

Centre for Training and Research in Public Finance and Policy Working Papers

Working papers 2020

Containing a Pandemic with Public Actions & Public Trust: The Kerala Story
Jyotsna Jalan and Arijit Sen

Abstract: We study the Covid pandemic in the Indian state of Kerala, and document the state’s remarkable success in containing the first wave of the pandemic. By studying Kerala’s initial conditions when it was hit by the pandemic, and the different components of the state’s pandemic policy, we advance the following thesis: While being subject to significant resource constraints faced by a relatively poor Indian state located in a federal structure, Kerala contained its first Covid wave by pre-emptively formulating a set of public actions – state actions that were supported by citizens and complemented by private efforts, and by concurrently leveraging and reinforcing public trust between the citizens and the state as well as among citizens. Further, Kerala’s state actions included supportive measures that ensured that its overall pandemic response did not pit poor lives against rich lives; rather, the public actions aimed to save all lives and livelihoods.

Participatory Theater Empowers Women: Evidence from India
Karla Hoff, Jyotsna Jalan and Sattwik Santra

Abstract: Legal prohibition, economic growth, and *edutainment* do not suffice to end domestic violence and restrictions on women’s human rights. An obstacle to change is the belief that the exercise of power over women is a mark of masculinity. Can community-based participatory theater promote change? We evaluate the impact of one of the largest participatory theater organizations in the world—*Jana Sanskriti (JS)* in West Bengal, India. In a performance, it enacts a drama of oppression and then repeats it to permit anyone from the audience to take the role of a protagonist-victim and try to rein in the oppression. *JS* gives oppressed groups a means of analyzing oppression, of rehearsing resistance and of representation, itself. We estimate the impact of *JS* with an endogenous treatment analysis using a stratified random sample, across 87 villages, of over 3,000 households. Our results are that *JS* reduced spousal abuse and increased women’s role in making important decisions. In villages exposed to *JS* for at least 10 years compared to villages never exposed

to *JS*, the proportion of abuse-free marriages increased from 47 percent to 58 percent.

Working Papers 2019

Taxation and Supplier Networks: Evidence from India

Lucie Gadenne, Tushar K. Nandi and Roland Rathelot

Abstract: Do tax systems distort firm-to-firm trade? This paper considers the effect of tax policy on supply chains in a large developing economy, the state of West Bengal in India. Using administrative panel data on firms, including transaction data for 4.8 million supplier client pairs, we first document substantial segmentation of supply chains between firms paying Value-Added Taxes (VAT) and non-VAT-paying firms. We then develop a model of firms' sourcing and tax decisions within supply chains to understand the mechanisms through which tax policy interacts with supply networks. The model predicts partial segmentation in equilibrium because of both supply-chain distortions (taxes affect how much firms trade with each other) and strategic complementarities in firms' decision to pay VAT. Finally, we test the model's predictions using variations over time within firm and within supplier-client pairs. We find that the tax system distorts firms' sourcing decisions, and evidence of strategic complementarities in firms' tax choices within supplier networks. These two mechanisms explain a substantial share of the supply chain segmentation that we observe.

Skill, Innovation and Wage Inequality : Can Immigrants be the - Trump Card?

Gourange Gopal Das, Sugata Marjit and Mausumi Kar

Abstract: With the ensuing immigration reform in the US, the paper shows that targeted skilled immigration into the R&D sector that helps low-skilled labor is conducive for controlling inequality and raising wage. Skilled talent-led innovation could have spillover benefits for the unskilled sector while immigration into the production sector will always reduce wage, aggravating wage inequality. In essence, we infer: (i) if R&D inputs contribute only to the skilled sector, wage inequality increases in general; (ii) for the wage gap to decrease, the R&D sector must produce inputs that go into the unskilled manufacturing sector; (iii) even with two types of specific R&D inputs entering into the skilled and unskilled sectors separately, unskilled labor is not always benefited by high skilled migrants into the R&D-sector. Rather, it depends on

the importance of migrants' skill in R&D activities and intensity of inputs. Inclusive immigration policy requires inter-sectoral diffusion of ideas embedded in talented immigrants targeted for innovation. Empirical verification using a VAR regression model in the context of the USA confirms the conjectures, and the empirical results substantiates our policy-guided hypothesis that skilled immigration facilitates innovation with favorable impact on reducing wage-gap.

Working Papers 2018

Does Protectionism Harm Unskilled Workers?

Hamid Beladi, Sugata Marjit and Reza Oladi

Abstract: In this paper we construct a general equilibrium model of trade and illustrate that return to unskilled labor may be negatively correlated with the price of product it produces. Specifically, we show that greater protection for the intermediate good that uses “unskilled” labor can reduce the unskilled wages. This result has interesting political-economic implications.

Credit Rationing and Inefficient Redistribution

Hamid Beladi, Sugata Marjit, Suryaprakash Misra and Reza Oladi

Abstract: It has been argued in many policy circles that lack of access to credit by the poor may be a source of inefficiency in developing economies. Then, conventional wisdom may suggest that asset redistribution from the rich to the poor improves efficiency. In contrast, we develop a general equilibrium model with credit market and show that such a egalitarian redistribution of assets may indeed lead to inefficiency.

Pareto Efficiency, Inequality and Distribution Neutral Fiscal Policy - An Overview

Sugata Marjit, Anjan Mukherji and Sandip Sarkar

Abstract: A structure of taxes and transfers that keep the income distribution unchanged even after positive or negative shocks to an economy, is referred as a Distribution Neutral Fiscal Policy. Marjit and Sarkar (2017) referred this as a Strong Pareto Superior (SPS) allocation which improves the standard Pareto criterion by keeping the degree of inequality, not the absolute level of income, intact. In this

paper we show the existence of a SPS allocation in a general equilibrium framework, and we provide a brief survey of distribution neutral fiscal policies existing in the literature. We also provide an empirical illustration with Indian Human Development Survey data.

