil technologies, usually in the absence of networked systems, and with mixed results on overall growth. Therefore, if it is true that exceptional productivity gains from sustainable infrastructure will derive from applications of intelligence and connectivity in the integration (supply and demand management) of fundamentally transformed energy systems that are associated with a wider wave of digital industry innovation, technology-led growth may be realized only when combined with complementary system reforms of market designs, adapted business practice, and financial models.

In this vision of growth-driven energy futures, any macroeconomic claims for sustainable infrastructure must be disaggregated and evaluated both for the risk and timing of productivity effects in order to make the case for continued investment.

In summary, as climate action moves to the center of finance and macroeconomics, and finance and macroeconomics move to the center of climate action, a shift in strategy and institutional focus is advisable. A plausible theory of growth that would support targeted programs for public finance investment, including credible hypotheses about the macroeconomic growth effects of sustainable infrastructure, could require a three-part proposition that combines technology innovation, quality institutional delivery and system transition. Analyzing, testing, piloting, monitoring and evaluation of how more generalized macroeconomic and growth strategies could be applied and delivered would require both a connected network of local and regional actors with practical public finance responsibilities, a common conceptual framework, and coordinated capacities to execute appropriate methodological techniques to variable specified conditions.

These challenging objectives and questions are being explored by an informal network of public finance officials, economists and financial theorists in a proposed Advisory Finance Group. The Group will be composed principally of experienced practitioners from the public finance community—including directors of ministries of finance, central banks, financial regulatory agencies, and development finance institutions—and supported by economists and financial strategists recognized for leading expertise on investment productivity and by analysis groups in all regions to specify locally adaptive applications of these programs.

The conceptual framework of the Advisory Finance Group inverts the logic of

climate change analysis. It begins not with climate change as an environmental issue, but rather with financial problems central to macroeconomics and growth. We already have a reasonable idea what expanded and targeted public investments in low carbon infrastructure can contribute to meeting climate goals. What we need now to understand is whether investment in sustainable infrastructure has credible productivity potential greater than other plausible claims upon increased public funding. In a world caught up in prolonged macroeconomic stagnation, the primary mandate of financial officials is to define and deliver the fiscal and monetary options that can lift investor expectations of long-term growth.

Without such long-term growth, climate change will remain trapped in good intentions, with an increasing gap between what we know is needed and what is achieved on the ground.

From Sector to System: Reshaping Humanitarian Aid

By RT. Hon. David Miliband

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In May of this year, I visited the refugee camps at Dadaab, the desert complex in Kenya's remote northeastern region that some 350,000 Somalis call home. Many of those whom I met in the camps have been there since 1991, the year that the United Nations (UN) planted the first tent poles; after a quarter century of false dawns in Somalia, they told me they have abandoned hope of ever seeing their country again. Among their children and grandchildren, born, raised and stranded in the camps, the sense of dislocation, limbo, and enforced transience was depressingly palpable, as was the feeling of utter helplessness.

The plight of Dadaab's residents is extreme but illustrative. Modern conflicts rage on for an average of 37 years, making the return for those forced to seek shelter in neighboring or far-flung states an ever-distant prospect: less than one percent of the world's 21.3 million refugees went home in 2015.

The levels of forced displacement such as these have not been seen since the last days of World War II. The human toll has been immense: the unending conflicts in places like Somalia and Afghanistan and newer wars in the likes of South Sudan and Syria behind such upheaval—alongside increasingly intense natural disasters, environmental degradation, impoverishment and epidemics—have given rise to unprecedented levels of global humanitarian need. More than 125 million people currently require urgent assistance, which has increased from 32 million a decade ago.

The funding requested by the UN and its partners to meet such needs has risen tenfold since the Millennium, reaching an all-time high of \$21.9 billion this year. Yet despite record levels of donor contributions, the gap between needs and the resources provided to meet them is growing, not shrinking; according to the UN High Level Panel on Humanitarian Financing, the overall emergency relief effort is underfunded to the tune of \$15 billion.

There is, then, an obvious and immediate need for more aid, especially in the conflict-ridden, fragile states that produce 60% of the world's displaced and 43% of its extreme poor (yet receive only 30% of total overseas development assistance). For a planet generating a global gross domestic product of \$78 trillion annually, finding the resources to save lives and mitigate the impacts of conflict and disaster should be more than feasible.

But there is a further, equally urgent imperative, which is the subject of this essay: the need to transform humanitarian action from a mission-driven but fragmented *sector*, characterized by plethora areas of focus and organizations, into a high-performing, dynamic *system* that is directed towards clearly shared outcomes, underpinned by agreed metrics of success, bearing common methods of accountability, founded upon a commitment to drive practices based on evidence, and financed on the basis of a methodology that supports rather than subverts its goals and efforts.

From Sector To System

So much humanitarian action is genuinely heroic. The work carried out amidst conflict by UN staff, non-governmental organizations (NGOs), and the civilians themselves afflicted by war and disaster is remarkable. Its setting is axiomatically volatile and intensely dangerous. Those endeavoring to get aid into the hands of those who need it seek to uphold the highest humanitarian and professional ideals in places notable for their absence.

