ISEC Diamond Jubilee Conference on Statistics, Economic Development and Public Administration

ISECDJCD-11

Indian Statistical Institute, 7, S. J. S Sansanwal Marg
New Delhi-110 016

February 11-12, 2011

Program and Abstracts

Diamond Jubilee (1950-2010) of the

INTERNATIONAL STATISTICAL EDUCATION CENTRE

ISECDJCD-11

Organized by
Indian Statistical Institute, Delhi Centre

Contents

Welcome……..3
Local Organizing Committee...……4
Overview of Program……5
Inaugural Session & Programme Schedule..…..……7
Abstract of the papers ……11
Some Full papers……..…31
Exhibition Contents……142

Welcome to ISECDJCD-11

On behalf of the organizers of *ISECDJCD-11,* I welcome you in the *ISEC Diamond Jubilee Conference on Statistics, Economic Development and Public Administration* at Indian Statistical Institute, Delhi Centre. This conference will be organized as a part of Diamond Jubilee Celebrations of the International Statistical Education Centre (ISEC, for details visit http://www.isical.ac.in/~isecweb/) and it intends to review the current issues in the theory and applications of *Statistics, Economic Development and Public Administration.*

This conference aims at discussing new developments and promises to build an interaction between the users and researchers by bringing them together to address the important issues in *Statistics, Economic Development and Public Administration.* The conference topics include (but not limited to):

- Population Statistics: Problem & Prospects.
- Relation of Statistics and Public Administration.
- Issues in Economic Development: Developed vs. Developing Countries.

More information about social events will be available to you at the time of registration. You may also contact me for further details about technical sessions, social events and Taj Mahal trip.

S. K. Neogy
Convener Local Organizing Committee

Local Organizing Committee

Professor R.B. Bapat (Chairman)

Dr. N.K. Khatri

Professor Isha Dewan

Shri S.S. Sethi

Shri S.A. Srinivas

C E (A & F), ISI Kolkata

Professor P. Pal Choudhury

Professor Manoranjan Pal

Professor Premananda Bharati

Professor Ayanendranath Basu

Dr. Buddhadeb Ghosh

Mrs. Bhomra Chatterjee

Professor S.K. Neogy (Convener).

ISEC Diamond Jubilee Conference on Statistics, Economic Development and Public Administration

Program Overview

Date: February 11, 2011

Time	Event	Venue
08:00-08:45	Registration	Indian Statistical Institute Delhi
10:00-10:55	Inaugural Session	*Vasuki Auditorium**
10:55-11:15	Tea & Registration (contd.)	Exhibition hall, *Vasuki Auditorium*
11:15-11:30	Display on ISEC Activity & History	Exhibition hall
11:30-13:00	Technical Session-I	*Vasuki Auditorium*
13:00-14:00	Lunch	Exhibition hall
14:00-16:00	Technical Session-II: Population Statistics: Problem & Prospects	*Vasuki Auditorium*
16:00-16:30	Tea	Exhibition hall
16:30-18:00	Technical Session-III: Population Statistics: Economic Development and Public Administration: Problem & Prospects	*Vasuki Auditorium*
18:00-18:30	Tea & Snacks	Exhibition hall
18:30-19:30	Cultural Programme	*Vasuki Auditorium*
20:00	Conference Dinner	India International Centre

Note: ****Bus leaves from Indian Statistical Institute on February 11, 2011 for Vasuki Auditorium at 08:30am***

Program Overview (Contd.)

Date: February 12, 2011

Time	Event	Venue
10:00-11:15	Technical Session-IV: Population Statistics & Economic Development	*ISI Auditorium***
11:15-11:30	Tea	*ISI Auditorium Lawn*
11:15-11:30	Display on ISEC Activity & History	Conference Hall (Admin. Building)
11:30-13:30	Technical Session-V: Economic Development and Statistics	*ISI Auditorium*
13:30-14:30	Lunch	ISI Guest house Lawn
14:30-16:00	Technical Session-VI: Population Statistics, Economic Development and Environment	*ISI Auditorium*
16:00-16:30	Tea	*ISI Auditorium Lawn*
16:30-17:00	Concluding Session	*ISI Auditorium*
17:00-17:30	High Tea	*ISI Auditorium Lawn*

***** *Note: Located near Library Building of Indian Statistical Institute, Delhi Centre***

February 13, 2011 **Time: 07:30 –19:00 : *Taj Mahal Trip***

ISEC Diamond Jubilee Conference on Statistics, Economic Development and Public Administration

February 11-12, 2011

Inaugural Session Details

February 11, 2011 Time: 10:00 -10:55 Venue: ***Vasuki Auditorium****

1.	**Welcome address: *Shri R. B. Bapat*,** *Head, Indian Statistical Institute Delhi Centre (05 minutes)*
2.	**Address by *Shri Pabitra Pal Choudhury,*** *Member Secretary, Board of Directors, ISEC (5 minutes)*
3.	**Address by *Shri Bimal K. Roy*,** *Director, Indian Statistical Institute (5 minutes)*
4.	**Address by Shri *T. C. Anant,*** CSI & Secretary Ministry of Statistics and Programme Implementations, Govt. of India *(10 minutes)*
5.	**Address by *Shri Pronab Sen,*** *Principal Adviser, Planning Commission and Former Chief Statistician of India (10 minutes)*
6.	**Address by *Shri M. S. Gill,*** *Hon'ble Minister of Statistics and Programme Implementation (IC) (15 minutes)*
7.	**Vote of thanks by: Shri *S. K. Neogy*,** *Convener Local Organizing Committee (5 minutes)*

Note: ***Bus leaves from Indian Statistical Institute on February 11, 2011 for Vasuki Auditorium at 08:45am***

