

**The Fourth International Conference  
on  
South Asian Economic Development  
Faculty of Economics  
South Asian University  
New Delhi**

**February 22-23, 2018**

**Venue: FSI Hall, Akbar Bhawan, SAU**

**DAY 1: THURSDAY, FEBRUARY 22**

1:45 – 3:45 pm: **Technical Session 1.a: Macro Economics**

**1. Some Macro Dynamic Concerns on Debt in the Indian Context**

**C. Saratchand** (Satyawati College, Delhi, India)

In the recent period the Indian economy has been beset with a number of macroeconomic difficulties among which the role of debt non-repayment by big business to public sector banks has been significant. A heterodox macro dynamic model of a capitalist economy with a critical role for debt is set out to unravel some of the macroeconomic underpinnings of the current conjuncture in India. In the model, a rise in the ratio of debt stock to the capital stock induces capitalist entrepreneurs to increase prices in order to protect the share of profits of enterprise in output. Though the central bank pursues a policy of inflation targeting, to the extent that workers are compelled to accept a lower share of wages this tendency towards inflation remains latent. But this squeeze on workers by reducing the degree of capacity utilisation may further increase debt non-repayment. This self-propelling chronic process of debt non-repayment may undermine the stability of the capitalist economy.

**2. Analyzing Jobless Growth and Income Growth Dynamics in India: A Sectoral Decomposition Analysis**

**Balakrushna Padhi** (Jawaharlal Nehru University, New Delhi, India)

Employment occupies the centre stage in any discourse on growth and development. The low employment growth namely “jobless growth” during the phase of better income growth generates serious concern regarding the imbalance generated in the Indian labour market. This present study examines the changing trends in employment and income among different sectors and sub-sectors of Indian economy since last three decades. It adopts the Job Generation and Growth Decompositions tool (JoGGs), to understand factors driving growth of the Indian economy and decompose growth across

different sectors of the economy. The findings suggest that there is a sharp decline in the employment growth in the agricultural sector, with moderate growth in the manufacturing sector and high growth only in the construction and service sector. Despite the declining income share of agriculture in 2011-12, a significant proportion of workers are engaged in the agricultural sector. The study also found that the employment content of economic growth has reasonably shrunk. The study also confirms a negative association between employment rate and economic growth indicative of the jobless growth phenomenon. The recent period features positive growth across industrial and service sector and negative growth for the agricultural sector. The overall trend in the employment and income warrants serious policy intervention in the Indian labour market.

### **3. The Long-Run Determinants of Indian Government Bond Yields**

**Tanweer Akram** (Global Public Policy and Economics Thrivent Financial, Minneapolis, USA)

Anupam Das (Mount Royal University, Alberta, Canada)

This paper investigates the long-term determinants of Indian Government Bonds' (IGB) nominal yields. It examines whether John Maynard Keynes's supposition that the short-term interest rate is the key driver of the long-term government bond yield holds over the long-run, after controlling for key economic factors. It also appraises if the government fiscal variable has an adverse effect on government bond yields over the long-run. The models estimated show that in India the short-term interest rate is the key driver of the long-term government bond yield over the long-run. However, the government debt ratio does not have any discernible adverse effect on IGBs' yields over the long-run. These findings will help policymakers to use the information on the current trend of the short-term interest rate and other key macro variables to form their long-term outlook about IGBs' yields and to understand the policy implications of the government's fiscal stance.

### **4. Protectionism and the Business Cycle**

**Alessandro Barattieri** (Collegio Carlo Alberto and ESG UQAM)

Matteo Cacciatore (Institute of Applied Economics, HEC Montréal and NBER)

Fabio Ghironi (University of Washington, CEPR, EABCN, and NBER)

We study the consequences of protectionism for macroeconomic fluctuations. First, using high frequency trade-policy data, we present fresh evidence on the dynamic effects of temporary trade barriers. Estimates from country-level and panel VARs show that protectionism acts as a supply shock, causing output to fall and inflation to rise in the short run. Moreover, protectionism has at best a small positive effect on the trade balance. Second, we build a small-open economy model with firm heterogeneity, endogenous tradability, and nominal rigidity to study the channels through which protectionism effects aggregate fluctuations. The model successfully reproduces the VAR evidence and highlights the importance of aggregate investment dynamics and micro-level reallocations for the contractionary effects of tariffs. We then use the model to study scenarios where temporary trade barriers have been advocated as potentially beneficial, including recessions with binding constraints on monetary policy easing or in the presence of a fixed exchange rate. Our main conclusion is that, in all the scenarios we consider, protectionism is not an effective tool for macroeconomic stimulus and/or to promote rebalancing of external accounts.

1:45 – 3:45 pm:

## **Technical Session 1.b: Energy Efficiency and Sustainable Development**

### **Technical Session 1.b: Energy Efficiency and Sustainable Developments**

#### **1. Consumer Preferences for Fuel Efficient Products: Role of Green Networks**

**Charu Grover** (Jawaharlal Nehru University, New Delhi, India)

Sangeeta Bansal (Jawaharlal Nehru University, New Delhi, India)

The paper presents a study of star labeled cars in Delhi, using discrete choice experiment. The respondents were asked to choose between the presently available cars and two labeled cars (high star label car and moderate star label car). The higher the star the better the car is for the environment. Consumers' willingness to pay for star labeled cars and various car attributes are estimated using conditional and random parameter logit model. The star label, price and the green network effect led in the importance to respondents. The results of the random parameter logit model showed that consumers on an average are willing to pay approximately Rupees 6 Lakhs extra for the car which has been awarded high star label and Rupees 3.78 Lakhs extra for the car which has been awarded moderate star label. The respondents willingness to pay was motivated by fuel cost savings and environmental benefits. Consumers' preferences is also influenced by social norms, which arise from the network formed by the individuals. Consumers are willing to pay Rupees 2375 extra for the green network effect. Engine displacement and transmission are comparatively less important in the decision to purchase cars.

#### **2. Energy efficiency of Iron and Steel Sector in India: An Interstate Analysis**

**Salman Haider** (University of Hyderabad, Hyderabad, India)

Prajna Pramita Mishra (University of Hyderabad, Hyderabad, India)

This study aims at estimating energy efficiency and energy saving potential of Indian iron and steel sector in total factor productivity framework. Data for this purpose is extracted from annual survey of industry for a panel of 19 major steel producing states over the period of 2004-05 to 2013-14. We employed radial and non-radial variant of data envelopment analysis to estimate energy saving potential and identified relative position of each states in terms of level of energy efficiency. We started by examining a simple indicator of energy efficiency that is energy--output ratio. It shows declined trends over the period of time but for some states like Bihar, Jharkhand, Gujrat and Uttarakhand, it does not decrease much. Slack-based measures (SBM) of tone (2010) is used to get a more comprehensive measure of energy efficiency along with radial measure of energy efficiency. SBM of energy efficiency show overall average 8 percent of energy saving potential without reducing average output level. Further we also calculated scale efficiency which shows overall average level of scale efficiency was 0.91. So scale inefficiency also contributed to total energy inefficiency.

