The Institute for Economic Development

Research Review

Contents

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Recent Discussion Papers — Page

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

Do Prices Determine Vertical Integration? Evidence from Trade Policy

By Laura Alfaro, Paola Conconi, Harald Fadinger, Andrew F. Newman

Discussion Paper 248

Economists and policymakers have long debated the causal effect of vertical integration on price levels: foreclosure arguments predict price increases, while efficiency arguments predict price decreases. However, this paper studies the largely neglected reverse causal effect – how price levels affect vertical integration. If integration enhances productivity, as the efficiency arguments posit, then when product prices are low, increases in revenue are too small to justify the fixed cost of investing in vertical integration. Higher prices help benefit to exceed cost, so higher prices will cause an increase in vertical integration along the chain of production. As correlations are more easily observed than causal effects, a nuanced understanding of causality is of vital importance in policy planning and industry projections. The paper focuses on empirically assessing causal effects of exogenous price changes on vertical integration.

A key device is using MFN tariff agreements between WTO/GATT members as a proxy for exogenous price variation. Higher tariffs raise product prices in the domestic market, and MFN tariffs are determined in complex, high-level multilateral negotiation process that may last for a decade. The authors marshal a number of arguments from the political economy of trade to contend that these tariffs are exogenous, that is, vertical integration in an industry does not affect the tariff's negotiated level. The main cross-section analysis uses 196,586 domestic manufacturing firms, each with 20+ employees, from 80 countries. Firm data is from the year 2004, when prevailing tariffs resulted from the 1994 Uruguay Round of trade negotiation. A separate time-dimension panel analysis is performed using data on 28,928 Chinese firms observed in 1999 and/or 2007, with China acceding to the WTO in 2001. Additionally, organizational convergence between countries is studied using regressions on 101 country-pairs. The analyses employ the WorldBase dataset of firm-level observations from Dun & Bradstreet, along with USA input-output tables, to construct a proxy measure of vertical integration for each firm. Tariff data is at the 4-digit SIC level, collected from the WITS database.

The authors find that the evidence supports the theory of a positive causal relationship from prices to integration. Their results are quantitative, with a vertical integration index ranges between 0 and 1 that measures the portion of a firm's products' value that was produced within the firm, rather than being purchased from suppliers. The authors thus report a strongly significant tariff elasticities of vertical integration. For competitive sectors, these estimates range from 0.029 to 0.1. Thus, using the average tariff level of 5%, the paper suggests a ballpark price elasticity of integration of 0.61 to 2.1. A one standard deviation increase in tariffs implies an up to 0.12 standard deviation increase in vertical integration. They find similar results in the cross-section and panel data analyses, including a number of robustness checks.

Do consumers pay more for what they value more? The case of local milk-based dairy products in Senegal

By Mélanie Lefèvre

Discussion Paper 249

Senegalese consumers spend 7% of their food budgets on milk and dairy products, and this demand is largely satisfied by imports of milk powder, principally from the European Union. While consumer questionnaires have shown that Senegalese consumers prefer fresh or local milk products over powder-based milk products, this is not reflected in observed product prices. A systematic discrepancy between market behavior and stated preferences of consumers may point to imperfect information. This paper explores this discrepancy, and assesses the role of misleading product labeling.

The author employs two main datasets, to assess stated preferences and market behavior, respectively. For the former, a sequence of questions assesses 400 households' relative preference over eight hypothetical sour-milk products and their prices. The questionnaire was conducted in April 2002 by the NGO "GRET," in the Dakar region. This allows assessment of households' willingness-to-pay for three different product attributes that vary over the eight products.

To assess market behavior, the author employs a survey including data on 1327 milk and yogurt products, assessing price, aspects of labeling and branding, and raw source material, The survey was conducted in 2011 by a Masters' student in the University of Liège, with the support of CNCR, a Senegalese farmers' association. This paper applies the hedonistic regression method to decompose products' prices into market valuations of different material and labeling characteristics.

The questionnaire confirms that households prefer fresh/local sour-milk over powder-based sour-milk, and the market survey reaffirms that prices are not higher for products from fresh material. However, the questionnaire also shows that consumers are often misinformed about the content of the milk that they purchase. The author's analysis shows that prices are higher for products whose label makes no mention of whether or not it contains powder, relative to products that specifically mention a milk powder ingredient. From these results, the paper concludes that any policy which leads to better information, such as local-origin certification, would allow local producers to sell their products on the market at a higher price, while still finding a demand. In an interesting twist, the author notes that powder-based products' labels lacking mention of milk powder may have violated Senegalese law.

African Migration

By Robert E.B. Lucas
Discussion Paper 250

The author prepared this chapter to appear in The Handbook on the Economics of International Migration, edited by Barry R. Chiswick and Paul W. Miller, to be published by Elsevier. The state of analysis of migration in both North Africa and Sub-Saharan Africa (SSA) is critically summarized and extended deploying the latest available data.

The paper begins by drawing out some of the defining features of Africa's international migration, including the influence of colonial heritage, extensive and porous borders, and the impacts of conflicts and refugees. The role of migration policies is then taken up in the context of Europe, North America, the Gulf Cooperation Council (GCC) states, and within Africa itself. The rejection rate on applications for Schengen visas is much higher for Africans than for other regions, but enforcement of entry restrictions in Europe appears quite ineffective. Visas issued by the US to Africans are largely confined to diplomats and students. GCC recruiting is focused almost exclusively on Egypt within Africa. Forced expulsions are far more common among the African states than in the rest of the world, but these states are also generous in granting asylum.