Tea break: 10:55 – 11:15

February 11, 2011 Time: 11:15 -11:30 Visit to Exhibition hall

Technical Sessions Details

February 11, 2011 Time: 11:30 –13:00 Venue: ***Vasuki Auditorium***

Technical Session –I: Keynote Address

Chairman :*Professor Ashish Bose* **(**Honorary Professor, The Institute of Economic Growth)

1.	***Professor Kaushik Basu*** *(Chief Economic Adviser, Government of India, Ministry of Finance & C. Marks Professor (on leave) Department of Economics, Cornell University)* Indian Economy: The Challenges Ahead
2.	***Mr. Ronald Luttikhuizen (Senior Economist/Statistician, World Bank)*** Virtual Statistical System, A Knowledge Portal To Support Statistical Capacity Building

*Vasuki Auditorium, Lok Kala Manch, 20, Lodhi Institutional Area, Lodhi Road, New Delhi - 110 003.
Vasuki Auditorium is located in the pristine environs of Lodhi Institutional Area (500 Mtrs. away from India Habitat Centre and located in the lane behind the SAI Baba Temple).

Lunch break: 13:00 – 14:00 Venue*:* *Exhibition hall*

Technical Session –II: Population Statistics: Problem & Prospects

February 11, 2011 Time: 14:00 –16:00 Venue: ***Vasuki Auditorium***

Chairman :*Professor Bimal Roy* (Director, Indian Statistical Institute)

Session Organizer: *Professor S. K. Neogy* (Indian Statistical Institute, Delhi Centre)

1.	***Professor R.B.Bhagat*** (International Institute for Population Sciences, Mumbai) *Population Statistics in India: A Historical Perspective*
2.	***Professor K.S. James*** (Population Research Centre, Institute for Social and Economic Change, Nagarbhavi, Bangalore) *India's Demographic Divided: Concerns and Evidence*
2.	***Professor Sayeed Unisa*** (Department of Mathematical Demography and Statistics, International Institute for Population Sciences,Mumbai) *Population Situation of India: Problems and Prospects*
4.	***Professor Manoj Dixit*** **(**Department of Public Administration, Lucknow University Lucknow) *Policy Analysis: A Practical Link with Research and Statistics*

Tea break: 16:00 – 16:30

Technical Session –III: Population Statistics, Economic Development and Public Administration: Problem & Prospects

February 11, 2011 Time: 16:30 –18:00 Venue: ***Vasuki Auditorium***

Chairman : *Dr. Pronab Sen, (**Principal Adviser, Planning Commission and Former Chief Statistician of India* **)**

Session Organizer: *Mr. K D Maiti (*DDG, NASA)

1.	***Professor P.K. Chaubey*** (Indian Institute of Public Administration, I.P.Estate, Ring Road, New Delhi-110 002) Statistics and Public administration
2.	***Professor Laishram Ladusingh*** (Department of Mathematical Demography & Statistics, International Institute for Population Sciences, Mumbai-88) The role of familial transfers in supporting the lifecycle deficit in India
3	***Dr. Rudra Prakash Pradhan*** (V. G. School of Management, Indian Institute of Technology Kharagpur,) Dynamic Panel Data Model and The FDI Determinants: Revisited in India

Tea break: 18:00 – 18:30

Time: 18:30-19: 30 Cultural Programme Venue: ***Vasuki Auditorium***

Time 20:00 Conference Dinner **Venue: India International Centre**

Technical Session –IV: Population Statistics & Economic Development

February 12, 2011 Time: 10:00 –11:15

Venue: ISI Auditorium, Indian Statistical Institute Delhi Centre

Chairman: ***Professor Ayanendranath Basu*** **(**Indian Statistical Institute, Kolkata)

1.	***Dr. Soumyadip Chattopadhyay*** (Department of Economics and Politics, Visva-Bharati University, Santiniketan, India.) Decentralized Urban Governance in West Bengal: Does Rhetoric Match Reality?
2.	***Dr. Sharda Kumari*** (Rajkumar Goel Engineering College, Ghaziabad) & Dr. Kadambini Kumari (Indira School of Business, Pune) Comparative analysis of Developed vs. Developing Countries on varies Economical parameters
3.	***Dr. Biswajit Mandal*** **(**Visva-Bharati University, Santiniketan, India and Professor ***Sugata Marjit*** Centre for Studies in Social Sciences, Calcutta, India and The Leverhulme Centre for Research on Globalisation and Economic Policy University of Nottingham, UK.) Economic Reform, Extortion and the Informal Sector

Technical Session –V: Economic Development and Statistics

February 12, 2011 Time: 11:30 –13:30
Venue: ISI Auditorium, Indian Statistical Institute Delhi Centre

Chairman: ***Professor Atul Sharma***

Session Organizer: ***Professor Bharat Ramaswami*** (Indian Statistical Institute, Delhi Centre)

1.	***Professor Indira Rajaraman,*** Ex-member, Finance Commission and Honorary Visiting Professor, Indian Statistical Institute, Delhi) Core Issues in a Statistical System
2.	***Professor K. Kanakasabapathy*** (Director, EPW Research Foundation, Mumbai) Financial Sector Statistics and Development Issues
3	***Professor R. Nagaraj*** (Indira Gandhi Institute of Development Research, Mumbai) Quality of India's Economic Statistics: A Skeptical Note

Lunch : 13:30 – 14:30 **Venue:** Indian Statistical Institute Guest house

Technical Session –VI: Population Statistics, Economic Development and Environment

February 12, 2011 Time: 14:30 –16:00
Venue: ISI Auditorium, Indian Statistical Institute Delhi Centre

Chairman : ***Professor*** **R. B. Bapat** *(Indian Statistical Institute, Delhi)*

Session Organizer: ***Professor M. Pal*** *(Indian Statistical Institute, Kolkata)*

