The Institute for Economic Development

Research Review

Institute for Economic Development (IED) is a research center within Boston University's Department of Economics focusing on development economics and related fields of finance, trade, foreign investment, health, education, political economy, organizations and economic history.

BOSTON UNIVERSITY

Contents

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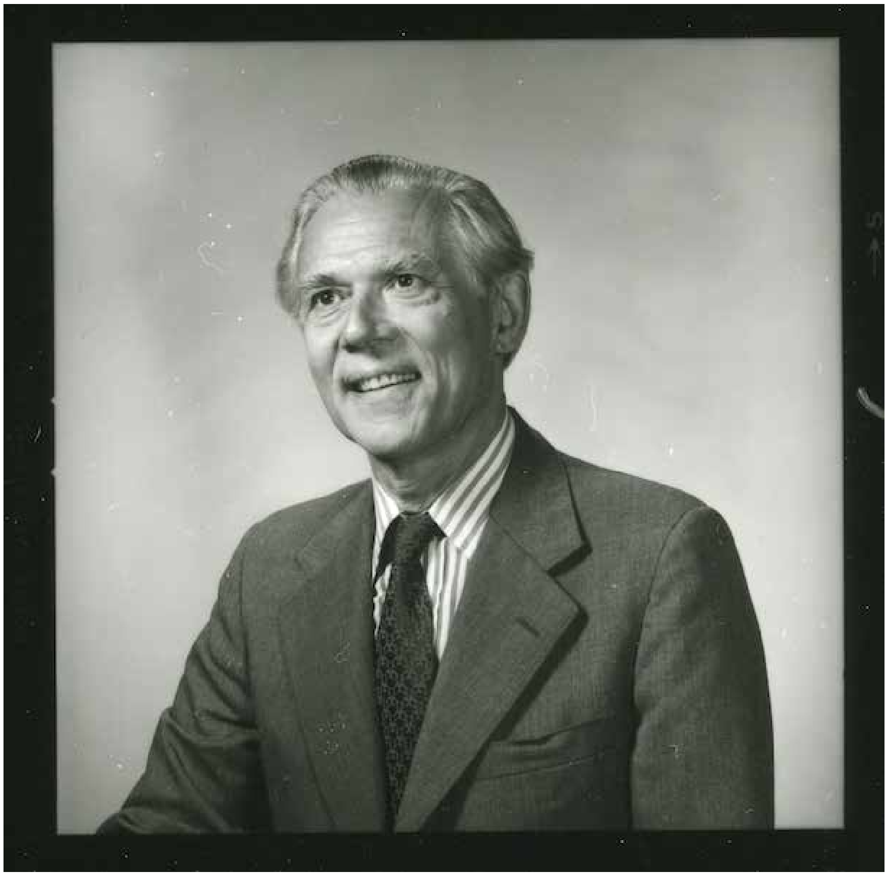
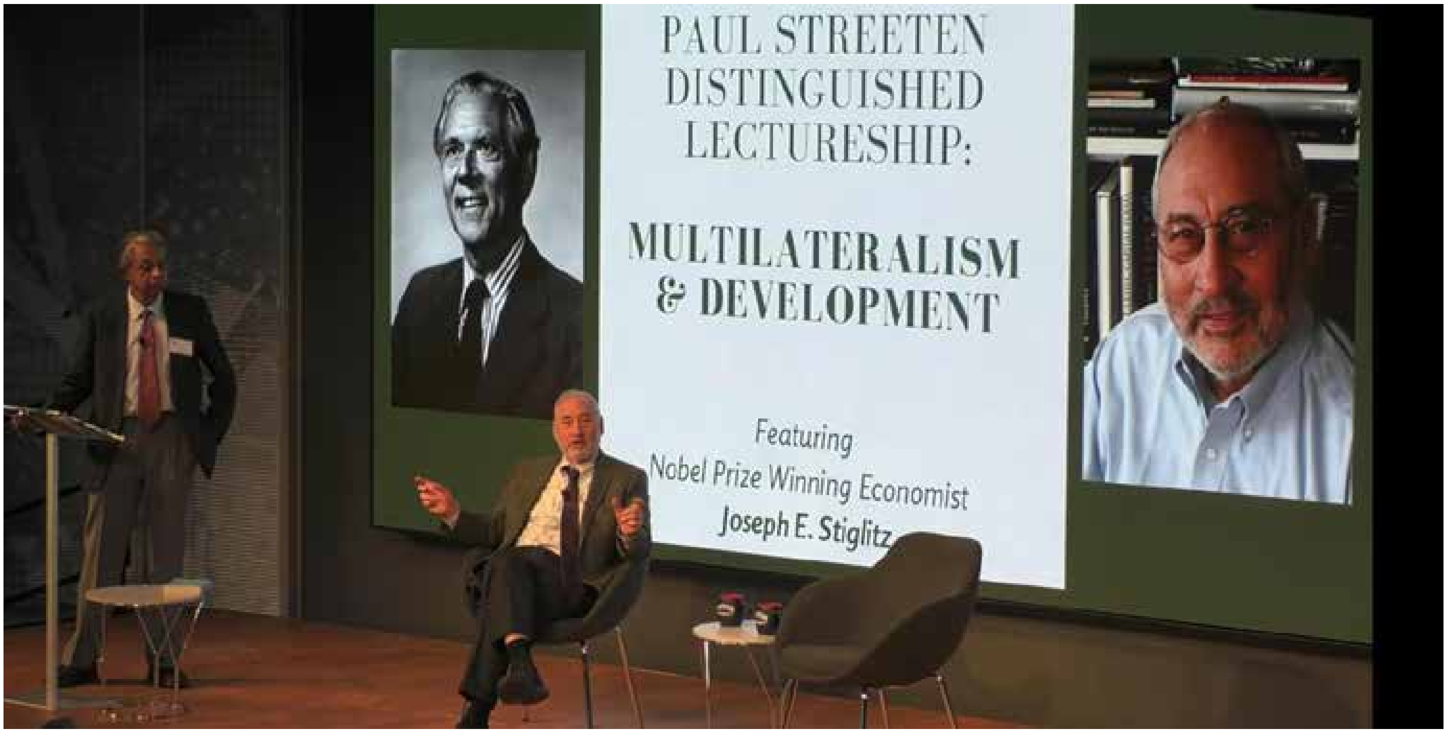
In Memoriam:

Paul Streeten (1917-2019)



With deep regret we announce the passing away of Paul Streeten, Emeritus Professor of Economics at Boston University, at the age of 101 at his home in Princeton, New Jersey on January 6, 2019. Professor Streeten joined Boston University in the mid-1970s and stayed until his retirement in the late 1980s. Here he set up and managed the World Development Institute, which along with other centers such as the Center for Latin American Studies and Asian Development Center made Boston University one of the world's leading universities specializing in development policy and training generations of economists and public officials from developing countries. In 1989, these centers were merged to form the present-day Institute for Economic Development, which functions as a research center within the economics department. The tradition of policy-oriented development research has subsequently expanded across the university, including the new university-wide Global Development Policy Center.



Inaugural Paul Streeten Distinguished Lecture in Global Development Policy, March 29, 2019

In appreciation of Professor Paul Streeten's far reaching contributions to development thinking and policy, the Global Development Policy Center, the Department of Economics, and the Institute for Economic Development have jointly established the annual Paul Streeten Distinguished Lectureship in Global Development Policy. Economist and Nobel Prize winner Joseph Stiglitz delivered the first lecture in March 2019 on the topic of `Multilateralism and Development.' Stiglitz's lecture to a standing-room-only audience of students, faculty, alumni and visitors, was a virtuoso synthesis of his own research and interpretation of recent international policy trends related to income distribution, risk taking, public policy, macroeconomics and globalization. His talk highlighted the key role of the US in both creation of the current rules-based international order, as well as recent trends at undermining those same rules. Ranging across banking regulation, trade barriers, international migration, patents, international law enforcement, health care, and the environment, Stiglitz highlighted how dramatically and rapidly the world is changing, with tremendous new challenges to developing countries. The lecture culminated with a rich set of questions from BU students and responses that emphasized new topics of inquiry for the future.

To view the event recording:
https://www.youtube.com/watch?v=SlWPWNnd4RQ
Inquiries regarding the second annual Streeten Lecture should be sent to iedcoord@bu.edu.

2018-19 IED Working Paper Summaries

PLACE-BASED DEVELOPMENT: EVIDENCE FROM SPECIAL ECONOMIC ZONES IN INDIA

By: Yeseul Hyun and Shree Ravi

Discussion Paper 306

Special Economic Zones (SEZs) are a popular policy tool used by both developed and developing economies to boost growth in specific geographic areas and economic sectors. These zones typically receive infrastructure and regulatory concessions from the government. Despite their popularity, the existing literature documenting the effects of SEZs is limited and primarily focuses on developed economies. The authors of this paper empirically evaluate the case of Indian SEZs, established and managed within the legal framework set by the SEZ Act of 2005.

One particular concern is that the benefits to regions receiving SEZs could be offset by losses elsewhere in the economy through resource relocations. To understand the effect of SEZs both within SEZs and in their neighboring areas, the authors first trace the pattern of SEZ influence through time and space using Nighttime Lights (NL) data as a proxy for economic activity. Using a fourteen-year panel of 1-square kilometer cells that are within 15 kilometers of any SEZ in the sample, they provide three results: 1) When SEZs begin operating, economic activity not only increases within SEZs, but also in the immediate neighborhoods around them. 2) The effect is moderately persistent across time and spans areas that are comparable in size to the administrative division of an Indian village. 3) Areas further away are not hurt significantly (by a potential withdrawal of resources) thus recording net-positive effects up to areas spanning 1,200 square kilometers, one-fourth the size of a median district.

To estimate the aggregate effects of SEZs on firms and workers, the authors use a difference-in-differences framework. Given the SEZ program targeted regions with a greater degree of urbanization, human capital, and profitability, a simple comparison of areas with SEZs to those without would likely violate the parallel trends assumption and thus bias the estimate upwards. The authors instead use the stages of approval for SEZs as a source of quasi-experimental variation. They compare regions that that have no operating SEZs but have at least one SEZ that has passed the penultimate stage of approval and thus will likely have SEZs in the near future (the control group) with those that have at least one operating SEZ (the treated group).

The authors find that SEZs increased the average labor productivity of formal sector manufacturing firms by 24% and formal sector wages by 18% between 2005 and 2010. The empirical results also indicate that within-industries SEZs expanded formal production by 4%, employment by 18%, and investment in plant and machinery by 37% over the same time period. The expansion of the formal sector in SEZs coincides with a reduction in total production within industries, total employment, and labor productivity in the informal sector. The authors explain that this is likely due to the informal sector's most productive firms moving to the formal sector to signal quality and expand their customer base. They also find that SEZs decreased employment in firms at the lower end of the productivity spectrum. Taken together, these findings suggest that the resulting agglomeration spillovers from SEZs structurally transform the economy away from informal lines of production towards formality.

Although the impact of the SEZ policy has been positive in terms of stimulating formalization in the economy, the authors find evidence of growing inequality. While the wages of workers at the 90th percentile of the income distribution increased by as much as 42% over the five years in which their district was treated with SEZs, the wages of those at the lower end of the wage and educational distribution did not significantly increase. This suggests that some workers are left out of the wage benefits due to their inability to work in the formal sector. It corroborates the current concern in both developed and developing countries regarding the "skill gap," a situation where the workforce is unable to fulfill the demand for skilled labor thereby limiting further development.

Convergence, Financial Development, and Policy Analysis

By: Justin Yifu Lin, Jianjun Miao, and Pengfei Wang

Discussion Paper 307

A number of technological leaders in Western Europe and North America leapt ahead of the rest of the world in the nineteenth century as a result of the industrial revolution. Other countries became colonies or semi-colonies of the Western powers. After WWII, most developing countries obtained political independence and started their industrialization and modernization process. One might expect that with the spread of technology and the advantage of backwardness (Gerschenkron 1962), the world should have witnessed convergence in income and living standards. Instead, the post-WWII period saw continued and accelerated divergence (Pritchett 1997). While some OECD and East Asian economies were able to narrow the per capita GDP gap with an annual growth rate higher than that of the U.S., most other countries in Latin America, Asia, and Africa did not. Why these countries failed to converge in growth rates despite the possibility of technology transfer is still a puzzle. The authors of this paper analyze the relationship between growth, inflation, and financial development to explain convergence and divergence.

