

RESEARCH NEWSLETTER

Electricity and Development | October 2020



[Electricity Availability and Economic Activity: Lessons from Developing Countries](#)

Electricity is critical to modern economic activity and is an essential input to many public services. Yet, more than 800 million people lack even basic access to electricity services, and in many parts of the world, the power supply is limited and highly unreliable. Recent advances in methodology and data have made it possible to better calculate just how valuable electricity access is. [Recent research](#) on Brazil, for example, suggests that grid electrification has been responsible for nearly a third of the increase in GDP per capita between 1970 and 2006. In a recent [Policy Research Talk](#), World Bank economist Jevgenijs Steinbuks discussed this and other findings about the role of electricity in transforming economies.

Policy Research Talk: [Video](#) | [Presentation](#) | [More about Jevgenijs Steinbuks](#)

RESEARCH HIGHLIGHTS

WORKING PAPERS

✓ [Electricity Access and Structural Transformation: Evidence from Brazil's Electrification](#)

Grid electrification is an important yet understudied driver of how the structure of economies evolve as they develop. Increased electricity availability increases economic returns and lowers entry costs in sectors that can make more intensive use of electricity. Model simulations for Brazil during 1970-2006 show that the expansion of electricity infrastructure explains 17 percent of the structural change in the economy and 32 percent of the observed increase in GDP per capita.

✓ [Infrastructure, Economic Growth, and Poverty: A Review](#)

[Govinda Timilsina](#), Gal Hochman, and Ze Song, *World Bank Policy Research Working Paper 9258*, May 2020

Developing countries face a difficult question: how much of their limited financial resources should they invest in physical infrastructure relative to other pressing needs? A growing literature generally finds a positive correlation between infrastructure investment and growth and a negative correlation with inequality. Yet many gaps and limitations in the literature remain that, if addressed, could provide better guidance to policy makers.

✓ [How Valuable Is the Reliability of Residential Electricity Supply in Low-Income Countries? Evidence from Nepal](#)

Anna Albertini, [Jevgenijs Steinbuks](#), and [Govinda Timilsina](#), *World Bank Policy Research Working Paper 9311*, June 2020

Nepali households are willing to pay a significant amount for reliable power service—on average, 65 percent more than their actual average monthly bill. However, this figure is still lower than the marginal cost to avoid load shedding. The figure also appears to have not changed since the beginning of the country's 2008-2016 load-shedding crisis.

✓ [Demystifying the Costs of Electricity Generation Technologies](#)

[Govinda Timilsina](#), *World Bank Policy Research Working Paper 9303*, June 2020

The levelized cost of electricity (LCOE) indicator is commonly used to compare the cost competitiveness of different types of electricity generation. This study calculates more than 4,000 values of the LCOE for 11 electricity generation technologies depending on seven input variables (capital costs, fuel costs, etc.). When capital costs are at the lower end of available estimates and the discount rate is under 10 percent, the LCOE for many renewables is lower than that of fossil fuel-based electricity technologies.

■ JOURNAL ARTICLES

✓ [Willingness to pay for electricity access in extreme poverty: Evidence from Sub-Saharan Africa](#)

Maximiliane Sievert and [Jevgenijs Steinbuks](#), *World Development 128: 104859.020*, 2020 | [Working Paper Version](#)

Improving electricity access in low-income countries is complicated because of high service costs and low electricity consumption in rural areas. This willingness-to-pay analysis for electricity supply in a number of poor Sub-Saharan African countries shows that at low levels of household income, low-cost decentralized off-grid solar technologies provide the highest net benefit for those households.

✓ [Economics of energy subsidy reforms in Bangladesh](#)

[Govinda Timilsina](#) and Sheoli Pargal, *Energy Policy 142: 111539*, July 2020 | [Working Paper Version](#)

Subsidies to energy in Bangladesh impose a significant fiscal burden, with benefits that disproportionately accrue to high-income households. An economy-wide simulation of the impacts of removing both direct electricity subsidies and indirect subsidies for the use of natural gas finds positive economic outcomes: increased GDP and economic welfare when the proceeds are used to fund investment or cut income taxes and indirect taxes.

UPCOMING EVENTS

A new webinar series on [Deep Trade Agreements](#) starts this fall. Tune in on [Youtube](#) on November 3 for the next event in the series on “Political Economy and the Design of Deep Trade Agreements”!

- **November 11:** [Development Policy and COVID-19 Seminar Series: Recovery from the Pandemic across the World](#)
- **November 17:** [Policy Research Talk: Bank Lending for Inclusive Growth](#)
- **December 8:** [Policy Research Talk: The Implications of Behavioral Economics for Public Utility Policies](#)

To see more events, please click [here](#).