An Application of Distribution Neutral Fiscal Policy?

Sanjeev Gupta, Sugata Marjit and Sandip Sarkar

Abstract: Distribution neutral fiscal policy refers to a structure of taxes and transfers that keep the income distribution unchanged even after positive or negative shocks to an economy. This is referred to as a Strong Pareto Superior (SPS) allocation which improves the standard Pareto criterion by keeping the degree of inequality, but not the absolute level of income intact. We apply this methodology to India to compute SPS tax rates and determine their proximity to actual tax rates. Limited available data on income and expenditure shows that the official policies so far are close to desired benchmark level. Our methodological contribution will be enriched further with more detailed income tax and transfer data.

Working Papers 2017

Redistributive Innovation Policy, Inequality and Growth

Parantap Basu and Yoseph Getachew

Abstract: Using a heterogenous-agent growth model with in-house R&D and imperfect capital market, we examine the growth and distributional effects of alternative public R&D policies that target high-tech and low-tech sectors. In our calibrated growth model to the US economy, a regressive public innovation policy that targets the high-tech sector aggravates inequality and growth. On the other hand, with the same model calibrated to Sub Saharan African (SSA) countries, we find that a progressive R&D policy that targets the low-tech sector could lower inequality and promote growth if it is financed by a consumption tax. Our model helps us understand the contrasting effects of public R&D spending on inequality and growth of the US and SSA countries.

Technology Shocks and Business Cycles in India
Shesadri Banerjee and Parantap Basu

Abstract: In this paper, we develop a small open economy New Keynesian DSGE model to understand the relative importance of two key technology shocks, Hicks neutral total factor productivity (TFP) shock and investment specific technology (IST) shock for an emerging market economy like India. In addition to these two shocks, our model includes three demand side shocks such as fiscal spending, home interest rate, and foreign interest rate. Using a Bayesian approach, we estimate our DSGE model with Indian annual data for key macroeconomic variables over the period of 1971–2010, and for sub-samples of pre-liberalization (1971-1990) and post-liberalization (1991-2010) periods. Our study reveals three main results. First, output correlates positively with TFP, but negatively with IST. Second, TFP and IST shocks are the first and the second most important contributors to aggregate fluctuations in India. In contrast, the demand side disturbances play a limited role. Third, although TFP plays a major role in determining aggregate fluctuations, its importance vis-a-vis IST has declined during the post liberalization era. We find that structural shifts of nominal friction and relative home bias for consumption to investment in the post-liberalization period can account for the rising importance of the IST shocks in India.

From Sales Tax to GST, the journey of West Bengal in 75 years
Malay Ghosh and Tushar K. Nandi

Abstract: West Bengal is one of the pioneering states in India to introduce sales tax through enactment of The Bengal Finance (Sales Tax) Act, in 1941. Later another act, namely The West Bengal Sales Tax Act came into place in 1954 for better monitoring of revenue on luxury goods. The Central Sales Tax Act was enacted by the union government in 1956, empowering states to impose tax on interstate sales. However, central law was viewed upon by some states as curtailing the autonomy of the states and affecting the revenue generation by putting a cap on tax rate on certain goods of special importance. To rationalize the tax system, West Bengal Sales Tax Act, 1994 was enacted, repealing the earlier state laws. The rate war among states that started in the 90's adversely affected revenue growth of all Indian states. A major paradigm shift in sales tax happened when states across the country introduced the Value Added Tax (VAT), replacing earlier tax laws, which resulted in higher growth rate for all the states. Successful implementation of VAT is a firm

stepping stone for the greatest tax reform in indirect taxation in India - Goods and Services Tax, that subsumes a number of indirect taxes of the states as well as the union. This paper presents West Bengal's journey from the earlier sales tax regimes to the doorstep of GST.

Preferences, Purchasing Power Parity and Inequality: Analytical Framework, Propositions and Empirical Evidence

Amita Majumder, Ranjan Ray and Sattwik Santra

Abstract: This paper makes analytical, methodological and empirical contributions to the literature on Purchasing Power Parity (PPP). PPPs are required in a host of cross country welfare comparisons, such as poverty rates and GDP. The subject has recently generated much interest in the wake of the release of the final results of the 2011 ICP. This paper introduces a preference based analytical framework that departs from the conventional Balassa Samuelson framework in deriving empirically verifiable propositions on the link between PPP and exchange rates, and between PPP and inequality. The paper also provides an alternative methodology for calculating PPPs that are benchmarked against the 2011 ICP PPPs. As this study shows, the alternative methodology is capable of easy implementation on readily available data sets. The benchmarking exercise suggests that the 2011 ICP generally understates the PPP and overstates the GDP, and that the PPPs vary across expenditure percentiles. The study reports regional variation in the direction of the difference between the two PPPs. The empirical evidence is supportive of the positive association between inequality and PPP derived in the paper.

Global and Country Poverty Rates, Welfare Rankings of the Regions and Purchasing Power Parities: How Robust Are the Results?