The author presents gravity models of international migration from 55 African states to 220 host countries from 1960 through 2000. The elasticity of emigration with respect to income gaps proves much greater in North Africa than in SSA, possibly reflecting financial constraints on movements from the lower-income states of SSA. Higher incomes at home are associated with greater migration over long distances but less migration to neighboring states, though no sign of an overall migration hump is detected, as often claimed. Conflict results in significantly greater emigration even by non-refugees, though the polity index at home proves to have almost no effect. Climatic disasters have less influence on emigration, according to these results, than asserted in some previous studies, either directly or through effects on incomes. Parallel results on refugee flows are also presented, demonstrating quite different associations, tending to deny frequent claims that many refugees are really economic migrants.

The paper then goes on to examine the economic consequences of migration for Africa: the long-run effects through investment and the links with remittances; the availability of human capital, the brain-drain and study abroad, and elements of brain-gain; the short-run influences on domestic labor markets, any Dutch-disease consequences of remittance inflows, and the economic impact of refugee inflows; plus the overall effects on inequality and poverty. In addition, social effects on fertility and family structure are considered as well as some of the political and security issues connected with African migrations.

The author closes with some thoughts on future prospects, noting the likelihood of substantial increases in the presence of Africans in Europe in particular, given the rising income gap, the large differences in population growth rates and the inability of Europe to limit entry.

Living Arrangements in Europe: Whether and Why Paternal Retirement Matters

By Luca Stella

Discussion Paper 251

In Southern European countries, it is quite common for young people to remain with their parents until their late 20s or early 30s, leaving only when they get married. Yet, as others have argued, delaying new household formation by adult children may have considerable impacts on their labor market behavior and outcomes. Furthermore, delayed household formation may also contribute to decreased fertility. Previous research has suggested that the retirement of parents may play a considerable role in inducing adult children to "leave the nest." Yet, the mechanisms for this effect are unclear, and existing research has looked only at Italy, whose large retirement severance pay may make it unrepresentative of the broader European trend.

This paper seeks to test whether the positive effect of parental retirement on children's nest-leaving holds up broadly across Europe. It also seeks to test two competing hypotheses for how parental retirement may impact children's decision to leave the household. One theory is that once parents' incomes decline, they are no longer able to incentivize their adult children to remain at home. An increase in retirement benefits would then tend to lead to less nest-leaving because it would alleviate parents' credit constraints. An alternate theory is that parents use severance payments at retirement to incentivize their adult children to leave the household. An increase in retirement benefits would then tend to lead to increased nest-leaving. To test these theories, the author develops a bivariate discrete-time hazard model. The model exploits changes in the eligibility rules for early retirement benefits that were implemented across European countries in the period 1961 to 2007. The author then incorporates data from the 2006 wave of the Survey of Health, Ageing and Retirement in Europe (SHARE), which collects data on individuals aged 50 and above, and includes retrospective information on the year of father's retirement and children's nest-leaving. Regression analyses of this data are repeated for the various regions of Europe to test for the presence of heterogeneous effects.

Results show that in Southern Europe, parental retirement positively impacts the timing of children's nest-leaving. However, parental retirement does not impact the timing of children's nest-leaving in Northern and Central Europe. These results are robust to a number of specification checks. Additionally, the author does not find significant evidence of a relationship between retirement benefits and children's nest-leaving. This implies that parental credit constraints are not driving the relationship between paternal retirement and children's nest-leaving, and that some other mechanism is in effect. For example, differences between parents' preferences and children's preferences regarding household activities or consumption may impose negative externalities once parents retire. Thus, although policy reforms that impact the age of retirement should also be expected to impact new household formation in Southern Europe, policy reforms that impact post-retirement benefits may not impact new household formation.

The strategy of Philip II against the Cortes in the 1575 crisis and the domestic credit market freeze

By Carlos Álvarez Nogal and Christophe Chamley

Discussion Paper 252

The first large public debt of a state in history (in terms of GDP) is that of the public debt of Castile (most of current Spain) in the second half of the 16th century. Yet the king, Philip II ordered four times a payment stop on part of this debt, the medium-term bonds, called asientos, to the Italian Genoese bankers. The most important of these crises occurred between September 1575 and the end of 1577. Who was affected by the payment stop, and how can we interpret this history as relevant to modern economic events?

The authors of this paper propose that rather than merely reflecting a shortage of cash flow, the payment stops were actually part of a strategic contest between the King and the Cortes, the representative assembly of cities, through which the King effectively forced the cities to raise the debt ceiling. To support this thesis, the authors review primary sources and historical literature, and apply economic inference. Financial linkages are identified by reviewing loan contracts, private books of accounts, and court reports. Intentions and perceptions of different historical entities are explored through imperial reports and orders, individuals' letters and journals, plus a broader array of sources. The paper also develops in detail the role of the commercial fairs as a financial clock, to help clarify the effects of the payment stop on the overall economy.

The authors argue for a particular interpretation of the dramatic economic events of 1573-1577. They emphasize that the sovereign debt had been borrowed through a layered mix of intermediaries. Spanish cities issued long-term bonds or juros backed by the city's sales taxes, and proceeds of the cities' juros then funded the sovereign. Also, some juros were sold to intermediary banks who then re-lent in bulk to the sovereign via the shorter-term asientos. Many such banks, including Genoese banks, also provided through credit and deposit services a liquidity that critically facilitated Spanish trade. Thus the payment stops on asientos resulted in a banking credit crisis that shut down much trade, including the commercial fairs. In this way, the authors reinterpret the payment stops as a maneuver by the King to purposefully create a painful credit crisis, forcing the cities to raise their sales taxes, and enabling the sovereign to continue financing his war efforts with more debt. The paper suggests a comparison to the modern USA, where the executive and the Congress have clashed over raising the debt ceiling in the early 2010s.

