

RESEARCH NEWSLETTER

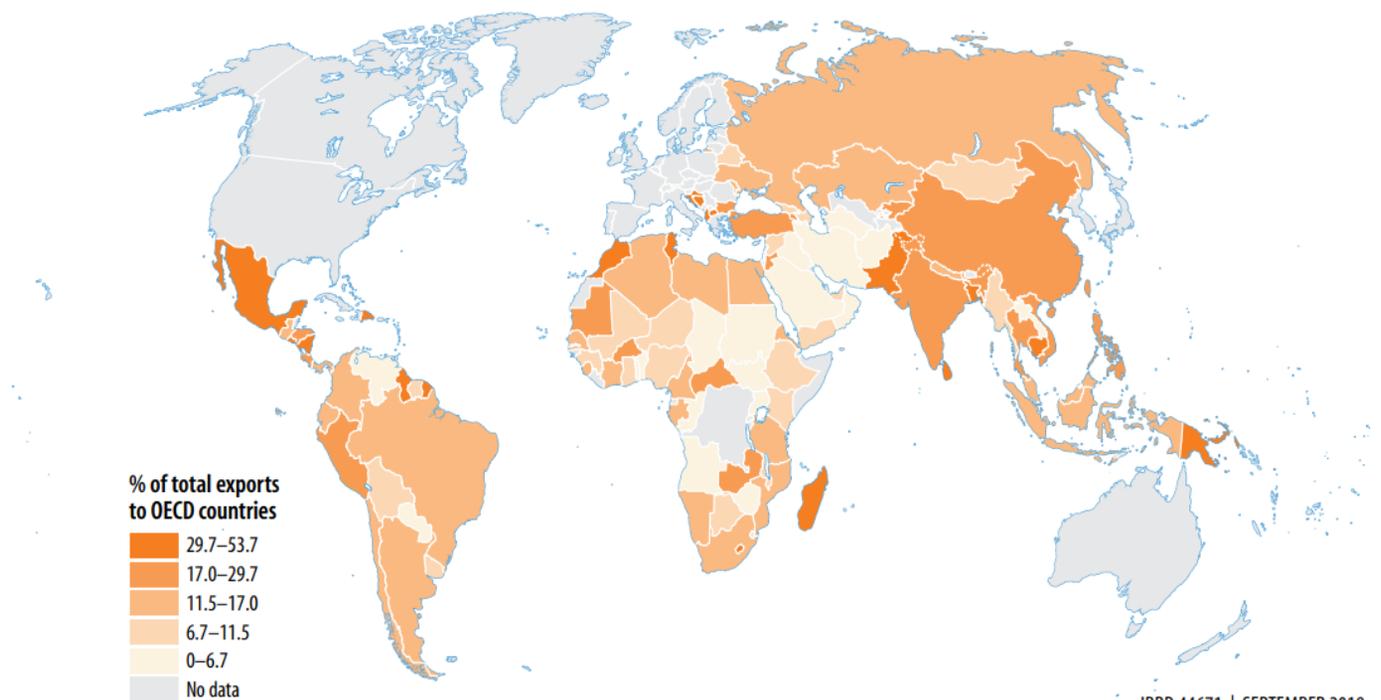
Trade, Robots, and Industrial Development | April 2021

FEATURED RESEARCH

Many developing countries have relied on export-led industrial development to achieve growth and higher standards of living. Research has backed up the hypothesis that competing in export markets can push firms to upgrade, increase human capital, and generate higher productivity and incomes. But is this well-worn path to development success still open to new contenders? The falling price of robots combined with the high percentage of goods exported from developing countries that could be produced by robots suggest developing countries might struggle in the future (Map 1).

In a recent Policy Research Talk, however, World Bank economist [Paulo Bastos](#) finds that, at least for now, robotization has actually increased net demand for imports from developing countries via greater demand for parts and components. Past performance is no guarantee, though, and Bastos argues that developing countries that hope to take advantage of trade-led development will need to focus increasingly on upgrading the capabilities of both firms and workers. While the COVID-19 pandemic sped up the trend toward robotization, it also had a silver lining: widespread work from home demonstrated that many services can be provided remotely, a vast potential opportunity for workers with the right skills.