Amita Majumder, Ranjan Ray and Sattwik Santra

Abstract: This four-part study examines the sensitivity of poverty estimates, regional composition of the 'extremely poor' population and regional rankings to the Purchasing Power Parities (PPPs) used. The first part compares PPPs that use the price information collected by the ICP but follow a different methodology and, also, from a procedure that avoids the need for price information altogether. The second part examines sensitivity of poverty rates and poverty trends to PPPs. The third part finds that both PPPs and inequality, have a positive effect on poverty. Finally,

the paper proposes a methodology that uses the price and expenditure information and a welfare criterion by Sen (1976) to rank regions, and examines the sensitivity of the rankings, and their temporal changes, to PPP. The results point to the need for high quality, item wise price and expenditure information across countries, improved PPP methodologies, explicit incorporation of inequality in the welfare measure and more sensitivity analyses in cross country welfare comparisons with respect to PPP.

Inefficient Redistribution with Credit Rationing

Hamid Beladi, Sugata Marjit and Suryaprakash Misra

Abstract: It is almost a folk theorem like result that under credit rationing and with wealth heterogeneity redistribution should lead to efficient outcome. We develop a simple general equilibrium model and show that redistribution leads to inefficiency with credit rationing; a clear counter point to the conventional wisdom. We also identify the critical assumptions that lead to the conventional result. We argue that the absence of imperfect product market and diminishing returns in production will not deliver the conventional outcome with redistribution even when credit market is imperfect. Given the massive public interest and engagement with inequality as a vibrant topic of development related discourses and the fact that redistributive strategy is the hallmark of democratic politics all over , especially in the developing world, the clarification attempted in the paper seems to be timely and relevant.

Working Papers 2016

Tax Evasion, Corruption and Tax Loopholes

Sugata Marjit, André Seidel and Marcel Thum

Abstract: This paper addresses tax loopholes that allow firms to exploit borderline cases between legal tax avoidance and illegal tax evasion. In general, tax loopholes are detrimental for a revenue-maximizing government. This may change in the presence of corruption in the tax administration. Tax loopholes may serve as a separating mechanism that helps governments maximize revenues and curb corruption, which may explain why developing countries only gradually close loopholes in their tax codes.

Sequencing of External Sector Reforms and Wage Inequality
Reshmi Ahuja

Abstract: As developing economies integrate far more with the world economy, international trade and foreign capital inflows continues to be important instruments of this increasing economic integration. However, different initial conditions in economies require different external sector reforms. Trade liberalization and regulations on foreign investment flows (especially FDI) are two of the most important components or aspects of external reforms. For instance, in some economies, trade liberalization precedes fdi reforms while in other FDI reforms precedes trade liberalization. This sequencing of trade liberalization and FDI reforms may have diferent impact on skilled-unskilled wage inequality. This paper uses a two sector-three factor specific factor full employment model to examine whether sequencing of external reforms matter in terms of its consequences for wage inequality in developing economies. It is found that sequencing of external reforms, i.e., whether or not trade reforms precedes reforms w.r.t FDI infows, matter in terms of its consequences for skilled-unskilled wage inequality in developing economies. Numerical examples are also constructed to capture the extent of changes in skilled-unskilled wage inequality.

Anti-Trade Agitation and Distribution-Neutral Tax Policy - An Elementary Framework
Sugata Marjit

Abstract: The recent Brexit episode is being interpreted in some quarters as an anti-globalisation backlash. Free trade does not promise gains for all without a proper compensating mechanism that allows winners to bribe the losers. Also standard prediction of trade theory does point towards increasing wage inequality for the relatively skill abundant developed world. Theoretical discussion on compensating mechanism that addresses inequality is rare in trade literature. In a simple HOS model we consider tax policies that keep the pre-trade degree of inequality unchanged between skilled and unskilled workers. We discuss the problem of existence of such an inequality-neutral tax rate that generates a positive increment in the after tax skilled wage and unskilled wage. Such a mechanism exists and is independent of whether the tax is progressive or proportional.

Distribution-Neutral Welfare Ranking-Extending Pareto Principle

Sugata Marjit and Sandip Sarkar

Abstract: The well known Pareto criterion used in the context of efficiency and welfare has to do with absolute changes whereas in every domain of economic behaviour inequality or relative changes has become a major concern. We propose an inequality-preserving or distribution neutral Pareto criterion-the strong Pareto superior or SPS allocation which preserves the initial distribution and makes everyone better off. Our main result is that whenever there is a gain in the aggregate value of the relevant attribute, there exists a unique counterfactual allocation which is SPS.

Extending The Approaches To Inequality Ordering Of Ordinal Variables

Sandip Sarkar and Sattwik Santra

Abstract: In the context of distributions of ordinal variables and their inequality orderings, this paper provides three interesting contributions. Firstly it explores the association between certain types of transfers of population mass to the dominance rankings of distributions. Secondly it relates the inequality orderings of certain family of inequality indices to the dominance relationships of underlying distributions. Finally, the paper characterizes the class of inequality indices which allows comparison between ordinal distributions having different median categories and examines whether some established inequality indices satisfy the required properties. The same is illustrated using data on male and female educational attainments in India.

Like Father, Like Son: Intergenerational Occupational Persistence among Youth in India

Sweta Lahiri and Tushar K. Nandi

Abstract: The recent demographic change in India has engendered a lively debate on education and employment of youth. There is a growing concern that the evolving labor market has disproportionately favored skilled workers. Under this backdrop our paper analyses the incidence of high degree of intergenerational persistence of industry among youth in India. Using data from the latest three rounds of the employment-unemployment survey of NSSO, this paper studies the underlying causes and determinants of the probability that sons (aged between 15-24) are employed in the same industry as their fathers. We use a probit model for estimating the effect of own, parental education, asset ownership and father's network on such

probability. The results show that in the rural area, with increase in the level of education sons are less likely to be in the industry same as their father. There exists positive effect of household productive asset ownership on persistence. We also find evidence of significant influence of father's network on such incidence. There is indication that difference across castes and religions has been declining in recent years.