We must not take such heroism for granted, nor should we fall into the trap of believing that heroism is, in and of itself, an adequate response to the levels of humanitarian suffering with which the world is currently confronted. While having more resources is vital, the stark reality is that the scale and complexity of current humanitarian needs are increasingly out of step with the policies and practices available to meet them.

For instance, even though nearly 60% of refugees live among host communities in towns and cities, the primary service delivery model is focused on camps. Despite the obviously protracted, long-term nature of the displacement that typically befalls those forced to flee their homes, humanitarian interventions aimed at meeting their needs continue to be funded on a short-term basis and are not complemented by the provision of access to jobs and education. While an increasingly large proportion of those displaced by conflict find themselves seeking shelter in middle-income states, the mandates of international institutions and donors are often premised on the notion that impoverished and vulnerable people are only to be found in poor countries. And in both middle- and low-income settings, development and humanitarian actors segment themselves by the different populations they serve and work according to separate timescales and funding streams, regardless of their commonalities in need or vulnerability.

The mismatch between need and response is, therefore, also one of concept, institutions and mindset that have resulted into the play of an organic, ad hoc fashion in which the humanitarian sector has evolved since the 1940's. Transforming that sector into a system that does justice to the heroism underpinning it cannot be accomplished overnight; nevertheless, a degree of urgency and focus is essential if we are to meet the humanitarian challenges of the 21st century. With this in mind, the call of my organization, the International Rescue Committee (IRC), which delivers aid to millions of people in more than 30 war-torn, disaster-prone countries, is for action in three key areas: outcomes, effectiveness and financing.

Outcomes

The humanitarian community has always embraced fundamental principles of action; independence, neutrality, impartiality and humanity both underpin and govern all aspects of our work. But unlike our development counterparts, we have yet to define limited and specific results to guide our programs and investments and to measure progress and performance.

The Sustainable Development Goal's (SDG's) framework, to which national governments signed on last September, enshrines 17 goals and 169 targets. But specific targets for the millions of people affected by conflict and disaster, who increasingly constitute the locus of global poverty, was lacking. This severely

undermines the prospects of the SDG's attainment; more widely, the absence of a limited set of agreed, collective outcomes measured by meaningful indicators is preventing us from operating like a proper system. They are an essential first step if we are to overcome the divide between humanitarian and development actors working in the same countries with overlapping populations.

As a starting point, the IRC's recommendation is that those working in humanitarian settings—both nongovernmental and governmental actors—establish and adopt at both the global and national level clear priorities for collective outcomes to track improvements in the health and economic wellbeing of those displaced by conflict, as well as in the education of children and the protection of women and children from violence that is uprooted by war. The indicators to measure these outcomes will need to be carefully and precisely crafted; whether a child has access to education, for instance, should be assessed in terms of attendance and participation rates, not merely enrollment. And the 'collective' element needs to act as a discipline on donors by ensuring that they replace the costly diverse multitude of indicators that aid agencies currently responsible for measuring with a harmonized, effective accountability system that drives out wasteful information collection.

Effectiveness

Focusing on outcomes is the first stage in the battle for effective aid; the second relates to how that aid is delivered. While there have been more than 4,000 rigorous evaluations of programming in stable countries over the past decade, approximately 100 of them have been conducted in conflict settings. In the absence of a strong evidence base to inform the selection and prioritization of interventions, the humanitarian community is currently relying on assumptions, experience and intuition, rather than research founded on facts and data. This needs to change.

Since 2006, the IRC has launched 66 research studies, including 29 impact evaluations, across 24 crisis-affected countries, as well as in the United States. The evidence that such studies generate offers a wealth of insights into how outcomes for those receiving aid can be improved; the reduction in violence and promotion of healthy child development that targeted target programs for parents and caregivers can yield in high-income and stable countries is but one example. Where such evidence exists, donors and aid agencies should work to agree on its implications for the achievement

of desired outcomes, with programs demonstrating high impact receiving greater support. Where it doesn't, serious international investments in terms of time and both public and private sector resources should be made to generate it through impact evaluations that can inform program design, outcomes to monitor and measure change between different interventions, the allocation of risk capital for research and development, and a concerted push to secure breakthroughs in innovation.

The humanitarian community stands to gain dramatically by aligning behind interventions that work. As a starting point, we suggest that a collective evidence drive focus on a few priority areas, for example: improving learning outcomes for children affected by conflict (including a benchmark of the costs entailed in doing so); reducing violence against women and children in communities ruptured by the coincidence of poverty and war; and increasing family incomes and assets in contexts of protracted urban displacement.

