WORLD BANK GROUP

Interest Bearing Notes

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What's new on our website

Female-owned firms during the COVID-19 crisis

In a new brief, **Marie Hyland**, **Nona Karalashvili**, **Silvia Muzi**, and **Domenico Viganola** use firm-level data, collected between May 2020 and May 2021 in 41 countries, to provide descriptive evidence on the differential impact of the COVID-19 crisis on female- and male-owned firms. The data suggests that female-owned firms were hit harder by the crisis than male-owned firms along several dimensions. For example, female-owned firms experienced more temporary closures and laid off a larger fraction of their workforce. Despite these greater challenges, women expressed the same optimism about the future of their firms as men.

World Bank research

Efficient irrigation and water conservation: Evidence from South India

Groundwater depletion is a major threat to agricultural systems, especially in economies heavily reliant on farm production as well as densely populated regions. A new field experiment by our own **Xavier Gine**, along with **Ram Fishman** and **Hanan Jacoby**, explores the feasibility of drip irrigation as a potential mechanism to reduce groundwater use in India. Using a randomized control trial methodology, the study encouraged a group of well-owners in the treatment group to adopt drip irrigation through a subsidy incentive, while the control group was not offered the subsidy. Three years after the experiment started, the study finds the treated group reported greater adoption of irrigation reliant crops and earned higher agricultural revenue. However, they do not find any significant reduction in groundwater pumping compared to the control group, partly because the marginal price of pumping is zero. The authors correspondingly find an increase in water sales to adjacent plots by treated farmers. Therefore, from a policy perspective, the evidence from this paper suggests that while drip irrigation can improve agricultural efficiency, it cannot reduce the use of precious groundwater.

Warlords, state failures, and the rise of communism in China

In slightly fewer than three decades, the Chinese Communist Party went from its birth to ruling China. **Zhangkai Huang**, **Meng Miao**, **Yi Shao**, and IBN co-editor **Colin Xu** examine how this happened,

offering evidence that the rising frequency of famines during the brief warlord period (from 1917 to 1927) contributed to increasing support for the communist ideology. After half a dozen years of centralized rule under the new Republic (which derived from the Qing Dynasty), China fell into this warlord period, which witnessed frequent changes of rule at the prefecture level. The authors first show that famines became more frequent after warlord fragmentation, especially in prefectures that were hard to defend because of flat terrain along their borders, or those that neighbored strong military warlords. This is consistent with the notion that when the likelihood of their political survival was low, warlords behaved like roving bandits and state failures were more likely. They next establish that in prefectures with more warlord-era famines, residents died in greater numbers for the Communist cause in the subsequent decades leading up to its eventual triumph in 1949. There is also suggestive evidence that this link between famines and deaths operated through the share of landless peasants, which was both higher in prefectures that experienced more famines during the warlord years and positively associated with the number of deaths for the communist cause. The paper therefore suggests that state failures in some regions during the brief warlord period helped to facilitate the rise of communism in China.

Improving tax compliance without increasing revenue: Evidence from population-wide randomized controlled trials in Papua New Guinea

In a new field experiment on tax compliance in Papua New Guinea, **Christopher Hoy**, **Luke McKenzie**, and **Mathias Sinning** present results from two randomized control trials aimed at improved tax compliance in the country. The study tests the efficacy of text messages, fliers, and email reminders alerting taxpayers of upcoming due dates and also providing knowledge of the public benefit of paying taxes. The findings are quite interesting – while both treatments do increase tax filing, they do so only for taxpayers who do not have a tax liability. The non-compliant taxpayers do not improve their behavior due to either treatment. The authors conclude that such light-touch nudges are effective for those taxpayers that face the lowest cost of compliance.

Long-run effects of trade liberalization on local labor markets: Evidence from South Africa

Trade liberalization typically brings aggregate gains in welfare, but mounting evidence indicates that it may also have strong distributional consequences within countries. For example, competition from cheaper imports can have lasting impacts on local labor markets. Using municipal-level data from South Africa from 1996 to 2011, **Paulo Bastos** and **Nicolas Santos** examine the medium- to long-term effects of several trade agreements completed as part of multilateral tariff liberalization under the Uruguay Round. Because of initial heterogeneities in production structure, their analysis exploits the fact that municipalities across South Africa were differentially exposed to the sizable tariff reductions observed in the country after the introduction of democratic elections in 1994 and the pursuit of this trade reform. Under apartheid, South Africa used the homeland system to essentially divide the country into separate nation-states and the provision of public goods was segregated. Another consequence was that labor market conditions and production structures varied widely across regions. The authors find that areas where production tilted toward industries that were more exposed to tariff cuts had slower growth in employment and income per capita (relative to regions less exposed to trade liberalization), that the longer-term effects on income per capita tended to be stronger than the shorter-term impacts, and that the

long-term adverse effects on relative income per capita were stronger among municipalities that included the former homelands and had a higher share of the black population. They conclude that easing labor market adjustment and dealing with the localized effects of trade shocks may require a more comprehensive set of policies that goes beyond labor policies and training programs to include housing and financial policies that facilitate geographic mobility.

