

March 2019

I What's new on our website

Robo-advisors: Investing through machines

II World Bank research

Active trading and (poor) performance: The social transmission channel
Does automation in rich countries hurt developing ones? Evidence from the U.S. and Mexico

III "FYI": Our eclectic guide to recent research of interest

The effects of higher bank capital requirements on credit in Peru
Identifying and spurring "gazelles": Evidence from a business accelerator
Finance and mental health
Do privatized state-owned enterprises behave like private firms or state-owned enterprises?
Market access, trade costs, and technology adoption: Evidence from northern Tanzania
Impact of financial regulations: Insights from an online repository of studies

IV Upcoming Events and Miscellanea

Call for papers

Interest Bearing Notes is getting a makeover, so the next issue will not appear until June 2019. Please send comments, suggestions (such as your own or others' interesting research), and requests to be added to our distribution list, to Bob Cull (mailto: rcull@worldbank.org) by June 3rd.

IBN is a product of the Finance and Private Sector Development Team in the World Bank's Development Research Group. Our working papers and descriptions of research projects in progress can be found, along with a list of forthcoming seminars and conferences, on our web page (<http://www.worldbank.org/en/research/brief/finance-private-sector>).

I What's new on our website

Robo-advisors: Investing through machines

A new Research & Policy Brief by **Facundo Abraham**, **Sergio Schmukler**, and **José Tessada** discusses the rise of robo-advisors, online automated platforms that make it easier and less costly to open investment accounts and receive financial advice. The brief reviews the benefits and limitations of these services, as well as their implications for policymakers.

<http://documents.worldbank.org/curated/en/275041551196836758/Robo-Advisors-Investing-through-Machines>

II World Bank research

Active trading and (poor) performance: The social transmission channel

Our own **Alvaro Pedraza**, together with **Laura Escobar**, exploit the assignment of students in a large-scale financial education program in Colombia to test how peers affect each other's trading

strategies. The program, which was run by the Colombian Stock Exchange from 2008 to 2017, assigned registrants to sections that learned about equity trading for 8 to 14 hours over a two-week period. Because courses were formed when there were enough available registrants, and not based on their trading experience, assignment to a class could be viewed as random. Some class takers already had experience trading while others did not, and trading performance was tracked at a granular level in a transactions database. This enables Alvaro and Laura to test whether more experienced traders had an influence on the subsequent trading strategies of their inexperienced classmates. The results indicate strongly that exposure to peers with pre-course stock trading experience did lead to greater stock market participation by the inexperienced after the course. But it's the way that exposure affected subsequent trading strategies that could be a cause for concern: when experienced students had large positive returns in at least one stock, they stimulated market entry by inexperienced students, even if their average portfolio returns were negative. Those inexperienced entrants made more stock transactions, traded more speculatively, and generated lower returns than inexperienced students who did not interact with such peers. Thus, it appears that active trading strategies based on a single successful outcome spread from experienced to inexperienced classmates, resulting in poor trading performance for the new investors. This highlights a potential downside of social communication for inexperienced investors, and a need to provide them with unbiased information to evaluate investment opportunities.

<http://documents.worldbank.org/curated/en/901281551966282262/Active-Trading-and-Poor-Performance-The-Social-Transmission-Channel>

Does automation in rich countries hurt developing ones? Evidence from the U.S. and Mexico
Erhan Artuc, Luc Christiaensen, and Hernan Winkler use administrative data on Mexican exports from 2004 to 2014 to study how local labor markets that were more exposed to automation in the U.S. grew in terms of exports and employment outcomes. Their results show that an increase of one robot per thousand workers in the U.S. lowered growth in exports per worker from Mexico by nearly 7 percent. However, higher exposure did not affect wage employment. The authors further decompose the employment effect and find that exposure to U.S. automation reduced manufacturing wage employment in areas where occupations were initially more susceptible to being automated, but the same exposure increased employment in other areas. These results highlight the importance of policies to safeguard local workers from the disruptive effects of technology and trade.