Map 1 A substantial share of exports from developing countries is in goods that can be produced by robots



IBRD 44671 | SEPTEMBER 2019

Source: WDR 2020 team, based on Artuc, Bastos, and Rijkers (2018).

[Video](#) | [Presentation](#) | [Event Information](#) | [Policy Research Talks](#)

RESEARCH HIGHLIGHTS

WORKING PAPERS

✓ [Trade, Jobs, and Worker Welfare](#)

[Paulo Bastos](#), [Erhan Artuc](#), [Eunhee Lee](#), *World Bank Policy Research Working Paper 9628*, April 2021

This paper explores the welfare effects of exports on workers in Brazil using a new model of labor mobility that can account for changes in job opportunities after trade shocks. Export growth increases the number of job opportunities, improves the quality of employer-employee matches, and contributes significantly to worker welfare.

✓ [Does Automation in Rich Countries Hurt Developing Ones? Evidence from the U.S. and Mexico](#)

[Erhan Artuc](#), [Luc Christiaensen](#), [Hernan Winkler](#), *World Bank Policy Research Working Paper 8741*, February 2019 | [Blog](#)

Data on Mexican exports by municipality, sector, and destination from 2004 to 2014 shows that increasing automation in U.S. industries reduced Mexican exports to the United States by 3.35 percent. However, this reduction had no impact on overall employment in Mexico, and a negligible impact in Mexican districts where manufacturing jobs were initially more prone to be automated. Arguably, the lack of capacity to adopt new technologies—rather than increasing automation in rich countries—is the more important challenge in many developing countries.

✓ [Robots, Tasks and Trade](#)

[Erhan Artuc](#), [Paulo Bastos](#), [Bob Rijkers](#), *World Bank Policy Research Working Paper 8674*, December 2018 | [Blog](#)

Is robot adoption in the OECD replacing imports from developing countries? Empirical results reveal that greater robot intensity in the OECD leads to a rise in imports sourced from less-developed countries in the same industry, especially of parts and components. These results are consistent with a Ricardian trade model with two-stage production in which robots can take over some tasks previously performed by humans.

JOURNAL ARTICLES

✓ [Improving Management with Individual and Group-Based Consulting: Results from a Randomized Experiment in Colombia](#)

[Leonardo Iacovone](#), [William Maloney](#), [David McKenzie](#), *Review of Economic Studies*, forthcoming | [Working Paper Version](#) | [VoxDev Article](#) | [Blog](#) | [Policy Impact Note](#) (2-page summary)

By leveraging peer-learning effects, group-based consulting can be cheaper and more effective than individual interventions in improving SME performance. This conclusion emerged from a comparison between a group-based intervention and individual consulting for Colombian auto parts firms. The group-based intervention led to increases in firm sales, profits, and labor productivity, while the results for individual consulting were smaller and less robust.

✓ [Foreign Acquisition and Internal Organization](#)

[Paulo Bastos](#), [Natália P. Monteiro](#), [Odd Rune Straum](#), *Journal of International Economics* 114 (5): 143-163, September 2018

Foreign acquisitions lead to firm growth, reorganization, and technology adoption. This finding emerges from a study on the effect of foreign takeovers on firm organization using a comprehensive dataset of Portuguese firms and workers spanning two decades.

✓ [Export Destinations and Input Prices](#)

[Paulo Bastos](#), [Joana Silva](#), [Eric Verhoogen](#), *American Economic Review* 108 (2): 353-92, February 2018 | [Working Paper Version](#)

Detailed customs and firm-product-level data from Portugal reveal that firms exporting more to richer countries charged higher prices for outputs and purchased more expensive inputs. The effect on input prices is strongest in sectors with greater scope to differentiate between products based on quality.

✓ [Identifying and Spurring High-Growth Entrepreneurship: Experimental Evidence from a Business Plan Competition](#)

[David McKenzie](#), *American Economic Review* 107 (8): 2278-2307, August 2017 | [Working Paper Version](#) | [VoxDev article](#) | [Blog](#)

Almost all firms in developing countries have fewer than 10 workers. Can public policy help identify potential high-growth entrepreneurs and facilitate their growth? A large-scale national business plan competition in Nigeria provided winners with approximately US\$50,000. Follow-up surveys five years on show that winning leads to greater firm entry, more survival, higher profits and sales, and higher employment, including the likelihood of a firm having ten or more workers.