### **3. Energy Intensity and Technological Changes for Indian Economy: An Analysis using Hybrid Input-Output Technique**

**Tulika Bhattacharya** (University of Kassel, Germany and Institute for Social and Economic Change, Bangalore, India)

This paper makes an overtime comparison of energy intensities between different sectors of the Indian economy with corresponding sectors of other energy efficient countries of the world using World Input Output tables. The paper subsequently implants the advanced technologies of the energy efficient countries in different sectors of the Indian economy and thereby estimates the gains in terms of energy saving and productivity growth that these sectors would achieve owing to these implantations. On the basis of the analysis carried out, the paper brings out important policy implications pertaining to reserving energy resources which would help in ensuring sustainable growth of the economy in future.

### **4. Changing Material Consumption and its Sustainability in the Resource-based Manufacturing: An Assessment of Pulp and Paper Industry in India**

**Sandeep Kumar Kujur** (Institute of Public Enterprise, Hyderabad, India)

The study uses secondary data from Annual Survey of Industries and field survey information collected to assess the changing material consumption and its sustainability in the Pulp and Paper (P&P) industry in India. In the first part of the analysis, we use Log Mean Division Index method to understand the contribution of (i) scale effect, (ii) structural effect, and (iii) technology effect on change in the material consumption. The results show that all the three factors contributed to increase in the material consumption in the industry during the period 2000 to 2010. The second part of the analysis investigated the sustainability of raw material use in the industry. It is observed that the P&P industry in India has moved away from using conventional forest-based raw material to unconventional input-efficient and environmentally benign recycled paper (RCP)-based raw material. Using the inputs from field survey, the study also examined the sources and sustainability of the wood-based, agro-based, and RCP-based raw materials used in the P&P industry.

4:00 – 6:00 pm:           **Technical Session 2.a: Trade**

**Chair: Kavita Iyengar**, Economist, India Resident Mission, Asian Development Bank

**1. Endogenous Trade Agreements and Inter-Intra Industry Trade of India: An Empirical Investigation of Gravity Model.**

**Anusree Paul** (Jawaharlal Nehru University, New Delhi, India)

**Manoj Pant** (Jawaharlal Nehru University, New Delhi, India)

This paper explores the crucial dynamic economic integration between the trade balances of Bangladesh with Trans-Pacific Partnership (TPP) countries. It is empirically tested for Bangladesh's merchandise trade with its TPP trading partner countries (with or without USA) for over the 15 years and the tariff rate exporter per product used as a proxy for economic integration variable. The model is empirically tested under two different scenarios and robustness check of the model ensures the validation of the model. A dynamic balanced panel data analysis has been used in order to Unrestricted Error Correction Mechanism (UECM) and Generalized Method of Moments (GMM) estimator. The study examine that the existence of cointegration, that is, stable long-run relationship from any short-run deviation, and short-run dynamics also show convergence. Hence, the analysis of empirical results is shown that, without integration of the both scenarios, the trade balance of Bangladesh is relatively better off than that of integration. Thus Bangladesh should be maintained bilateral trade negotiations relationship instead of not joining to the TPP mega-regional FTA.

**2. India's Services Trade: What role does Information and Communications Technology (ICT) play?**

**Hemanta Barman** (Indian Institute of Technology Guwahati, India)

**Mrinal Kanti Dutta** (Indian Institute of Technology Guwahati, India)

**Hiranya K. Nath** (Sam Houston State University, Huntsville, USA)

Regional Trade Agreements (RTAs) are proliferating since mid-1990s where most are of South variety. Arguments of such proliferation can be developed from the economic and noneconomic point of view. One can argue that the incentive for RTAs seems to lie in tariff reduction and freer trade between members. The non-economic arguments are that as the WTO process seems to be unraveling, RTAs (commodity trade and WTO plus agreements) seem to offer new forms of plurilateralism and the decision to form RTAs must be essentially political - to be part of some political bloc for future multilateral negotiation. Hence, whether these political reasons dominate over economic and geographical reasons is a matter in question as the economic justification of RTAs seems to become limited. To address the debate, recent theoretical and empirical studies have tried to explain RTA formation as an endogenous rather than exogenous decision. Further, RTAs of varying nature are related differently to the unobservables which impede or facilitate trade. These unobservables also create endogeneity bias in the traditional estimation of RTAs' impact on trade flows of a country. In this study, we have theoretically modeled the inter and intra industry trade variety into the traditional gravity model and have made an attempt to investigate the endogeneity in the context of India's RTA engagements. Our empirical study ensures endogeneity of RTAs with its negative but insignificant impact on trade flows of India.

### **3. Should Bangladesh be integrated with Trans-Pacific Partnership? A Dynamic Panel Data Analysis**

**Nobin khor Kundu** (Comilla University, Bangladesh)

Md. Shaddam Hossain (Comilla University, Bangladesh)

The Belt and Road Initiative (BRI) or the One Belt One Road (OBOR) links China to more than 60 countries through the economic belt and the maritime Silk Road, including Europe, Central Asia, Southeast Asia, Africa and South Asia. The improvement in road communication has a huge potential to boost South Asian exports to China. In this paper, we attempt to explore the feasibility of exports growth to China in the context of the OBOR, by examining the case of four major South Asian countries, namely, Bangladesh, India, Pakistan and Sri Lanka. We identify the promising sectors and SITC product categories that have potential for exports boost in China, and outline a framework on how OBOR would contribute in creating such boost through the reduction of time and cost of trade. In addition, we also provide quantitative estimates of the marginal effects of the trade cost and time savings on the exports to China. Using a three-fold analysis method, we find more than seven likely sectors and twenty product categories for South Asian countries that show potential in the Chinese market. We further provide estimates that the time and cost savings through OBOR may encourage South Asian aggregate exports to China by a sizable magnitude; where manufacturing exports appear sensitive to both the trade cost and time while primary exports to trade cost only. Given several challenges identified, the paper calls for immediate policy actions by the governments of South Asian countries to secure the full benefit of the OBOR initiative.

### **4. The Belt and Road Initiative: Evaluating South Asia's Trade Potential with China**

Suborna Barua (OBOR Research Group, Australia, Federation University Australia, and University of Dhaka)

Rezwanul Hasan Rana (OBOR Research Group, Australia, and University of Southern Queensland, Australia)

**Afsana Arafin** (OBOR Research Group, Australia)

**Fariza Binte Mahbub** (OBOR Research Group, Australia)

Using an extended gravity model approach, this paper empirically examines the impacts of development in information and communications technology (ICT) on India's bilateral services Trade. This study uses India's bilateral services trade data for 22 partner countries from 2003 to 2009. We combine nine services items into two categories: ICT enabled services and non-ICT category. Following International Telecommunication Union (ITU), the present study constructs a comprehensive ICT development index (IDI) which captures the development of the technology in a country along three different dimensions. The results indicate that ICT development has significant positive contributions to the growth of India's ICT enabled services trade. Among other control variables, combined gross domestic product of India and its trading partner, common official language, regional trade agreement have significant positive impacts on India's ICT enabled services trade. In contrast, the relationship between ICT development and services trade in non-ICT category is found to be statistically insignificant.