Working Papers 2015

Short-term migration and intergenerational persistence of industry in rural India

Tushar K. Nandi and Saibal Kar

Abstract: This paper studies the effect of short-term internal migration experience on the intergenerational persistence of industry upon a migrant's return to native place. We develop an occupational choice model of a return migrant to study the relationship between the migrant's savings, skill or any other productive asset accumulation during migration and the decision to work, upon return, in the industry where his/her father is employed. Using data from a nationally representative sample survey, we find that short-term migration by males reduces the probability of intergenerational persistence by 20% in rural India. Migration to urban areas, work experience in a different industry and higher frequency of migration reduce the return migrant's chance of being employed in the industry where his father is employed. The results suggest that skill formation during migration can play a key role in reducing labour market inequality by weakening the strength of intergenerational transmission of disadvantages.

Why do the Poor Save Less? The Role of Economic Status in Inadequate Saving

Sugata Marjit, Hamid Beladi and Avik Chakrabarti

Abstract: It is well known that the lack of access to credit and insurance and/or labor market rigidities are often cited as the key factors affecting savings in the third world. Banerjee and Duflo (2007) have pointed out that such factors, by themselves, fail to explain why the poor save less. We show that, in the presence of inequality, a status-driven utility function grafted on a simple dynamic model can explain inadequate saving by the poor, an established empirical fact in the developing countries. Interestingly, our result is independent of any assumption regarding imperfections in the capital market.

The American Pride and Aspiration
Sattwik Santra and Ranajoy Chaudhury

Abstract: There has been a growing literature on empirical studies on status consciousness. Specifically, the predictions of signaling models and theory of subjective well-being are empirically tested and found to support status seeking behavior. Instead of relying on these established theoretical models on status seeking behavior, we adopt a very general approach and model how individuals' status seeking behavior influences their consumption patterns. We define both an aspiration aspect and a pride aspect of status. Individuals aspire to reach higher status which we call aspiration aspect of status. Individuals also try their best to maintain at least their current status with respect to relatively lower income group class, which we call the pride aspect of status. We model these two aspects of status for the U.S households using Panel Study of Income Dynamics (PSID) data. Some of the results obtained go against the conventional signaling models which predict that as the mean income of the reference group increases, consumption of conspicuous goods decreases. Also, we get results contrary to Duesenberry's claim that rich are not concerned about their position relative to lower income group class.

Does inequality affect the consumption patterns of the poor? The role of "status seeking" behaviour

Sugata Marjit, Sattwik Santra and Koushik Kumar Hati

Abstract: We consider a situation where the relatively 'poor' are concerned about their relative income status with respect to a relevant reference group. Such a concern is explicitly introduced in a utility function to study the consequences of societal status on the consumption behavior of the poor. The theoretical model points toward a possible conflict between income based and nutrition-based measure of poverty. Our theoretical model point toward a direct and negative relationship between inequality and share of nutritional consumption as reflected in the consumption of food. Finally the paper looks at the empirical relationship between inequality and consumption across districts within states of India. The hypotheses that inequality impacts consumption patterns via status effect turns out to be statistically significant for almost all the Indian states.

Tax Effort of West Bengal and Andhra Pradesh: A Comparative Study Based on Consumption Expenditure

Jayanta Kumar Dwibedi, Sugata Marjit, and Koushik Kumar Hati

Abstract: West Bengal is at present in a dire state of fiscal and financial stringency. In this paper we have tried to find out the root causes of such a problem by looking at the revenue generating capacity and comparing its performance with Andhra Pradesh which is said to be of similar ‘size’ in terms of the volume of economic activity. Our new approach carefully decomposes the aggregate consumption data of each state from National Sample Survey and measures tax collection for different commodity groups. We have also estimated tax realization of West Bengal, taking tax effort of Andhra Pradesh as a benchmark. Based on our counterfactual exercise on different components of the state’s own tax revenue we find that some part of West Bengal’s poor tax realization can be explained in terms of its consumption data. Per capita consumption of some commodities in West Bengal, which are very important from the point of view of tax collection, is unusually lower than the corresponding figures in Andhra Pradesh. We propose that the discrepancy might be related to larger informal sector and thereby under reporting of actual consumption or in genuine consumption behavior reflecting a different intra as well as inter-temporal preference structure. This opens up new avenues for further research.

The Effect of Employment Guarantee Scheme on School Attendance in Rural India

Tushar K. Nandi

Abstract: This paper estimates the effect of employment guarantee scheme on school attendance of 14-17 year old boys in India. Using data from a nationally representative household survey, we find that a household’s work in the scheme reduces the probability that a 14-17 year old male household member attends school by 14%. Estimation using an older subsample who attended school before the implementation of the scheme shows that the negative effect is not driven by unobserved household heterogeneity that affects both school attendance and work in the scheme.

Status Seeking Behavior and the Life Cycle Hypothesis

Ranajoy Chaudhury

Abstract: In this paper, we study the effects of status consciousness on life cycle

profiles of consumption and wealth and see how it differs from the results of standard macroeconomic theories which is without incorporating status. Also, we examine whether the overall wealth of the economy with status seeking behavior is higher or lower than an economy without it. For this, we consider a general equilibrium overlapping generations model and calibrate it to the features of U.S economy. We find that incorporating status seeking behavior, the overall wealth of the economy is reduced by 6.8 per cent and savings rate is reduced by 4.4 per cent.