With a sample of 71 countries over the period 1960-1995, the authors document several facts. They show that the average inflation rate is negatively related to the average per capita GDP growth rate and positively related to the average money growth rate. The average inflation rate is negatively related to the average level of financial development, but this relationship vanishes at a high level of financial development (about 50%). The countries that fail to converge to the world frontier growth rate have low average levels of financial development and their inflation rates are negatively related to the average levels of financial development.

Motivated by these facts, the authors introduce a monetary authority and a government to a closed-economy version of the Aghion, Howitt, and Mayer-Foulkes (henceforth AHM) (2005) model. They introduce money by assuming it enters utility (Sidrauski 1967) which allows them to properly analyze monetary policy. They also introduce intra-generational heterogeneity so that there are savers and borrowers (entrepreneurs) in each period. This allows them to endogenize the nominal interest rate in a credit market and study how credit market imperfections affect interest rates. Lastly, they assume savers are risk averse to derive their consumption and portfolio choices. In each period a young saver must choose optimal consumption, money holdings, and saving in terms of nominal bonds.

How the money supply is introduced to the economy is critical for how it affects the equilibrium allocation and long-run growth. If money increments are transferred to the old agents in an amount proportional to their pre-transfer money holdings, then money is super-neutral in the sense that monetary policy does not affect long-run growth and the equilibrium allocation along a balanced growth path. The intuition is that the demand for money and saving depends on the ratio of the nominal interest rate in the long run. Thus, only real variables are determined in the steady state.

There are three dynamic patterns consistent with the AHM model with the difference that the authors' model incorporates inflation. First, when the credit market is perfect so that the credit constraint does not bind, the economy converges to the world frontier growth rate and there is no marginal effect of financial development. Second, when the credit constraint binds, but is not tight enough, the economy converges to the world frontier growth rate with a level effect of financial development. Third, when the credit constraint is sufficiently tight, there is divergence in growth rates with a growth effect of financial development. In this case, the economy exhibits the feature of the disadvantage of backwardness and enters a poverty trap with low economic growth and innovation and high inflation. However, the long-run rate of productivity growth in this case increases with financial development and the long-run inflation rate decreases with financial development.

Comparing the efficient allocation with the market equilibrium, the authors find there are four sources of inefficiency in the market equilibrium. First, there is monopoly inefficiency in the production of intermediate goods. The resulting price distortion generates an inefficiently low level of final net output when taking the innovation rate as given. Second, the private return to innovation ignores the dynamic externality or spillover effect of technology. Third, the credit market imperfection prevents innovators from obtaining necessary funds for R&D. Finally, the overlapping generations framework itself may cause dynamic inefficiency and an inefficient within-generation consumption allocation. The authors show that a particular combination of monetary and fiscal policies can help correct these inefficiencies and help the market equilibrium attain the efficient allocation.

Multinational Expansion in Time and Space

By: Stefania Garetto, Lindsay Oldenski, Natalia Ramondo

Discussion Paper 308

Recent waves of nationalism have sparked debate on the effects of protectionist policies. Such policies may increase export and operating costs for the affiliates of US multinational enterprises (MNEs) which will likely affect US MNE expansion. Studying the behavior of US MNEs and their foreign affiliates is important given affiliates of US MNEs account for the majority of US sales to foreign customers. Properly understanding how such policies affect US MNE activity requires understanding the dynamic patterns of MNE expansion and the nature of the costs these firms face. The literature has mostly focused on MNE expansion in space (Tintelnot, 2017; Fan, 2017; Arkolakis et al., 2018; Head and Mayer, 2019) while the small literature analyzing the dynamic behavior of MNEs limits the spatial dimension of the problem. The authors of this paper document three empirical facts which inform a new multi-country dynamic model of MNEs. After calibrating the model, they conduct several quantitative exercises to understand the effects of Brexit on US MNE activity.

Using firm-level data on the operations of US MNEs from the Bureau of Economic Analysis (BEA), the authors find that MNE expansion happens at the extensive, rather than the intensive margin by adding export destinations outside the affiliates' host markets. They also find that the main activity of affiliates is selling to the host market while export activities may start later in life. Lastly, in contrast to Morales et al. (2018) which finds that the probability of exporting is much higher if the firm already exports to a similar country, the authors find a lack of "extended gravity" in the location of new affiliates. The unconditional probability of opening an affiliate in a country is very similar to the probability of opening an affiliate conditional on already having an affiliate in a "similar" country. Relatedly, they find that an affiliate's decision to export to a particular country is independent from whether its parent has an affiliate in that country.

Armed with these facts, the authors build a dynamic model in which MNEs open affiliates across countries over time. The static components follow Melitz (2003) but the dynamic part of the model is based on a compound option formulation. In each period, a firm endogenously decides whether to open an affiliate in a foreign country and whether/where to export from its existing affiliates. Opening an affiliate gives access to additional export destinations and thus the decision to open or shut down affiliates depends on these options plus the value of horizontal sales (i.e. sales to the host country). When a firm establishes an affiliate in a foreign country it must pay a sunk entry cost along with per-period fixed costs. To export from that country, it must pay a sunk cost along with a per-period fixed export cost. The model provides two key predictions: 1) Affiliates that start exporting later in life have lower horizontal sales than affiliates that start exporting earlier 2) Controlling for host market size, a MNE first opens its largest affiliates in a given host market.

After calibrating the model to match the expansion of US MNEs during the period 1987-2011 in the top-ten host countries for US FDI, the authors conduct several counterfactual exercises. They first consider the possibility of Brexit which would increase export costs between the United Kingdom and other countries in the EU. By increasing these trade barriers, the costs of exporting to and from the UK becomes costlier and thus reduces the incentives to open affiliates in the UK and other countries. These frictions also increase prices on average which encourages export entry from the UK. Finally, increased frictions affect entry and exit behavior in export markets, with ambiguous effects on sales. By considering one barrier at a time, the exercise shows how different frictions to MNE activities have quantitatively different effects on the extensive and intensive margins of firms' decisions. The authors also show the effects of changes in the price index by comparing aggregate outcomes after "deep Brexit" (all trade barriers increase at once) with and without endogenous prices. They show that the price response acts as a buffer to the decrease in affiliates' horizontal sales and exports. Finally, the authors show the importance of the compound option by analyzing an increase in trade barriers with and without the affiliate's option to export. An increase in trade barriers in the UK would decrease the presence of US affiliates in the UK by 25% more in the short run without the option to export. Moreover, without exports, this share would continue to decrease while in the model with the export option the share of US affiliates would start increasing in the long run.

Gender Crime and Punishment: Evidence From Women Police stations in India

By: Sofia Amaral, Sonia Bhalotra, Nishith Prakash

Discussion Paper 309

Violence against women (VAW) poses a major obstacle to inclusive prosperity. The fact that law enforcement has historically been dominated by men and that female victims may face social stigma makes reporting costly (Miller and Segal, 2014). The underreporting of these incidents prevents law enforcement from effectively deterring these crimes and overcoming this obstacle. Given greater female representation has been shown to improve the quantity and quality of the provision of public-goods preferred by other women (Chattopadhyay and Duflo, 2004; Clots-Figueras, 2011; Matsa and Miller, 2013; Bhalotra and Clots-Figueras, 2014; Ahern and Dittmar, 2012; Iyer et al., 2012), greater presence of women in law enforcement could improve women's access to justice thereby increasing reporting and deterrence rates. The authors of this paper investigate the effects of the placement of women police stations (WPS) in India on the number of incidents involving violence against women and the corresponding arrest rates.

The first WPS opened in the state of Kerala in 1973 and these stations have since spread across most of India. WPS are stations that typically employ only female officers and handle cases related to violence committed against women. The officers receive specialized training in dealing with victims and in processing these types of crime. Their purpose is to create an environment in which women feel safe reporting and cooperating in the investigation. The information on the dates of opening of WPS in cities and the roll-out of the policy comes primarily from the yearly reports on Policing Organization from the Bureau of Police Research and Development (BPRD). Crime records data from the major metropolitan areas comes from the National Crime Records Bureau.

The authors take advantage of the staggered rollout of the WPS stations and use a difference-in-difference (DID) design to estimate the effect of WPS on crime and arrest rates. They conduct this analysis at both the city and state-levels. They find that the introduction of WPS increases the VAW crime rate and that this effect is driven by increases in the rates of female kidnappings and domestic violence with increases of the magnitude of 22.2% and 21.7% respectively. The authors also find small and insignificant effects on non-gender based violent crimes which they claim is consistent with the hypothesis that WPS increased women's willingness to report but did not increase criminal activity. The authors also exploit a natural experiment in which three districts of the state of Bihar split to form the new state of Jharkhand in 2001. Jharkhand, unlike its former state of Bihar, opened WPS in each of its districts in the year 2006. The identifying assumption with this natural experiment is that the districts of Jharkhand (formerly Bihar) and those of Bihar have parallel trends. Using this subsample and the same approach, they find results that are similar to the baseline estimates.

The increase in the number of crimes reported could be due to changes in reporting behavior or increased incidence as a result of male backlash. The authors find that WPS did not change female mortality rates, a rate that is not likely to change as a result of altered reporting incentives. The authors also use police station level data from the state of Rajasthan to show that the opening of WPS led to a decrease in the reporting of crime against women in General Police Stations (non-WPS) and an increase in the reporting of crime against women in WPS, suggesting substitution from General Police Stations to WPS. Finally, the authors use individual-level data from the Demographic and Health Surveys of 2005-2006 and 2015-2016 and find that WPS did not significantly affect domestic violence. Both of these results suggest that WPS affected VAW rates by increasing reporting rates among women rather than increasing the incidence of VAW. Lastly, they show that WPS led to increased arrest rates of perpetrators of female kidnappings. This is important, since increased deterrence for this type of crime is necessary for total incidence to decrease.

Do Criminally Accused Politicians Affect Economic Outcomes? Evideince From India

By: Nishith Prakash, Marc Rockmore, Yogesh Uppal

Discussion Paper 310

The general consensus is that in any context, the election of criminally accused politicians is a matter of serious concern. In countries with weak judiciary systems and where large amounts of money are distributed by the government, the election of these politicians can be even more costly. These losses are estimated to be in the hundreds of billions of dollars in India (Sukhtankar and Vaishnav 2015). Existing literature has implicitly assumed that such politicians are undesirable, focusing instead on the response of voters to information about politicians' criminal history (Banerjee et al. 2014, Charchard 2014). The authors of this paper validate this assumption by providing the first causal evidence of the economic cost of electing a criminally accused politician.

Due to concerns regarding the corruption and criminality of politicians, the Supreme Court of India in 2003 began requiring candidates seeking election to the Parliament or to a Legislative Assembly to disclose information on their professional and educational information, assets and liabilities, and criminal convictions and charges. The authors take advantage of this policy and use data on the number and type of criminal accusations against each candidate collected by Election Watch and the Association for Democratic Reforms (ADR). They combine this data with election data from the Election Commission of India (ECI) Statistic Reports on General Elections to State Legislative Assemblies to estimate the effect of electing a criminally accused politician on economic growth at the constituency level. As a measure of economic activity, the authors use night time lights data from NASA's Defense Meteorological Satellite Program's Operational Linescan System (DMSP-OLS) as other datasets do not have measures of economic activity at a fine enough geographic level and/or are not available annually.

Constituencies that elect criminally accused politicians are likely to be fundamentally different than those that do not. As a result, an average difference in economic growth between these two types of constituencies will result in a biased estimate of the causal effect. To identify the latter, the authors use a regression discontinuity (RD) design (Lee 2008, Imbens and Lemieux 2008) and focus on close constituency elections in which the top two candidates include one criminally accused politician and one non-accused politician. The authors find that in constituencies where a criminally accused politician barely won, the annual growth of night-time lights was approximately 22 percentage points lower compared to constituencies in which a non-accused politician barely won. The costs of electing an accused politician did not occur instantaneously but instead occurred in the third and fourth years of their term, consistent with the idea that corrupt politicians need time to infiltrate local bureaucracies. This negative effect was larger when the elected candidate was accused of financial and/or serious crimes, or when the candidate had a larger number of accusations. The timing and heterogeneity of the negative effect by crime type and number suggest that criminal accusations provide a reasonable measure of politician quality/criminality. The authors also find that the costs are more pronounced in less developed and more corrupt states, whereas in more developed states the effect is insignificant. This suggests that the institutional quality (or lack thereof) can limit (enable) criminal politicians.