Skill Transferability, Migration, and Development: Evidence from Population Resettlement in Indonesia

By Samuel Bazzi, Arya Gaduh, Alexander Rothenberg, Maisy Wong

Discussion Paper 253

Large-scale resettlement is regularly suggested as a solution to overcrowding, natural disasters, and slow growth in developing countries. However, prior research has suggested that human capital may be location specific, either directly or indirectly because of location specific characteristics. If people are relocated to places where their human capital is not valuable, or if they are not able to adapt completely to conditions in their new location, then relocation programs may not have their intended effects. Yet, locational effects are notoriously difficult to identify, because in most circumstances, individuals choose where to locate in a non-random fashion.

This paper looks at the impacts of a large resettlement program in Indonesia to examine whether human capital is location specific, and to consider what location specific human capital means for these types of programs as a whole. Over the period 1979 to 1988 in Indonesia, the Transmigration program relocated approximately two million voluntary migrants from the densely-populated islands of Java and Bali to villages spread throughout the sparsely-populated outer islands of the country. These resettlement regions varied substantially along a number of dimensions. However, as proxies for the transferability of location-specific human capital, this paper focuses on two key characteristics of resettlement regions relative to source regions: similarity in local agroclimatic conditions and similarity of languages spoken locally. To address selection concerns, the authors use as a control group villages that were planned but never settled because of unexpected cuts to the Transmigration program.

Preferred estimates show that an increase in agroclimatic similarity of one standard deviation leads to a 22% increase in post-migration rice productivity. Agroclimatic similarity also boosts income growth; a one standard deviation increase leads to a 0.15 percentage point increase in the village-level growth rate. Linguistic similarity has smaller positive effects on production. Results also show that resettled migrants may partially compensate for locational differences by engaging in specialized labor, but the estimates of these effects are small. Finally, the paper constructs an estimate of the long-run average treatment effect of the Transmigration program.

Although these estimates are consistent with a null effect, the authors show that these non-positive estimates arise largely because migrants who are resettled to very poor agroclimatic matches have more difficulty transferring their skills. These results support the notion of location-specific human capital, and they imply that the overall effectiveness of mass resettlement programs may be improved substantially by avoiding very bad locational matches.

It's All in the Timing: Cash Transfers and Consumption Smoothing in a Developing Country

By Samuel Bazzi, Sudarno Sumarto, Asep Suryahadi

Discussion Paper 254

Unconditional cash transfers are a popular welfare program in many developing countries, including Indonesia. However, according to the classic Permanent Income Hypothesis (PIH) with perfect credit markets, the impact of these programs on consumption does not occur all at once. The PIH model predicts that transfer recipients will smooth their consumption over their lifetimes, and so the institution of a transfer should not lead to a one-time bump in consumption. Moreover, if recipients do not expect the positive shock to their income to be permanent, then some portion of increased income should go to precautionary savings.

This paper considers a model in which consumers prefer to smooth their income but do not have access to perfect credit markets. In this case, the effects of an unexpected cash transfer will be asymmetric; instituting the program will have a small positive effect on consumption, but withholding an expected payment will have a larger negative effect on consumption. These predictions are tested using data from an Indonesian unconditional cash transfer program during two periods in 2005 through 2007. The program provided transfers to 19 million households, and on average it provided a supplement equivalent to approximately 15 percent of household income. However, poor targeting of the program meant that many potential transfer recipients did not receive transfers, while many households that were technically ineligible received transfers anyway. Furthermore, pervasive administrative problems meant that payments for many program recipients were delayed. These administrative issues create a straightforward natural experiment.

Results show that the timely receipt of benefits has no positive impact on consumption, but that a delay in the receipt of benefits led to a 7.5 percentage point decline in consumption, implying a marginal propensity to consume out of unconditional transfers of approximately 0.55. This is consistent with the PIH model with credit constraints, and it suggests that empirical analyses which do not account for heterogeneous timing will tend to underestimate the consumption effects of cash transfer programs.

A Pareto Efficiency Rationale for the Welfare State

By Dilip Mookherjee, Stefan Napel

Discussion Paper 255

Standard theorems of welfare economics which relate Pareto optimal allocations and competitive equilibria are dependent upon the assumption that financial markets are complete. Accordingly, the rationale for government fiscal policy frequently arises from an understanding that markets may be incomplete, whence households may be unable to make long-term human capital investments or insure against idiosyncratic risks in the absence of government interventions. However, without making strong assumptions about the nature of preferences or technologies, existing research has not been able to address the question whether fiscal policy can be Pareto improving (i.e., justified on efficiency grounds alone).

This paper develops a theoretical model of overlapping generations where parents decide whether to invest in the education of their children. Parents are altruistic towards their children. Owing to credit market frictions, educational investments cannot be financed by borrowing. The cost of acquiring skill depends on a child's innate ability, which is observed privately by parents prior to making investment decisions. Unlike most previous literature, this model imposes minimal assumptions on preferences and technologies. The model assumes that parents have perfect foresight concerning future wage rates. It allows taxes and transfers to be conditioned on parental education and income status, besides parental investment decisions. In the base model, parents cannot leave financial bequests to their children; the consequences of relaxing this assumption are discussed later.

In the base model, the authors establish two main theoretical results. First, every laissez faire competitive equilibrium is interim-Pareto dominated by a policy that provides education subsidies financed by income taxes. Second, transfers that are conditional on educational investments interim-Pareto dominate unconditional transfers. These Pareto improvements are accompanied by higher per capita income, lower wage gap between skilled and unskilled occupations, and increased mobility. Interim-Pareto dominance pertains to utilities evaluated after parent's education levels are given but before the realization of children's ability is known. The authors show that if parental altruism is sufficiently high, the interim-Pareto-improvements will also translate into ex post Pareto improvements to welfare. Robustness of the results to alternative specifications of parental altruism are shown, as well as to contexts where parents have the option of supplementing educational investments with financial bequests. These results therefore provide strong theoretical justifications for fiscal policies of educational subsidies on efficiency grounds.