**1. Is Idiosyncratic Risk Ignored In Asset Pricing: Sri Lankan Evidence?**

**Moinak Maiti** (Pondicherry University, Puducherry, India)

The present study focuses on one of the important south Asian nation – Sri Lanka to examine the role of idiosyncratic volatility in asset prices. The analysis uses various statistical techniques (Multi factor regression model, Fama-MacBeth cross sectional regression, 3D graphs, GRS test, residual graphs) to test the role of idiosyncratic volatility in asset prices. A four factor model with idiosyncratic volatility designed for capturing the market, size, value and idiosyncratic risk yields better than Fama-French (1993) three factor model and performance of the model is not sensitive to the technique its factor variables are defined. Fama-MacBeth cross sectional regression, residual graphs and GRS test all confirms the superiority of four factor model over two three factor models. Finally study findings confirm that there is a high importance for idiosyncratic volatility risk factor in investment decision of Colombo stock exchanges stocks. Hence, investor should compensate for holding such risk factors in the portfolio. The paper argues that idiosyncratic volatility also play a role in predicting returns. This has significant public policy content. The present study is novel for several reasons: First study is the maiden study in Sri Lankan context that explicitly reported how important idiosyncratic volatility is in Sri Lankan context which is not addressed by any previous studies. Second study deploys different design and methodology from previous studies. Finally, study uses both time series and cross-sectional analysis to explore the significance of idiosyncratic volatility in asset pricing.

**2. Assessing Financial Integration in Equity Markets of major countries in South Asia**

**J Vineesh Prakash** (Indian Institute of Technology, Roorkee, India)

This paper examines the volatility dynamics of stock markets between Bangladesh and India over the period from 28 November 2001 to 20 February 2017. Results of a bivariate VAR model reveal the strong evidence of unidirectional spillovers in returns from the Bombay Stock Exchange (BSE) of India to Dhaka Stock Exchange (DSE) of Bangladesh. Applying preliminary statistics and univariate EGARCH models, we find that the return series of DSE and BSE show evidence of leptokurtosis, volatility clustering and leverage effect. The volatility transmissions across markets are examined using augmented GARCH(1,1) model. Results explore that the volatility spillover effects are bidirectional between BSE and DSE, while India is the largest volatility transmitter both domestically and internationally. Finally, we find evidence of very low conditional correlation between BSE and DSE though the estimated conditional correlation is positive and significantly different from zero at better than the 5% significance level.

### **3. Volatility Spillover Effects and Conditional Correlations in Bangladesh and Indian Stock Markets**

**Md. Abu Hasan** (Bangladesh Civil Service (General Education), Ministry of Education)  
**Anita Zaman** (Rajshahi University, Bangladesh)

The economic liberalization in most of the third world countries during 1980s and 90s, led to greater integration of their domestic financial markets with the global one, paving the way for enhanced flow of capital. It may be noted that financial integration refers to the extent the domestic financial markets are connected to each other at the domestic, regional or international levels (Ayuso & Blanco, 2001; Agénor, 2003; Worthington & Higgs, 2010; Fahami, 2011). There are two approaches to measure the level of financial integration viz. de jure and de facto. The de jure approach measures financial integration by counting the relaxed number of legal restrictions that otherwise constrain the flows of capital, though mere this action does not indicate actual degree of integration, as only removal of restrictions on capital flows may not ensure a growth in capital flows. The de facto approach, on the other hand, measures the actual financial integration either by measuring the actual cross-border capital flows or by measuring the convergence of prices of financial assets. The former category of measures is known as quantity based measures, while the latter is known as price based measures. The law of one price is used as the theoretical background to measure financial integration in price based measures. Under this law, given the risk, greater financial integration leads to greater convergence of prices of assets of similar nature. Thus, convergence of asset prices between countries can be used to measure the degree of financial integration while quantity based measures use actual financial flows and cross-border assets holding to measure financial integration (Park, 2014). The present paper uses price based de facto measures of financial integration for measuring the financial integration among the equity markets of major economies of south Asia viz. Bangladesh, India, Pakistan and Sri Lanka. Interestingly, a financial market is a very huge and highly heterogeneous domain involving variety of components such as bond markets, equity markets, money markets etc. which vary from one to another in terms of risk and liquidity. With this heterogeneity, it is very difficult to measure financial integration by taking the entire financial market and estimating the convergence of asset prices of various segments (RBI, 2007). The present study, therefore, measures only the convergence of asset prices of equity markets of major economies of south Asia as representative to the whole financial markets of south Asia.

### **4. An Econometric Analysis of Stock Market Volatilities in Colombo Stock Exchange (CSE) in Sri Lanka**

**Majuwana Kankanamge Amendra Kapila** (MA, PDBA, Chief Internal Auditor, Sri Lanka)

This paper examines the relationship between stock returns and market volatility of stock market in Sri Lanka. Test results reject the random walk hypothesis of stock returns. Two types of GARCH models (symmetric and asymmetric GARCH) are used to model the volatility of stock returns. I use daily data ranging from January 2005 to January 2014 and divide into two time frames, i.e. during war until May 2009 and post war. Symmetric GARCH results reveal that returns volatility takes long time to die out in the post war period if shock compare to the war period. EGARCH model gives the negative asymmetric effect implying that the good news generates less volatility than bad news, but not more expressive compare to the mature markets. Asymmetric effect and other empirical evidence give the better platform to conclude that asymmetric EGARCH model perform better than symmetric GARCH model. I use daily trading volume as a proxy for the information flow to the market has no significant explanatory power for the returns volatility in Sri Lanka.



## DAY 2: FRIDAY, FEBRUARY 23

9:00 – 11:00 am: **Technical Session 3.a: International Macro**

### 1. Trade and Income Convergence: Empirical Evidence from the EU and the ASEAN

**Devasmita Jena** (Reserve Bank of India, (currently on deputation with Deputation with FSDC, MoF, India)

The objective of the paper is to provide a comparative overview of per capita income convergence in the EU and the ASEAN nations over the period 2000-2014 and empirically assess the role of trade on income convergence. To do so, panel data analysis is employed. The major finding of this paper is that trade seems to be an important catalysis for per capita income convergence in the EU and the ASEAN countries, with international trade having greater impact than inter-regional trade. The difference in impact of extra-regional trade and intra-regional trade is higher in the case of EU than in the case of ASEAN. In addition to trade, factor mobility (capital and labour mobility) and policy variable captured in government expenditure were also found to be determinants of per capita income convergence in the EU and the ASEAN.

### 2. Causal Interactions between Trade and FDI in SAARC Region: Evidence from Dynamic Panel Co-Integration

**Pravin Jadhav** (Institute of Infrastructure, Technology, Research and Management, Ahmedabad, India)

Rahul Nath Choudhury (Indira Gandhi National Open University, New Delhi, India)

Foreign direct investment (FDI) and Trade are considered one of the key strategies for achievement of competitive advantage by Multinational Enterprises (MNEs) in emerging countries. The exponential growth in the volume of trade and FDI in the South Asian Association for Regional Co-operation (SAARC) region in the recent past has motivated many researchers to study the relationship between FDI and Trade in SAARC region. The correlation between FDI inflow and trade in host country has been subject to rigorous research for recent years.

This study analyses the relationship between FDI and trade in SAARC countries using co-integration and Granger causality tests in panel data to understand whether the trade and FDI are complementary or substitute. i.e., whether a greater FDI inflow held by a nation is associated with decreases or increases of its exports and imports. This is an issue that has concerned policymakers for long time in the large industrial nations, who have worried about possible negative effects of FDI upon the nation's balance of payments and employment of its work force. A time period from 1991 to 2016 has been used. The result reveals that in case of SAARC region higher FDI inflows is leading to higher trade volume. The results also indicate a unidirectional causality from FDI to Trade, which could be a good tool to prioritize the allocation of resources across sectors to promote foreign direct investment to increase International Trade.