The Big Con - Reassessing The "GREAT" Recession and It's "FIX"

By: Laurence J. Kotlikoff

Discussion Paper 311

Ten years after the Great Recession (GR), economists still debate its causes leaving policymakers unable to prevent the next financial crisis. The standard view is that the combination of poor regulation, complex financial products, fraudulent subprime mortgages, corrupt rating companies, and increased risk taking caused the GR. This paper argues that these alleged causes are either unsupported by the facts, disconnected from economic theory, or are symptoms of the GR, not causes. The author also suggests that the recession's name, which suggests a largescale economic downturn, is in some ways an inaccurate description. He then provides an alternative view of its causes that is based on pure, misinformed panic.

Unlike the medical profession which generally does not mistake symptoms (ex: rashes) as the cause of illnesses/conditions (ex: measles), the consequences of the GR have often been confused with its causes. Official reports such as the FCIC report and even popular movies like The Big Short have characterized subprime mortgages as one of the main culprits. When the GR began, the default rate on all mortgages was only 3.7% and increased to 11.5% over the next two years as close to 9 million workers lost their jobs. The author argues this increase in defaults did not cause the GR but was instead an outcome of the GR.

In addition to mistaking these recession symptoms as causes, many economists and others have over exaggerated their importance. Subprime mortgages never constituted a large share of total outstanding mortgages and their default rates actually increased by a smaller factor than prime mortgages during the GR. Given subprime mortgages' small role, the democratization of finance also likely had little to no effect on starting the GR. Despite similar claims that large bank leverage was to blame, the numbers show that it actually fell from 1988 through 2008. This also contradicts the claim that the GR was the result of the revolving door between Wall Street and Pennsylvania Avenue as the biggest factor that regulators needed to oversee was Wall Street's leverage.

Like subprime mortgages and bank leverage, many of the other commonly alleged causes were also overstated. Housing prices increased by a reasonable amount in 2007 but the "bubble" was minor. Rating shopping and egregious/predatory lending, though prevalent, were too small to matter. CEOs of major financial institutions – whose incentives were often characterized as promoting excessive risk taking – in reality had a significant amount to lose and were thus encouraged to play it safe. Lastly, many blame the Federal Reserve for keeping interest rates low when in fact real mortgage interest rates weren't low at the time.

Some explanations for the GR such as banks having insufficient amounts of capital are likely the result of a difference in facts. Christopher Cox, Chairman of the US SEC at the time of the GR, claimed that Bear Stearns had a capital cushion well above the Basel II standard. The author provides economic intuition to show why other explanations such as unregulated derivatives and the Repo market, the growth in trading activity by financial firms and household mortgage debt, and ignored risk are also not reasonable causes of the GR.

After describing why none of the usual suspects are guilty of causing the GR, the author suggests that the GR was not particularly great relative to previous recessions. This suggests the name itself was part of the recession's self-generated hysteria. He then provides another view to explain the origins of the GR. The real story, according to the author, is that both the economy and the banking system are inherently unstable. They are unstable due to expectations-driven multiple equilibria. If enough people think a bank is going down, that bank will go down regardless of its true condition. If enough people think the economy is going down, the economy will go down, also regardless of its true condition. To address these problems, the author suggests replacing Dodd-Frank legislation with more fundamental financial reform, such as Kotlikoff (2010)'s Limited Purpose Banking (LPB). LPB would transform all financial corporations into 100 percent equity-financed mutual fund holding companies subject to full and real-time disclosure supervised by the government.

Making Carbon Taxation A Generational Win Win

By: Laurence J. Kotlikoff, Felix Kubler, Andrey Polbin, Jeffrey D. Sachs, Simon Scheidegger, Discussion Paper 313

Climate change presents grave risks to current and future generations. The perils these generations face include natural disasters and potentially massive costs to the economy, ecosystem, health, infrastructure and the environment (US Government's National Climate Assessment 2018). Standard frameworks for studying carbon taxation such as the social planner (e.g., Nordhaus 2017) and infinitely-lived agent models (e.g., Golosov et al. 2014) do not necessarily allow the calculation of Pareto improvements. There is no guarantee the social planner's "optimal" carbon tax policy will achieve a generational win-win since it pays no heed to the initial intergenerational distribution of welfare. The infinitely-lived agent model relies, implicitly, on intergenerational altruism (see Barro 1974). However, such altruism begs the question of why appropriate climate policy is not already in place. Inspired by Sachs (2014), this paper develops a large-scale overlapping generation climate-change model to realistically assess the potential generational win-wins available from carbon taxation.

The authors' OLG model has 55 overlapping generations. A single consumption good (corn) is produced with capital (unconsumed corn), labor, and energy. Energy is clean or dirty. Clean energy is produced using capital, labor, and fixed natural resources (e.g., windy areas), which is proxied by land. As in Golosov et al. (2014), the authors explicitly model the dirty energies of coal, oil, and natural gas. Each has finite reserves, and is subject to increasing extraction cost. Corn and clean energy experience technical change (TFP growth), which can proceed at permanently different rates. The model adopts the modeling of demographics, carbon emissions, temperature change, and temperature-induced economic damage from Nordhaus (2017).

They present results for two alternative ways of distributing efficiency gains from controlling CO2 emissions. The first allocates all efficiency gains uniformly to current generations. The second allocates efficiency gains uniformly to future generations.

With the baseline Nordhaus (2017) damage function, the optimal uniform welfare increasing (UWI) carbon tax starts at $30, rises at 1.5 percent per year and raises the welfare of all current and future generations by 0.73 percent on a consumption-equivalent basis. Sharing the efficiency gains from the authors' two-part carbon policy (an initial tax plus its annual growth rate) evenly requires taxing future generations by as much as 8.1 percent and subsidizing early generations by as much as 1.2 percent of the present value of their remaining or total lifetime future consumption. Without such redistribution, the carbon tax constitutes a win-lose policy with those now alive experiencing up to a 0.84 percent welfare loss and those born in the medium run (in this case, year 235) experiencing up to a 7.54 percent welfare gain. Those born in the long run benefit by 3.45 percent.

Given the significant uncertainty (see Lontzek et al. 2015) surrounding climate damage, the authors also consider larger damage functions where the quadratic coefficient in Nordhaus' damage function is multiplied by either 3 or 6. For 1x damages, the optimal path of carbon taxation is robust to how efficiency gains are shared. For larger damage functions, the sharing method matters to optimal policy. In all three situations, the optimal carbon tax materially alters the course of dirty energy production.

Delaying the implementation of optimal UWI carbon policy for 20 years decreases the UWI gain by 44.6 percent with baseline damages (55.4 percent with 6x damages). If the uniform efficiency loss of climate change were zero (as climate skeptics claim), the potential efficiency losses from taking precaution are smaller than the potential efficiency gains, especially in the 3x and 6x damage cases. These findings along with the scientific consensus regarding humans' effect on climate change suggest that waiting too long to address climate change is inefficient.

Scarcity Without Leviathan The Violent Effects of Cocaine Supply Shortages in the Mexican War on Drugs

By: Juan Camilo Castillo, Daniel Mejía, and Pascual Restrepo

Discussion Paper 314

Drug-related homicides in Mexico increased from 2,760 in 2007 to 15,258 in 2010 (INEGI). Some blame this surge in violence was due to the aggressive policy of Felipe Calderón, the then president of Mexico, and PAN, his political party (Guerrero 2010; Merino 2011; Dell 2015; Calderón 2015). In 2006, Calderón began a strategy of beheading cartels by killing or arresting their leaders which often led to power struggles. The timing of the policy and this wave of violence in Mexico also coincided with the Colombian government redefining its anti-drug strategy. The new strategy emphasized the interdiction of drug shipments and the detection and destruction of cocaine processing labs over the eradication of coca crops. Cocaine seizures increased from 127 metric tons in 2006 to 203 metric tons in 2009. This paper examines how these cocaine supply shocks and their interaction with Calderón's war on drugs affected violence in Mexico.

Before empirically assessing the role of cocaine seizures in Colombia on violence in Mexico, the authors develop a model to guide their empirical analysis. In the model, cartels cannot influence the quantity of cocaine supplied and its price. Each cartel chooses how much cocaine to buy at this price, trafficks it, and sells it at the given downstream price.. Given the illegality of the market, each cartel is only entitled to a fraction of their revenue. This leaves a fraction of total cocaine revenue to be contested by the cartels. The unsecured revenue is split unequally across different municipalities with municipalities that are more important to the cocaine trade receiving a higher share of the total contested revenue. The fraction of the unsecured revenue in its municipality that a cartel receives depends on how much it invests in weapons or soldiers relative to the competing cartels in the same municipality.

The model generates the following testable predictions, assuming downstream demand for cocaine is inelastic: the equilibrium level of violence in a particular municipality increases when the fraction of total disputed revenue increases, or the share of total disputed revenue in that particular municipality increases (more important for cocaine trafficking), or the number of cartels in the municipality increases (equilibrium level is zero when there is only one cartel), or the supply of cocaine decreases.

Using monthly data for homicides in Mexico from INEGI (Mexico's Instituto Nacional de Estadística y Geografía) and cocaine seizures from the Colombian Ministry of Defense, the authors provide evidence consistent with the theoretical predictions. They show that reductions in the supply of cocaine increased the homicide rate in Mexico by 10%-15%. They also show that the effect of cocaine seizures on homicides is larger in municipalities that are closer to the US (and thus more important for the cocaine trade). To test the prediction regarding the number of cartels in a municipality, the authors find that cocaine seizures did not have an effect on violence in municipalities with zero or a single cartel; however, in municipalities with at least two cartels, cocaine seizures increased violence. This is consistent with the cartels fighting over unsecured revenues which increase as a result of the supply reduction. Finally, they show that cocaine shortages have a larger effect in municipalities with a higher historical PAN vote share, especially in municipalities close to the US border. This supports the hypothesis that Calderón's policies amplified the response of violence in Mexico to cocaine shortages by causing cartels to behave more shortsightedly and not cooperate.

Automation and New Tasks: How Technology Displaces and Reinstates Labor

By: Daron Acemoglu and Pascual Restrepo

Discussion Paper 315

Technological advances have sparked debate regarding their effects on employment and wages throughout history. For example, early innovations of the Industrial Revolution automated tasks previously performed by artisans in spinning and weaving (Mantoux 1928) leading to widespread displacement and the Luddite riots (Mokyr 1990). Some warn that contemporary technologies such as computer numerical control machinery, industrial robots, and artificial intelligence will also lead to widespread joblessness. However, past technological advances also created new tasks which increased productivity, labor demand, and labor share. Some argue that the current wave of technology, like past waves, will ultimately do the same and increase employment and wages. The authors of this paper formalize these arguments by developing a task-based framework to better understand the labor market implications of technological change.

Building on Acemoglu and Restrepo (2018a, 2018b) as well as Acemoglu and Autor (2011), Autor, Levy, and Murnane (2003), and Zeira (1998), the authors model production as requiring the completion of a set of tasks which is not constant over time. Automation enables some of the tasks previously performed by labor to be produced by capital. This differs from the canonical approach which imposes that all technological change takes a factor-augmenting form. The authors also assume that it is cost-minimizing for firms to use capital in all tasks that can be automated and to adopt all new tasks immediately.

The authors first consider how three classes of technologies impact the total amount employers pay for labor (i.e. the wage bill) in a single-sector economy: automation, new tasks, and factor-augmenting advances. Automation causes a productivity effect as it increases the value added by allowing firms to use cheaper capital in tasks previously performed by labor. This decrease in the share of tasks performed by labor relative to capital, which the authors call the (labor) task content of production, causes a displacement effect. Thus, the overall effect on the wage bill is ambiguous as the size of the pie increases but labor receives a smaller fraction. An introduction of new tasks unambiguously increases the wage bill as it reinstates labor into the new tasks which increases the labor share (reinstatement effect) and increases value added by exploiting labor's comparative advantage (productivity effect). Factor-augmenting improvements make either labor or capital more productive in all tasks which increases the value added (productivity effect). They also lead to substitution between factors; however, available estimates of this elasticity imply that this effect will be small relative to the productivity effects. Thus, factor-augmenting improvements will likely increase the wage bill. When this model is embedded in an economy with multiple industries, these technological changes reallocate employment and economic activity across sectors. The authors refer to these effects of sectoral reallocation as composition effects. This reallocation contributes positively to labor demand when the receiving sector has a higher labor share than the contracting (sending) sector, and negatively when the opposite holds. The authors show that the change in the aggregate wage bill between two periods can be decomposed as the sum of the productivity, composition, and substitution effects along with the change in the task content.