✓ [Exports and Job Training](#)

[Paulo Bastos](#), [Joana Silva](#), [Rafael Proença](#), *Review of International Economics* 24 (4): 737-756, August 2016 | [Working Paper Version](#)

A study utilizing worker-firm panel data from Brazilian manufacturing finds that exporting leads to worker technical upgrading via training. The results of the study support the hypothesis that exporting requires skills upgrading, and suggest that this is partially achieved by training firms' existing workforce.

✓ [Exporter Behavior, Country Size and Stage of Development: Evidence from the Exporter Dynamics Database](#)

[Ana M. Fernandes](#), [Caroline Freund](#), [Martha Denisse Pierola](#), *Journal of Development Economics* 119: 121-137, March 2016 | [Working Paper Version](#) | [Blog](#)

Larger countries and more developed countries have more exporters, larger exporters, and a greater share of exports controlled by the top 5 percent of exporting firms. These findings are based on data on the micro-structure of the export sector for 45 countries from the World Bank's [Exporter Dynamics Database](#).

For more Policy Research Working Papers from the Development Research Group: [Web](#) | [Email Notifications](#)

UPCOMING EVENTS

- **May 7, 2021:** [From Micro to Macro: Using Micro Data to Understand Macroeconomics and Public Policy](#)
- **May 25, 2021:** Policy Research Talk: [Data for Better Lives](#)
- **June 2021:** Policy Research Talk: [Information Technology and Tax Mobilization](#)
- **March 21–25, 2022:** [21st Annual Conference on Land and Poverty: Institutions for Equity and Resilience](#)

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BLOGS AND BRIEFS

Looking back at 10 years of Development Impact: Did our blogs age well?

[Berk Özler](#), [David McKenzie](#) | *Development Impact* | April 14, 2021

Ten years is a decade. 1,500 blog posts are a lot. We thought we'd reflect a little bit on how this all went since we had the idea of starting it in 2011.

The thing that we want to start with is the quality of our readership. In the early days, we would, not infrequently, receive comments from people, including guest bloggers, along the lines of “you don't get a lot of comments, but the ones you get are very high quality” (in the first year we received 115 comments on 179 posts; last year it was 90 comments on 123 posts). This was true from the very beginning: just check out this set of commenters on Berk's first blog post, “[Is there an 'unmet need' for birth control?](#)”, which is a 'Who's Who' of experts on development economics and family planning. And, each comment is like a blog post in and of itself.

[Read the blog](#)

The Development Impact Blog turns 10: We celebrate with a new logo!

[David McKenzie](#), [Berk Özler](#), [Markus Goldstein](#), [Florence Kondylis](#), [Kathleen Beegle](#) | *Development Impact* | April 12, 2021

We [launched the Development Impact blog on April 1, 2011](#), and have published exactly 1500 posts over the past 10 years! Our goal was to have a place to discuss a broad range of issues relating to conducting development research and impact evaluations, including discussion of new research methods and papers, sharing some of the many design and methods issues that don't often make it into either textbooks or published papers, and hopefully help both ourselves and others learn how to continue to improve our understanding of development and how to do development research. We have been thrilled by the continued support from our readers over the past 10 years, and it never gets old to hear from people in different countries who have found a post useful.

[Read the blog](#)

Learning from previous research: What to do when a global health crisis morphs into a global food crisis

[Kerina Wang](#), [Emiko Naomasa](#), [KCP Program Management Unit](#) | *Let's Talk Development* | April 9, 2021

This blog is the third in a series that highlights insights from research for development policies and practice, supported by the Knowledge for Change Program (KCP).

One of the most crucial benefits of empirical research is that it helps us learn from the past, so that we won't repeat the same policy mistakes again. The Covid-19 pandemic initially appeared to be a global health crisis, but very quickly, it morphed into a full-blown economic crisis that has detrimental impacts on people's ordinary daily routines, such as purchasing and securing food. It is [estimated](#) that the pandemic may have doubled the number of people facing severe food insecurity by the end of 2020.