### **3. Foreign Exchange Intervention and Rupee Exchange Rate: An Empirical Investigation**

**Dr Sanjeev Gupta** (Central University of Himachal Pradesh, Dharamshala, India)

**Abdul Rishad** (Central University of Himachal Pradesh, Dharamshala, India)

Central bank intervention has a vital role in stabilizing the exchange rate and curbing the market uncertainties. This study empirically analysed the impact of intervention policies of Reserve Bank of India (RBI) in the foreign exchange market. The explosive growth of foreign exchange market and secret practices in intervention operation of RBI, inspired us to analyse the wider question of the power dynamics between intervention as a regulatory measure and volatility spill-over as an uncertainty factor in the context of Indian market conditions. This study analysed the aspect of RBI's foreign exchange intervention operation and its impact on the exchange rate level and volatility. GARCH (1,1) model with weekly data from April 2000 to March 2017 is used to investigate the issue. Study found that RBI intervention not only influences the exchange rate in the desired direction but also reduces the volatility in the market. Likewise it asserts that coefficients of the purchase show that, RBI's action to absorb the excess supply of foreign currency influenced the exchange rate and dampened exchange rate volatility. RBI is more concerned to prevent appreciation of rupee than its depreciation. It may be because of the necessity to prevent the rupee appreciation to maintain competitiveness for promoting export and capital flow. Statistically significant negative coefficient of good news variable point out its ability to appreciate rupee and curb the market uncertainty. Study discovered some evidence of leaning against the wind in RBI intervention operations. Key words: exchange rate, RBI, volatility, GARCH, asymmetric impact.

### **4. Determinants of Current Account Deficit in Sri Lanka: an ARDL approach**

**K.T.U.Niranjala** (University of Ruhuna, Sri Lanka, India)

The long term existing deficit in current account in Sri Lanka is a critical macroeconomic issue. Therefore, a deep understanding of the dynamic behavior of this deficit and in-depth analysis is important for economists and policy perceptions. This study intends to examine the key determinants of current account deficit (CAD) in Sri Lanka for the period of 1977 to 2016. Data are gathered from annual reports of Central Bank of Sri Lanka employed to an econometric framework. ADF test for Unit Roots and Auto Regressive Distributed Lag (ARDL) model for cointegration are conducted. Results indicate that government budget deficit, exchange rate, degree of openness, external debt and terms of trade have significant long run relationship with CAD in Sri Lanka. Hence the policy makers could focus their perception on these variables to formulate effective policies to have a sustainable external balance in the economy.

**1. Climate Change Impacts on Economic Growth: A Cross Country Analysis**

**Shilpy Verma** (Jawaharlal Nehru University, New Delhi, India)

This paper develops a theoretical model of endogenous growth where both human and physical capitals depreciate due to environmental pollution. The model allows for adaptation to environmental effects due to climate variation. We characterize the socially optimal path of an economy in which pollution is generated by physical capital accumulation, which affects the depreciation rate of both the types of capital. The harmful effects of pollution might be severe for countries vulnerable to climate change. We capture the vulnerability of a country through its effects on the core sectors covering human health, ecosystem services, infrastructure, human habitat and well being. The model is then tested empirically for a balanced panel of 62 countries, including both developing and developed countries, for the time period spanning 1995-2012. The results based on country fixed effect model reveal that GDP is lower for the countries that have lower level of technology, higher negative effects on human health and ecosystem services due to climate change and lower adaptation efficiency to climate change. Moreover, these negative effects are not symmetric across developing and developed countries. Based on the results, we can assert that the selection of appropriate adaptation actions to offset the predicted impacts of climate change and to restore welfare through climate resilience investments is highly desirable.

**2. Economic Growth Aftermath of Floods in Indian States**

**Yashobanta Parida** (Jawaharlal Nehru University, New Delhi, India)

The study examines economic growth in the aftermath of floods in 19 Indian states using state level flood disaster data covering periods from 1981 to 2011. The study employed Pooled Mean Group (PMG) procedure to estimate the flood impact on economic growth. The empirical results show that the flood impact creates a negative and significant impact on growth of per capita Gross State Domestic Product (GSDP) in the long-run. The econometric results further show that human capital loss and population affected resulted in lowering economic growth compared to other flood measures such as area affected and economic losses. However, growth determinants such as higher power consumption, additional capital development expenditure, better road infrastructure and urbanization have positive and significant impacts on economic growth in the long-run. Another interesting finding of the study is that better financial development to some extent helps to minimize flood impact on economic growth in non-special category states. Thus, results conclude that financial development plays a very significant role in disaster recovery as well as minimizing flood impact on economic growth in Indian states.

### **3. The benefits of improving urban lakes in mega cities: A Revealed and Stated Preference Approach**

**Prajna Paramita Mishra** (University of Hyderabad, Hyderabad, India)

In this study, we estimate the demand for improvements in the site quality of Hussain Sagar, a large lake in metropolitan Hyderabad, India. Using both revealed and stated preference approaches, we estimate that the park provides recreational benefits of USD 35 per person for on-site respondents and USD 14 for off-site respondents per visit to the park. Given that over 1 million people visit the lake and its parks every year, based on different scenarios, the annual estimated amenity value of the lake ranges from INR 1.76 billion (USD 29 million) to INR 3.48 billion (USD 58 million). Thus, we recommend that park authorities double the access fee to the park from the current INR 10 (USD 0.16). With this increase, the government can potentially earn USD 0.36 – 1.48 million in revenues per year, which will make it possible to improve the quality of the lake and its surroundings.

### **4. An Analysis of Adaptive Capacity on Climate Change Adaptation Options of Poor and Non-Poor Rice Farmers in Nepal**

**Niranjan Devkota** (Tribhuvan University, Nepal)

**Ram Kumar Phuyal** (Tribhuvan University, Nepal)

This paper examines the adoption capacity of climate change adaptation options available to the poor and non-poor rice farmers in order to protect them from the climatic variations. Multi-stage sampling technique has been applied to source respondents for the study and structured questionnaire techniques has been used to collect data from 773 households from seven districts – 3 from Terai and 4 from Hilly region of Nepal. Both subjective and objective approach to poverty has been applied in order to separate poor and non-poor and Farmers' Adaptive Capacity Index has been created to gauge rice farmers' adaptive capacity. Also, the logistic regression model is used to detangle the determinants of the adoption of climate change adaptation options among poor and non-poor farmers. The result reveals that, under objective approach, out of 773 household - 175 households based on CBN, 197 households based on CBS and 547 households based on World Bank \$1.90 indicators lies below the absolute poverty line and 264 households are falls in the category of relative poverty. Similarly, 264 households fall under absolute poverty line based on the subjective approach to measuring poverty. Farmers' adaptive capacity index shows the overall adaptive capacity of rural rice farmers is 0.480 which falls in moderate adaptive capacity. However, such adaptive capacity differs from Hill (0.467) to Terai (0.49) and poor (0.41) to non-poor (0.50). Commonly there are 12 adopted adaptation options by both poor and non-poor rice farmers in rural Nepal to protect themselves from climatic variations. But such adoption practice is more with non-poor rice farmers compared to poor and of the people lived in Terai region. The binary logistic regression model shows that factors such as total farmland, total income, access to credit and distance of road significantly influence poor farmers' choice of adaptation differs as per their capabilities. The findings suggest that poor farmers are more vulnerable to changing climate which needs immediate actions that can be greater investment, subsidies and institutional set up for the counseling and prompt service that helps to improve poor rice farmers' wellbeing.