They apply this decomposition to BEA and NIPA data from the four decades following World War II from 1947 to 1987 and compare it to the three decades after 1987. From 1947 to 1987, the wage bill per capita grew at 2.5% per year and was largely explained by the productivity effect. Despite small changes in the task content, there were considerable displacement and reinstatement effects. The authors conclude that the introduction of new tasks during these four decades counterbalanced the adverse labor demand consequences of automation. From 1987 to 2017, the wage bill per capita grew at only 1.33% per year. The slower growth was due to lower productivity growth (1.5% per year) and a significant negative shift in the task content of production against labor (0.35%). This change in the task content of production was due to the displacement effects of automation outpacing the introduction of technologies reinstating labor during this period.

There are several factors which may have pushed in this direction. First, the US tax code subsidizes the use of equipment while taxing labor. Second, large tech companies have focused on automation and the use of artificial intelligence to remove the human element from the production process. These contexts discourage the introduction of new technologies which require labor while incentivizing the development of "so-so" technologies that have small productivity gains but still replace labor. Since new tasks contribute to productivity, slower reinstatement will be associated with slower productivity growth. The weaker reinstatement effect also makes automation even less productive as the productivity gains from automation are increasing in the wage in tasks being replaced.

Democracy Does Cause Growth

By: Daron Acemoglu, Suresh Naidu, Pascual Restrepo, James A. Robinson

Discussion Paper 316

The view that democracy is not beneficial for economic growth has become increasingly popular recently in both academia and policy discourse given China's spectacular growth under nondemocracy, the eclipse of the Arab spring, and the rise of populism in Europe and the US. Cross-country regression analyses of democracy's effect on economic growth such as Helliwell (1994), Barro (1996, 1999), and Tavares and Wacziarg (2001) have produced negative (though generally inconsistent) results while more recent papers which use panel data techniques estimate positive effects. In a meta-analysis of studies, Gerring et al. (2005, p. 323) conclude that "the net effect of democracy on growth performance cross-nationally over the last five decades is negative or null." This paper challenges this consensus and argues that the failure to recognize all of the challenges that arise when estimating the causal effect of democracy on GDP may explain these mixed results. In the paper, the authors address these challenges systematically and provide robust estimates of democracy's causal effect on economic growth.

The authors start by estimating a full dynamic model for GDP using a panel dataset of 165 countries from 1960 to 2000, which includes effect of GDP in recent years. This allows the authors to properly capture the GDP dynamics of democratization as they are on average preceded by a temporary dip in GDP. In order to address the measurement error issues in democracy indices, the authors create a consolidated and dichotomous measure of democracy based on Papaioannou and Siourounis (2008). In their preferred specification which includes four year lags of GDP, the implied long-run impact of democracy is a 21% increase in GDP per capita. To deal with various possible biases in this method of estimation, they also use an alternative estimator proposed by Hahn, Hausman, and Kuersteiner (2002) (hereafter HHK) and allow a more flexible path of GDP by modeling the selection of countries into democracy, and find that following a democratization, GDP increases gradually until it reaches a level of 20-25% growth.

The main potential threat to the validity of these estimates (using the dynamic linear panel model and semi-parametric approaches) is the presence of time-varying economic and political factors that simultaneously impact democracy and GDP. The authors investigate these by including differential GDP trends by initial GDP quintile and by region and regime; differential effects of Soviet countries for the years 1989, 1990, 1991, and post-1992; lags of unrest, trade exposure, and financial flows; and the size of the population. They also explore the sensitivity of their results to using other measures of democracy and excluding outliers. The results from these robustness checks end up qualitatively similar to the baseline analysis. To fully alleviate concerns regarding time varying omitted variables, the authors also use an instrumental variable approach. The resulting estimates turn out similar to those from both the baseline analysis which suggests that they are indeed estimating the causal effect of democracy on GDP.

After documenting these positive effects, the authors explore how democracy potentially drives economic growth. The authors find that democracies seem to enact policies that are conducive to growth. Democracy increases the likelihood of economic reforms, tax revenue as a percentage of GDP, investment, and openness to trade. It also improves the provision of schooling and health care as it increases enrollment in primary and secondary education and reduces child mortality. Finallly, the authors find that democracy reduces social unrest which could also have a positive impact on economic growth.

One common view is that democracy requires a certain level of development and/or human capital for it to properly function. The authors find the evidence not consistent with this view. They however find that democracy has a larger impact on growth in countries where a greater fraction of the population has secondary schooling. The authors believe that this is likely due to the fact that a more educated populace may be able to make democracy more stable by reducing the stakes of distributional conflicts in society.

A Theory of Clientelistic Politics Versus Programmatic Politics

By: Pranab Bardhan and Dilip Mookherjee

Discussion Paper 317

Several studies have documented examples of political systems marred by vote buying and clientelistic 'machine' politics. These include historical examples such as machines in the 19th and 20th century in the USA, UK, and Italy as well as contemporary examples in middle and low-income countries. Though most argue that clientelism undermines democracy and development, some praise its redistributive impact and ability to fill the voids left by the state. The authors of this paper develop a simple theoretical model which formalizes these arguments. The model provides a framework to understand why clientelism exists in certain settings and how it affects redistribution and public good provision.

The authors focus on a version of clientelism where state benefits are delivered selectively by elected officials to those citizens who they perceive as having supported them in the past. They do not focus on broader versions of clientelism where candidates buy votes upfront with pre-election unconditional transfers. Clientelism is distinguished from programmatic politics where the delivery of benefits is not subject to ex-post discretion.

In the model, there are two competing parties and citizens derive utility from their income, private transfers from the government, and the public good. Each party first announces its policy platform which is defined by private transfers and public good provision. They then organize a pre-election rally. Each citizen decides which rally to attend, thereby signaling publicly their loyalty. Finally, citizens privately cast a vote for the two parties. An exogenous fraction of every voter group belongs to the formal sector, with legally enforced entitlements and functioning bank accounts to which planned transfers can be directly made. In two candidate elections, these voters vote sincerely. In contrast, delivery of benefits to all other citizens in the informal sector is at the discretion of the party in power. Incumbents are motivated to condition delivery of benefits for this group on their attendance in the pre-election rally, thereby incentivizing them to vote for the party whose rally they attend. Informal sector citizens end up not voting sincerely. Instead they compare the utility from private transfers promised by the two competing candidates, weighted by their respective probability of winning. This generates a scope for `contagion' in beliefs among informal sector citizens, with multiple equilibria with self-fulfilling voter expectations.

The authors show that in a pure strategy equilibrium, both parties assign a higher weight to private transfers relative to the public good if there is an informal sector. The extent of this bias increases with the relative size of the informal sector. In a symmetric context (where both parties are equally popular) there is also a 'programmatic' equilibrium with convergent policies. This equilibrium is unstable if and only if the size of the informal sector is large enough. In this case, the only stable equilibria involve unequal vote shares, policy divergence, and lower public good provision relative to the 'programmatic' equilibrium. The authors refer to these equilibria as 'clientelistic' equilibria. Starting from a clientelistic equilibrium, increasing the size of the formal sector will lead to more political competition and both parties will provide more public goods and less private transfers. The authors also provide results concerning the distributional consequences of the two classes of equilibria. Finally they show that if a particular party becomes more popular, it will alter its policy in favor of larger private transfers and lower public goods.

Community Origins of Industrial Entrepreneurship in Pre-Independence India

By: Bishnupriya Gupta, Dilip Mookherjee, Kaivan Munshi, and Mario Sanclemente

Discussion Paper 318

There have been many paths to industrialization throughout history. In Britain for example, well-functioning markets along with an appropriate institutional setting spurred its industrial revolution. In other countries such as the US, Germany, Russia, and Japan, the state played a larger role by either protecting infant industries, building vital infrastructure, subsidizing credit, and/or providing tax incentives. In countries without well-functioning markets or interventionist states, ethnic networks allowed industrial entrepreneurs to overcome contractual moral hazards, credit constraints, and information barriers. The literature has explored how networks improve contracting outcomes (Grief 2006), economic activity (Fafchamps 2003; Rauch 2003), access to credit and insurance (Banerjee and Munshi 2004; Munshi 2011), and employment opportunities (Beaman and Magruder 2012; Munshi 2003). Business histories have accumulated case study evidence on entry into industry in India (Goswami 1987; Rudner 1994; Timberg 1978; Tripathi and Mehta 1990; Tripathi 2004). However, there is no systematic quantitative evidence for the industrial sector as a whole or any particular industry at the entrepreneur level. This paper fills that void by systematically analyzing the role of community networks on the emergence of Indian industrial entrepreneurship in the cotton textile and jute industries in the 19th and 20th century.

By the early 19th century, five trading communities (Parsis, Bhatias, Hindu Banias and Jains, Baghdadi Jews, and Bohra and Khoja Muslims) had a presence in and around Bombay city, one of the two main cities of industrial development (the other being Calcutta). The authors document that banking and insurance were replaced by the textile and jute industries as the primary modern sectors in the latter part of the century. They also explain how these communities helped industrial entrepreneurs overcome the limitations imposed by the market and existing institutions by providing a source of capital and technical knowhow. Indian traders, creditors, and debtors relied on the communities' norms, trust, and institutions for contract enforcement as legal institutions were weak. While these communities differed in education levels, initial endowments, and outside options, the authors show that there were no differential time trends between the communities in these characteristics. Using data collected from business directories for firms in the cotton industry in Bombay Presidency (Greater Bombay and Greater Ahmedabad), the authors document the steady growth between 1860-1890 in the number of entrepreneurs entering the downstream industry (textiles), especially for the Parsis community. Contrary to the findings that pre-existing upstream experience is an important determinant of entry into the downstream industry (Sutton and Kellow 2010; Sutton and Kpentey 2012), the authors show that a small proportion of downstream entrants had prior upstream experience during this time period. They also show that more than half of all entrepreneurs within any firm belonged to the same community, providing descriptive evidence in support of the hypothesis of importance of community networks.

The authors next construct a network-based model of entry dynamics motivated by these facts which is a special case of Dai et al (2018). They allow communities to differ in underlying initial characteristics but assume that these do not change differentially between communities over time (a reasonable assumption given the historical evidence documented). The authors model the network effect as the dependence of total factor productivity of an entrepreneur on the number of incumbents from the same community in the previous period. This formulation differs from agglomeration spillovers insofar as the domain of the spillovers is restricted to entrepreneurs from the same community (irrespective of location). The model provides a result which describes the evolution of a community network's size in downstream industry. The model predicts that initial differences in network size across communities will be magnified over time in the presence of network effects. The regression specification resulting from the model implies that network effects can be inferred from significant quadratic time trends interacted with the community's initial presence in downstream industry.

The authors create a community panel business directory dataset for the downstream industry in the early stages of the development of downstream industry (in the years 1866-1890) to test this prediction. They find a positive and significant estimate for the coefficient of interest which allows them to reject the null hypothesis of no network effects on industrialization. The results imply that the presence of one additional downstream entrepreneur in 1865 was associated with 1.6 additional entrepreneurs in 1880 and 4.4 additional entrepreneurs in 1890, a pattern of growing divergence. Using similar data from the jute industry from 1914-1930, they find a similar positive and significant estimate. These findings suggest that a community's initial presence in downstream industry predicts its presence decades later. This provides systematic evidence that community connections were important in the early stages of industrialization in India and helped fill the void of a well-functioning market and an interventionist state.

Resource Transfers to Local Governments Political Manipulation and Household Responses in West Bengal

By: Pranab Bardhan, Sandip Mitra, Dilip Mookherjee, and Anusha Nath

Discussion Paper 319

This paper examines two topics which have been relatively under-studied in the literature on political economy of developing countries. The first is the extent to which upper level governments manipulate allocation of resources to lower level governments in order to maximize the re-election prospects of incumbent parties. The literature on political decentralization has focused primarily on how local government incumbents may distort allocations within their jurisdictions. The possible manipulation of allocations across local jurisdictions by incumbents at higher tiers of government has received far less attention.

The other phenomenon which the authors focus on is political clientelism, in which politicians distribute short-term private benefits to select groups of swing voters in exchange for their political support. This weakens governance by undermining the accountability of elected officials, and their incentives to supply long-term benefits and public goods necessary for development. Clientelism is distinct from other forms of political distortions such as elite capture, or uneven patterns of voter awareness and political participation. Yet there has been relatively little evidence regarding the presence and significance of clientelism, owing to difficulties in measurement using quantitative data.