1.	***Dr. Anugula N. Reddy*** (Department of EMIS, NUEPA) School Educational Statistics in India: Changing Status and Persisting Problems
2.	***Mr. Arijit Das*** (Center for Economic Studies and Planning, Jawaharlal Nehru University, New Delhi) Sustainable ecosystem in mid-Himalayan region and social cooperation
3.	***Dr. B. Ghosh*** *(Indian Statistical Institute, Kolkata) Science, Technology and Environment*

Tea break: 16:00 – 16:30

Venue: ISI Auditorium, Indian Statistical Institute Delhi Centre

February 12, 2011 Time: 16:30 –17:00 : Concluding Session

Professor R. B. Bapat **(**Indian Statistical Institute, Delhi Centre)
Professor Isha Dewan**(**Indian Statistical Institute, Delhi Centre)
Professor S. K. Neogy **(**Indian Statistical Institute, Delhi Centre)

Speaker: *Selected ISEC participants*

High Tea: 17:00 – 17:30

February 13, 2011 Time: 07:30 –19:00 : ***Taj Mahal Trip***

ABSTRACT OF THE PAPERS

Indian Economy: The Challenges Ahead

Kaushik Basu

Chief Economic Adviser, Government of India, Ministry of Finance

& C. Marks Professor (on leave)

Department of Economics, Cornell University

Virtual Statistical System,

A Knowledge Portal To Support Statistical Capacity Building

Ronald Luttikhuizen, World Bank/DECDG/DGSDP

Population Statistics in India: A Historical Perspective

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The modern demographic statistics in India has a strong colonial root with the beginning of census in 1872. The 2011 census to be conducted in February 2011 would be the 15th census in India. Although census during British period was not only a source of size, growth, age and sex, marital status, educational levels and rural and urban composition of population, but also there was an overriding concern for demographic data by caste and religion . The census in this context played more importantly an instrument of governance rather than an instrument of development planning. This is evident in the fact that the Census of India still continues to be part of the Ministry of Home Affairs unlike British Census controlled by an independent Statistical Authority and US Census working under the Department of Commerce. After independence, however, its role has been recast after dropping the question of caste from the census except for the questions on SCs and STs. On the other hand, the rural- urban classification, workforce composition and migrant and non-migrant composition of population have gone through several definitional changes. Further, since 1991 Census housing tables have been expanded to include household amenities like electricity, sources of drinking water, toilet facility and household assets like car, television, telephone/mobile phone, refrigerator, motor cycle, bank account etc. This paper discuses the changing nature of the economic and social aspects of population data over the censuses in India.

India's Demographic Divided
Concerns and Evidence

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With many developing countries including India are currently experiencing faster growth of working age population, there has been an overwhelming optimism that the demographic bonus will take these countries to newer economic heights. The scepticism on the possible demographic advantage for India due to change in the age structure more towards adult population has been growing over the last few years. On the contrary, the pessimists mainly argue that India might experience a demographic burden or nightmare due to poor educational status and skill development among the large mass of population in the working age group. However, most of these arguments remain as rhetoric without any systematic analysis of empirical data and estimating the complex linkages between population change and economic growth.

This study looks at the concept of demographic dividend more critically in the context of India. The regression method using the panel data has been used widely for estimating demographic dividend in many countries. The other possible approach is macro-economic simulation. This study uses the regression both the methods to understand the effect of age structure change on the economic performance of India. The empirical analysis clearly exhibits the powerful positive impact of working age group population boom on economic growth in the country. This is despite the fact that the education and health conditions of the people are still poor. The rapid reduction in the number of children in many states provided several household level benefits particularly higher levels of saving and the resulting in beneficial impact on economy. India is likely to enjoy the benefits of demographic advantage for a few more decades due to wide variation in the achievement of fertility transition in different states.

Population Situation of India: Problems and Prospects

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This paper examines the possible implications of past, present and future trends in population size and rates of growth in India. A discussion of quality of age, sex data in the past will be carried out before projection of population. Various approaches to formulating population projection with educational level will be discussed. This paper will also present situation of major states of India with their age-sex pyramid, population size and growth. Different states of India will reach peaks in their total population, working population, and aging population at different times as the rate of decline of fertility and mortality are not the same for all states. Problems and prospects of population size and growth in future will also me multifaceted in India as contrast situation of high fertility in some states and rapid fertility with aging in other states will be prevailing. The paper suggests that in order for population problems to be solved, the population programmes need to be developed and implemented within the framework of each state's development plans.

Policy Analysis: A Practical Link with Research and Statistics

Manoj Dixit

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Traditional research is concerned with broad, theoretical, complex questions. It uses explicit scientific steps and invariant procedures. Policy analysis, on the other hand, is practical, situational and flexible. It addresses local problems and focuses on making decisions. It is more craft or art than science.

Traditional Research	Policy Analysis
Seeks "truth"	Is practical
Explicit steps and procedures	Flexible, situational
Addresses broad questions	Addresses local problems
Focus on complexity	Focus on decision-making
Science	Craft

The paper is an attempt to understand relations between research concepts and their applications in real administrative scenario. Apart from that an attempt is made to understand the role of a particular type of research method – case study – in diagnosing the problems of public systems.

Case Studies In Policy Analysis

Problems in the public sector are multi-faceted and difficult to pin down. As if that was not bad enough, the knowledge domain of public policy is ill-structured. This means that there is no "one best way" to solve all problems. Giving policy analysis only one methodology is like giving a home owner only a hammer to solve all household problems.

A new approach is needed to learning in this area. This approach is offered by case studies. Case studies link problems to a reality; they offer the opportunity for the application of policy analysis techniques in a concrete context.

The way information is remembered and use is linked to the way it is learned. Case studies provide cues to the types of techniques that are needed to approach a solution to the problem. These cues help policy analysts learn multiple approaches to learning and to problem solving.