Relative Affluence and Child Labor - Explaining a Paradox

Jayanta Kumar Dwivedi and Sugata Marjit

Abstract: Some micro level empirical studies questioned the validity of the poverty hypothesis of child labour. In some cases child labour incidence found to be increasing even with improvement in the economic conditions of the poor. This paper provides a possible explanation as to why increase in absolute income may not be sufficient to solve the problem of child labour, at least in some cases. We argue that people in general are not just concerned about their own consumption; they are very much affected by the consumption of their peers. While taking decisions regarding the time allocation of their children between work and leisure, parents do keep an eye on their relative position in the society. We may have a situation where the absolute income of the poor is increasing but their relative position in the society is deteriorating and this may lead to an increase in child work. We develop a theoretical model of household decision making to show that child labour supply from a poor family can increase even with improvements in its economic conditions if the family's relative position in the society deteriorates and if the relative concern effect is sufficiently strong.

Inequality and Trade: A Behavioral-Economics Perspective

Sugata Marjit and Punarjit Roychowdhury

Abstract: We examine how differences in preexisting levels of inequality across countries may determine the pattern of international trade when preferences are non-homothetic. Using a standard Heckscher-Ohlin framework, we propose a behavioral linkage between asset inequality and trade pattern by modeling non-homotheticity in terms of status dependent preferences. We show that if the rental-wage ratios are sufficiently high in two countries, then there exists a critical level of asset inequality such

that the specificities of the trade pattern that emerge between them are contingent upon whether the levels of asset inequality prevailing in the countries are above or below this level.

International Trade, Migration and Unemployment – The Role of Informal Sector
Sugata Marjit and Biswajit Mandal

Abstract: This paper examines the role of intellectual property rights (IPRs) in developing countries on contractual R&D. We find that strengthened IPRs in developing countries provides incentive for firms, both multinational and local, to specialize in undertaking an R&D activity in which it has competitive advantage (the specialization effect). It also facilitates the process for local firms to switch from imitators to potential innovators (the switching effect). Moreover, we demonstrate that the multinational firm's strategic behavior on IPRs enforcement can be used as an effective instrument to subsidize contractual R&D in developing countries (the subsidizing effect). We further illustrate how a policy mix of IPR and FDI subsidy in developing countries affects R&D activities adding an offshore R&D subsidiary as an additional organizational form.

Strategic Enforcement, Intellectual Property Rights and Contractual R&D
Hamid Beladi, Sugata Marjit, Xinpeng Xu and Lei Yang

Abstract: This paper provides an elaborate general equilibrium framework by including informal economic activities in a model of trade, migration and unemployment. Existence of informal activities is critical in generating positive employment effects of liberal trade policies. Following a tariff cut informal wage increases and rate of unemployment goes down under reasonable conditions. Next we generalize the benchmark model to capture the phenomenon of sequential migration: from agriculture to urban informal sector, and then to urban formal sector. The paper also extends the benchmark model to include both informal intermediate and final good.

Working Papers 2014

Network and diversification in audio-visual market
Tushar K. Nandi and Grazia Cecere

Abstract: This paper studies the effect of network on product diversification in audio-visual market. We use register data on links between companies from Discop East 2008 market, the largest audio-visual market in East-Europe. Empirical estimation of network effects has often been difficult because of the presence of three related effects: endogenous effect, exogenous effect and correlated effect. We use a methodology that allows disentangling endogenous network effects from exogenous effects after eliminating correlated effects by network transformation. We find that network of a company has a significant positive effect on the diversity of product and services it trades in the market.

Rent seeking and market-oriented reform in India
Sugata Marjit and Vivekananda Mukherjee

Abstract: This chapter shows the relevance of rents and rent seeking in post-independence India, where market-oriented reforms have substantially reduced government control over economic activities. Despite significant economic reforms, rent-seeking and corruption have been prevalent. The chapter reviews the research on rent seeking and corruption in India and outlines a new theory relating rent seeking to economic reforms. Liberal and conservative economic policies are endogenous in such a framework. We also discuss other possible relationships between reforms and rent seeking in the context of an emerging market.

Competitive General Equilibrium with Finite Change and Theory of Policy Making
Hamid Beladi, Avik Chakrabarti and Sugata Marjit

Abstract: We construct a generalized model of finite change whereby exogenous shocks such as international trade or technological change, not only contract, but totally shut down production in some sectors. In such cases even in a competitive structure and in absolute contrast to the conventional wisdom, price based strategies to protect those vanishing sectors will not be equivalent to quantity based strategies. We also consider factor trade and a similar asymmetry between price based and quantity based interventionist policies.

On the Sustainability of Product Market Collusion under Credit Market Imperfection

Sugata Marjit, Arijit Mukherjee and Lei Yang

Abstract: We study the implication of credit constraints for the sustainability of product market collusion in a bank financed Cournot duopoly when firms face an imperfect credit market. We consider two situations without or with credit rationing. When there is no credit rationing moderately higher cost of external finance may affect the degree of collusion, but a substantial increase keeps it unaffected. Permanent adverse demand shock in this set up does not affect the possibility of collusion, but may aggravate the finance constraint and eventually lead to collusion. We also discuss the case with credit rationing.

Working Papers 2013

Smuggling and Trafficking in Human Beings: A Brief Review of the Economics of Illegal Migration

Saibal Kar

Abstract: Studies on illegal labour migration to rich countries are strongly policy driven and welfare-centric. Border control and employer interdiction are the most popular policies for controlling illegal entries. We review a large body of literature on illegal immigration in general and smuggling and trafficking of workers in particular. A policy to lower exploitation from illegal migration is discussed.