This paper examines evidence for both phenomena in rural West Bengal, India using detailed data from panel household surveys of benefits received from local governments between 2004-2011, and how these related to their political support for different political parties. The importance of clientelism is inferred by comparing the effectiveness of different forms of benefits on political support of household heads: short-term recurring private benefits (e.g., public works employment, subsidized loans and farm inputs), long-term one-time private benefits (e.g., low income housing, access to sanitation and drinking water, eligibility for food and fuel subsidies), and local public goods (e.g., roads). The extent of politically motivated reallocations of program budgets across local governments by upper tier officials is inferred from observing exogenous shocks to political competition in different local areas.

In order to isolate such shocks, the authors use a redistricting of electoral constituencies that was implemented in India in 2007, which they argue was politically neutral. The redistricting moved certain villages across different constituencies subject to differing degrees of political competition. They develop a theoretical model which predicts the effects of these shocks on program scales of any redistricted local government on the basis of the winning margin size of the constituency in the last major elections, and extent of political alignment between the upper and lower level government. With political manipulation by upper level incumbents, program scales would expand (resp. contract) in a local area if it were redistricted into a more competitive constituency and the incumbents at the two levels are (resp. are not) politically aligned. If clientelism is present, these effects should be strongest for recurring private benefits, less strong for one-time private benefits, and absent for local public goods.

Consistent with these predictions, the authors find that per capita private benefits in treated non-aligned villages decreased by 1.8 standard deviation (s.d.) and increased by 2.5 s.d. in treated aligned villages after redistricting into more competitive constituencies. The effects were strongest for recurring private benefits, which contracted by 1.53 s.d. in `treated' non-aligned villages and expanded by 0.77 s.d. in `treated' aligned villages. They also find no significant difference in per capita spending on PMGSY roads (centrally planned construction of all-weather roads) and a negative and marginally significant effect of non-PMGSY roads for the non-aligned treated villages after redistricting.

Finally, the authors use shocks in program scales in local areas owing to redistricting and budgetary fluctuations for different programs at the district level, as exogenous determinants of the probability of any given household receiving a specific benefit in any year. They find that political support at the household level was most strongly influenced by receipt of private recurring benefits, and was either unrelated or negatively related to provision of local roads. This is consistent both with the hypothesis of clientelism, and with the nature of political manipulation of scales of various programs by upper level governments.

The Community Origins of Private Enterprise in China

By: Ruochen Dai, Dilip Mookherjee, Kaivan Munshi, Xiabo Zhang

Discussion Paper 320

China's rapid industrialization occurred without effective legal systems or well-functioning financial institutions. Many studies have recognized the role of China's government in spurring the country's transformation (e.g., Long and Zhang 2011; Wu 2016). Some authors have also argued that informal mechanisms based on reputation and trust also helped rural entrepreneurs start and grow their businesses (Peng 2004; Allen et al. 2005; Song et al 2011; Greif and Tabellini 2017; Zhang 2017). Case study evidence (e.g. Fisher et al. 2010 and Nee and Opper 2012) document a high degree of mutual reliance of firms within production clusters. This paper contributes to this line of research by quantifying the role of networks on the growth of private enterprise in China using comprehensive data covering the universe of registered firms.

To motivate their model, the authors start by documenting several stylized facts. Using the China Family Panel Survey (CFPS), which covers a nationally representative sample of households, they show that population density is positively associated with unplanned social interactions, trust in local residents, and the fraction of locally born residents in counties but not in cities. This suggests that a county's population density is a reliable measure of its localized and enforceable trust and in turn its network quality. It also provides a source of variation which the authors exploit to identify and quantify the role of county networks in supporting the explosive entry and subsequent growth of their firms.

Armed with this fact, the authors develop a canonical model which shows the dynamic relationship between population density and evolution of entrepreneurship in any network. A prospective entrepreneur's TFP depends on her origin (birthplace) network's 'quality' and the number of entrepreneurs from the same origin who have already entered. This framework differs from others used in the endogenous growth and agglomeration literatures in that networks are based on the social origins of entrepreneurs. The model predicts that entry (of new entrepreneurs from any given origin) is increasing in initial entry (of entrepreneurs from the same origin at the time of the beginning of the process), and the initial entry effect is increasing over time due to the compounding network effect. Also, the initial entry effect is increasing in the network 'quality', and hence, in origin population density. Similarly, the interaction between initial entry and network quality will grow stronger over time due to the compounding network effect.

Using the State Administration of Industry and Commerce (SAIC) database which comprises the universe of registered firms in China, the authors test the canonical model's predictions. They focus on private enterprises and assign each firm the birth county of its legal representative (designated as the firm's "entrepreneur"). Initial entry is measured in the 1990-1994 period, when private firms emerged in China, and subsequent entry is measured separately in 2000-2004 and 2005-2009. The empirical results show that both a county's initial entry into a sector location and its initial entry interacted with the county's population density have positive and significant effects on subsequent entry with these effects growing stronger over time, as predicted by the model. The authors also provide additional evidence which shows that alternative explanations cannot fully explain the explosive growth of private enterprises. The authors then extend the canonical model to incorporate sector-location choice and capital investment, which helps distinguish the hypothesized mechanism from a range of possible alternative explanations.

After validating the augmented model, the authors estimate its structural parameters measuring destinations by sectors. They parameterize the network quality function to be increasing linearly in population density. Cross-sectional variation is only generated by differences in population density and initial entry; yet, the model is able to match the data quite well across counties and sectors, even out of sample. They then use the estimated parameters for several counter-factual simulations. They find that the total number of entrants would have declined by 64% over the 1995-2004 period had networks not been active. They also simulate a policy in which all entering firms receive subsidized credit and find that it would have increased entry and profits of all entrants. It also would induce lower ability entrepreneurs to enter at the margin and increase the dispersion in firm size. Finally, the authors simulate a modified version of this policy where entrepreneurs from counties with higher population densities (and thus higher quality networks) are targeted in order to take advantage of the larger resulting network spillovers. Though this policy would maximize total profits, it would also exacerbate existing inequalities across communities and could also lead to rent-seeking.

Targeting Setting and Allocative Inefficiency in Lending Evidence From Two Chinese Banks

By: Yiming Cao, Raymond Fisman, Hui Lin, and Yongxiang Wang

Discussion Paper 321

Corporations, government, and other organizations often set performance targets to incentivize effort. Though these targets can motivate employees, they can also lead to changes in the timing and quality of their effort. Results from the empirical literature exploring the distortionary effects of performance incentives have been mixed. Some papers find target setting increases performance with no other discernible side-effects (e.g., Propper et al. 2010) while others find incentives lead to distortions in behavior and/or reporting of results (e.g., Gulati et al. 2016). The authors of this paper provide additional empirical evidence of the effects of performance targets. They study the effects of month- and quarter-end loan quotas used by Chinese banks to motivate branch managers. By observing loan quality, they are also able to explore the efficiency consequences of these incentives.

To highlight the intuition behind their empirical results, the authors present a stylized two-period model of a forward-looking loan officer who faces monthly quantity incentives. The loan officer is compensated on the profitability of the loans they make. They are also required to make at least one loan at a given interest rate across the two periods. In each period, they receive one loan applicant with a random quality which they observe. The authors show that the expected probability of a loan and thus the probability of default is strictly higher in expectation in the second period relative to the first. They also show that this lending quota increases the probability of lending and thus default even in the first period, relative to the no-quota benchmark. Thus, comparing loan quality across the monthly cycle may underestimate the overall effect of lending quotas.

After developing a stylized framework to understand how quotas can affect the number and quality of loans issued, the authors test these predictions using data from both private and state banks. The private bank data contains total city-level lending for each day while the state bank data contains data on a representative subset of individual loans which they aggregate to the branch-date level. After controlling for the day-of-the-week, month, and city, the authors show lending spikes at the end of the month using both data sets. For the private bank data, they do not observe loan-shifting from the beginning of one month to the end of the previous one. If anything, lending at the beginning of the month is slightly higher than average. For the state bank data, they observe a below average rate of lending at the beginning of the month which is consistent with the theoretical prediction from their stylized model. The state bank loan-level data also shows that this increased lending at the end of the month occurs at both the intensive (larger loan sizes conditional on a loan being made) and extensive margin (more loans being issued). The probability that a branch makes a loan in the last 5 days of the month is 70 percent higher than the loan probability for a date in the middle of the month. These loans at the end of the month are on average 13 percent larger than those issued mid-month leading to an overall end-of-month lending increase of about 92 percent.

Though the observed increase in lending at the end of the month could stem from loan officers loosening lending standards to meet quotas, it could also be the result of increased effort or from shifting loans. The authors use the observed loan quality from the state bank data to show an increase in the final few days of the month in the fraction of lending that is ultimately categorized as bad (based on the bank's own "bad loan" classification), consistent with their framework in which loan officers relax their standards. The authors also show that loan officers do not significantly shift their lending to certain groups at the end of the month. They find that the increased lending goes to borrowers with both good and bad histories and to SOEs and non-SOEs. This suggests that they lower their threshold for all borrower classes. The increase in the fraction of bad loans at the end of the month results in an increase in the bank's bad loan rate by 0.9 percent (relative to a baseline of 12 percent at the beginning of the month) which multiplies to RMB 4.5 billion in bad loans annually from the state bank. If these banks are representative of Chinese banks in general, the performance incentives account for an extra RMB 36 billion in bad loans. According to the model, these back of the envelope calculations are a lower bound given targeting also lowers loan officers' quantity/quality thresholds even at the beginning of the month.

Social Ties and the Selection of China's Political Elite

By: Raymond Fisman, Jing Shi, Yongxiang Wang, and Weixing Wu

Discussion Paper 322

The Central Politburo (hereafter Politburo) is the most powerful body in the Chinese government. Officially the Central Committee of the Chinese Communist Party (hereafter Central Committee) is elected by the National Congress and the Politburo is elected by the Central Committee. However, in practice the Politburo has a decisive role in selecting its own new members (Nathan and Gilley 2003 and Shih 2016). Shirk (2012) explains the perception that existing Politburo members tended to select new members who studied at the same university or worked at the same institutions. The existing literature on selection in Chinese politics corroborates this perception (Shih et al. 2012; Jia et al. 2015; and Francois et al. 2016) as it finds that previous employment relationships and college ties play a key role in Politburo selection. These results are in stark contrast to the antifactionalist writings of Mao Zedong, China's post war leader. The authors of this paper use a more rigorous empirical approach which absorbs quality differences between candidates to better understand how hometown, college, and past employment connections to existing Politburo members affect Politburo selection.

Identifying network effects on Politburo selection requires names and detailed background info on all of the Central Committee members including the small subset that eventually became Politburo members. The authors collect the names of all Central Committee members since the seventh term (1945-1956) from the website maintained by the Communist Party of China. The Political Elites of the Communist Party of China database maintained by the National Chengchi University in Taiwan provides background information on these individuals including their birthplace, birth year, and detailed education and work history. The unconditional Politburo selection rate for those with shared backgrounds is higher for each of the three types of ties (same hometown as at least one Politburo incumbent, same university as at least one Politburo incumbent, and period of overlap in work history with at least one Politburo incumbent). The authors argue that these differences may reflect an upward bias as there are likely quality differences between those from more/less prestigious backgrounds.

To absorb these quality differences, the authors exploit the within group variation over time and include a full set of fixed effects to control for the source of each tie. They include 219 hometown fixed effects when estimating the effect of hometown ties, 264 college fixed effects when estimating the effect of college ties, and 305 workplace fixed effects when estimating the effect of workplace ties. After controlling for group quality, the authors find that both home-town and college connections have a significant negative impact on the likelihood of a Central Committee member being selected into the Politburo. They find a precisely estimated near-zero effect of workplace ties.

After estimating a connection penalty, the authors conduct a series of heterogeneity analyses to explore its potential explanation. They show that the connection penalty is larger when the connection is with more junior Politburo members relative to more established Politburo members. This is consistent with intra-group competition where politburo incumbents are less likely to select new members with shared backgrounds that could be potential competitors.

The authors do not find any evidence which suggests that the connections\ penalty is due to the existence of quotas or inter-group competition. They do find that the connection penalty was far greater under Mao's rule relative to later periods, which suggests that the anti-factionalist ideology is a potential explanation given his writings and rhetoric.

Given the authors' results are in stark contrast to the connections benefits found in Shih et al. (2012), Jia et al. (2015), and Francois et al. (2016); the authors investigate the source of this difference. The authors reproduce the main result in each of the papers using the same sample, variable construction, and empirical approach in each of the papers. The authors argue that the penalty/benefit difference is due partially to the fact that they find a penalty for hometown and college ties while the other studies find a benefit for workplace ties. It is also due to the fact the authors of this paper account for group-level differences in quality by including group fixed effects which leads to a more negative relationship between shared background and Politburo selection, regardless of the type of connection. This analysis suggests that cross-sectional analyses may be biased towards finding positive effects of connections when none exists.