FEATURE STORY



This idea of hibernation is that you're going to be saving firms. Those firms are going to be benefitting the young population that will be working in those firms later on.

Sergio Schmukler
Research Manager, Development Research Group
Financing Firms in Hibernation during the COVID-19 Pandemic

[How to "Hibernate" Firms for a Resilient Recovery from COVID-19](#)

Policymakers around the world have deployed a range of actions to cushion the effects of the economic shock brought on by COVID-19, while containment measures necessary to save lives continue. A critical part of the discussion is how to prevent companies—many of which have been hammered by a collapse in revenues and a plunge in cash flows—from failing. One idea is to help them “hibernate” until activity resumes. Sergio Schmukler, Research Manager and co-author of the paper, “[Financing Firms in Hibernation during the COVID-19 Pandemic](#),” jointly produced with the Research and Development Center in Chile, explains the what, why, and how.

[Read the story](#) | [Learn more about Sergio Schmukler](#)

BLOGS AND BRIEFS

Reassessing the evidence for “business training doesn’t work”

[David McKenzie](#) | *Development Impact* | September 21, 2020

A new meta-analysis of business training programs shows a positive average impact, and discusses ways to improve standard training

In a [new working paper](#), I re-assess the evidence for the effectiveness of business training, incorporating both the older literature and these newer studies. I also look at innovations that have been trialed as alternatives to traditional training, and at different approaches to scaling up training to reach tens of thousands or millions of firms on a cost-effective basis.

[Read the blog](#)

Four things to know about the Human Capital Index – and an uncomfortable fact

[Roberta V. Gatti](#), [Aart Kraay](#) | *Let's Talk Development* | September 28, 2020

The [2020 update of Human Capital Index \(HCI\)](#) was launched this month, providing a pre-pandemic benchmark of human capital outcomes for 174 countries, as well as new data for 2010 to enable tracking progress in building human capital over the past decade. The HCI was a large-scale collaborative effort, involving staff from around the World Bank Group and many inputs from government counterparts to update and review the data. Now that the HCI is out, it is useful to step back and consider some basic questions around the HCI, what it does and does not say, and also to recognize how its limitations challenge us to increase our efforts towards more and better measurement to inform policies that support the acquisition of human capital.

[Read the blog](#)

Growth of global corporate debt

[Facundo Abraham](#), [Juan Jose Cortina Lorente](#), [Sergio Schmukler](#) | *All About Finance* | October 05, 2020

Slower economic growth worldwide as a result of the COVID-19 pandemic could impose significant costs to emerging market firms that increased reliance on debt financing

In a new [paper](#), we show that the rise in corporate debt was concentrated in emerging economies. Between 2008 and 2018, nonfinancial corporate debt rose from 56 to 96 percent of GDP in these economies, whereas it grew at the same rate as GDP in developed ones. This rise in corporate debt was mainly conducted through bond markets and it has been largely attributed to accommodative monetary policies in developed economies.

[Read the blog](#)

Different-sized baskets of fruit: How unequally sized clusters can lead your power calculations and analysis astray

[Ryan Cooper](#), [David McKenzie](#) | *Development Impact* | October 19, 2020

At the Chilean Budget Office, Ryan is starting an experiment with Eliana Carranza from World Bank, Leonardo González from the Budget Office (and with the participation of other colleagues from the World Bank, Ministry of Finance and Social Security Superintendence), that intends to measure the effect of the delivery mechanism of a cash transfer scheme for workers on their welfare and labor market decisions. They will randomize a set of 5,172 employers (with a total of 31068 workers that are eligible for the cash transfer program) to two treatment groups and a control group. One important characteristic of this sample is that the size of clusters is unequal and highly skewed.

[Read the blog](#)

How to win in private equity in emerging market and developing economies

[Tristan Reed](#) | *All About Finance* | October 19, 2020

Under what circumstances do EMDEs outperform developed markets? My colleagues and I answer this question in a new [study](#) of a remarkable data set—the cash flows associated with every private equity and venture capital investment made by the International Finance Corporation (IFC), the private-sector arm of World Bank. This data set offers three advantages compared

with existing references. First, the time series is longer than any other available, reaching back to 1961. Second, due to the IFC's mandate to promote economic development, the portfolio is extremely diversified, more so than foreign direct investment inflows, covering 130 economies with a concentration in the poorest (i.e., those with real gross domestic product (GDP) per capita less than \$1,000). Third, since the data set includes all of IFC's equity investments—even the write-offs—our analysis is not affected by survivorship bias, which occurs when successful investments are more likely to appear in a data set than failures.

[Read the blog](#)

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