Use of case studies will help to:

1) Recognize situations where analysis is appropriate and productive;

2) Become competent in the application of different approaches and methods;

3) Learn how to communicate the results of policy analysis.

Political Constitution Of The Present Principal European Countries And Peoples, Whereby He Meant Comprehensive Description Of The Social, Economic And Political Features Of A State.

Statistcs And Public Administration

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The journey of word ‘Statistics’ from a political science to a pure science, and from any data pertaining to State to any data pertaining to any field of enquiry has been quite interesting. It is well known that Gottfried Achenwall—a philosopher, political scientist, economist and jurist—coined and used word statistik in 1749 in his work on statecraft. In his work translated in English as 'Political Constitution of the Present European Countries and Peoples' the German singular statistiker denoted comprehensive description of the social, economic, political features of a modern state. Thus, he became known as statistiker too. The plural Statistics in English was used by W. Hooper in 1771 in his translation of a work by B.F. Bielfeld. It was still in its old usage. Description of state of public affairs in terms of empirical reality yielded to description of any set of empirical observations. New usage as a science developed during nineteenth century when parallel development of probability theory came to serve the empirical observations in any field of inquiry.

The beginning of ideas of Statistics in India in terms of data pertaining to State such as on methods of collecting and using data on population, production, commerce and economic census goes back at least to 2500 years back when Arthashastra is found to specifically describing about it. Historical records do mention land classification based on crop yields, carried out by Raja Todarmal are found in Ain-i-Akbari by Abul Fazal. Mahalanobis indeed found it use of qualitative statistical thinking in Saptabhanginyaya, which he translated as dialectic of seven-fold prediction in Shyadwad system of logic of Jain philosophy developed by Bhadrabahu in the fourth century BC.

The same could be said about the West or China. Christ was born during the period of conducting of census—when people were supposed to come and record details about them in places designated by State.

However, humans did not wait for formal arrival of Statistics either sense. They have always been using experience of their own or their brothern and observations made out of experiments and also used. They seem to be using almost from antiquity the idea of sampling and indulged in decision-making in uncertainty always history. Around 20 years ago, in his CSIR lecture—entitled Statistics and Truth—CR Rao made a incisive observation that 'Statistics as a method of learning from experience and decision-making under uncertainty must have been practiced from the beginning of mankind.' The same assertion can perhaps be made about other beings with only difference that human experience could be passed on to successive generations. In a way, it seems humans learnt from history and extrapolated history. Statistics in this sense is a particular way of dealing with history—which can now be looked as selected collection of facts. This is how Klein looked as Econometrics. Contemporary data can thus be viewed as contemporary history for this purpose.

Data relate to any observation, not necessarily those converted to numeric way. After all, there are only two questions out of seven W's, viz. how many and how much/less, that refer to quantitative dimensions. Numbers do not come alone. However, in the phase when science meant 'measure and measure only', data came to mean numerical data for most of the students so much so that they could not think of qualitative variable. Thanks to computer terminology, practical everybody has realized the real meaning of data as givens.

While data or observations, however made, were collected and used by all varieties of scientists as well as by lay-persons—the former laying down or following some set procedures, those specifically collected by or behalf of State (say by churches) were used by the State for State purposes—which in earlier days were supposed to military and revenue. That is why, in certain phases of history, only male members were counted as only they came to be conscripted for armed forces. So the data—social, economic, political or religious/secular—collected on population, production, lands, livestock, estates, commerce, revenue, etc could properly be called statistics.

However, when formal methods of classification, analysis, summarization and presentation were devised, word Statistics came to denote both the data as well as the science of inferring from them. When the idea of using probability, rather specifying the amount of uncertainty, came to help the analysis, we came to classify Statistics itself as Descriptive Statistics and Inferential Statistics.

Inductive reasoning, though used from antiquity, was not codified because people/scholars could not realize that amount of uncertainty could be specified till the middle of nineteenth century. Once this was realized it became clear that statistics could be applied every where. As CR Rao says 'all sciences in the abstract are mathematics and all methods of acquiring knowledge (about the world) as statistics' as the phenomenal word is statistical or call it stochastic.

It could be easily realized that Statistics originally to State and statecraft only, which means it related to societies with state. Non-societies also had data but no statistics. A chief characteristic of the state is that it has military, a specialized section of society, which presupposes certain rise in productivity so that a section of society could be maintained exclusively to fight with others without being engaged in productive work. Counting people was essential for military purposes and hence the census was started. Military could not be maintained by the state without revenue, of course in-kind in early days, bases for revenue had to be assessed. By then, it could be realized, the system of private property should have emerged even though state could conscript labour for generating wherewithal for state.

Existence of state also presupposes bureaucracy or public administration to manage its affairs—military and civil. In a private property society, even law and order becomes important. Public administration is often narrowly defined as officials tasked with carrying out or implementing decisions made by the state but is broadly defined to cover practically all aspects of state activity. Though it is true that in a democratic state, a distinction between political and bureaucratic, between those elected by the people as representatives and those selected for carrying out orders by the representatives is duly made, yet the distinction cannot

be carried too far as interaction between the two is now too complex, almost organic. So, all the state activities can be taken as public administration for the present purpose.

With passage of time, activities of the state transformed a great deal: from watch-and-ward state to welfare state; from defending from external aggression and internal disturbances to removing poverty and providing employment; and from taxing people and activities to subsidizing some of the activities. It was once upon a time to protecting life and property but now it is said to be life, liberty and property. State now covers practically all public affairs which were once upon a time were taken care of communal processes but for emergence of non-government organization on the horizon.