Experience of Communal Conflicts and Inter-Group Lending

By: Raymond Fisman, Arkodipta Sarkar, Janis Skrastins, Vikrant Vig

Discussion Paper 323

Ethnic divisions are associated with poor macroeconomic outcomes (e.g., Guiso et al. 2009; Easterly and Levine 1997; and Alesina and Ferrara 2005) but there is little microeconomic evidence regarding the sources of these inefficiencies. The existing literature on the microeconomic consequences of inter-group frictions has focused on shorter-term increases in in-group favoritism as a result of current events (Hjort 2014; Shayo and Zussman 2011; and Shayo and Zussman 2017). The authors of this paper analyze the lifelong consequences of divisive personal experiences in childhood. Specifically, they document the effects of experiencing violent ethnic riots as a child on Hindu loan officers' later lending decisions to Hindus, Muslims, and individuals of other religions. Since they also observe whether each loan goes into default, they can provide a credible measure of their efficiency consequences as well.

The authors use individual loan data from a large public-sector bank which includes loan-level data for every borrower, in each quarter that the borrower has a loan outstanding. Critically, this data provides each borrower's religion. They aggregate the outcomes of interest (new debt issued, number of new loans, and repayment rates of new loans) to the religious group level (Hindus, Muslims, and other religions). The bank's personnel records allow the authors to identify the head of each branch in each quarter along with their religion, their year and city of birth, and the year they started at the bank. They then combine the bank data with conflict data from Varshney (2006) which provides information on the number of deaths, injuries, and arrests as well as the timing for each Hindu-Muslim riot in India from 1950-1995. They measure a loan officer's riot exposure as the total number of riot deaths in their city of birth from their birthdate to the date they joined the bank.

After joining the bank, loan officers leave their hometown and experience frequent rotation among branches. This variation allows the authors to identify the effect of a loan officer's riot exposure on the fraction of new lending obtained and the total amount borrowed for each of the three religious groups (Muslim, Hindu, or other religion) from their branch in each quarter. They estimate the effect of riot exposure separately for each of the three religious groups (Muslim, Hindu, or other religion) and include branch and district-quarter fixed effects to control for time invariant characteristics of each branch and shocks/trends in demand for credit of a particular religion in a particular district. They find that being exposed to 10 or more riot deaths is associated with an offsetting reallocation of lending from Muslim to Hindu borrowers.

By shifting lending from Muslims to Hindus, the authors show that riot-exposed officers pay a real cost as their pay grade depends on loan performance. The default rate of loans issued to Muslim borrowers by riot-exposed loan officers is 3.5 percentage points lower relative to those issued by loan officers that weren't exposed to riots. The authors also show that this decline in lending to Muslim borrowers is not due to riot-exposed managers being less capable of assessing the creditworthiness of Muslims. If this were the case, one would expect information on Muslim borrowers to mitigate this decline for riot-exposed officers. The authors show that neither hard information regarding the creditworthiness of Muslim borrowers or a longer tenure at the bank have insignificant differential effects on lending outcomes. Taken together, these results suggest that the decline in lending to Muslims is the result of riot-exposed loan officers' animosity as they are willing to pay a cost to derive a utility gain from acting on their prejudice.

The authors show that the riot-exposure effect is much larger for loan officers first experiencing violent riots before the age of 10 compared to officers experiencing riots later in life. This finding is consistent with the developmental psychology literature which suggests that the environmental influence on prejudice is strongest prior to age 10 (see Raabe and Beelmann (2011) for a meta-analysis). In addition to documenting the effects of experiencing riots in a loan officer's early years, the authors also show that concurrent events such as the Gujarat riots in 2002 had similar effects on lending outcomes. They find that branches where Gujarat-exposed officers were rotated increased the share of lending to Hindus and decreased the share of lending to Muslims. Branches with loan officers in areas with greater media exposure to the Gujarat riots also decreased the share of lending to Muslims which suggests that media exposure can exacerbate this bias as a result of inter-group frictions.

Can Affirmative Action Affect Major Choice?

By: Fernanda Estevan, Thomas Gall, and Louis-Phillippe Morin

Discussion Paper 324

Recent studies suggest that the field of study matters more than school quality in determining future earnings (e.g, Altonji et al. 2016; Kirkeboen et al. 2016). In several contexts, low-income students are less likely to choose college majors with higher returns such as STEM and medicine (e.g., Carrell (2016) and Steven et al. (2016) document underrepresentation in medical school in the UK and Camera (2017) and NSF (2019) document underrepresentation in STEM fields in the US). The combination of heterogeneous returns to college majors and the link between college major and economic status could slow intergenerational social mobility. The authors of this paper explore how university policies can improve the representation of students from lower socioeconomic backgrounds in STEM fields and medicine. They focus on a policy at the Universidade Estadual de Campinas (UNICAMP), a highly ranked public university in the state of Sao Paulo in Brazil, that gave their public high-school applicants bonus points on the admission exam.

Each year, UNICAMP holds an admission exam to select its new students. When students register to take the exam, they can choose up to three majors, which they rank. If students are admitted, they are admitted in a specific major, not just the university, and switching majors is costly. UNICAMP uses a version of the Boston mechanism (Abdulkadiroglu and Sonmez 2003) to select students, which incentivizes students to apply to majors they are likely to get in. In the first round of admission offers, applicants that ranked a given major as first are ordered based on their admission exam score. Often times, the number of available spots for that major is smaller than the number of applicants and the top-scoring applicants in this first round are selected for that major. If there are remaining spots, students choosing that major as second choice are ordered until that major is filled. With this scheme, selecting medicine as one's first choice may prevent an applicant from being admitted in nursing even if their score was much higher than nursing's "cutoff" score.

In Brazil, public high school graduates typically come from lower socioeconomic backgrounds and are underrepresented in public universities. Before 2004, public high school applicants to UNICAMP were also less likely to choose more competitive, higher earning majors even after controlling for scores on an end-of-high-school standardized exam. In 2004, UNICAMP implemented an affirmative action program granting a 30-point bonus (30% of a standard deviation) on the admission exam score of public high school applicants. In their theoretical model, the authors show that a student's score on the end-of-high-school standardized exam (ENEM score) and the high school they attended are sufficient statistics for their expected admission exam score. The model predicts that this policy will lead public high school applicants to choose more competitive majors. Given cutoff scores will increase for most majors, private school applicants may respond by choosing less competitive majors.

To test these predictions, the authors use individual-level data from the 2004 (before the affirmative action policy) and 2006 (after the affirmative action policy) UNICAMP admission exams from its admission office. Critically, this dataset contains the socioeconomic characteristics of the applicants, the name and type of high school they attended (public or private), and their ENEM score. To identify the effects of the policy, the authors exploit the timing of the policy and use a difference-in-differences estimation strategy. They find that the affirmative action policy significantly increased the likelihood that public high school students applied to medicine and top-five majors (as measured by the admission cutoff scores) by 1.0 and 2.0 percentage points respectively (10.8% and 9.8% increases respectively) relative to private school applicants. This effect was strongest for higher-ability students scoring in the top ENEM quartile. The policy also significantly increased the joint probability of public high school applicants applying for and being admitted to medicine and top-five majors.

By affecting applicants' major choice and probability of admission, the policy could have impacted intergenerational mobility. The authors test this by replacing the public-school indicator with the log of the applicant's parental income in the baseline specifications. They find that the policy increased the admission probability for both medicine and top-five majors for applicants from poorer families. These results suggest that well-designed public policies can address unequal access to high-paying majors and lead to higher social mobility

Firm-Level Political Risk: Measurement and Effects

By: Tarek A. Hassan, Stephan Hollander, Laurence van Lent, and Ahmed Tahoun

Discussion Paper 325

From the UK's vote to leave the European Union to repeated shutdowns of the US federal government, recent events have renewed concerns about the effects of political risk on firm behavior. Quantifying the effects of political risk has often proven difficult due to a lack of firm-level data on exposure to political risks and on the kind of political issues firms may be most concerned about. The authors of this paper use textual analysis of quarterly earnings conference-call transcripts to construct firm-level measures of the extent and type of political risk faced by firms listed in the United States over time. They use these measures to understand the nature of political risk affecting US listed firms, and how it affects their stock returns, investment, employment, and lobbying behavior.

To distinguish between language associated with political versus non-political matters, the authors adapt a simple pattern-based sequence-classification method developed in computational linguistics (Song and Wu, 2008; Manning et al., 2008). They measure political risk as the share of the quarterly earnings conference calls devoted to political risk. They then validate the measure by showing it correctly identifies calls containing extensive conversations on risks that are political in nature, that it varies intuitively over time and across sectors, and that it correlates with the firm's actions and stock market volatility in a manner that is highly indicative of political risk.

The authors find that increases in their firm-level measure of political risk are associated with significant increases in firm-specific stock return volatility and with significant decreases in firms' investment, planned capital expenditures, and hiring. They also find that firms facing higher political risk tend to subsequently donate more to political campaigns, forge links to politicians, and invest in lobbying activities. Such active engagement in the political process is primarily concentrated among larger firms, consistent with the idea that large firms internalize more of the gain from swaying political decisions than small firms (Olson, 1965). These results continue to hold after controlling for news about the mean (as opposed to the variance) of political shocks.

Surprisingly, most of the variation in measured political risk appears to play out at the level of the firm, rather than the level of (conventionally defined) sectors or the economy as a whole. Variation in aggregate political risk over time (time fixed effects) and across sectors (sector x time fixed effects) account for only 0.81% and 7.50% of the variation in the authors' measure, respectively. "Firm-level" variation drives the remaining 91.69%, most of which is accounted for by changes over time in the assignment of political risk across firms within a given sector. To shed some light on the origins of this firm-level variation in political risk, the authors also provide detailed case studies of political risks faced by two illustrative firms over the sample period. These findings suggest that the effectiveness of political decision-making may have important macroeconomic effects by affecting idiosyncratic political risk. Such idiosyncratic risk may affect the allocation of resources across firms, and thus total factor productivity.

After studying the incidence and effects of overall political risk, the authors turn to measuring the risks associated with eight specific political topics. To validate the topic-specific measures, they exploit the fact that firms that lobby any branch of the US government must disclose not only their total expenditure on lobbying, but also the list of topics this expenditure is directed toward. That is, lobbying disclosures uniquely allow the authors to observe a firm's reaction(s) to risks associated with specific political topics, and to create a mapping between specific political topics discussed in conference calls and the topics that are the object of the same firm's lobbying activities. Using this mapping, the authors show that a one-standard-deviation increase in risk associated with a given political topic in a given quarter is associated with a 11% increase relative to the mean in the probability that a given firm will lobby on that topic in the following quarter. That is, a significant association exists between political risk and lobbying that continues to hold within firm and topic.

Staple Products, Linkages, and Development: Evidence from Agentina

By: Federico Droller and Martin Fiszbein

Discussion Paper 326

In the late 19th century and early 20th century, Argentina underwent a rapid process of integration into the international economy as an exporter of primary goods. The leading staples, ranching products and cereals, had different production functions. Ranching was characterized by an extensive production system, whereas cereals were labor-intensive and usually more intensive in the use of inputs and capital. Cereals' main forward linkage, flour mills, often located close to their input sources, while ranching's main forward linkage, meat-processing industries, were concentrated around the Buenos Aires port. The authors of this paper examine how these differences shaped development across local economies in Argentina.

Throughout Argentina's core agricultural region (the Pampas), there was considerable variation across local economies in the prevalence of each staple, partly due to variation in climatic features. The authors exploit this climate-induced variation in the agricultural production mix and construct an instrumental variable (IV) based on high resolution spatial data on climate-based potential yields for pastures, wheat, corn, and flaxseed. The IV is based on the estimation of a fractional multinomial logit (FML) model of crop choice in which the county-level shares of primary products in total agricultural land use are functions of the product-specific potential yields. In particular, the predicted share of ranching in local agricultural land ("potential ranching specialization") can be used as an instrument for actual ranching specialization.