Trade reform, intermediation and Corruption

Biswajit Mandal and Sugata Marjit

Abstract: We construct a general equilibrium model with a protected intermediate sector and analyze the effectiveness of trade reform for a small open economy where bureaucratic corruption arises because of trade protection. Intermediaries are employed by the producers in order to avoid paying the import tariff. We use HOSV kind of framework to prove whether trade liberalization necessarily leads to a decline in intermediation activities. We find that labor intensity of the exportable commodity which uses the intermediate good is critical in determining the extent of corruption. It is essentially a tug of war between higher tariff revenue and higher wage in the new equilibrium. Thus trade liberalization may or may not lead to less corruption.

Capital Flows, Public Policies and Emigration Patterns from a Developing Country
Rajat Acharyya and Saibal Kar

Abstract: Microeconomic models of migration networks discuss migration patterns of prospective emigrants. We adopt an open economy model to show that stock of emigrants influences future flows even at aggregate levels. We develop a general equilibrium model for a developing country to establish that trade liberalization, stock of skilled and unskilled emigrants, migrant remittances and capital investments critically influence rates of emigration. Interestingly, capital investments may raise emigration prospect among skilled workers at source and lower that for unskilled types. When domestic wage is sensitive to emigration, trade reform raises skill emigration but lowers unskilled emigration. Finally, we establish that investments by skilled emigrants lower unskilled emigration while a restriction on unskilled emigration raises skilled emigration.

Intergenerational Persistence of Industry of Employment in India
Tushar K. Nandi

Abstract: This paper studies the intergenerational persistence of industry in India. Using data from a nationally representative sample, we find that 62% young Indian men are employed in the same industry where their fathers are also employed. A set of simulations that assign young men randomly across industries is run to study the persistence in counterfactual population. We use a probit model to estimate the effect of education, and a set of family background variables on intergenerational persistence. Higher education is found to be associated with lower persistence. Ownership of productive assets exerts important non-linear effect on intergenerational transmission of industry. We also find substantial evidence of influence of father's network and assortative mating on son's choice of industry.

International Trade and Credit Market Imperfection
Hamid Beladi, Avik Chakrabarti and Sugata Marjit

Abstract: We introduce credit market imperfection in an otherwise Ricardian model, but for identical technologies, when workers or entrepreneurs are endowed with different levels "capital" and need to borrow to produce the credit intensive

good. We argue that in such a framework identical countries will gain from trade without the assumption of comparative advantage. Thus, we show that we do not need monopolistically competitive models to generate trade between similar countries. International trade, in our set up, takes place in fragments in a way that can help alleviate credit constraints. Moreover, very poor firms and very rich ones are not likely to gain from trade in fragments, but those in the middle will.

Cross-Border Mergers and Product Differentiation

Hamid Beladi, Avik Chakrabarti and Sugata Marjit

Abstract: We construct a general equilibrium model of an oligopolistic industry that allows us to capture the role of product differentiation in the incentives for and implications of cross-border mergers. A rise in the degree of product differentiation will compress the extensive margins of trade and reduce the gains from cross-border mergers. Cross-border mergers will mitigate the effect of product differentiation on the extensive margins of trade.

A Mixed GOLE Model of Cross-Border Mergers and Trade

Hamid Beladi, Avik Chakrabarti and Sugata Marjit

Abstract: We construct a tractable open economy general equilibrium model of a mixed oligopoly. Our model is then applied to capture the incentives for and implications of cross-border horizontal mergers and trade in the presence of a public firm. Absent any possibility of cross-border mergers, an increase in the degree of privatization will result in a shrinking of the extensive margins of trade. Cross-border mergers will mitigate, by aligning specialization toward the direction of comparative advantage, the effect of privatization on the extensive margins of trade. Allowing firms to move sequentially will magnify the effect that cross-border mergers have on the extensive margins of trade: the magnification effect will be larger when the private firms lead than it will be if the private firms follow.

Scientific Collaboration & Innovation with Tools of Economic Analysis & Management

Hamid Beladi, Avik Chakrabarti and Sugata Marjit

Abstract: We propose an eclectic hub-and-spoke model that can guide a long overdue transformation of the current system of graduate education and research.

Cross-Border Mergers and International Trade: A Vertical GOLE Model

Hamid Beladi, Avik Chakrabarti and Sugata Marjit

Abstract: We present a general equilibrium model to capture the role that the vertical structure of an oligopolistic industry can play in the links between cross-border horizontal mergers and international trade. We show that the extensive margin of trade shrinks on the face of vertical integration. Cross-border mergers will mitigate the effect of vertical integration on the extensive margins of trade by facilitating specialization toward the direction of comparative advantage. The impact of a merger, on the extensive margins of trade, will be magnified when the merger takes place between two disintegrated firms across borders compared to a merger between a disintegrated firm in one country and a vertically integrated firm in another.

Trade with Time Zone Differences: Factor Market Implications

Toru Kikuchi, Sugata Marjit and Biswajit Mandal

Abstract: We investigate the tax evasion of firms when tax officials are corrupt. The collusion between firms and corrupt tax officials can make the enforcement of tax liabilities ineffective. The gains from tax evasion may simply be transferred from the evading firms to the corrupt officials, while the total evasion remains unaffected by the monitoring. Using a simple theoretical model, we show that the monitoring of firms even by corrupt tax officials will reduce tax evasion in the presence of asymmetric information. Firms will typically be better informed about their ability to exploit tax loopholes than the corrupt tax officials. The optimal separating contract offered by the corrupt tax official will allow the smart firms to fully exploit the loopholes for tax evasion but will reduce the leeway for tax evasion by the less competent firms. We also show that in such an environment, a revenue maximizing government may not have an incentive to close all tax loopholes because such a step may reduce total tax revenues.