**1. Job flows in the Indian Organised Manufacturing Industries**

**Diti Goswami** (Indian Institute of Technology Delhi, India)

Sourabh Paul (Indian Institute of Technology Delhi, India)

There has been an increasing concern regarding the slow growth of employment in organised manufacturing among the academicians and the policymakers. Several reasons like the increase in capital intensity, strict labour regulations, high wage share and low income elasticity of labour intensive goods have been held as the possible reasons. However, to understand the real source of low employability, we need to know the job dynamics. In this study, the heterogeneity in the unit level employment changes in the Indian organised manufacturing sector is explored. The study is performed using ASI establishment level longitudinal data from 2001-2013. This heterogeneity is analysed empirically in terms of simultaneous gross job creation and gross job destruction. This study finds high rates of churning in the job market where jobs are continuously reallocated among competing business units. Along with high job creation, job destruction is also an integral part in all the narrowly defined sectors. Thus the structural problem as identified in this paper will help in making precise policies directed to the areas as to those who create jobs and those who destroy jobs. Quantification of various theories behind the heterogeneity in plant employment dynamics reveal that both the selection effects due to passive learning and the between sector employment shifts can explain very minute proportion of the perceived job reallocation.

**2. A State Level Analysis of Trade Liberalization and Unemployment in India.**

**Nidhi Dhamija** (Hindu College, University of Delhi, India)

**3. Public-private wage differential in the Indian mining industry**

**Smrutirekha Mohanty** (Sardar Patel Institute of Economic and Social Research, Ahmedabad, India)

Chandan Kumar Mohanty (Jawaharlal Nehru University, New Delhi, India)

The aim of this paper is to estimate and decompose the wage gap between workers in the public and the private mines in India. We utilize the Blinder-Oaxaca and the Machado-Mata methods of decomposition. The estimated results indicate a wage premium for workers in the public sector mines. The results from the sub-sample wise decomposition line up with the main findings from the full sample. This study points out that the unexplained component of total wage differential declines moving up the conditional wage distribution. However, two exceptions are observed. For the sample of ‘female workers’ and ‘workers who don’t have any written job contract’, we find an increasing unexplained wage gap along the wage distribution. This suggests that workers at the top of the wage distribution in the aforementioned samples face more wage discrimination than those located at the bottom. The observations drawn from this study shed light on the impact of type of ownership on wage outcome of workers in the Indian mining industry.

#### **4. Understanding Wage Gap in India**

Subhasankar Chattopadhyay (IIM Indore, India)

**Suganya Balakumar** (IIM Indore, India)

How is the structure of wage gap changing in India? By using National Sample Survey (NSSO) Employment-Unemployment Survey (EUS) data for four rounds from 1999-00 to 2011-12, this study estimates the pattern of formal-informal and skilled-unskilled wage gap. The formal-informal wage gap at the overall level and at different quantiles of the wage distribution is estimated and decomposed into endowment effect and coefficient effect following a generalised Oaxaca-Blinder decomposition technique. Similar analysis is done across the Indian states and across the genders. The study finds the following: (i) True formal-informal wage gap is similar across years, though there is small kink in 2009-10, (ii) Skilled-unskilled wage gap experiences fluctuations, which decreases till 2004-05, increases upto 2009-10 and decreases thereafter (iib) True skilled-unskilled wage gap and actual skilled-unskilled wage gap is similar across the years (iiia) True formal-informal wage gap for males reflects the similar pattern as the overall true formal-informal wage gap, and the true formal-informal wage gap for females shows an erratic pattern (iiib) Skilled-unskilled wage gap for males reflects the pattern of the overall skilled-unskilled wage gap, and skilled-unskilled wage gap for females shows the opposite pattern, (iv) True formal-informal wage gap is higher in Sikkim, West Bengal, Jharkhand and Manipur, while skilled-unskilled wage gap is higher in the north-eastern states.

11:15 – 1:15 pm:      **Technical Session 4.a: Labour**

##### **1. Migration, Wages and Female Workforce Participation in Nepal**

**Ruzel Shrestha**

##### **2. Parental Migration and Children's Educational Performance: Evidence from Selected Regions in Sri Lanka**

**Priyanga Dunusinghe** (University of Colombo, Sri Lanka)

##### **3. Occupational Choice in Developing countries- A Conceptual Framework: Self-employment versus Wage Employment- How Does Discrimination Affect the Occupational Choice?**

**Tanima Banerjee** (University of Calcutta, West Bengal, India)

Traditional occupational choice models considered only two types of occupations where agents depending on their entrepreneurial abilities or on the level of their risk choose between entrepreneurship and wage employment assuming that individuals have enough access to capital and that there is no borrowing constraint. Hence, these models are mainly applicable for developed countries. These models are, however, not apt for less developed countries, like South Asian countries, where the choice of being an entrepreneur is often restricted by borrowing constraint or lack of wealth. On the other hand, a large section of the population in these less developed nations is self-employed. Hence, we need a different

conceptual framework to understand the occupational choices of people living in these nations. In existing theories, richer people get higher loan against the existence of high level of collateral, and become entrepreneurs and earn high. On the other hand, people located at the middle level of wealth distribution receive smaller loans and choose self-employment that involves low-scale production process. People who join wage employment earn the least level of income in this model.

However, empirical evidences from less developed nations tell a different story where wage employment offers higher income than self-employment. Even in this paper, we have documented empirical findings for India and shown how self-employed people who do not hire any additional workers are at the lowest end of income distributing with wage labourers and entrepreneurs at the middle and highest end of income distribution, respectively.

To justify these findings for less developed countries that are different from what existing theories predict, we built a conceptual in this paper. We used a partial equilibrium framework and made some assumptions about capital constraint, wealth possession, and other conditions prevailing in less developed nations. In this model, human capital plays an important role in the determination of occupational choice. Given lack of or absence of necessary collateral, people make their occupational choice on the basis of their human capital possession and capital availability. We considered a dual sector economy comprising of unskilled and skilled sectors. We have shown that in both the sectors, self-employment that hires no labourer generates lower level of income than wage employment. We have also extended this framework to incorporate labour market discrimination based on gender, race, religions, etc. that is highly prevalent in South Asian Nations in order to understand how discrimination changes occupational choices of people.

#### **4. Labor Market Engagement and the Health of Working Adults: Evidence from India**

**Archana Dang** (Delhi School of Economics, University of Delhi, India)

Pushkar Maitra (Monash Business School, Monash University, Clayton Campus, Australia)

Nidhiya Menon (Department of Economics and International Business School, Brandeis University, Waltham USA)

Driven by rapid income growth, labor market transitions in the nature of jobs, and lifestyle factors, there has been a widespread increase in rates of overweight and obesity in many countries. This paper examines the effect of occupational engagement and work intensity on the weight of urban working women and men in India. Using nationally representative data, a variety of specifications that reflect different definitions of work, and empirical methods that correct for the influence of unobservable, we document that labor market inactivity is positively associated with BMI. We offer policy recommendations that may help mitigate some of these unintended consequences. Our paper builds on the fairly limited evidence on the relationship between labor market engagement and health in developing countries.

