

Why the 'oil' that greases India's economic engine - its financial system - needs an upgrade

The Indian economy has been growing at a breakneck pace in recent years. However, the country is in serious need of financial reforms to make that growth sustainable and inclusive, explains Cornell professor Eswar Prasad, the Nandlal P. Tolani Senior Professor of Trade Policy in the Department of Applied Economics and Management, and an adviser to the Indian government. Before coming to Cornell, he was the head of the International Monetary Fund's Financial Studies Division.

BY ESWAR PRASAD

A country's financial system – including its banks, stock markets, government and corporate bond markets – is a key part of the engine that drives the economy's growth. For an emerging market economy like India, a well-functioning financial system could spell the difference between low and volatile growth on the one hand, and high, stable and equitable growth on the other. While India's financial system has improved over the years, the demands placed on it have multiplied as the Indian economy has become richer, more complex and more integrated into the world economy.

Last August, the Indian government set up a high-level committee, chaired by the former chief economist of the International Monetary Fund (Raghuram Rajan) and including India's top bankers, financial regulators and academics, to articulate a vision for the next generation of financial reforms for India.

I was on the research team for the committee and was responsible for drafting the chapter on macroeconomic policies. What do monetary, exchange rate and fiscal policies have to do with the financial system? Therein lies a tale.

This committee was given the freedom to paint on a broad canvas. Its mandate was to "outline a comprehensive agenda for the evolution of the financial sector." The committee rightly decided that it would have to take a holistic perspective, including thinking about the right

macro policies that could serve as a foundation for financial reforms. For instance, good monetary policy – and the resulting confidence that a central bank will keep a tight leash on inflation – is essential for people to enter into long-term contracts and participate in markets for long-term bonds.

The committee's composition seemed primed for conflict, considering that it put together heads of the leading private- and public-sector banks together discussing how the government should reform public-sector banks and make them more subject to market discipline. Remarkably, despite the inevitable differences in views, the committee succeeded in reaching consensus on a sharp set of recommendations. This is a testament to the strong desire of all committee members to push for significant financial reforms, even if they disagreed on some specifics.

The report <http://planningcommission.nic.in/reports/genrep/report_fr.htm>, which was released this month, lays out a blueprint for the next generation of financial sector reforms in India. It contains a broad vision for strengthening the banking system, building up government and corporate debt markets, improving regulation and supervision of the financial system and promoting financial innovation. More importantly, it shows how these different elements are intertwined and argues that putting in place some of these reforms simultaneously, rather than in a piecemeal manner, may in fact be easier and potentially more effective.

A robust financial system is not much good, however, if most people don't have access to it. The lack of access to formal banking services, which affects more than one-third of poor households, leaves them vulnerable to moneylenders. And the lack of financing nips entrepreneurial desires in the bud. The report highlights that financial inclusion is a key priority for India, especially rural India. This means providing not just basic banking but

Cornell Perspectives



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also instruments to insure against such adverse events as low crop yields due to bad weather.

There is a risk that India's rich and complex political process could stall the implementation of the broad vision in the report. Hence, the report also contains specific smaller steps to build up some momentum for reforms as people see the benefits. For instance, something as simple as converting trade receivable claims to electronic format and creating a structure allowing them to be traded in a secondary market could greatly boost the credit available to small and medium-sized enterprises.

The report has already generated strong reactions, and members of the committee, including myself, have been busy writing articles in the major Indian newspapers summarizing the arguments in the report and rebutting our critics.

Even if we change the terms of the debate among Indian policymakers and the public, something will have been accomplished. But it is the committee's fervent hope that the report will achieve a lot more; we will have to wait and see what the government does with it.

To the committee, the choice is clear. The implementation of our report's blueprint for financial sector reforms could lay a strong foundation for India's future economic growth and also contribute to the social and political sustainability of that growth. The absence of reforms, on the other hand, would represent a lost opportunity and perhaps also a huge source of risk for the economy.

Soil continued from page 5

While the composition of organic carbon in soils from North America, Panama, Brazil, Kenya or New Zealand proved remarkably similar within each sample, the researchers found that within spaces separated by mere micrometers, soils from any of these locations showed striking variation in their compositions. For example, the compounds that "hang on the right and left of a clay mineral may be completely different," said Lehmann.