State was supposed to an agency of society for carrying out certain function. However, agencies develop a tendency of becoming autonomous. And state slowly emerged as most powerful and therefore coercive monopoly. In some treatises of political science, state was held as unifier of its society, which has a lot of meaning in a multi-ethnic state. Countervailing forces, again over time, tried to subdue this tendency. The operation of state changed, as a result, from the rule of king to republican rule. However, it did not resulted in diminution of its activities but only tremendous increase. But there is often two way flow state-citizen interactions.

State activities can for the sake of convenience be grouped in three categories, (i) decision-making, (ii) policy-making, and (iii) opinion-making. State can seek and does seek active support from the academia in each of these. Statistics come handy in all the three. This is done both in terms collection of facts—data, qualitative and quantitative, as well as using statistical tools that have been developed to analyze the facts and forecast events and processes. Mahalanobis indeed remarked once upon a time that statistics is a modern technology of the present (twentieth) century whereas technology is supposed to help solve a societal problem or resolve a societal issue. Technology is a social product and it can be said that statistics emerged in a way as a tool or fashions tools for analysis of societal problems, including those of scientists from physicists to economists to astronomers to biotechnologists, to name a few.

Activities of decision-making, policy-making and opinion-making require knowledge of why and how but before that whether it is an issue and if it is an issue what priority does it merit, given the scarcity of resources. These activities are normally in the secular domain of social, cultural, political and economic domain and all policies pertaining to science and technology, including information technology and biotechnology, fall in these categories inasmuch as do sports policy and girl child policy.

Statistics is needed in both of its forms. Collection of facts has to be done through economical methods is fine. But whether census has to be conducted or sampling is enough or better. Whether census has to be supplemented by sample could be an issue. What should be the design of sampling procedure as well as what could be proper questionnaire, if necessary. Whether one requires time series data or cross-sectional data is enough or purpose requires pooled data or panel data. Whether it is doing only once or it is systematically collected over time. Whether a change is warranted or whether continuity has to be maintained. The tools have to be fashioned even if the broad principles are known. Depending upon the data whether one has conduct univariate analysis or multivariate one. How to select appropriate tools or to devise a new one, if possible, depends on the purpose in hand and inclination of the researcher. Public administrators can do certain things on their own but can involve/engage scholars/professionals to do the job. In any case, statistical inputs become necessary in making any of these.

Some of decisions and policies are to be made only when popular opinion is their favour. Some archaic values may prevent their implementation. And it may become necessary for the state to gauge the mood of the people and try to change their thinking in a multi-ethnic context. The state may choose to refrain from attempting any change.

Decisions and policies are made but they do not work for eternity. They need to be monitored while under implementation and concurrent evaluations may be undertaken. Decisions implemented, if reversible, have to be evaluated. Policies in any case have evaluated and statistics come very handy. Recent economic events have revealed the importance of statistics even though they have been in use now for long, despite the debate and quarrels on appropriateness of statistical data and statistical tools.

The Role Of Familial Transfers In Supporting The Lifecycle Deficit In India

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Abstract

This paper has examined age patterns of per capita consumption in India by sector, emphasizing the socio-cultural significance of intra-household transfers to support the lifecycle deficit. We have used the analytical framework of National Transfer Accounts and data from India Human Development Survey (IHDS), conducted during 2004–05 (NCAER) and National Account Statistics (CSO 2006). Education and health care are the main forms of consumption that produce a lifecycle deficit among the young and elderly individuals. We found that young and elderly dependents respectively account for 3% and 5% of aggregate labour income and 34% and 9% of aggregate consumption. Familial transfers from household members with disposable income go mostly to members below age 20, accounting for 51% of the lifecycle deficit of this age group, whereas intra-household transfers to members of ages 60+ fall far short of their lifecycle deficit. The main conclusions we draw from this study are that India has a shortage of public funding to meet the lifecycle deficit of its population, and that children and the elderly would not be able to consume essential goods and services were it not for the existence of familial transfers in general and intra-household transfers in particular.

Dynamic Panel Data Model and The FDI Determinants: Revisited in India

Rudra Prakash Pradhan

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Indian Institute of Technology Kharagpur,

Abstract

The paper deals with different characteristics of panel data models to examine the determinants of FDI inflows in India. Using the data over 2001-2008, it finds that the main determinants of FDI inflows are the availability of power, domestic investment and profit. It further justifies that higher profitability increases FDI inflows into a state, while larger variability in it can reduce the same.

Keywords: Dynamic panel data model, FDI, India

Decentralized Urban Governance in West Bengal: Does Rhetoric Match Reality?

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Abstract

One of the major promises of decentralization is that it brings popular participation and accountability to local governance and, therefore, makes local government more responsive to citizens' desires and more effective in delivering services. The 74th Constitutional Amendment Act in India provides the much needed platform to operationalize the rhetoric of decentralization into reality. This amendment marks a distinct watershed in the concept and practice of citizens' participation in urban governance. Acknowledging the importance of participation in democratic local government, this paper, using primary data, evaluates the implications of constitutional provisions for participation and accountability at the municipal level in West Bengal. The study finds that a large gap exists between the rhetoric surroundings the constitutional provisions and

their actual implementations. Political nature of the ward committee and thin attendance of the citizens in the meetings put a question mark on the efficacy of the WC as a true participative forum at the municipal level. The numerical representation has not transformed into effective representation with respect to participation of elected representatives and their accountability in municipal governments.

Comparative analysis of Developed vs Developing Countries on varies Economical parameters

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Abstract

Economic development is the increase in the standard of living in a nation's population with sustained growth from a simple, low-income economy to a modern, high-income economy Also, if the local quality of life could be improved, economic development would be enhanced. Its scope includes the process and policies by which a nation improves the economic, political, and social well-being of its people.