Financing Smallholder Agriculture: An Experiment with Agent-Intermediated Microloans in India

By Pushkar Maitra, Sandip Mitra, Dilip Mookherjee, Alberto Motta, Sujata Visaria

Discussion Paper 256

Microcredit is frequently proposed as a solution to the financing needs of poor farmers in developing countries. However, recent evaluations of microcredit programs have indicated that these programs do not succeed in financing the productive needs of poor borrowers in agriculture. Microcredit programs require frequent repayment, and they have a low tolerance for risk. While those conditions may be well suited to permit consumption smoothing and the purchase of durable goods by borrowers, they make microcredit unsuitable for agricultural loans. This is particularly for high-value cash crops which are vulnerable to weather and price risks, and involve long time lags between planting and harvesting. Since diversification into cash crops is an important pathway out of poverty, this significantly limits the scope of microcredit in lowering poverty and raising agricultural growth.

This paper investigates a new mechanism (called Trader Agent Intermediated Lending, or TRAIL) for selecting farmers with low landholdings to receive unsecured individual-liability loans to finance agricultural working capital. In contrast to standard microcredit, these loans have durations which match crop cycles, and repayment amounts are index-insured against yield and price risk in potatoes, a major cash crop. Local intermediaries who have extensive knowledge of the creditworthiness of local farmers are appointed as agents and asked to recommend borrowers to the lender. Agents are incentivized through commissions that are dependent on repayment by the borrowers that they recommend, and borrowers are induced to repay by conditioning their future credit access on current loan repayments.

Using a randomized field experiment conducted in 48 villages in two districts of West Bengal, India in 2010-12, this paper assesses the performance of the TRAIL scheme relative to a more traditional Group Based Lending (GBL) scheme. A theoretical model shows that borrowers in the TRAIL scheme are a selected group in that they are likely to be personally connected to and trusted by an agent. In contrast, GBL borrowers may be connected or unconnected to members of their lending group. Additionally, the model predicts that the incentives of the TRAIL program will lead to greater expansion of production and more borrowing than the GBL scheme, and ultimately to higher incomes. Consistent with these predictions, empirical analysis finds intent-to-treat effects on farm income of 25% for TRAIL, as against 0.5% for GBL. In both programs, loans enabled borrowers to increase cultivation of potato, a high value but risky cash crop. TRAIL borrowers achieved rates of return in potato cultivation ranging from 70-115%, compared to 9-37% for GBL borrowers. The former repaid their loans at higher rates than GBL borrowers. Administrative costs to implement the TRAIL scheme were also lower than GBL because of lower personnel costs. This paper contributes to the ongoing policy debates in India and elsewhere regarding microcredit, by showing that a carefully designed incentive scheme such as TRAIL may be able to address the shortcomings of more traditional microcredit approaches.

The Female Labor Force and Long-run Development: The American Experience in Comparative Perspective

By Claudia Olivetti
Discussion Paper 257

In order to better understand the nature of economic development, one must also understand how the economic activity of women changes throughout the development process. Prior researchers have suggested that the labor supply of women is U-shaped. These researchers argue that while technological progress may tend to reduce the demand for female household labor, at high levels of economic development the emergence of a white-collar sector fosters increased paid employment for married women. The existence of in-home production and data limitations make measuring the true labor force participation rate of women over the course of economic development a challenging exercise, but previous research on this topic suggests that the U-shaped labor supply holds for married women in the U.S. Yet, it is not immediately clear whether the U-shape of changes in female labor supply are due to the nature of economic development itself, or if they are simply the result of U.S.-specific cultural or historical factors. Furthermore, it is not clear whether the nature of the U-shape has itself changed over time, or why it may have done so.

This paper builds on previous work by providing additional evidence of the link between economic development and women's labor force participation. The author combines pre-WWII data on labor force participation from the International Historical Statistics with comparable post-WWII data from the International Labor Organization (ILO), creating a panel dataset of sixteen developed economies that spans the period 1890 to 2005. By drawing on both the within-country and across-country variation in this dataset, the author's analysis confirms that the female labor supply function is U-shaped over the course of economic development. Next, the author considers a broader cross-section of countries using the ILO data from 1950 to 2005 to show that the U-shape of the labor supply function is more muted when early OECD economies are not included in the sample. This result may hold because the stigma toward the labor market participation of married women has declined over time, but it may also hold because of changes in the nature of manufacturing employment, or because the expansion of the market for service labor may now happen sooner in the course of economic development.

To build upon these results, this paper then examines the process of labor reallocation across sectors over the course of economic development. The author shows that as an economy develops, the share of women employed in agriculture drops more rapidly than that of men. Similarly, the hump-shaped profile of manufacturing employment over time is less pronounced for women than it is for men. Finally, the increase in service sector labor is more rapid for women than it is for men. Taken together, these results suggest that changes in the path of economic development over time have contributed to the softening of the U-shaped profile of labor supply. The cleaner, precision manufacturing of the present time and the rapidly expanding service economies in some developing countries may be less likely to trigger norms against women's work.