Such an evidence base, if it is to support a high-performing humanitarian system rather than a fragmented sector, will need to be common, easily accessible, and shared with consensus around the standards of evidence required to inform programming. The IRC's new Outcomes and Evidence Framework, which draws together the best available evidence on how to achieve defined improvements in our beneficiaries' lives and presents it via an online tool, will be available to everyone, from practitioners to donors and grant managers to program planners. We believe that this open-sourced approach—as opposed to separate evidence bases for different players—represents the way forward.

Finance

Finally, the humanitarian community needs to confront head-on the reality that key aspects of our contemporary financing system are dramatically out-of-sync with the nature of modern humanitarian need. The UN's High-Level Panel on Humanitarian Financing has already raised the standard for a more efficient and effective system: it is vital that its insights are turned into daily practice.

For donors, that means embracing a shift to predictable, multi-year funding, dedicated to securing clear outcomes for affected populations. Despite the fact that refugees are displaced for an average of 17 years, the IRC's median grant length is just 12 months;

the attendant accountability systems are multiple, overlapping and divergent, and they consume time and resources. This means funding measurement, evaluation and evidence-generation at appropriate levels. It means ensuring that funding follows that evidence and that programs with high levels of impact and which are tracked and delivered against clear collective outcomes grow. It means pooling funds across humanitarian and development agencies and, where required, sectors like health and education for women and children, to ensure that money is targeted towards meeting people's needs, not organizational mandates. And finally, it means establishing a harmonized reporting framework that cuts the costs of managing grants.

Donors have a further, vital role to play. Within the humanitarian sector, though the cost of particular interventions is widely recognized as important, we do not reliably know how much it costs us to change individual's lives. The current "value for money" approaches employed by individual NGOs tend to focus on administrative savings, regardless of whether they have actually contributed to overall efficiency, and reveal little about how these costs relate to the actual outcomes achieved by programs, and do not lend themselves to cost comparisons. A far more meaningful analysis would examine and compare the cost-efficiency (cost per latrine constructed, for example) and cost-effectiveness (cost per increase in, say, nutritional status) of specific programs, and enable us to significantly increase the numbers of people who benefit. With data on the cost per output and cost per outcome of different interventions, we could direct funding towards the programs that achieve the greatest change in the lives of beneficiaries per dollar spent, multiplying the impact of our dollars exponentially .

For the multiplier effects of better costing to be truly realized, however, the humanitarian community needs a common costing methodology that allows figures to be compared across agencies, systems that help to automate calculations, and shared metrics of efficiency, towards which we can collectively strive. This will only happen if donors coordinate their requirements, and invest in building capacity within implementing organizations. Our call in this regard is for a successor to the High-Level Panel on Humanitarian Financing—a High-Level Panel on Humanitarian Costing—which brings, under independent chairmanship, all sides of the debate together to develop the cost benchmarks and guidelines that the sector needs. Moreover, instead of embedding varying analytical requirements within grants or sectors, they should target support towards implementers who develop

transparent and rigorous in-house systems that generate the necessary information systematically. The IRC has taken the lead in establishing a first-generation Systematic Cost Analysis (SCAN) tool to track costs on key interventions, and by 2018, we will have rolled out a full cost monitoring system across our various country offices to enable the delivery of cost-efficiency estimates in all proposals and final reports.

More Aid, Better Aid

This essay has sought to make the case not just for more aid but for better aid. Business as usual is no longer an option, if it ever was. Those uprooted by conflict are crying for a humanitarian response that reflects the length of their displacement and the complexities of their needs; meanwhile, growing climate risks, increasing economic imbalances, escalating urbanization, and deepening pressures on domestic budgets further mitigate against the status quo.

There are some grounds for hope. Under the leadership of President Jim Yong Kim, the World Bank has demonstrated its readiness to support the creation of job opportunities for those forced to flee to middle-income countries. The commitments made at February's Supporting Syria and the Region Conference in London, where international financing—and trade preferences—were offered in return for job opportunities for Syrian refugees point the way forward, as do pledges to ensure that all refugee and vulnerable host community children in Lebanon, Jordan and Turkey are enrolled in school by the end of the 2016-17 school year. Canada's strong show of solidarity with these countries, in resettling tens of thousands of vulnerable Syrians across the Atlantic, is an example to all able states, and should be emulated. The 'Grand Bargain' struck six months ago in Istanbul between the top 30 international donors and aid agencies endorsed a general shift towards the greater use of cash transfers as aid. September saw world leaders gather in New York for two summits aimed at tackling the global displacement and migration crises.

Crucially, the heroism and commitment of aid workers—in settings from Mali to Myanmar—proves that the fundamental humanitarian impulse is alive and well. The task for donors over the coming months and years—possessing as they do the money, leverage and bearing, therefore, the responsibility—is to capitalize on that impulse, overcome the muscle memory of the past 70 years, harmonize their efforts, focus on outcomes rather than inputs, and break out of the moribund categorizations

that events on the ground have long left behind. If the incoming UN Secretary-General can galvanize the necessary political and institutional energy to take such an agenda forward, then the world has a chance to radically transform the lives of those in Dadaab and elsewhere, and to build—for the first time—a humanitarian system worthy of its name.