Our eclectic guide to recent research of interest

Africa's manufacturing puzzle: Evidence from Tanzanian and Ethiopian firms

Before Covid-19 struck, many economies in Sub-Saharan Africa were growing rapidly, workers were leaving agriculture, and urban populations and occupations were expanding. However, aggregate labor productivity growth within manufacturing has been close to zero in many countries. These patterns are not consistent with a supply-side model, where urban employment growth is driven by productive improvements in manufacturing. To examine growth patterns in more detail, **Xinshen Diao**, **Mia Ellis**, **Margaret S. McMillan**, and **Dani Rodrik** created panel data on manufacturing firms in Tanzania and Ethiopia, using non-public surveys from the local statistical agencies (they obtained permission to make the panels publicly available in the future). This data shows that large manufacturing firms are more productive than small firms, but employment has mostly increased in small firms only. The authors argue that employment has not increased in large manufacturing firms because they use excessively capital-intensive modes of production. They compare the capital-labor ratio of firms in Tanzania and Ethiopia to that of firms in the Czech Republic. The economy-wide capital-labor ratio is less than 10% that of the Czech Republic, but in the largest manufacturing firms, capital-labor ratios in Tanzania and Ethiopia are close to those in the Czech Republic. The authors explain that manufacturing technologies on offer on world markets have moved steadily towards being more capital-intensive. They conclude that this trend has made it difficult for African firms to simultaneously enhance productivity and increase employment.

Digital collateral

Paul Gertler, **Brett Green**, and **Catherine Wolfram** study a new form of secured lending utilizing “digital collateral.” Digital collateral relies on “lockout” technology, which allows the lender to temporarily disable the flow value of the collateral to the borrower without physically repossessing it. The authors partnered with Fenix International, the largest solar-home system (SHS) provider in Uganda, which also offers loans to customers who purchased an SHS. These loans are disbursed via mobile money and can be digitally secured with the SHS. If a customer does not make a payment on time, the SHS will lock (i.e., the battery will not discharge electricity) until the next payment is made. The authors conducted an experiment, where 3,300 Fenix customers were randomized into three treatment groups and a control group. In the first treatment, the customer was offered a loan secured with digital collateral. In the second treatment, the customer was offered an unsecured loan. In the third treatment, the customer was offered a secured loan, but if the customer accepted the loan, he or she was (positively) “surprised” and received an unsecured loan. The “surprise” group is used to disentangle adverse selection from moral hazard a la Karlan and Zinman (2009). The results show that securing a loan with digital collateral reduced default rates by 19 percentage points and increased the lender’s rate of return by 38 percentage points. About

one-third of the reduction in default can be attributed to adverse selection while two-thirds is driven by moral hazard.

Fintech and the digital transformation of financial services

Erik Feyen, **Jon Frost**, **Leonardo Gambacorta**, **Harish Natarajan**, and **Matthew Saal** explore how fintech is reshaping the structure of financial services, asking what are the most likely market outcomes (in terms of providers, business models, services, and industrial organization) and what regulatory responses might shape or change those outcomes. In this comprehensive and thought-provoking overview, the authors describe how digital innovation has improved connectivity of systems, increased computing power, and created much new and usable data. In reducing the transaction costs of providing financial services, these improvements have given rise to new business models and new entrants. At the same time, they acknowledge that economies of scale and scope and network effects will remain in many aspects of financial services production, including customer acquisition, funding, compliance activities, data, and reputational capital, and thus large multi-product providers, including 'big tech' firms expanding into financial services will be in an advantageous position. The paper goes on to discuss the policy issues and objectives regarding competition, regulatory perimeters and ensuring a level playing field. While those are very much a work in progress and final outcomes are impossible to predict, the authors put forth one vision of a "barbell-shaped" market structure that coalesces around one set of large providers adopting multi-product strategies on one side and a large set of small niche players offering focused products and services on the other.

The making of social democracy

Scandinavian countries represent a particular type of capitalism that features more equality and a larger government, often under the leadership of the Labour Party (LP). **Daron Acemoglu**, **Tuomas Pekkarinen**, **Kjell Salvanes**, and **Matti Sarvimaki** offer an in-depth analysis of how the LP delivered on a promise of a major schooling reform upon assuming power in Norway in 1935, and how this deed garnered durable voter support that resulted in fundamental institutional changes—from a society that featured a pre-tax Gini coefficient of 0.57 before the reform (above that of high-inequality countries in current day Latin America) to 0.25 by 1970 (among the lowest in the world). They first document that the cohorts mostly affected by this reform increased their schooling attainment and labor income in subsequent decades. They then offer evidence that the groups who benefitted significantly increased their voting support for the LP in subsequent decades, and they go on to address and rule out some alternative hypotheses: for example, rising education was not itself a cause of support for the LP because the more highly educated tended to vote for conservative parties. In addition, voter turnout was not the cause of these patterns because it had been high both before and after the reform, nor were there changes in resource allocation under LP government that can account for them.

Upcoming events and miscellanea

Norges Bank-CEPR Workshop "Frontier Research in Banking"

Jointly with the Centre for Economic Policy Research (CEPR), Norges Bank will be organizing a workshop on "Frontier Research in Banking" in Oslo, Norway, on November 18-19, 2021. Topics of particular

interest include digital currencies, Fintech, the impact of climate change on banking, and financial intermediation in reaction to the COVID-19 Pandemic. Complete manuscripts should be submitted by September 5, 2021.

2022 Frontiers of Entrepreneurship Conference and Trends in Entrepreneurship Report

The Frontiers of Entrepreneurship conference will be hosted by the Kenan Institute of Private Enterprise at UNC Kenan-Flagler Business, along with academic partners, at The Breakers, Palm Beach, Florida, on January 27-28, 2022. Submissions to this conference are in the format of trends, presentations consisting of 5-10 slides on a specific topic of current interest. Most trends are based on current research projects, surveys, reports, or new analysis of an emerging topic. Accepted trends will be compiled into a report and made available to the public. The deadline for submitting a trend is September 24, 2021.

Happy reading!

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