Our research work will reflect on the comparing developing & developed countries on the different issues under following parameters as follows:

- Education
- Contribution to GDP
- Socio-Cultural Aspect
- Tends to grow or downsize
- Impact on future economical structure of the country

* **Key Words:** Gross Domestic Product (GDP),Gross National Product (**GNP**), Human Development Index (HDI), the less developed countries (LDC), Purchasing power parity (PPP)

Economic Reform, Extortion and the Informal Sector

Biswajit Mandal
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Abstract

Informal economy involving unrecorded, unregistered, extra legal activities employs majority of the workforce in the developing world. Such extra legal existence of informal manufacturing and service sectors is facilitated through extortion by agents of political forces in power. Such extortion activities themselves constitute an informal segment. We develop a general equilibrium model to explore the possible consequences of a change in the fee of extortion, change in the quality of administration, tariff reform etc. Economic reform of various kinds has interesting effects on the size of the extortion sector. Various reformatory policies may actually lead to an expansion of the extortion component of the informal sector.

Key words: International Trade, Extortion, General Equilibrium.

Core Issues in a Statistical System

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Abstract

One of the paradoxical developments over the last quarter century has been that even as developing countries have exhibited improved growth momentum, dissatisfaction has grown over the adequacy of GDP as a measure of well-being, and even with GDP growth as a target of achievement. A number of alternative measures of the human condition have been advanced, such as the Human Development Index of the UNDP, which averages over direct measures of educational and health attainments. In recent years there have even been whole commissions set up to examine possible measures of human happiness, and whether these are at all correlated with GDP growth.

While not denying the obvious limitations of GDP as a measure of human well-being, alternative measures of human well-being can only be in the nature of supplements to GDP, which will remain the most basic measure that a statistical system has to get right. Even more importantly, sub-national disaggregates of national GDP yield the only comprehensive handle on within-country regional inequality. At the end of the day, redistributive fiscal flows have to be predicated on some nationally acceptable measure of within-country inequalities, and measures of income originating and income accruing at subnational levels remain the most fundamental.

Economic development also relies critically on macroeconomic stability, for which good measures of headline and core inflation are needed.

Finally, any data system has to insure against special purpose data collection, where the special purpose could shape expectations about the use to which the data will be put, and therefore carry implicit incentives to distort the data reported.

These are the three issues on which the talk will focus, using illustrations from the Indian statistical system to show how, even today, these measurement issues continue to confound important decisions bearing on development policy.

Financial Sector Statistics and Development Issues

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Abstract

I. Role of finance in the development process--brief outline of mainstream thinking. Inter-relationship between real and financial sector activities. Stages of financial development and complexities of modern financial system. Lessons from the recent global financial crisis.

II Scope and diversity of financial sector statistics: money, banking, non-banking financial, money, foreign exchange, government securities and capital markets, insurance, small savings, provident funds and pension funds, fiscal and external sectors. Formal and informal sectors. Domestic and cross-border.

III Need for data generation. Perspectives of users-- micro and macro level monitoring of financial sector activities by regulators, supervisors and credit rating agencies; market analysis and forecasting by market agents, analysts and advisors; empirical validation of theories and models by Economists and researchers.

IV. Sources of Data and data dissemination process. Real time and historical time series data needs. Role of official, private and non-profit organizations and think-tanks. Issues on Transparency and disclosure.

V. Data gaps, despite data and information deluge. Compliance with Special Data Dissemination Standards.

VI. Gaps identified by the National Statistical Commission and the Committee on Savings and Investment.

VII. Concluding Observations.

Quality of India's Economic Statistics: A Skeptical Note

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Abstract

India's official statistical system, in comparison to most developing countries, is considered to be better, both scientifically and institutionally. But, of late, the data quality are said to have deteriorated. This is illustrated with a few examples from the output estimates of manufacturing and services sectors, which have a bearing on our understanding of the recent economic performance.

Similarly, while the world is enthralled by China's unprecedented economic growth, serious scholars have harboured many doubts about its underlying statistics. Although the official data have improved enormously since the reforms, many serious shortcomings seem to remain. The paper will also briefly illustrate the problem with a few examples.

Why have India's statistics deteriorated? Attributing it to the "government failure", policy makers have encouraged outsourcing to improve their efficiency. In our view, the reason lies in the failure to enforce the minimum rules to record the inception, output growth and closure of factories, offices and firms – abdicating the basic functions of the sovereign, in the name of entrepreneurial freedom and incentives.

School Educational Statistics in India:

Changing Status and Persisting Problems

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Sustainable ecosystem in mid-Himalayan region and social cooperation

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Abstract

Property rights and management of common property resources such as forests, fisheries and irrigation systems has becoming a central issue in environmental economics and policy. This paper studies cooperative actions among the villagers in mid-Himalayan region. This study uses the data of 165 villages equally spread over mid- Himalayan region of Uttaranchal and Himachal Pradesh, collected during late 90s by a group of researchers consists of Jean-Marie Baland, Pranab Bardhan, Sanghamitra Das and Dilip Mookherjee.

The data shows about 44 percent of the respondent of 165 villages are concerned about the degradation of the forests around their villages. Only 105 responses indicate some type of action to protect neighbouring forests. This means only 17 percentage of the respondents acknowledged that some type of action taken place. In terms of villages, numbers of villages experience some type of cooperative action is negligible. But another striking result is that collective action is not absent in the surveyed villages. In public goods we could observe presence of a fair amount of

collective activities. In electricity provisions we could find that about 70 percent of respondent tells that it is collective action by the villagers. In other public goods provisions also we could observe fair amount of cooperation among the villagers.

This opposite result raises questions about cooperative activities among the villagers. Their cooperative activities could be purely need based and rational rather than evolutionary. In this research I would try to find cause of cooperative activities of the villagers and effect of factors like heterogeneity, norm, social capital, institution set ups, external effect (NGOs) and need in collective activities in forest maintenance.

Science, Technology and Environment

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SOME FULL PAPERS

Virtual Statistical System

A Knowledge Portal To Support Statistical Capacity Building.