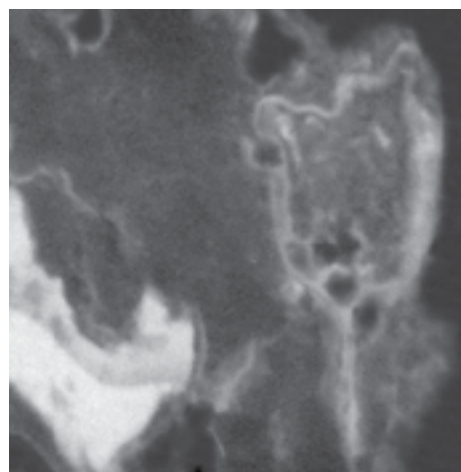
The researchers were also able to identify the origins of some of the nano-sized compounds, determining that some of them, for example, were microbe excretions and decomposed leaves.

The researchers also recognized patterns of where types of compounds are likely to be found at the nanoscale.

"Now we can start locating certain compounds," Lehmann said. "We find black carbon as distinct particles in pores, whereas we find microbial products smeared around surfaces of minerals."

The method now allows researchers to break soil down, separate compounds, conduct experiments on individual compounds and better understand the interactions, Lehmann said.

The research was funded by the National Science Foundation.



JOHANNES LEHMANN/PROVIDED
Carbon distribution map in a soil microaggregate.

Drell continued from page 5

is very, very angry about it. The White House and Congress are not working together, and science got caught in the crossfire."

The lack of adequate funding for basic science poses a major threat to the nation's ability to stay competitive, Drell said. But if government dysfunction is partly to blame for the quandary, she said, the research community must also do a better job of advocating for a budget that invests broadly across the sciences in basic research; mission-directed research (basic science conducted within a strategic framework); and applied research.

"Some investments have short-term, maybe less than five-year payoffs; some won't pay off for decades," she said. The invention of the transistor and MRI technology, she said, are just two of many examples of revolutionary applications that have their roots in fundamental research.

"Over and over, we see that it's transformative solutions that come out of a broad investment in research that really make huge changes in our society. We as a community have to do a better job of articulating those," she said.

And scientists must focus less on lobbying for their own narrow projects, she said, and more on emphasizing the importance of a broad national investment across disciplines.

"I believe a coherent advocacy is the only way that we will be able to succeed," she said. "We have to be willing to serve in the national advisory capacities and provide our best, wisest advice – not just on what is best for ourselves and our disciplines, but what is best for the national program as a whole ... We will all benefit if we all advocate a broader national commitment to scientific research and innovation."

While at Cornell, Drell also served as deputy director of Cornell's Laboratory of Nuclear Studies and as chair of the Synchrotron Radiation Committee.

Duke University Press joins Cornell Library to expand Project Euclid by putting independent journals online

In a publishing agreement that reaches across boundaries, Cornell University Library has partnered with Duke University Press to establish a joint venture to expand and enhance the services of Project Euclid, the premier online information community for mathematics and statistics resources from independent publishers.

Project Euclid was established in 2000 by Cornell Library with funding from the Andrew W. Mellon Foundation. It created an online presence for a group of non-profit independent and society journals in mathematics and statistics, to help them thrive in the increasingly competitive and commercial world of scholarly publishing. It is now home to

93,000 journal articles (75 percent of which are open access) from 54 journals, along with 60 monographs and conference proceedings. In addition to being an online publishing service and repository, Project Euclid may also in the future provide publishers and editors with tools to streamline their editorial and peer-review processes, as well as showcase and deliver their content in a more timely and cost-effective manner.

The collaboration is unique, said Terry Ehling, executive director of Project Euclid, because this is the first time "a university press and a library that don't share the same genetic material have entered into formal partnership." Duke was involved in the original planning for Project Euclid, she said, and "their formal association and complementary strengths now afford a singular opportunity to expand Euclid's footprint nationally and



abroad."

Duke is one of the leading university presses in the nation, and its journals publishing program is one of the five largest, Ehling explained. "Duke University Press will bring expertise in marketing, order fulfillment and recruitment of new journals," she said, "Our collaboration with Duke Press will allow the library to do the things it does best – provide innovative technology and promote fun-

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– Anne Kenney, university librarian

damental changes in the publishing and delivery of scholarly information."

"A collaboration that pairs the complementary strengths of a leading research library and a university press from different

universities is an extraordinary move," agreed Anne Kenney, the Carl A. Kroch University Librarian. "The result is nothing less than securing the future of alternative publishing options for independent presses in the fields of mathematics and statistics."

The joint venture was undertaken in cooperation with the Scholarly Publishing and Academic Resources Coalition, an alliance of universities, research libraries and organizations, created by the Association of Research Libraries. Leadership for Project Euclid will be assumed by management at both Cornell and Duke when the agreement takes effect in July.