Diversification, Cost Structure, and the Risk Premium of Multinational Corporations

By Jose L. Fillat, Stefania Garetto, Lindsay Oldenski
Discussion Paper 258

One theory of why multinational corporations (MNCs) choose to operate in different countries is that their operations are a source of diversification which reduces exposure to risk. If this theory is true, the risk premia associated with MNCs' stocks should be correlated with the geography of their foreign operations. More precisely, firms that operate in countries whose business cycles co-move less with the one of the home country will have lower risk premia than firms that operate in countries whose business cycles co-move more with the one of the home country. While theoretically sensible, this hypothesis alone cannot explain the high risk premia that MNCs display, and there is reason to believe that multinational operations actually increase the riskiness of MNCs. Sunk entry costs and other fixed costs of operating in a foreign country may increase an MNC's exposure to risk, so that firms that operate in costlier countries will have higher risk premia.

The authors of this paper develop a structural model to show that both of the effects described above can operate simultaneously. Since these two effects are offsetting, the model predicts that the net effect of an MNC's presence in a foreign country on its risk premium depends on both the co-movement of that country's economy with the U.S. economy, and on the cost of entry into that country. Then, the authors conduct an empirical analysis using a novel dataset obtained by merging accounting and financial data from Compustat/CRSP with U.S. Bureau of Economic Analysis data on the operations of multinational corporations.

By aggregating estimates, the paper shows that the aggregate risk premium from multinational sales is large: a firm with affiliates in every country in the sample has, on average, expected annual returns that are 3.6 percent higher than those of a purely domestic firm. While Canada and most European countries have relatively low risk premia, the countries of Greece, Malaysia, India, Singapore, and China have the highest risk premia for these MNCs. Furthermore, an analysis of the option value of foreign sales suggests that even the mere possibility of entering foreign markets is a source of risk to the firm. The authors describe this research as a first step in understanding the complex interactions between MNCs and financial markets.

School Choice and Educational Mobility: Lessons from Secondary School Applications in Ghana

By Kehinde F. Ajayi
Discussion Paper 259

Many school choice systems use merit-based assignment mechanisms. Ideally, these mechanisms provide an opportunity for increased educational mobility, as a student's chances of gaining admission to a more selective school depend on her individual academic performance and not purely on luck or family background. However, students who apply under these merit-based systems often have both incomplete information about their choices, and constraints on the number of choices that they can list. These constraints may considerably lessen the impact of the assignment mechanism on educational mobility, especially if aggregate choice behaviors are correlated with non-merit-based sources of educational advantage, such as socioeconomic status or prior educational experience.

This paper examines differences in application behavior among students in Ghana who apply under that country's centralized secondary school application process. Through this system, approximately 350,000 elementary school students per year are assigned to 700 secondary schools. In the application process, each student may list no more than six choices, and each student must apply before knowing his/her entrance exam score. The results of this analysis show that students from lower-performing elementary schools apply and gain admission to less selective secondary schools than students with identical exam scores who attended higher-performing elementary schools.

This paper then goes on to determine whether differences in selective school admission are the result of differences in preferences, strategies, or both. To accomplish this, the paper first incorporates the predictions of a model of optimal portfolio choice to identify which students adopt sophisticated application strategies. Results show that students from higher performing schools are more likely to use sophisticated application strategies. However, strategic sophistication accounts for only a small percentage of the difference in overall application behavior among students.

Does School Quality Improve Student Performance? New Evidence from Ghana

By Kehinde F. Ajayi
Discussion Paper 260

The question of how school assignment impacts performance is a difficult empirical question with a long history in the economics literature. To ascertain school quality effects, one must separate observed school attendance from unobserved factors such as student motivation, family resources, and intrinsic academic ability. However, in addition to the typical notion of "school quality" which impacts educational performance, one must also consider the possibility of heterogeneous "match quality." That is, a school that is a good match for a student's individual characteristics may tend to improve his/her academic performance. This paper asks whether a better school assignment for a given student can lead to improved performance for him/her, and whether this is because of school quality effects, match quality effects, or both.

In Ghana, students apply to secondary schools through a centralized system, in which they rank their preferences. Based on these preference orderings, and also on standardized test scores, students are then assigned to secondary schools. This combination of merit-based and preference-based approaches provides a source of exogenous variation in school assignment. At the same time, a considerable degree of non-compliance with school assignments means that student switches can serve as a proxy for the quality of initial student-school matches. The baseline estimates of this paper use a selection on observables approach, taking advantage of the revealed preference information given by applicants to address the usual concerns of applicant sorting. As an additional check, the paper includes a regression discontinuity design, based on the effective cutoff scores for admission to competitive schools. Both sets of estimates show that students who are admitted to selective schools generally receive better matches, in that they are more likely to remain in their officially assigned school. These students are also more likely to complete their schooling, and to complete the school exit exam in the normative time frame. However, the effect of selective school admission on overall exam scores and on exam certifications is small.

To further understand why aggregate effects on educational performance are small, the author looks at potential heterogeneous effects across the distribution of observable student characteristics. She finds that female students benefit more from selective school assignment in the number of core subjects passed, while students from high-performing elementary schools and students who applied to high-performing secondary schools see larger improvements in exam scores from admission. Finally, the author looks at heterogeneous effects across the distribution of school characteristics. Some characteristics, such as boarding facilities, are shown to increase retention rates, but not exam performance. Other characteristics, such as female only schools, increase exam performance, but not school completion. Taken together, these results suggest that providing generic information on school quality is not likely to enable students or parents to make individually-optimal choices. Rather, stakeholders might generate larger improvements in outcomes by tailoring information to different student types.