The authors find that localities specializing in ranching historically had weaker linkages with other activities, higher land concentration, lower population density, and less immigration of Europeans. In terms of linkages, ranching areas had less investment in agricultural machinery, lower railroad density, and weaker development of agro-processing industries. Moreover, ranching's extensive production system was conducive to land concentration, presumably increasing income inequality. In addition, ranching's low labor-intensity led to lower population densities. Thus, ranching areas were likely to have thin local markets and limited agglomeration effects. Finally, ranching localities had relatively few Europeans, whose skills were more complementary to cereal production. In turn, European presence in cereal producing areas created an advantage for industrial and commercial activities.

Ranching lost importance as the national economy industrialized and diversified, but the influence of early ranching specialization across local economies did not wash out over time. The negative effects on population density and urbanization were remarkably persistent. Moreover, ranching locations displayed slower industrialization, with lower skill-intensity in manufacturing activity. Ultimately, ranching had negative long-run effects on income per capita and education. These findings provide evidence consistent with the staple theory of growth (Innis, 1930, 1940) as the types of goods produced by local economies in Argentina influenced their development paths. While extrapolation from subnational results to country- wide implications is speculative, the findings also suggest that Argentina's sluggish growth in the 20th century might be partly rooted in a distinctive feature of the agro-export-led growth period, i.e., specialization in ranching.

FACULTY PROFILES

Marianne Baxter's research is in the fields of macroeconomics and international economics. In research related to her prior work on macroeconomic consequences of home production, she has been engaged in a large-scale econometric analysis of household expenditures and household time use as they pertain to home production. She is also working with a data set using IKEA catalogs from many countries and up to twenty years to study the determinants of departures from the law of one price.

Samuel Bazzi's research lies in development and political economy. His core research is organized around three themes: (1) understanding barriers to migration, (2) political and cultural challenges to nation building, and (3) the scope for public policy to foster integration in diverse societies. Another strand of research explores agglomeration spillovers and constraints to firm growth.

Christophe Chamley's research is on social learning, coordination of expectations and markets in macroeconomics, and in the history of states' finances from 5000 BC to the 19th century.

Randall Ellis' recent research focuses on how health care payment systems affect consumers, health care providers and health plans. He is actively using big data to address policy issues, consumer demand, and understand market behavior. He continues to conduct research on risk adjustment and predictive modeling, which resulted in the payment models used in the US since 2000 and Germany since 2009, with similar models being evaluated in other countries. He was recently awarded a grant from HHS Agency for Healthcare Research and Quality for "Advanced Risk Adjusters and Predictive Formulas for IDC-10 Based Risk Adjustment". He is also working on health care innovation, feasible transitions to Medicare for All, and children with medical complexity. During the past year Ellis gave talks in the US, Israel, Japan, and Belgium. He is currently collaborating with researchers in the US, Netherlands, France, and Brazil.

Raymond Fisman works in two main areas of political economy --- the causes and consequences of inequality, and corruption. His recently work on the consequences of social ties in Indian banking was recently published in the American Economic Review, and his research on social ties and favoritism in Chinese science in the Journal of Political Economy. His book on corruption, with political scientist Miriam Golden, was published in April 2017.

Martin Fiszbein works in the fields of economic growth, development, history, and urban economics. In particular, his research seeks to understand the dynamics of structural change, human capital formation and economic growth. In a series of current projects, he studies the effects of the production structure on patterns of long-run growth. This works examines predictions from a variety of macro-development and urban economics models using rich subnational data from the United States and from Argentina.

Ivan Fernandez Val specializes in theoretical and applied econometrics. He has recently been working on nonlinear panel data and distributional methods with applications to labor economics and other fields.

Stefania Garetto is a trade economist with a prevailing interest in the study of foreign direct investment and the activities of multinational corporations, both from a real and from a financial perspective. Stefania's current research merges empirical analysis and structural dynamic modeling to understand the creation of multinational firms via mergers and acquisitions, and their expansion in space over time.

Mahesh Karra is an IED affiliate and Assistant Professor of Global Development Policy at the Frederick S. Pardee School of Global Studies and Associate Director of the Human Capital Initiative at the Global Development Policy Center. His academic and research interests are broadly in development economics, health economics, quantitative methods, and applied demography. His research utilizes experimental and non-experimental methods to investigate the relationships between population, health, and economic development in low- and middle-income countries.

Robert King focuses his research on monetary policy and macroeconomics. Particular areas of current interest are the nature of price dynamics, the influence of reputation and credibility on optimal monetary policy, and the history of banking markets.

Kevin Lang's research concerns education and labor markets, with a particular focus on discrimination. While his work is primarily centered on the United States, he is currently involved in projects in Spain (on the effects of a policy allowing mothers to work part-time) and Singapore (on the market for illegal money-lending).

Laurence Kotlikoff specializes in fiscal policy, macroeconomics, money and banking, computational economics, healthcare, and personal finance. He also works on the economics of robots. The author or co-author of 17 books and hundreds of journal articles, Kotlikoff is also a prolific columnist and a #1 NY Times Best Seller author. His columns have appeared in the New York Times, the Wall Street Journal, Bloomberg, Forbes, PBS.org, and many of the other top newspapers and magazines in the U.S. and overseas. His recent work has focused on generational policy, banking reform, corporate tax reform, social security reform, healthcare reform, computing large scale life-cycle models with aggregate shocks, and modeling the economic impacts of robots.

Robert Lucas's recent work focuses on migration. In the last couple of years his chapter on African migration appeared in the North-Holland Handbook series and he edited a handbook on international migration and economic development, which was published by Elgar during 2015. For that volume Lucas prepared a chapter on the link between bilateral trade and international migration, including fresh evidence derived from the most extensive data available to date. In May 2015 Lucas gave the key-note speech on "Migration and Economic Development" at the United Nations, NY, leading to adoption of the UN Post-2015 Development Agenda in September. Lucas's current work is on internal, rural-urban-rural migration in developing countries using a very large micro data set on 60 countries. He also continues to act as a member of the advisory committee on remittances to G8 countries.

Robert A. Margo's presidential address to the Economic History Association, entitled "Obama, Katrina, and the Persistence of Racial Inequality," was published in the June 2016 issue of the Journal of Economic History. He authored a chapter entitled "Labor and Labor Markets in the United States: An Historical Perspective" in the Handbook of Cliometrics, also published in 2016.

Jianjun Miao continues to work on two lines of research. The first concerns macroeconomic implications of financial frictions, specifically business cycle and growth implications of bubbles and credit constraints. The second involves new models of ambiguity sensitive preferences and applications to macroeconomics and finance.

Dilip Mookherjee works on a combination of theoretical and empirical topics related to development economics. Current empirical projects include agriculture and environment, political economy, financial development, entrepreneurship and marketing supply chains in Asia; theoretical topics include inequality, globalization and organization design. He is a member of the State, Bureaucracy and Justice RA4 Program of the Economic Development and Institutions (EDI) network based at University of Namur and Paris School of Economics. He is a fellow of BREAD, CEPR and the NBER Development group.

Andrew Newman is currently engaged in several research projects pertaining to development, organizational economics, inequality, and the economics of the household. Recent work involves developing a testable competitive equilibrium framework for studying how firms' internal organization decisions such as outsourcing or vertical integration interact with markets and how those decisions in turn affect product market performance, particularly in the face of globalization. He has been contributing to the economic theory of matching markets and applying that to affirmative action policies. He is also exploring how the processes by which people learn about their economic environment can lead to organizational dysfunction and change.

Daniele Paserman specializes in labor, applied microeconomics, political economy and behavioral economics.

Pankaj Tandon concentrates on technological change, microeconomics, public enterprises, and food policy. He has worked on evaluating privately financed infrastructure projects and privatization programs. His main field experience has been in Egypt, India, Mexico, and Venezuela.

Professors Emeriti: **Peter Doeringer, Shane Hunt, and Gustav F. Papanek**

Department of Economics faculty members at Commencement with this year's Distinguished Alumni recipient and Commencement speaker, Gina Ortiz Jones (B.A./M.A. 2003)

GRADUATE STUDENTS

2019 Abdala and IED Summer Research Fieldwork Grants

This program was created in 2019, to fund research fieldwork of graduate students. These grants are made possible by a generous gift from alumnus Manuel Abdala. Fieldwork is broadly defined to include conduct of surveys, interviewing, collecting archival/historical data, or performing laboratory experiments, along with associated activities necessary to carry out a research project.

The 2019 grants provided funding in the range of $3- $10k each to the following PhD students: Yiming Cao, Matteo Ferroni, Thomas Gautier, Hilmy Masyhur, Thomas Pearson, Gianluca Russo, Lisa Tarquinio, and Kexin Zhang. The MA awardees were Sakshi Goel and Dixita Gupta. Below we provide descriptions of the fieldwork conducted by some of these students, in their own words.

PhD Abdala Awardees

Yiming Cao, "How ex ante corruption is linked to the extent of damages in the context of the 2008 Sichuan earthquake"

I spent two months this summer traveling in China to collect data on the 2008 Sichuan Earthquake. I hired a team of six college students in Chengdu, Sichuan. We scanned and digitized over a hundred county gazetteers provided by the Sichuan Public Library. Specifically, we obtain a list of buildings and infrastructures whose year of construction have been documented in the county's gazetteers, and another list of buildings whose damages have been mentioned in the county's Book of Earthquake Relief. The buildings whose documents we collected consist of schools, hospitals, government buildings, firms and other public facilities. We are currently working on matching the two lists of buildings to construct a database of buildings damaged during the earthquake. The data will be used in analyzing the determinants of building damages in the course of the earthquake.

Masyhur Hilmy, "Exploratory Fieldwork for Research on Education in Indonesia"

This summer, I have been doing research work on two topics related to education in Indonesia: Islamic education and school grant fraud. To advance my research ideas, I spent two months in Jakarta to meet with stakeholders at various levels, including (1) director-level officials at the Ministry of Religious Affairs (MORA) and the Ministry of Education and Culture (MOEC), (2) policy advisers at the Jakarta Governor Office and the National Team for the Acceleration of Poverty Reduction (TNP2K) under the Office of Vice President, (3) academics and research staffs at the World Bank, SMERU Research Institute, and J-PAL Southeast Asia, as well as (4) teachers at an elementary madrasah and an Islamic elementary school in Banten. From these meetings, I obtained two new datasets that will further my research: a nationwide roster of madrasah under the purview of MORA and a core database of schools under the purview of MOEC. I am also in the process of acquiring a dataset of nationwide teacher certification scores to supplement the aforementioned data. The discussions with the various stakeholders were enlightening and they will help me refine my research ideas.

Lisa Tarquinio, "The Political Motives behind Drought Declarations in India"

Lisa Tarquinio with farmers in India

I spent one month this summer traveling in India to meet with academics, state government workers, and local government workers. I am conducting research on the politics of drought relief in India as well as the effects of drought and drought relief on local economic outcomes. I met with researchers to present my current findings and received excellent feedback as well as new data, which will help me advance my research. I spoke with government officials at the state and district levels to better understand the administrative process for drought relief. I also had the opportunity to meet with a group of farmers in a village in Andhra Pradesh (some of whom are shown in the picture) where I learned more about their farming practices and how they are affected by drought and drought relief.

Kexin Zhang, "Exploring Behavioral Biases in Contraceptive Decision-Making: Evidence from a Field Experiment in Urban Malawi"

Kexin Zhang and Professor Mahesh Karra with research participants in Malawi

I spent one month this summer traveling in Malawi with Professor Mahesh Karra and two graduate students from Pardee school at BU. We collaborated with Innovation for Poverty Action (IPA) in Malawi and conducted a randomized controlled trial with 700 women in Lilongwe, Malawi. The project's aim is to understand women's preferences for family planning methods, and how their preferences could be affected by the involvement of their husbands in the family planning counseling procedure and a more tailored attribute-based counseling procedure. We started designing the surveys since February 2019. During this one month in Malawi, we programmed and tested our baseline survey, intervention questionnaires and the end line surveys. In addition, we designed and prepared the materials for the intervention. We have been talking with the local IRB and obtained their final approvals for our study in July. We then oversaw a three-day piloting for the baseline, and the local team launched the 2-month baseline in mid-July. The data collection process is expected to be completed in early December. Besides gaining a better understanding of women's preferences for family planning, I learned how to conduct a field experiment and how to design questions tailored to the research question. I believe this will be extremely helpful for my future research.