**1. Rethinking Health System Financing: Rejuvenate Public Provisioning**

**Dr. Shailender Kumar Hooda** (Institute for Studies in Industrial Development, New Delhi, India)

The healthcare system in low- and middle-income countries is financed largely through out-of-pocket (OOP) payments. This is one of the most inequitable forms of healthcare financing, posing a barrier to access (Berman et al 2010), plunging a sizeable section of society—even the well-off—into poverty and impoverishment, and leading to a direct loss of a household's well-being (Wagstaff and van Doorslaer 2003). In order to ensure equitable access to healthcare and protect households from the devastating consequences of OOP payments, health sector reforms in most countries have focused on strategies to achieve universal health coverage (UHC). An effective financing strategy is considered the fundamental pillar of an efficient healthcare system, ensuring equitable and affordable healthcare services. Supply- and demand-side health financing strategies are generally discussed for universal entitlement of healthcare services to every citizen. A supply-side financing strategy (SFS) strengthens essential primary, secondary and tertiary healthcare services, financed through general taxation. Under SFS, health services are provided through the government healthcare system. One of the major strengths of SFS is that it provides universal healthcare services almost free or at low cost at the point of delivery to all its citizens. In addition, SFS can provide comprehensive services to the remotest areas, if implemented effectively. The demand-side financing strategy (DFS), on the other hand, promises to enable health service access from public and private providers by providing financial protection through health insurance, such as pro-poor or social health insurance schemes. The aim of this paper is to identify the SFS and DSF strategies prevailing in India and examine their combined and relative effectiveness.

**2. Influence of socioeconomic and mother-child care variables on childhood immunization in India (2002-2012)**

**Nit Ranjan** (Jawaharlal Nehru University, New Delhi, India)

In this paper, we studied the influence of different factors on the immunization level in India from 2002-2012 and tried to analyze the improvement in this period. For the study purpose, secondary data from DLHS (II, III & IV) and AHS, covering the time period 2002-2012, has been primarily considered. Though, India is improving at the overall level, but it is still lagging far behind the immunization target. Full immunization level has increased overall and increase in immunization coverage is the prominent one, but the proportion of partial immunization is quite significant. The slow progress in enhancing the immunization status of children is the result of complex nature of different factors. This study found that the impact of demographic variables on the immunization level has reduced drastically, while the socioeconomic and mother-child care variables continue to play dominant role in influencing the immunization outcome of the child. Muslim religious group children and ST community's children continue to have lower immunization level. Increase in mother's education level helps in improving the immunization status of the child. And, improvements in interaction with health institutions like ANC visits, mother's TT vaccination and facilitated by community health worker have positive associations in improving the immunization status of children.



### **3. Caste Discrimination in Provision of Schooling in Rural India**

**Neha Bailwal** (Indian Institute of Technology Delhi, India)

**Sourabh Bikas Paul** (Indian Institute of Technology Delhi, India)

In this paper we intend to gather evidence of caste discrimination in provision of public schools in rural India. We estimate the extent of caste gaps in accessing public schools using two rounds of census data (2001 and 2011). We find that the villages dominated by lower caste groups have lower chance of having public schools compared to the villages inhabited by higher castes. The students in villages with high concentration of lower caste communities also travel farther to reach the nearest school. These results are robust to multiple variable regression estimation even after controlling for important village level characteristics. The main and central message of this paper is that there is a supply side discrimination in provision of public schools in rural India.

### **4. Mothers' agency and gender bias in investments in adolescent education in rural India**

**Sunaina Dhingra** (Delhi School of Economics, India)

**1. Empirical Evidence on access to finance and the economic performance: An analysis of firm in micro small medium enterprise (MSME) sector in India.**

**Motiniva Nayak** (Jawaharlal Nehru University, New Delhi, India)

The purpose of the study is to explore impact of the characteristics of board of directors (BoD) structure on banking performance indicators of banking sector in Bangladesh. The sample size of the study consists of 31 banks in Bangladesh with complete profile of total 294 directors of the banks. Return on assets (ROA), return on equity (ROE), non-performing loan (NPL) and capital adequacy ratio (CAR) of the 31 banks have been selected as measures of banking performance. Besides, BoD structure of world's top 5 biggest banks which have reached into these positions due to their better performance have been taken into consideration to depict the international best practices analyzing the complete profile of 66 board members of the banks for making comparison. The research uses three categories of characteristics of BoD structure namely board composition, educational qualification, and professional experience. Total 13 characteristics of BoD have been considered under these 3 categories. Regressions have been performed separately for ROA, ROE, NPL and CAR. The research paper provides empirical evidence that size of board of directors matters in explaining ROA. Besides, existence of civil service holders as member of BoD matters in explaining ROE, NPL and CAR. The study will support policy makers to develop and execute proper amendments toward the transition into good corporate governance and better banking performance. Literatures are still rarely found that focus on the impact of board of directors structure on bank's performance in Bangladesh. Hence, this study seems first to address such issue in the context of a developing country as Bangladesh covering 13 characteristics of BoD.

**2. Who has Microcredit Really Helped? A Look at Women's Empowerment Using Evidence from Rural India**

Hangma Basumatary (Sikkim University, India)

**Prabin Chauhan Chhetri** (Sikkim University, India)

Rajesh Raj S.N (Sikkim University, India)

In this study, we examine the impact of microcredit on time allocation outcomes for men and women, and rely on this analysis to draw conclusions on the relationship between microcredit and women's empowerment. The study is based on household survey data collected from rural India. Data were collected through a questionnaire survey from 240 households in the Udalguri district of Assam in India. The impact of microcredit on economic empowerment of women is examined by comparing the time allocation outcomes for men and women belonging to households participating in self-help groups; with outcomes for men and women belonging to the control group, that is, those who are not participating in self-help groups; and the difference between these groups is ascribed to microcredit. Besides employing linear-in-the-variables estimation to estimate time use regressions, we also check the robustness of our results using instrumental variable regression model and tobit model. Our findings from time use regressions suggest little evidence to endorse the linkage between microcredit and women's empowerment as women continue to spend most of their time in wage and non-market work; being part of a credit group fails to change this reality. On the other hand, we also find that men in the participating

households have succeeded in reallocating their work hours toward self-employment because of their wives' participation in the credit program. This points to the fact that though the microcredit program is targeted at women, its real beneficiaries are men.

### **3. The role institutional Innovations in financial inclusion: Evidence from India's banking sector**

**Kiran Kumar Kakarlapudi** (Centre for Development Studies, Kerala, India)

In the context of growing emphasis on fostering financial access to the excluded sections, this paper analyses the effects on two major institutional innovations; bank nationalization and financial sector reforms in shaping the pattern of financial inclusion in India during 1972-2014. Going beyond one-dimensional measure of financial inclusion, drawing from the measure proposed by Chakravarty and Pal (2010), this study constructs a measure of financial inclusion index using six dimensions of inclusion representing both access and use indicators. Further, a separate financial inclusion index for rural and urban areas is constructed to explore the differences. The regression analysis shows positive effects of both the institutional innovations on financial inclusion. However, the first institutional intervention with its objective of social banking contributed to the growth of banking in rural areas, backward states and productive sectors. The second institutional innovation, reforms, with its objective of efficient banking, contributed to the faster growth of banking in urban, developed regions and allocation of services to high-return sectors. The results show unequal effects of reforms on financial inclusion as manifested in increase in inter-states inequalities, rural-urban inequalities and concentration of banking services. Based on the findings, the study, therefore, calls for increased role of state create institutional architecture for inclusive financial systems in order to foster access to financial services in rural India.