<http://documents.worldbank.org/curated/en/221101550152344701/Does-Automation-in-Rich-Countries-Hurt-Developing-Ones-Evidence-from-the-U-S-and-Mexico>

III "FYI": Our eclectic guide to recent research of interest

The effects of higher bank capital requirements on credit in Peru

Xiang Fang, David Jutrsa, Maria Soledad Martinez Peria, Andrea Presbitero, Lev Ratnovski, and Felix Vardy estimate the effects of raising bank capital requirements on lending in Peru. Their identification strategy relies on the fact that between 2012 and 2016, the Peruvian banking regulator introduced bank-specific, formula-based, capital buffers. These buffers came on top of the 10 percent (of risk-weighted assets) uniform minimum capital requirement and, depending on the bank, could be as high as 5.6 percentage points. The authors use quarterly capital requirement and balance sheet data for 14 Peruvian commercial banks, that accounted for

about 85 percent of financial system assets in 2016, for the period 2005–2016. Their main analysis regresses credit growth at the bank level on changes in (bank-specific) capital requirements, controlling for bank and time fixed effects, as well as time-varying bank characteristics. The results suggest that a one percentage point increase in capital requirements is associated with a reduction in loan growth of 4 to 6 percentage points in the same quarter. However, this effect is short-lived: an increase in capital requirements is not significantly associated with loan growth two quarters after the increase or later. The authors conduct several checks to rule out that endogeneity stemming from formula-based capital requirements is driving their results. They conclude that the fact that the reform was gradual and pre-announced and that banks were highly profitable at the time could explain the short-lived effects on credit.

<https://www.imf.org/en/Publications/WP/Issues/2018/09/28/The-Effects-of-Higher-Bank-Capital-Requirements-on-Credit-in-Peru-46274>

Identifying and spurring “gazelles”: Evidence from a business accelerator

Juanita González-Uribe and **Santiago Reyes** provide new evidence on how to identify and foster high-growth firms, so called “gazelles”, from a business accelerator in Colombia. The business accelerator offered entrepreneurship training and mentoring, but no cash. The authors first show that scores from judges who screen applications to the accelerator can predict which firms will grow the most, but only after controlling for judge fixed effects. This finding is due to substantial heterogeneity in the scoring generosity of judges. As a result, a third of the participants ended up being selected because they were scored by relatively more generous judges rather than because of their inherent better quality. Using the random allocation of applicants across judges with different scoring generosity as an instrumental variable for acceleration, the authors then measure the effects of the accelerator on the growth of marginal applicants, i.e., those whose selection decision is altered by the judge assignment and would (not) have been selected but for the strictness (generosity) of the judges. The results suggest that acceleration increases annual revenues by about US\$20K—a 157% increase relative to baseline sales.

<http://juanitagonzalez-uribe.net/portfolio/identifying-and-spurring-gazelles-evidence-from-a-business-accelerator/>

Do privatized state-owned enterprises behave like private firms or state-owned enterprises?

The answer to this question is important in China because the number of privatized SOEs is huge, and how the Chinese government subsidizes firms remains a vital policy concern, both for China and its trading partners. **Ann Harrison**, **Marshall Meyer**, **Peichun Wang**, **Linda Zhao**, and **Minyuan Zhao** use comprehensive data from China’s Annual Industrial Survey from 1998 to 2013, which features millions of firm-year observations, to address this vital question. They show that privatized SOEs behave like a mixture of (pure) private firms and SOEs. On the one hand, they showed improved performance (as measured by productivity or patent filings) after privatization, though their performance levels on those dimensions were still inferior to pure private firms. On the other hand, privatized SOEs continued to enjoy government subsidies such as low-interest loans and R&D subsidies. To summarize, the authors quip that, “The tiger can change its stripes; however, the government’s behavior seems to be sticky.” True privatization appears to remain a challenge in the Chinese context.