Bilateral Migration and Multinationals: On the Welfare Effects of Firm and Labor Mobility

By Chun-Kai Wang

Discussion Paper 261

Bilateral migration flows are pervasive across OECD countries, and they occur across the skill distribution. However, standard models of migration typically do not allow for bilateral migration at all, or they allow only for unidirectional migration within skill levels, as immigrants of different skill levels migrate to suit their comparative advantage. This paper presents a general equilibrium model that can reproduce the nature of bilateral migration flows through two simultaneous innovations. In the model, native and foreign born laborers of different skill levels are imperfect substitutes for one another. These laborers are employed by multinational corporations (MNCs), and the marginal productivity of each worker depends on the country of origin of the MNC for which he/she works. Introducing these innovations individually cannot reproduce real-world migration behavior, but when used simultaneously, these innovations imply that firms demand a variety of labor, and that bilateral migration across the skill distribution is used to satisfy this demand.

The model is calibrated using data on the stocks of U.S. & Canadian migrants from the year 2000. The author's results show that opening a country up to migration alone does not necessarily benefit native workers, especially low-skilled ones. The author shows that policies that reduce moving costs unequally across the skill distribution, such as policies that favor high-skill migration, can harm some classes of native workers by causing firms to use immigrants as substitutes. However, the interaction between migration and multinational corporations results in net positive effects on welfare. Furthermore, migration quotas that are reciprocally enforced have negative effects on the welfare of native workers. These results of this exercise lend support to the view that greater openness to migration can bring mutual welfare gains, and they contribute to a growing literature that analyzes the welfare effects of migration using calibrated models.

Institute for Economic Development and The Center for Finance, Law and Policy Collaboration:

The Institute for Economic Development and The Center for Finance. Law and Policy (CFLP) agreed to collaboratively seek new opportunities for securing further research grants in the field of Development Economics.

The Master's Global Developmental Policy and Master's Global Development Economics Program were awarded a total of up to $9,458 by CFLP to support a total of six master's students' travel to India and Romania for their research on their capstone projects. Each group chose 3 of the 6 members to travel to their respective countries and conduct field research with the guidance of a skilled in-country researcher. The remaining group of 3 received data from the traveling group to analyze the data. Upon returning from their trip each of the teams worked together to prepare and present their final research paper to the students, faculty and visitors of the MAGDP and MAGDE.

The MAGDP team comprised **S. Winata**, **C. Pheiffer**, **T. A. Tye**, **J. C. Blanco**, and **O. Bai**; their project was titled "The Effects of Social and Economic Ties on Loan Repayment in Agent-Intermediated Lending in West Bengal, India". The MAGDE team included **Bryan N. Patenaude** and five others from other departments at BU; their project was titled "Funding Growth: A Strategy for Romania's Development". Bryan has since been invited to advise the government of Romania on their industrial and finance strategy, on the basis of this report.

Nathaniel Young, fourth year PhD candidate was awarded $12,500 by CFLP for his PhD dissertation project on "Credit and Bank Branching: Evidence from India".

New Funding Opportunities for Research

Weiss Foundation Grants for Junior Faculty and PhD Students

The Weiss Family Program Fund for research in development economics was set up last year, the result of the generosity of past IED Affiliate and Emeritus Professor of Economics, Andrew Weiss. Kevin Lang is helping manage it along with faculty members at Harvard and MIT economics department; it is being administered by Harvard University. The Fund is supporting research by undergraduates, graduate students and junior faculty at Harvard, MIT, and Boston University working on development economics. This year the Institute for Economic Development assisted **Kehinde Ajayi**, Assistant Professor, **Amrit Amirapu**, **Michael Gechter** and **Anusha Nath** fourth year PhD candidates, with applications to the Weiss Foundation for funding on their developmental economics projects for a total of $38,273. All three applications were successful with their funding requests as described in the following:

Assistant Professor Kehinde Ajayi was awarded $7,040 for a total of 3 data sets to assist in her research project "Consumer Perceptions and Savings Responses to Information and Bank Reforms".

Amrit Amirapu and Michael Gechter, fourth year PhD candidates were awarded $21,233 in support of their research project "The Effect of Size-Based Regulations on Firms and the Pattern of Development in India". The students were able to fund a three-week research trip to India to gather data necessary for their project. In collaboration with IED and the funds budgeted for data sets were combined to purchase an institutional license. The purchase of the institutional license now allows other students access to the data needed for their research.

Anusha Nath, a fourth year PhD candidate, was awarded $10,000 in support of her research project "Political Competition and Bureaucratic Effort". Ms. Nath was able to fund her travel to India to gather data and have the data computerized, along with the costs of photocopying of questionnaires.

Faculty Profiles

The following paragraphs summarize the projects and development-related research being conducted by Institute affiliates from the Department of Economics at Boston University

Kehinde Ajayi's current research focuses on education and youth employment in Africa. She continues to work on a project that examines the schooling choices of secondary school students in Ghana. Key questions in this project include: What kind of information influences schooling decisions? Do differences in male and female labor market opportunities affect choices about what field to study? And how does school quality affect student outcomes? She is also pursuing a project on the determinants and effects of public sector employment.

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 new 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 interests span labor and macroeconomics. His current research examines the role of labor mobility in the development process. He has studies looking at how income growth in poor countries affects international migration, the role of recruiter intermediaries in facilitating international labor mobility, the importance of migrants' skill transferability for regional economic development, and the effect of trade liberalization on labor reallocation across firms. Other work investigates the causes of conflict and barriers to the entry and growth among small firms. His primary ongoing projects are in Brazil and Indonesia.

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.

Francesco Decarolis specializes in industrial organization with a focus on auctions, health insurance, and anti-competitive behavior. His recent research concerns the effects produced by different auction formats in the context of public procurement auctions and the effects on insurers competition of government subsidies in Medicare.

Randall Ellis' recent research focuses on how payment systems affect consumers, health care providers and health plans. In June 2014 he will be completing his final two years as Past President of the American Society of Health Economists. His research on risk adjustment and predictive modeling resulted in payment models being used in the US since 2000 and Germany since 2009, with similar models being evaluated in other countries. During the past year Ellis has given talks in the US and Australia. He is currently collaborating with researchers in the US, Australia, Chile, and China, and as well as with multiple graduate students on US and developing country topics.