### **4. Board of Directors Structure and Bank's Performance: Evidence from Bangladesh**

**Mohammad Saiful Islam** (Leading University, Bangladesh)

**Sharmin Akter Eva** (Voice of South Bangladesh, Bangladesh)

The paper has examined whether the Micro Small and Medium Enterprises (MSMEs) are actually constrained by their inadequate access to finance as they have cited shortage of capital as one of the most important problem, based on an empirical analysis of data from National Sample Survey Organisation's survey on unorganized manufacturing and Annual Survey of Industry data on industries. Two-way fixed effect method is applied to the analysis of panel data econometric model. It has looked into role of size and age of firm in weakening the finance problem faced by the firm and its consequential economic performance. The main findings are Micro and Small firms are financially distressed and constrained by inadequate access to finance, such condition of firm is affecting its economic performance. The financial constraint is providing explanation to the dynamics of size and economic performance of firm. The ability of the firm to weaken its liquidity constraints and to enhance access to external financing is a function of its size and age.

2:00 – 4:00 pm:

## **Technical Session 5.a: Health and Education**

### **1. Parents to Son, why not from Parents to Daughter? Intergenerational Transfers of Educational Years and Streams in India**

**Indrajit Bairagya** (Institute for Social and Economic Change, Nagarbhavi, Bangalore, India)

Rohit Mukerji (Institute for Social and Economic Change, Nagarbhavi, Bangalore, India)

The objective of the paper is to examine the issue of gender discrimination in intergenerational transfers of education in India both in terms of years of education as well as the streams/disciplines of education. It also aims to assess the academic performance of children at the college level examination belonging to the same educational stream as their father, compared to those who were not. The results, based on India Human Development Survey (IHDS) data of the individuals at the nationwide, and using ordered probit model and Oaxaca-Blinder non linear decomposition method for ordered probit model, show greater likelihood of intergenerational transfer for males than for females from both mother as well as father, proving the presence of gender discrimination in the intergenerational transfers of education in India when it came to transfer of years of education. Further, the likelihood of the children performing better academically at the college level was higher for students who belonged to the same academic stream as their father.

### **2. Quality of Schooling, Child Quantity-Quality Trade-off, Technological Progress and Economic Growth**

**Swati Saini** (Jawaharlal Nehru University, New Delhi, India)

An overlapping generations version of an R&D-based growth model à la Diamond (1965) and Jones (1995) is built to examine how improvement in quality of schooling impact technical progress and long run economic growth of an economy by influencing fertility and education decisions at household level. The results indicate that improvement in schooling quality triggers a child quantity-quality trade-off at household level when quality of schooling exceeds an endogenously determined threshold. At the household level, parents invest more in education of children and have lesser number of children in response to improvement in quality of schooling. This micro-level tradeoff has two opposing effects on aggregate human capital accumulation at macro level. Higher investment in education of a child stimulates the accumulation of human capital which fosters technical progress but the simultaneous decline in fertility rate reduces the total factor productivity growth and economic growth by contracting the pool of available researchers. The first effect prevails over latter only when quality of schooling is higher than the threshold.

### **3. Knowledge is Power: School Construction & Intergenerational Human Capital**

**Naveen Sunder** (Cornell University, USA)

This paper examines how a school building program in India impacted educational and cognitive outcomes of the children of program beneficiaries. Beginning in the early 1990s, India implemented a national school building programme which disproportionately benefited districts that had low female literacy levels at the time. Records indicate that the programme covered nearly 375,000 schools and benefited more than 50 million children across 271 programme districts. Using a regression discontinuity approach, I exploit spatial and temporal variation to estimate the intergenerational effects of improvements in schooling opportunities experienced by women under this scheme. For the analysis, I combine data from several sources: I use individual-level data from multiple nationally representative datasets, government archival data on programme implementation at the district-level, and detailed administrative data on school infrastructure. I find that children whose mothers were impacted by this programme had higher cognitive abilities as measured by scores on standardized math, reading and English tests. These children also experienced positive impacts on enrolment and grade progression. While I observe that these educational benefits exist for children of both genders, the impacts on test score for girls is between 13-32 percentage points higher than the corresponding effect for boys. I explore different mechanisms through which school construction might have led to the child-level effects I observe, such as maternal education, health and healthcare utilization. The findings of this paper provide evidence on how the expansion of school infrastructure could have substantial long term impacts on cognitive and educational outcomes that extend beyond the generation that is directly impacted by the school construction.

### **4. Household Income Dynamics and Investment in Children: Evidence from India.**

Sowmya Dhanaraj (Madras School of Economics, India)

Christy Mariya Paul (Madras School of Economics, India)

**Smit Gade** (Good Business Lab)

Shocks to households in developing countries impact the investment in the education of children. In this paper, we explore the effects of various income and expenditure shocks on educational investment and cognitive outcomes in children. We use three rounds of household-level panel data from Young lives survey conducted in two southern states of India, Andhra Pradesh and Telangana. We use Dynamic Panel data model using system General Method of Moments (GMM) estimator for investigating the impact of various income and expenditure shocks on children's education and cognitive abilities. We find that idiosyncratic shocks like paternal health shocks and livestock loss translate into lower inputs of children's education which in turn reduce their cognitive ability captured through vocabulary and mathematics tests. We also find that these shocks mainly affect children's development through decreased time spent in school.

2:00 – 4:00 pm:           **Technical Session 5.b: Rural Development and Human Development**

**1. India’s MGNREGA success boils down to few States, fewer Districts and fewest Blocks**

**Nitin A. Lokhande** (Indian Institute of Technology, Bombay, India)

HariPriya Gundimeda (Indian Institute of Technology, Bombay, India)

Given its demographic dividend, India is badly in need of strategies for generation of employment opportunities for its rural youth. The current rural unemployment rates implies that India needs rural employment guarantee schemes like MGNREGA more than ever to support its growing unemployed rural population. However, official data shows that satisfactory performance which we would call “success” of MGNREGA boils down from few States to fewer Districts to fewest Blocks. We analyze and interpret the official MIS data of the scheme. The study has two parts – first, a State level performance analysis and second, a District and Block level performance analysis of an average performing State. While only 4 States of 29 are overall efficient and performing at the optimum scale, it is observed that in majority of Districts of an average performing State more than 40% of Blocks are performing at unsatisfactory levels.

**2. Southern Super Models: Human Development Trajectories of Sri Lanka, Kerala and Tamil Nadu**

**Swati Narayan** (Tata Institute of Social Sciences, Mumbai, India)

**3. Mining with Community: Closure and the Issue of Livelihood**

**Sujit Kumar Mishra** (Council for Social Development, Hyderabad, India)

The “state-centric” view of development in mineral sector generally gives birth to the network of “state, mine and the community” where the role of the mineral sector in adding large revenue to Indian economy is enormous. Sound institutional instruments and its proper implementation are the main factors behind its sustainability. However, these mechanisms are limited to the extraction stage of a mine, giving very little space to other important stages – especially closure. The mining communities are worst affected owing to mine closure since they derive their livelihood directly or indirectly from it. With this in background, the study attempts to analyze the shift in the livelihoods of people during and post-mining operations. The results based on data collected from different types of stakeholders of Hindustan Zinc Limited (HZL), Sargipalli, Odisha of 24 mining villages; and on the basis of available evidence of documents and reports, interviews with officials of the mine and the communities, show negative impact of closure in terms of decreased purchasing power; under employment; the major impact is found to be on the losses of livelihood of small businesses like cycle repairing shops, grocery shops, weekly market and hotels; the paper also gives an indication of a special voluntary retirement scheme (VRS) of the employees which was a conspiracy. All this happened because of the lack of transparency between the planners and the villagers. Lastly, the study has attempted to analyze the various key factors that bring differences in outcome, which have a bearing on policy.