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Introduction

The Development Economics Data Group (DECDG) Directorate of the World Bank has one unit that is called Statistical Development and Partnerships (DGSDP).

Our business is to improve the capacity of developing countries to produce statistics. This business needs and can be improved. Statistics as outputs are specific kinds of knowledge products. They try to tell a story over the world with concepts and numbers. The assumption is that the concepts are meaningful and the numbers correct.

Statisticians are the knowledge workers and the knowledge producers. They need to understand the concepts, and where these come from and how to use methods to create correct numbers. And they need to know a lot more than that. Generally speaking statistical organizations face a shortage of knowledge and a lack of access to relevant knowledge.

When we look at the costs of the production of statistics we see that normally 80% is caused by the staff. The rest is costs of IT infrastructure, equipment, building, travel, etc. For the staff to be able to do their work they need to have access to the relevant knowledge. That is key. This means that the knowledge they access need to be useful, and usable. Further the staff in statistical offices needs to be able to absorb that knowledge and to communicate about it. The VSS is design to support all this.

The VSS projected started with one meeting of a group of interested organizations and countries. They approved the approach proposed by the World Bank.

1. VSS Principles.

The VSS is built on certain principles. First there is the policy principle of the World Bank: The Bank wants to provide Open Data, Open Knowledge and Open Solutions. There are two considerations. One: in the development policy the aim is that developing countries are being helped to help themselves and to solve their own problems. By making data available to them they can use the data and study their situation. With the VSS they have access to a vast range of

information that is needed to understand what should be considered to improve and change. With the VSS they also have part of the tools (read knowledge) at their disposal to be correctly informed and to make the right decisions. At least they can have a proper and informed discussion about the topics.

Secondly, in practical terms the relevant knowledge about statistics is structured in such a way that it makes it very easy to understand what knowledge is available and how this knowledge is related to other types of knowledge. Moreover: the VSS (VSS Wiki) provides the opportunity for statisticians to upload their own information, to enter into discussions while using the discussion groups and to make use of an e-learning program that has been developed to complete the VSS.

This makes that the VSS is a fully integrated tool that allows the user to make full and complete use of the options it provides.

2. The VSS Home Page.

The VSS home page is the opening page. The site is based on two sides. Left and Right.

The left side is presenting the Activities. These ACTIVITIES is the total of general knowledge that a statistical organization needs to have in order to conduct its work.

It is based on 10 activities. Each of these can be divided into subgroups again, and in some cases again in sub-sub-groups. The order of these 10 Activities is based on the logical structure of the statistical production process. Each statistical organization, especially the national statistical offices, can be considered as organizations that follow a general pattern of activities. Generally speaking one can say that one activity is a condition for the next activity to work properly. In the end good quality statistics also depend on the user-community. Professional users tend to have the effect of an increase in the quality of statistics. Also on the left side are a number of selected sites that are useful to consider.

The right site is presenting the THEMES. The themes are the subject matter topics or domains about which statistics are produced. The list of these topics is based on an internationally agreed classification of statistical topics. There are five main groupings, with many sub-groupings and even some sub-sub-groupings. Also on the right site is presented the list of comments that are made by users of the site.

5. Why VSS

VSS addresses serious knowledge (access & shortage) problems in partner countries. This includes: Structural lack of access to knowledge. People leave their functions and newcomers need to be retrained. Also there is a growing need for archiving. Further there is a growing need

to have easy accessible study materials within reach for all workers in statistics. The aim of the VSS is to deliver statistical knowledge for all.

6. VSS and endless knowledge.

VSS is the beginning, but not the end. Knowledge is endless, VSS is endless:

In theory there is a vast amount of knowledge available about statistics to learn from. But the information people need is often not easy to find. Again in theory one can define the set of information that people need when they work in statistics. Part of this information can be made available on line with the VSS. The VSS does not imply that it is complete. In fact we state clearly the VSS can never be complete. The VSS presently has already a lot of information and this information can be extended in the coming yours.

Directly on the site available are about 2500 pages of text: directly available and in the form of PDF documents, and through the selected links. In addition the site is linked to a large number of other sites, among which several work banks sites. Already the World Bank GDDS project sites have at least a 2500 pages of additional documentation directly available. And on the VSS e-Learning site the user will find again 10.000 pages with training materials. This means that the site offers, apart from the links, access to at least 15,000 pages of information. And so it goes on and on.

On the site one can find:

- Intros and full text versions.
- Hundreds of links to other websites / documents.
- Direct links to VSS related Project site and VSS Learning site.
- VSS needs to grow up and have a life. The life of the site is defined by the way it is used. The site can be used by individuals who visit the site and use it whenever they wish. Also it can be used in an organized way, by organizations. In that case the site should be part of a training program of students or professionals who want to update their information, or want to use the interactive functions of the site. In this case the VSS needs to be integrated in the training approaches of these organizations.

7. About the VSS site.

Relevant aspects:

Structure. Essential are the left and the right side. This distinction is about what it takes to be effective in statistics. A good starting point is to use the concept of the Statistical Production

Processes. These are represented by the list of the Activities. Producing statistics is a step by step process. The Activities form together, as a series of steps, the structure of such a process. These steps represent a general or generic process that is relevant for each organization. This can also be called the "super process". Also each specific project (the Themes) has its own production process, but the super process still remains relevant. Using this super process one can understand in which way the general production process is also relevant for each specific project.

Content: there are about 150 topics (modules), for each topic about four aspects (sub modules); in total about 500 plus sub modules with information. Interactivity: comments can be made to react about what is on the site. Also can be reported about what is missing. The VSS wiki is designed to give users the opportunity to create their own knowledge base. Using the Discussion groups, structured according to the geographical regions of the world users can start or be engaging in discussions. The search function is helpful.