Carola Frydman works at the intersection of economic history, corporate finance, and labor economics. Recently, she investigated changes in executive compensation, the market for managers, and income inequality in the U.S. over the twentieth century. Her current project studies the evolution of businesses organizations and financial markets from 1900 to 1930, focusing on the value of connections to bankers through boards of directors, and the detrimental consequences of these ties on firm outcomes during financial crises.

Stefania Garetto's current research analyzes the risk implications of firms' international operations. She integrates new trade theory and theoretical asset pricing models to analyze both qualitatively and quantitatively the economic drivers of international activity and their consequences. In a series of related papers, she has analyzed the relationship between export/FDI status and financial indicators. Her current work focuses on banks' international activities.

Simon Gilchrist's research studies the effects of financial market imperfections and financial crises on real economic activity, with particular focus on the implications for investment behavior, business-cycle dynamics, and the conduct of monetary policy. Recent work explores the predictive content of credit spreads for macroeconomic activity, and the effect of investment irreversibility on business cycle dynamics in environments where capital serves as a form of collateral in loan contracts.

John Harris works on issues of applied macroeconomic theory, regional and urban economics, and migration theory. His recent research includes comparative analysis of economic development in Africa and Southeast Asia. He also has extensive field experience in Africa and Asia, with emphasis on Indonesia, Uganda, Botswana, Kenya, Nigeria, Sudan, and Tanzania.

Leroy Jones specializes in policy-oriented micro issues in developing countries. Particular areas of interest include public enterprise, privatization, government-business solutions and industrial organization. He has substantive experience in Indonesia, Korea, Pakistan, Venezuela and thirteen other countries. Professor Jones directs the Institute's Program in Public Enterprise.

Robert King continues to focus 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.

Laurence Kotlikoff specializes in public finance, macroeconomics, money and banking, computational economics, and personal finance. He also works on the economics of robots. The author or co-author of 16 books and hundreds of journal articles, Kotlikoff is also a prolific columnist. His columns have appeared in the NY Times, the Wall Street Journal, Bloomberg, Forbes, PBS.org, and large numbers of the other top newspapers and magazines in the U.S. and overseas. His recent work has focused on generational policy, limited purpose banking, corporate tax reform, computing large scale life-cycle models with aggregate shocks, and modeling the long-term impact of smart machines.

Kevin Lang continues to focus his research on education and labor markets, in the context of Israel and the US. Along with Deepti Goel he is studying the role of social networks in the assimilation of immigrants to Canada. His book, Poverty and Discrimination, was published by Princeton University Press in 2007.

Robert Lucas's recent work focuses on migration. A chapter on African migration is forthcoming in the North-Holland Handbook series. Lucas has also edited a handbook on international migration and economic development, which is currently in press with Elgar. For that volume he 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 2014 Lucas presented a paper on internal migration and economic development in the low income countries at a World Bank conference in Dhaka, Bangladesh. In addition, Lucas has been acting as a member of the advisory committee on remittances to G8 countries and of the steering committee for the Global Research Competition organized by the Global Development Network.

Robert A. Margo is currently working on co-editing two NBER conference volumes, Human Capital in History: The American Record and Enterprising America: Businesses, Banks, and Credit Markets in Historical Perspectives. His current IED working paper with Lawrence Katz is a forthcoming chapter in Human Capital in History.

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 has been working on a combination of theoretical and empirical topics related to development economics. Current empirical projects include land policies, political economy, financial development and food marketing supply chains in South Asia, while theoretical topics include inequality, poverty and corruption control.

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.

Claudia Olivetti specializes in labor economics and economic history. She has written on the causes of the changing role of women in the family and in the workplace, and on the consequences of this change (with both a US and cross country focus). Her current research explores the role of early socialization for the formation of gender norms and investigates the link between marriage and intergenerational mobility in a historical perspective.

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.

SEMINARS

IED organizes a weekly seminar year-round where visiting speakers present their research. The following is the list of seminars the past year.

Fall 2013

09/10/12
Joshua Goodman (Harvard Kennedy School)
"First Degree Earns: The Impact of College Quality on College Completion Rates"

9/16/13
Melissa Dell (Harvard)
"Path dependence in development: Evidence from the Mexican Revolution"

9/23/13
Daniel Keniston (Yale)
"The Efficient Deployment of Police Resources: Theory and New Evidence from a Randomized Drunk Driving Crackdown in India"

9/30/13
S Anukriti (Harvard)
"The Fertility-Sex Ratio Trade-off: Unintended Consequences of Financial Incentives"

10/7/13
David Atkin (Yale)
"Who's Getting Globalized? The Size and Nature of Intranational Trade Costs"

10/15/13
Suresh Naidu (Columbia)
"Democracy and Growth" (joint with Daron Acemoglu, Pascual Restrepo, and James Robinson)

10/21/13
Anja Sautmann (Brown)
"Credit constraints and the measurement of time preferences" (joint with Mark Dean)

10/28/13
Claudia Goldin (Harvard)
"A Grand Gender Convergence "

11/4/13
Mushfiq Mobarak (Yale)
"Communicating with Farmers through Social Networks" (joint with Ariel BenYishay)

11/11/13
Andrei Zlate (FRB Board of Governors)
"Capital Flows to Emerging Market Economies: A Brave New World?"