Trade openness, corruption, and factor abundance: evidence from a dynamic panel

Sugata Marjit, Biswajit Mandal and Suryadipta Roy

Abstract: Using the Heckscher-Ohlin-Samuelson-Vanek (HOSV) framework, this paper illustrates a relationship between corruption and the pattern of international trade that depends on the factor endowments of countries. We empirically investigate this relationship between trade openness and corruption by using a panel dataset on trade openness, corruption, and capital-labor ratio, and applying estimation techniques developed for dynamic panels. Our regression results provide strong support to the hypothesis that the effect of corruption on trade openness depends on relative factor abundance.

Institutional Reform and International Trade

Sugata Marjit and Vivekananda Mukherjee

Abstract: This note, on the seminal contribution of Lerner and Singer (1937), highlights the role of privatization in the location decision of firms in an industry where no firm can produce all varieties demanded. We demonstrate that, in the presence of a publicly owned firm, firms may deviate from the socially optimal location and that such deviation softens with an increase in the degree of privatization.

Working Papers 2012

Trade Between Similar Countries: The Role of Credit Market Imperfection

Sugata Marjit

Abstract: We build up a simple Ricardian trade model with imperfection in the market for credit which affects the pattern of production. Workers/entrepreneurs are endowed with different levels “capital” and need to borrow to produce the credit intensive good. We argue that in such a framework identical countries will gain from trade without the assumption of comparative advantage.

Rent-Seeking and Reform - Relationship Revisited

Sugata Marjit

Abstract: Domestic and foreign firms engaged in Cournot competition bribe the local authorities. The local firm pays for imposing a cost to the foreigners; the for-

eign pays so that the local competitor does not get overwhelming advantage. Local authorities, political or otherwise, decide an optimal level of ‘cost’ to be inflicted on the foreign firms which maximize their pay-offs from both. We argue why drastic trade reform increases the pay-off to the authorities whereas relatively less drastic reforms do the opposite. Thus extreme liberal stance is consistent with greater rent seeking. However, greater rent seeking is also consistent with higher welfare for consumers. This result may change with fixed costs.

Caste, religion and employment in India: An empirical analysis of network effects
Tushar K. Nandi

Abstract: This paper investigates the caste and religion based network effects on employment in India. Often limited employment opportunity in disadvantaged caste regions, varying level of formal education and discrimination are considered as prime factors behind disparity in employment outcomes among caste. We examine the role social network plays in determining employment outcome in rural India. Using the 66th round of NSS data we estimate the effect of caste based network on an individual’s employment probability in non- farm sectors. We use a methodology that allows us to control for several omitted variable biases that often confound the network effects. The results suggest that social network works as an information channel facilitating non-farm employment of individuals of same caste: higher the number of people of an individual’s caste employed in non-farm sectors, higher is his own chance of finding a non-farm employment. Household members employed in non- farm sector are the closest network contacts for employment related information. The effect of social network based on caste and locality remains substantial even after controlling for within household information transmission.

India’s move from Sales Tax to Value Added Tax: A hit or miss?
Sattwik Santra and Koushik K. Hati

Abstract: The Value Added Tax and Sales Tax are indirect commercial taxes in India. Government of India introduced Value Added Tax (VAT) across all its states in subsequent stages in the early years of this millennium. The main motive behind this move was to make the commercial tax collection more transparent, accountable and revenue enhancing. The purpose of this paper is to see if the introduction of VAT has indeed served its purpose or not.

Working Papers 2011

Conflicting Measures of Poverty and Inadequate Saving by the Poor – The Role of Status Driven Utility Function

Sugata Marjit

Abstract: In the presence of inequality a status driven utility function reconciles the conflict between income based and nutrition based measures of poverty. Moreover, it can explain why the poor tend to save less, an established empirical fact in the developing countries. The result is independent of the assumption of imperfect capital market. The paper attempts to integrate various strands of literature on status effects.

International Capital Flow, Finite Change and Two-sided Wage Inequality

Sugata Marjit and Saibal Kar

Abstract: This paper shows that international capital flow can lead to rise in the relative wage between the skilled and unskilled workers simultaneously in both capital-exporting and capital-importing nations. Previously, impossibility of such two-sided inequality outcome has been discussed in the literature. We argue that such a result has strong possibility when some industries vanish following changes in factor prices as a consequence of factor flows. The asymmetry in the nature of finite changes is the critical factor.

Firm Heterogeneity, Informal Wage and Good Governance

Sugata Marjit and Saibal Kar

Abstract: We provide an analysis of enforcement policies applicable to formal sector in dual labor markets. We use a framework with heterogeneous firms, endogenous determination of informal wage and politically dictated enforcement strategies. Firms which operate both in the formal and informal sectors do very little to increase employment when faced with the opportunity of hiring workers in the informal labor market. Thus enforcement of labor laws and other regulations should not have aggregate employment effects, particularly when workers are productively homogeneous. For firms operating exclusively in the informal sector, the outcome is different. Such

features determine the stringency of enforcement in a market characterized by firms with varying levels of productivity. For example, in case of firms with relatively high levels of productivity, enforcement has to be stricter than in the case with relatively low productivity firms. Taxing the more productive seems to be the optimal strategy.