[Read the blog](#)

Devil in the details: measuring seeds

[Kathleen Beegle](#) (and others) | [Development Impact Guest Blogger](#) | April 8, 2021

This blog is the 2nd in a 2-part series which explores how laboratory-based measurement can be used to inform studies in agricultural economics, specifically assessing seed quality...

In our first [Devil in the details](#) post, we sounded a cautionary note on fertilizer quality measurement, which can be hampered by pesky but crucial calibration problems that can yield misleading test results. Measuring quality matters because it helps to inform if perceptions of fertilizer quality among farmers are accurate. This, in turn, is critical to understanding drivers of low agricultural productivity associated with low utilization. Here, we shift our focus to seeds – another agricultural input that has similarly attracted the gaze of economists. Farmers are also widely concerned about seed quality but measuring seed quality (by farmers or researchers) is fraught with complexities in analysis and interpretation. At the end of this post, we provide some guidance for economists using lab-based measures.

[Read the blog](#)

Regulations help explain variations in financial inclusion

[Leora Klapper](#), [Dorothe Singer](#), [Saniya Ansar](#) | *All About Finance* | April 7, 2021

Regulations might matter more in encouraging the use of financial services—rather than just their adoption

Our global [policy note](#) updates research originally conducted by [Franklin Allen and others](#) and explores why account ownership varies so widely among economies with similar income levels. We had a hunch that consumer protection was a big factor, so we took data from the 2017 [World Bank Financial Inclusion and Consumer Protection Survey](#) (FICP) to create a consumer protection monitoring and enforcement index. The index ranges from 0.06 to 1, with a higher score indicating more vigorous rules.

[Read the blog](#)

What prevents more small firms from purchasing professional business services? An experiment to test a business services marketplace

[David McKenzie](#) | *Development Impact* | April 7, 2021

In [recent work](#), Stephen Anderson and I found that subsidizing small firms in Nigeria to use HR consultants to hire a marketing or accounting worker, or outsourcing these services to a professional accounting or marketing company were both more effective than spending this money on trying to train the entrepreneur. The natural question that then arises is Why don't more small firms simply purchase these services for themselves? That is, why are government subsidies needed to get firms to start using these services?

In a [new working paper](#), we report on a series of follow-on activities designed to better understand how the marketplace for professional business services works in Nigeria, and on an experiment to test the effects of providing small firms with information and quality ratings on the business service providers.

[Read the blog](#)

Learning to navigate a new financial technology: Evidence from Bangladesh

[Emily Breza](#), [Martin Kanz](#), [Leora F. Klapper](#) | *VoxDev* | April 2, 2021

How do consumers learn to navigate a new financial technology? In our research (Breza et al. 2020), we examine this question using an experiment that introduced bank and mobile money accounts with automatic wage payments in a population of largely unbanked manufacturing workers in Bangladesh. Prior to our study, all workers in our sample received their wages entirely in cash, as is the case for approximately 85% of all employees in developing countries. We tracked workers over a period of approximately two years using surveys and administrative data and examine impacts on consumer learning and real outcomes.

[Read the article](#)

Targeting tax enforcement efforts on larger firms: A necessary distortion?

[Pierre Bachas](#), *Research & Policy Brief 45*, April 2, 2021

To collect tax revenue and maximize the use of scarce enforcement capacity, some tax administrations focus their enforcement efforts disproportionately on large firms instead of enforcing taxes evenly on firms of all sizes: small, medium, or large. This Research & Policy Brief provides evidence that size-dependent tax enforcement is prevalent, especially in lower-income countries, leading to increasing effective tax rates as firms become larger. The Brief then quantifies the impact of this policy for aggregate economic production. It finds that the impacts are moderate (amounting to about a 1 percent decline in total factor productivity), and thus could be justified for tax authorities with limited resources, given documented tax revenue gains of stringent enforcement targeted to large firms.

[Read the brief](#) | [More research briefs](#)

Policy research working paper series roundup, March 15–22

Let's Talk Development | April 2, 2021

This blog is a biweekly feature highlighting recent working papers from around the World Bank Group that were published in the [World Bank's Policy Research Working Paper Series](#). Nine papers published during the weeks of March 15 and 22 focuses on data research that contributed to the WDR2021, deforestation and trade liberalization, labor market impacts of COVID-19 in India, and others.

[Read the blog](#)

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