<http://www.nber.org/papers/w25475>

Finance and mental health

A host of evidence has shown that better provision of finance is found to facilitate long-run economic growth. At the same time, the medical literature has found that higher income (a by-product of that growth) improves local residents' mental health. In a recent paper, **Qing Hu, Ross Levine, Chen Lin, and Mingzhu Tai** link these two literatures using the well-known quasi-experiment involving deregulation of bank branching in the U.S. That episode improved local availability of bank finance, but did greater finance also affect people's mental health? Using the National Longitudinal Survey of Youth 1979 (NLSY79), a nationally representative survey that follows individuals born in the years 1957-1964, the authors construct an index based on several questions on mental health. Because NLSY1979 is a panel data set, they can control for individual fixed effects, gender-race-year fixed effects, state-specific time trends, and time-varying state characteristics to better isolate the effect of the bank branching reform on individual mental health using a difference-in-differences approach. They find reasonably convincing evidence that better local financing improved the mental health of local residents and that the impact was largest in counties dominated by bank-dependent firms. In terms of mechanisms and channels, they also provide evidence that finance affected mental health by improving firm finance rather than consumer finance. Although low-income people did not borrow more as a result of the regulatory reforms, the increased borrowing by firms boosted their employment, income, and mental health in bank-dependent counties.

<http://www.nber.org/papers/w25584>

Market access, trade costs, and technology adoption: Evidence from northern Tanzania

Shilpa Aggarwal, Brian Giera, Dahyeon Jeong, Jonathan Robinson, and Alan Spearot study how market access constrains agricultural productivity in Tanzania. The authors use micro-level data on farmer input and sales decisions, as well as data on prices across more than 1,000 villages in two regions of the country. They find that a one standard deviation increase in travel time is associated with up to 25% lower input adoption and output sales. In addition, they estimate that reducing travel costs by half, for example by paving rural roads, would likely double input adoption and reduce the adoption-remoteness gradient by 15%. These findings suggest that policies aimed at lowering input prices through lower transport costs can have lasting impacts, in particular by improving linkages between markets and villages, and also between urban centers and villages.

http://people.ucsc.edu/~jmrtwo/market_access.pdf

The impact of financial regulations: Insights from an online repository of studies

Frederic Bossay, Carlos Cantú, Stijn Claessens, and Alan Villegas describe a new online public repository of studies on the effects of bank regulations, "The Financial Regulation Assessment: Meta Exercise" (FRAME). They then present findings from their meta-analyses on the effects of bank capital and liquidity, and the relevant regulations, on banks' funding costs, lending interest rates, loan growth, and their probability of default. They find that capital ratios, the most studied type of regulation in the repository, tend to have a positive long-term effect on loan growth and a negative effect on default probability. But, the authors emphasize that most studies use observed ratios rather than minimum capital requirements. Because those ratios can be influenced by many factors, they likely provide noisier indicators of the effects of regulatory change than would changes in regulatory requirements. Another nice feature of the FRAME repository is that it describes features of each study, such as whether it was peer reviewed and

whether its estimates are for crisis or normal periods. The authors are therefore able to run meta-regressions to test whether the average effects they find are driven by study features. For example, they find that the effects of capital ratios on loan growth are two percentage points higher when a study accounts for macro-feedback effects (on lending volumes, deposit rates, asset prices) that influence all banks. The number of studies limits what can be teased out at this point, but the repository is likely to become an increasingly important resource for studying the effects of regulatory change as more studies (and their characteristics) are added over time.
https://www.bis.org/publ/qtrpdf/r_qt1903f.htm

IV Upcoming events and miscellanea

Call for papers: 19th Annual FDIC/JFSR Bank Research Conference

The FDIC's Center for Financial Research and the Journal of Financial Services Research (JFSR) invite submissions for the 19th Annual Bank Research Conference to be held in Arlington, Virginia on Friday, September 13, and Saturday, September 14, 2019. The program committee invites theoretical and empirical papers on a broad set of issues related to the performance and regulation of the financial sector. Papers must be received by May 1, 2019. Authors will be notified about the status of their papers in July 2019. Expenses for travel, food, and lodging will be reimbursed for paper presenters. Selected papers may be invited for submission to the JFSR for a special conference issue. To submit a paper, visit:
https://fdicsurveys.co1.qualtrics.com/jfe/form/SV_1Xp3RmxAB4zyNWI

Happy reading!

Your editors Miriam Bruhn (mbruhn@worldbank.org), Bob Cull (rcull@worldbank.org), Colin Xu (lxu1@worldbank.org), and Bilal Zia (bzia@worldbank.org)

1818 H st NW Washington DC 20433
© 2017 The World Bank Group, All Rights Reserved