#### **4. Poverty Estimates on Multiple Dimensions in India**

**Jaspreet Kaur** (Punjabi University, India)

Dr. Anupama (Punjabi University, India)

The measurement of poverty has been under a continuous autopsy from the researchers and policy makers. Income (consumption expenditure) has been used as a proxy variable to understand and measure poverty from many years. Recently due to increasingly theoretical and methodological discussions, there has been an increase in poverty awareness and interest in its measurement across different regions of the world. Consequently, the blemishes in the use of income as the only poverty measure have urged researchers and policy makers to explore various diverse dimensions of poverty that add to, or substitute for, income measure. These dimensions comprise namely the life expectancy, caloric intake, height and weight, formal education, literacy, employment, quality of housing and access to services and income etc. Thus it is widely acknowledged among the economists that poverty is a multifaceted phenomenon with highly complex causes and consequences. Poverty is not a monetary phenomenon only; it can be in the human capital attainments, living conditions, nutritional status, ownership of assets etc. Thus, the present study by using the novel methodology has tried to capture the incidence and intensity of poverty on uni-dimension as well on multiple dimensions in India. This study has scrutinised the extent and the pattern of poverty on multiple dimensions, using the unit level data from National Sample Survey Organisation (NSSO) for time period 1999-2000 to 2011-12. Since the results shows reduction in poverty levels both at national and state levels during study period, but at the same time this decline in official poverty rates seems to be bogus. In this perspective the objective of the paper is firstly to measure the poverty on multiple dimensions and secondly to have a look at the actual picture of poverty through different lens.

**1. Alcohol Ban and Crime: The ABC's of the Bihar Prohibition**

Kalyani Chaudhuri (Indian School of Business, India)

Natasha Jha (Indian School of Business, India)

Mrithyunjayan Nilayamgode (Indian School of Business, India)

**Revathy Surya Narayana** (Indian School of Business, India)

Since a prohibition is not merely a shock in the supply of alcohol but also a sudden change in law enforcement, a priori it is hard to theorize how a prohibition might affect the incidence of crime. This paper studies this question in the context of a statewide liquor ban in the Indian state of Bihar. We study the effect of the ban on 9 categories of crime and find a consistent decline in the post period for all categories, with a significant decline in violent crimes such as murder (21 %) and robbery (19 %). We test for a differential impact of the ban in border and interior districts of Bihar and find significantly stronger declines in crime in the interior districts in the post-ban period, with murder and rape declining by an additional 17% and 22% respectively. The results are in line with the inherent porous nature of Indian state borders that facilitates cross-border movements of alcohol or alcohol-seekers. Using the neighboring state of Jharkhand as a control, we employ a double difference strategy and gain an insight into the shift in the crime composition after the ban. While violent crimes such as murder and robbery continue to exhibit a significant decline, the incidence of nonviolent crimes or crimes requiring planning and organization, such as kidnapping, riot, and theft, has gone up after the ban in Bihar as compared to Jharkhand. Our paper adds to the literature by finding a reduction in violent and alcohol-induced crimes in the post ban period, as well as a shift in the pattern of crime towards crimes requiring greater organization, both of which are consistent with impaired cognitive abilities on account of alcohol consumption. Our results hold in the presence of a battery of robustness checks and alternate estimation methods.

**2. Terrorism in a game theoretic framework**

**Aishwarya Harichanadan** (Jawaharlal Nehru University, New Delhi, India)

I have used game theory to formulate the problem of terrorism. Taking the terrorist group as one of the players and the government as another, I have tried to incorporate political stability into the analysis. I have also tried to analyse the policy prescriptions by distinguishing between the terrorist groups as short term and long term. The paper also addresses the question whether the government should negotiate or not with the terrorist groups. It goes on to look into the expenditure by government on anti-terrorist activities depending upon the incidence of attacks and the political stability.



### **3. A study of Social Capital in Bhutan**

**Phuntsho Choden** (Thimphu, Bhutan)

### **4. Performance of Indian Food Processing Industry in Post Liberalized Era: Case of Sugar and Fruits and Vegetables Processing Industry**

**M. L. Nithyashree** (Division of Agricultural Economics, ICAR-IARI, New Delhi, India)

Priyanka Upreti (Division of Agricultural Economics, ICAR-IARI, New Delhi, India)

Alka Singh (Division of Agricultural Economics, ICAR-IARI, New Delhi, India)

Food processing industry being a sunrise sector in India, in terms of value addition, employment generation and raising income of the stakeholders in general and farmers' income in particular. Thus it necessitates knowing about performance of Food processing industry in terms of growth, productivity and efficiency. For in depth analysis, two food processing industry in India viz.: sugar manufacturing (oldest agro-based industry of the country after textiles) and fruit and vegetable processing industry (relatively nascent in origin) were chosen. In particular the present study aims (i) to examine trends in output growth, employment, capital formation and factor productivity in sugar manufacturing and fruit and vegetable processing industries of India, (ii) to estimate technical change and total factor productivity growth trends; and (iii) to analyse firm level technical efficiency across states and firm-sizes in these two industry segments.. Study compiled panel (1991-2013) and cross sectional (2012-13) data for industry and firm-level analysis respectively from Annual Survey of Industries published by the Central Statistical Organization (CSO), Ministry of Statistics and Programme Implementation, Government of India from Annual Survey of Industries. Growth of factory number and employment was declined by 1.95 and 1.22 per cent respectively for sugar industry. Reduced growth rate of sugar industry has not affected in the way of value generation and it shows that gross value of output and gross value added grown by 5.48 and 3.34 per cent respectively. In case of fruits and vegetables processing industry, factory number and employment increased by 7.70 and 6.76 per cent respectively during 1991-2013. During the same period it has grown by 13.80 and 14.77 per cent in terms gross value of output and gross value added respectively. Total factor productivity (TFP) calculated by Malmquist productivity index shows that, TFP growth for sugar as well as processed fruits and vegetable industries raised to the tune of 3.3 and 5.6 per cent respectively from 1991-2013. TFP analysis for the sub periods indicated that, sugar industry benefited more in period I (1991-2001) with high TFP growth of 8.4 per cent. However in case of fruits and vegetable processing, technology change contribution is taken place in recent years with TFP growth of 7.8 per cent .i.e. in period II (2001-13) compared with 1.8 per cent TFP growth in period I. Technical efficiency score for sugar industry was estimated as 0.69 as against 0.74 in case of fruit & vegetable processing sector. Across the size, firms revealed wide range of resource use efficiency and it ranges from 0.53 to 0.81 for sugar and from 0.60 to 0.93 for fruits and vegetable industry. Finally, state-wise technical efficiency estimates indicated highest technical efficiency in Karnataka (0.87) and lowest in Maharashtra (0.68) for sugar industry. In case of fruits and vegetables, Maharashtra showed highest technically efficiency (0.83) and lowest is Tamil Nadu (0.63). Therefore, study clearly points out the need for efficiency improvement at all firm-size categories in selected states in order to harness the potential of existing technology and available resources optimally.