11/18/13
Leonard Wantchekon (Princeton)
"Education and Human Capital Externalities: Evidence from Colonial Benin"

11/25/13
Stelios Michalopolous (Brown)
"Trade and Geography in the Origins and Spread of Islam"

12/2/13
Asim Khwaja
"Tax Farming Redux: Experimental Evidence on Incentive Pay for Tax Collectors"

12/9/13
Eric Verhoogen (Columbia)
"Enlisting Employees in Improving Payroll-Tax Compliance: Evidence from Mexico"

Spring 2014

3/3/14
David McKenzie (DV) (World Bank)
"The Impact of Vocational Training for the Unemployed: Experimental Evidence from Turkey" (with Sarojini Hirshleifer, Rita Almeida, and Cristobal Ridao-Cano)

3/17/14
Christophe Chamley (BU)
"The strategy of Philip II against the Cortes in the 1575 crisis and the credit market freeze"

3/24/14
Shing-Yi Wang (Wharton)
"Worker Mobility in a Global Labor Market: Evidence from the United Arab Emirates "

3/31/14
Cynthia Kinnan (Northwestern)
"Does Microfinance Foster Business Growth? The Importance of Heterogeneity"

4/7/14
Rick Hornbeck (Harvard)
"Railroads and American Economic Growth: A "Market Access" Approach"

4/14/14
David Lam (Michigan)
"Credit Constraints and the Racial Gap in Post-Secondary Education in South Africa"

4/24/14
Pol Antras (Harvard)
"The Margins of Global Sourcing: Theory and Evidence from U.S. Firms"

4/28/14
Gauri Kartini Shastry (Wellesley)
"Water Quality Awareness and Infant Health: The Role of Breastfeeding"

5/5/14
Robert Staiger (Wisconsin)
"Trade Disputes and Settlement"

Distinguished Visitors

Joel Sobel from the University California, San Diego visited from October 7th through the 11th. He gave one seminar and two lectures on microeconomic theory.

Nobu Kiyotaki from Princeton University, visited from October 28th through November 1st. He gave one seminar and two lectures of which one was open to the public followed by a reception on macroeconomics.

Yuliy Sannikov from Princeton visited from Novermber 18th through the 22nd. He gave one seminar and two lectures on macroeconomics.

Patrik Guggenberger from Pennsylvania State visited from December 2nd through the 6th. He gave one seminar and two lectures in econometrics.

David McKenzie from the World Bank, Washington DC visited from March 3rd through the 7th. He gave one seminar and two lectures on development.

2014 Rosenstein-Rodan Prize

The Rosenstein-Rodan prize is awarded annually for the best paper in a development-related area written by a PhD economics student.

The 2014 Rosenstein-Rodan prize will be shared by three students: **Mirko Fillbrunn**: “Strategic Voting and Ballot-Order Effects”; **Anusha Nath**: “Political Competition and Elite Capture of Local Public Goods”; **Nate Young**: “The Effect of Formal Banking on Real Economic Outcomes:Evidence from a Regression Discontinuity Analysis in India”.

Mirko’s paper studies the phenomenon of ballot-order effects where the order in which candidates appear on the ballot matters for election outcomes. He develops a number of alternative theories for explaining this, and uses data from local California elections to discriminate between them empirically.

Anusha’s paper studies the allocation of spending across different local public goods by Members of Parliament in India out of a discretionary fund they control. She provides evidence that local elites exert disproportionate influence on these allocations, which is moderated by political competition.

Nate’s paper studies the effect of a banking regulatory reform in India implemented in 2006-7. He uses evidence to show that the reform had a significant impact on spatial allocation of branches by commercial banks, on deposits and loans, with consequent impacts on agricultural productivity and industrial investment.

Students Activity

PhD Students Completed Dissertations and Placement

As of May 1, twenty-three new BU Ph.D students have accepted job offers. Fifteen of them are academic positions at universities, and eleven are at US universities and firms. Seven placements are at top universities in China. One more job candidate has an offer. Two more job candidates are still seeking offers. We congratulate the following students on their new positions:

Richard B. Baker, senior lecturer, Vanderbilt University, Nashville TN; **Jacopo Bizzotto**, assistant professor, University of Oslo, Norway; **Marric Buessing**, associate, Analysis Group, Boston, MA; **Seong Yeon Chang**, assistant professor, Xiamen University, China; **Tianxu Chen**, assistant professor, Shanghai University of Finance and Economics (SUFE), China; **Rania Gihleb**, assistant professor, University of Pittsburgh, PA; **Jie Hou**, assistant professor, Capital University of Economics and Business, Beijing China; **Peng Huang**, assistant vice president, State Street, Boston, MA; **Hyosung Kwon**, economist, Bank of Korea, South Korea; **Timothy Layton**, post doc, Harvard Medical School, Boston MA; **Huailu Li**, assistant professor, Fudan University, China; **Yang Li**, risk analyst, Santander Bank, Boston, MA; **Junghwan Mok**, economist, Bank of Korea, Seoul, South Korea; **Karim Naguib**, Postdoctoral Fellow, Evidence Action, Washington DC; **Eyno Rots**, researcher, Central Bank of Hungary; **Steven Sprick Schuster**, visiting assistant professor, Colgate University, Hamilton, NY; **Julie Shi**, assistant professor, Peking University, Beijing China; **Sonal Vats**, assistant professor, Eastern Connecticut State University, CT; **Chun-Kai Wang**, assistant professor, Rensselaer Polytechnic Institute, Troy NY; **Tak-Yuen Wong**, assistant professor, Shanghai University of Finance and Economics, China; and **Sherry Xinrui Yu**, assistant professor, New College of Florida, Sarasota FL..

Job candidates this year set new records on conferences and outside seminars even before flyouts (56 presentations), academic publications (at least 11 of them), and awards (one student coauthored paper is nominated for best paper of the year for 2013 by the National Institute of Health Care Management). Congratulations to all of them!

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