Bye-laws and User-charges at the Panchayat Level: A Case Study of West Bengal
Polly Dutta and Saibal Kar

Abstract: Recent spurt of activism in relation to the enactment of bye-laws by the majority of Gram Panchayats (GPs) of West Bengal for imposing different fees, rates and toll taxes on services provided to the villagers is a considerable development. This is the drive to empower the GPs, particularly those urbanized in nature, to raise their own resources. This study analyzes four different parameters in measuring the effectiveness of such initiative. First, whether adequate attention was paid to the norms of intra-institutional as well as inter-institutional participatory democracy while passing bye-laws. Second, level of acceptance of further user taxes by villagers and GP representatives were examined. Third, we studied the level of efficiency in revenue mobilizing at the GP level and whether the present administrative dispensation could efficiently cope with the additional burden of new charges. Finally, this study examines the extent to which sample GPs adjusted their plans to adopt the mandates of the Panchayat department while addressing idiosyncratic local issues.

Are Minority Concentrations Deprived of Public Good Provisions? Regional Evidence from Rural India

Pranab Kumar Das, Saibal Kar and Madhumanti Kayal

Abstract: Religious and ethnic minorities often face partisan treatment with regard to provision of public goods. This may be due to discriminatory practices or historical antecedents, like caste divides in India. We measure access to public goods in eleven districts of West Bengal in India where rural concentration of religious minorities, namely Muslims is higher than state and country-level averages. Using Least Square, Generalized Linear Models and Blinder-Oaxaca decomposition, we find evidence of strong horizontal inequality against Muslims in terms of access to public goods. Blinder-Oaxaca decomposition shows that Muslims in larger concentrations face poorer access to infrastructure, health and transport facilities.

VAT and GST in India – A Note

Punarjit Roychowdhury

Abstract: One of the most widely debated issues in Indian Public Finances in current times is undoubtedly the proposed Goods and Services Tax (GST). Perceived as the ‘biggest tax overhaul since independence’ GST promises to fuel overall economic growth and increase tax revenue of the government to a great extent by removing all the impediments that the financial system had been hitherto subject to. This short note starts off by providing a somewhat candid analysis of the present system of VAT which has been in effect since 2005 and then goes to explore certain critical issues related to GST, its prospects and problems and how it can usher in a new era of government finances of the country.

West Bengal Public Finances: An Analytical Perspective

Punarjit Roychowdhury

Abstract: The dismal state of government finance of West Bengal is frequently being highlighted by the media in the last couple of years. This report looks into the actual state of finances of the West Bengal Government over the last decade - according to the media reports which is ‘precarious’ - from a purely ‘statistical view point’.

An Effective “Targeting Shortcut”? An Assessment of the 2002 Below-Poverty Line Census Method

Jyotsna Jalan and Rinku Murgai

Abstract: Proxy means test methods are increasingly being used by governments as substitutes for the more expensive and administratively difficult means test methods to target poverty alleviation programs. In India as well, the 2002 Below Poverty Line (BPL) census replaced the previously used —exclusion|| criteria method with a proxy means test in order to identify people living below the poverty line. In this paper, we use 1999-00 National Sample Survey data to analyze whether the BPL census methodology is effective at distinguishing the poor from the non-poor. Our results indicate large targeting losses in moving to a proxy means test method. However, even though the data reject the assumptions implicit in constructing a BPL

score, overly stringent assumptions are not the main reason for the poor targeting performance. As an alternative, we use an augmented regression model that relies on additional indicators and relaxes the BPL assumptions which substantially reduces the targeting errors vis-à-vis the BPL method, particularly in the tails of the expenditure distribution. However, under-coverage is still high (34 percent), largely because even an augmented and flexible model performs poorly in sorting the poor from non-poor in the vicinity of the poverty line. With the high density of population with income close to the poverty line, arriving at an effective proxy means test is an inherently problematic and difficult exercise.

Small Bang for Big Bucks? An Evaluation of a Primary School Intervention in India
Jyotsna Jalan and Elena Glinskaya

Abstract: Primary school interventions have regularly been undertaken by governments in many countries to increase enrollments and improve quality of learning. Such initiatives included building schools, training teachers, providing school-meals at noon, revising textbooks etc.. In India too, several policy initiatives have been undertaken over the years. A recent intervention is the District Primary Education Program (DPEP). Under the DPEP, efforts were made to design project components that would reduce gaps in enrollments, dropouts and learning achievements across gender and disadvantaged social groups. By December 2001, over 1.5 billion US dollars had been committed to the project and the school system under DPEP was expected to cover more than 50 million children. Question is whether the DPEP was successful in increasing enrollment rates particularly among the targeted groups and/or in improving quality of learning of the already enrolled children. Our estimates show some impacts on enrollments of the socially disadvantaged minority groups (the scheduled tribe and scheduled caste) especially in one specific state where concurrent to the DPEP, another state government-supported primary school initiative was also started. Contrary to the stated objectives of the program, however, there was no closing of the gender gap either in terms of enrollments or with respect to educational achievements.

Working Papers 2010

Low Mean & High Variance: Quality of Primary Education in Rural West Bengal
Jyotsna Jalan

Abstract: Since Independence, the focus of government interventions in primary education has been on increasing access to schools. Today net primary school enrollments in India are over ninety percent. Even in very remote areas of India, it is likely that there is a primary school. But whether these schools are functioning efficiently or whether children are learning in these schools is another matter. The Right to Education 2009 bill is also largely silent about the quality of education that is to be provided to children 6-14 years. Only indirect references are made regarding steps to improve the quality of primary education.