MA IED Awardees

Sakshi Goel and Dixita Gupta, "Social Networks and Women's Reproductive Outcomes: Evidence from a Randomized Experiment in Rural India"

Mahesh Karra (Assistant Professor of Global Development Policy at the Frederick S. Pardee School of Global Studies) in India with Abdala Awardees Dixita Gupta and Sakshi Goel

This summer we spent a month in Varanasi, India under Professor Mahesh Karra working on an ongoing randomized control experiment that aims to investigate the causal effect of a social network-based family planning intervention on 671 young women's reproductive health outcomes. The study sought to assess the influence of social networks on women's family planning and reproductive health outcome decisions. Our team started designed follow-up surveys after assessing results of a baseline survey from last year. We programmed, translated and tested our surveys using tools such as CommCare with support from our local field managers and professors. In addition, we designed materials required for the intervention, and trained a team of local enumerators that will collect data. We were fortunate to have an opportunity to oversee the work of our enumerators during the pilot study in a sample village.

This study was our first hands-on experience with field work. It allowed us to understand and learn about the various components that make a field work successful. It improved our ability to design questions tailored to the needs of the project and in accordance with the local customs and norms. It was a wonderful experience, which advanced our skills and knowledge that will surely be useful in future.

Student Placement

This year, fourteen graduating BU Ph.D. students have accepted job offers, while two of them have not completed their searches yet. Among the accepted jobs, five are tenure-track positions in universities and liberal arts colleges, four are in international organizations, think-tanks or other research institutions, and five are in private companies. Congratulations to our Ph.D. graduates!

So Hyun An, Associate Research Fellow, Korea Institute of Industrial Economics and Trade; Jesse Bruhn, Post-doctoral fellow, Princeton University; Assistant Professor, Brown University; Juan Carvajal, associate, Analysis Group; Alessandro Casini, Assistant Professor, University of Rome Tor Vergata; Vince Chen, Assistant Professor, Renmin University of China; Mesay Gebresilasse, Assistant Professor, Amherst College; Yeonha Jung, Associate Fellow, Korea Development Institute; Sanghoon Kim, Assistant Professor, University at Buffalo, The State University of New York; Yi-Hsuan Lin, Assistant Research Fellow, Academia Sinica (Taiwan); Junwen Lu, Predictive Modeler, Arbella Insurance; Bruno Martins, Associate, Analysis Group; Phillip Ross, Associate, Analysis Group; Arthur Smith, Associate, Cornerstone Research; Danielle Trachtenberg, economist, Inter-American Development Bank, Integration and Trade Sector.

2019 Rosenstein-Rodan Prize: Fatima Aqeel

The Rosenstein-Rodan prize is awarded annually for the best paper in a development-related area written by a PhD economics student. The 2019 Rosenstein-Rodan Prize was awarded to Fatima Aqeel (Economics), for her paper " Educational Investments and Marriage Success: Evidence from Pakistan."

Fatima's paper studies effects of a reform which increased opportunities for women to enter medical school in Pakistan. It first documents that women medical graduates match better on average than women with a different college degree: they marry men who are richer, have smaller spousal age gaps, and are less likely to divorce. It then shows that removal of a cap on the number of female medical students rapidly increased the proportion of females in medical school. Using a differences in differences strategy, the paper evaluates changes in labor and marriage market outcomes for women medical graduates. Single women were more likely to work. Cohorts of women entering medical school after cap removal were more likely to delay marriage and marry richer men. These findings can be explained using a model which incorporates the effect of changing selection into medical school.

ALUMNI NEWS

Annual Distinguished Alumni Award

The Institute for Economic Development and the Department of Economics continued the annual award to honor a distinguished alumnus. The Department Chair and IED Director, along with a few senior faculty, established this award to recognize the remarkable accomplishments of our alumni and to inspire and motivate current students in the department.

The 2019 Distinguished Alumni Award was awarded to Alexandria Ocasio-Cortez and Gina Ortiz Jones for their inspiring dedication to public service.

Alexandria Ocasio-Cortez graduated from Boston University in 2011 with a BA in International Relations and Economics. During her time at BU, she was an intern in the immigration office of US Senator Ted Kennedy. After college, Ocasio-Cortez moved back to the Bronx, working as a bartender and a waitress. She launched Brook Avenue Press, a publishing firm for books that portray the Bronx in a positive light, and worked as lead educational strategist at GAGEis, Inc., and for the nonprofit National Hispanic Institute. In May 2017, she announced her candidacy for the Democratic nomination for Congress in New York's District 14, a seat long held by Democratic Caucus Chair, Joe Crowley, who had not been challenged for the nomination since 2004. Despite being outspent $194,000 versus $3.4 million, Ocasio-Cortez won the primary with 57.1% of the vote. She won the general election easily, receiving 78% of the vote.

Gina Ortiz Jones attended Boston University on a four-year Air Force ROTC scholarship and graduated in 2003 with a B.A. in East Asian Studies and a B.A. and M.A. in Economics. After graduation she entered the Air Force as an intelligence officer and deployed to Iraq. Upon separating from the Air Force, Jones returned to Texas in 2006 and served at U.S. Army South advising on military operations in Latin America. Jones was invited to serve as an inaugural member of U.S. Africa Command, and served in numerous follow-on positions as a civil servant, including Special Advisor to the Deputy Director of the Defense Intelligence Agency; Senior Advisor for Trade Enforcement in the Executive Office of the President, and Director for Investment in the Office of the U.S. Trade Representative leading the Committee on Foreign Investment in the United States (CFIUS) portfolio. In 2018, Jones lost her bid for Texas' 23rd Congressional District by 926 votes in the general election. In May 2019, Gina Ortiz Jones announced that she would run again for Texas' 23rd Congressional District.

A Distinguished Alumni Award Reception and Dinner was held on May 16, 2019 to honor the award recipients. In attendance was Gina Ortiz Jones, numerous alumni, faculty, students and friends who enjoyed a convivial evening at the BU Castl

Alumni Engagement

We have an extremely dedicated Master's Alumni Council (MAAC) who host several career development events in support of our Master's students. This past year the MAAC sponsored an excel workshop, mock interviews, and a career information meeting. The career information panelists were: Peter Brodeur of Charles River Associates (BA/MA 2017), Kelly Colden of Ernst & Young (BA/MA 2014), Julia Frayer of London Economics International LLC (BA/MA 1997), Prithvi Hingorani of Cornerstone Research (BA/MA 2015), Michael Hoffman of Federal Deposit Insurance Corporation (MA 2017), Caroline Margiotta of Mathematica Policy Research (BA/MA 2017), and Jessica Nicholson of U.S. Department of Commerce.

Members of the Master's Alumni Leadership Council at the annual dinner: Kelly Colden (Chair), Jessica Nicholson, Caroline Margiotta and Michael Hoffman. Council member Prithvi Hingorani missing from photo.

Fall 2018 MA Career Information Meeting panelists

STAFF NEWS

Kelly Benkert joined the IED team in January 2019 and manages the day-to-day operations of the Institute, Department grants, and alumni engagement. Prior to IED, Kelly worked in the World Languages & Literatures Department at BU as a critical language grant administrator. Matthew Brown came on board in November of 2017 and is the IED Program Coordinator and Economics website webmaster. And in November 2018, Dianne Lopez was hired as an administrative coordinator to support faculty and weekly departmental programming. She also works with Kelly on alumni engagement efforts.

If you would like to receive an invitation to the Streeten Lecture and Department organized alumni events, please email Kelly Benkert at kbenkert@bu.edu.

IED Research Visitors



Chi Man Cheung with Professor Dilip Mookherjee,Nishith Prakash and Priya Mukherjee

Chi Man Cheung visited the IED from September 2018 to January 2019 before embarking on a PhD program in Agricultural and Resource Economics at Berkeley. His research interest broadly defined is political economy in developing countries. He is particularly interested in political selection and bureaucrat selection in China and India. While visiting IED, he worked on an extension to a working paper by IED Affiliate Raymond Fisman which had shown improved selection of politician quality resulting from asset disclosure law in India. Chi Man studied whether the improved political selection translates into better outcomes in infrastructure procurement and less corruption in a nationwide rural road building project in India. During his time at the IED, he worked under the supervision of IED Director Dilip Mookherjee.

Nishith Prakash, a professor of economics at University of Connecticut who began his visit in January 2018 will remain a visitor until January 2020. His primary research interests include development, labor, public policy, and health economics. While visiting the IED, Professor Prakash plans to work on joint projects related to education with Professor Raymond Fisman.

Sebastian Jävervall, a PhD student in economics at Uppsala University, visited the IED for the academic year 2018-2019. His primary research interests include development and political economics. While visiting the IED, he worked on the role of government transparency in India and local governance in South Africa.

Priya Mukherjee, assistant professor of economics at William & Mary, visited IED during the 2018-19 academic year. Her research interests lie broadly in political economy, and the economics of education in developing countries. While visiting the IED, Professor Mukherjee worked on projects that investigate voter behavior and their responses to government policies, in India. She also worked on extending her prior work on democratic transitions, by studying the behavior of firms before, during and after Indonesia's transition into democracy.

Distinguished Faculty Visitors 2018/19

The following distinguished visitors spent a few days in the Economics department each, giving a seminar and two lectures in their field of expertise for the benefit of our graduate students and faculty:

John C. Haltiwanger (University of Maryland) visited from October 16 – 18, 2018 (Macroeconomics)

Navin Kartik (Columbia University) visited from November 5 – 9, 2018 (Microeconomic theory)

Steven Berry (Yale) visited from November 26 – 30, 2018 (Industrial Organization)

Chad Jones (Stanford) visited from February 28 – March 1, 2019 (Macroeconomics)

Dave Donaldson (MIT) visited from March 18 – 22, 2019 (Development)

Paola Sapienza (Kellogg) visited from April 8 – 15, 2019 (Empirical Microeconomics)

SEMINARS

IED organizes a weekly seminar during the academic year where visiting speakers present their research. The following is the list of seminars for the 2018-19 year:

Fall 2018

9/10/18 Priya Mukherjee (William & Mary/visiting BU) "Pricing Private Education in Urban India: Demand, Use and Impact"

9/17/18 Bob Lucas (BU) "Returns, Selection, Sorting and Barriers: Migration between Rural and Urban Areas of 44 Low and Middle-Income Countries"

9/24/18 Nico Voigtlaender (UCLA) "Forced Migration and Human Capital: Evidence from Post-WWII Population Transfers"

10/1/18 Ben Enke (Harvard) "Kinship, Cooperation, and the Evolution of Moral Systems"

10/15/18 Fernanda Estavan (FGV-Sao Paolo, visiting BU) "Can affirmative action affect major choice?" with Thomas Gall (University of Southampton) and Louis-Philippe Morin (University of Ottawa)

10/22/18 Dany Bahar (Brookings Institution) "Let their knowledge flow: the effect of Yugoslavian returning refugees on export productivity"

10/29/18 Raquel Fernandez (NYU) "Coming Out in America: AIDS, Politics, and Cultural Change"

11/5/18 Melanie Morten (Stanford, visiting BU) "Border Walls" with Treb Allen and Caue Dobbin

11/12/18 Enrico Spoloare (Tufts) "Fertility and Modernity"

11/26/18 Sandra Seqeira (LSE, visiting Harvard) "Immigrants and the Making of America

12/3/18 Jeanne LaFortune (PUC-Chile) "Is workplace safety everybody's business? Experimental evidence on prevention information, accidents and compensating wage differentials in SMEs"

12/10/18 Toman Barsbai (U of St. Andrews, visiting Harvard) "The Geographical Origins of Human Preferences: Evidence from Animal Behavior"

Spring 2019

3/4/19 Tiago Cavalcanti (Cambridge) "Family Planning and Development: Aggregate Effects of Contraceptive Use" with Georgi Kocharkov and Cezar Santos

3/18/19 Dave Donaldson (MIT) "The Bigger the Better? Using Lotteries to Identify the Allocative Efficiency Effects of Firm Size" with Paul Carrillo (GWU), Dina Pomeranz (Zurich), and Monica Singhal (UC Davis).

3/25/19 Rema Hanna (Harvard) "The challenges of universal health insurance in developing countries: Evidence from a large-scale randomized experiment in Indonesia" with Abhijit Banerjee (MIT), Amy Finkelstein (MIT), Benjamin Olken (MIT), Arianna Ornaghi (University of Warwick), and Sudarno Sumarto (TNP2K and SMERU)

4/1/19 Clement Imbert (Warwick, visiting Chicago) "Migrants and Firms: Evidence from China"

4/8/19 Paola Sapienza (Northwestern) "Diversity in Schools: Immigrants and the Educational Performance of Natives"

4/22/19 Nishith Prakash (UConn, visiting BU) "When Goal Setting Forges Ahead but Stops Short"

4/29/19 Pauline Grosjean (U of South Wales) "Men. Roots and Consequences of Masculinity Norms"

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