8. Activities.

The list of Activities is based on the understanding that in statistics we have knowledge of a more general matter, and knowledge of a rather specific matter. The general information is relevant for all those working in statistics. The specific knowledge is mostly only relevant for those who are dealing with these specific topics.

This means that the general information in fact is mostly also relevant for those involved in each statistical project in official statistics. The activity classification is based on the Overall Statistical Production Process. The activities can also be considered as the "building blocks" of national statistical systems. The site provides further a selection of selected links and additional resources.

9. Themes.

Themes are about specific subjects, topics, projects, issues. Topics relate to statistical projects. The structure of the themes is based on the UN/ECE/OECD/Eurostat Classification about statistics. The VSS Themes are rich with info, but are always limited due to the enormous amount of information that exists. Relevant information always can be added.

9. The VSS Wiki and Discussion groups.

The main body of the VSS consists on materials there were specifically written or collected for the VSS. But we want to give the user also the opportunity to share their information on the site, or to start building their own knowledge base. For this reason the VSS Wiki has been created. To use the Wiki one starts by selection of a region.

Another function is to start or participate in discussions groups. One even can start their own professional blog and users can react to the postings. Again it would be good to start picking a region like SSA. But in order to be able to upload information or to participate in discussion one has first to register.

10. E Learning

An essential part of the VSS concept is the training courses. These courses are made available through a separate site which has more and other function than the VSS. The VSS e-Learning training courses are dealing with 10 separate topics. In total there about 200 courses available (about 20 per topic). These training courses can be reached when going to the Training part of the site and click on the "moodle" link that leads the user to the World Bank Institute site where the training courses are uploaded.

List of topics of the courses:

- Management of Statistical Systems.
- Project management
- Labor
- Justice and Security
- Quality assurance of the Population and Housing Census.
- Agriculture
- Business Registers/Business Statistics
- System of national Accounts (1&2)
- Government Finance Statistics.
- GIS

<u>Different types of courses:</u>

At present the courses are available in several modes of delivery.

- Fully Animated with voice. This is the most developed form of delivery. This is only available for the topic Management.
- Slides and notes with voice over. These are only available for Justice and Labor.
- Only Slides and notes. These are available for all courses. The purpose is to download them on the own computer and to study the slides and the notes.

11. The Use of VSS.

The best way to use the VSS is to learn from what it offers. Also the VBSS can be used as a checklist. This explains the knowledge one needs to know in dealing with statistics. Furthermore it is Portal, a one stop shop, with hundreds of links. Proper use of the site facilitates the designing of blueprints for change of the organization. The VSS eLearning site is an excellent tool to educate users in a targeted way by following the training courses. The VSS wants to share knowledge and to exchange views. This can be done while using the unlimited possibilities of the site to share and communicate.

When one understands the structure of the site, and is able to use the site as a checklist, the users can select topics for in-depth study and use the links to other sites.

The VSS is a powerful communication tool. It allows to upload own contributions. The VSS e-Learning can be used for active learning. This can be done by individuals in their own time but also in an organized way by making use of the class room options. The idea is that all users can share the site. We are contemplating the development of on line Training programs. This can lead to awarding participates with different kinds of certificates. We are thinking about developing country and regional courses: on the VSS and on the training materials.

12. Next steps.

A marketing plan (MP) has been drafted and will be implemented. The aim of the MP is to have an increased activity on the site. We hope that it will be possible to have the VSS integrated in all statistical capacity projects. When the VSS is accepted it even can be extended in terms of content and languages. In the far future the VSS can be used to provide consultancy services. Here again there are several options.

The Role Of Familial Transfers In Supporting The Lifecycle Deficit In India

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Abstract

This paper has examined age patterns of per capita consumption in India by sector, emphasizing the socio-cultural significance of intra-household transfers to support the lifecycle deficit. We have used the analytical framework of National Transfer Accounts and data from India Human Development Survey (IHDS), conducted during 2004–05 (NCAER) and National Account Statistics (CSO 2006). Education and health care are the main forms of consumption that produce a lifecycle deficit among the young and elderly individuals. We found that young and elderly dependents respectively account for 3% and 5% of aggregate labour income and 34% and 9% of aggregate consumption. Familial transfers from household members with disposable income go mostly to members below age 20, accounting for 51% of the lifecycle deficit of this age group, whereas intra-household transfers to members of ages 60+ fall far short of their lifecycle deficit. The main conclusions we draw from this study are that India has a shortage of public funding to meet the lifecycle deficit of its population, and that children and the elderly would not be able to consume essential goods and services were it not for the existence of familial transfers in general and intra-household transfers in particular.

Introduction

This paper estimates the nature and magnitude of familial transfers to support the lifecycle deficit (excess of aggregate consumption over labor income) of economic dependents (persons below the age of 20 and above age 60) in India in 2004-05, using the analytical framework of National Transfer Accounts. Young and elderly dependents respectively account for 3% and 5% of aggregate labor income and 34% and 9% of aggregate consumption. In other words, the lifecycle deficit of young dependents is about 6.9 times that of the elderly. For young dependents education is the major form of consumption, whereas for elderly dependents it is health care.

Familial transfers are estimated by net inter- and intrahousehold transfers, and are distinguished by education, health care, and other forms of consumption. The results offer positive evidence of a remarkable role for familial transfers in India. The respective mean ages of beneficiaries and donors are 14.5 and 50.1 for education, 55.1 and 53.4 for health care, and 32.6 and 50.9 for other forms of consumption. Most importantly, total intrahousehold transfers support about 51% of the deficit of younger dependents, but fall short of the deficit for elderly dependents. This surprising finding is contrary to the general presumption that elderly dependents are supported by their families, given the poor public social security arrangements for elderly.

During the economically unproductive stages of life individuals are supported by familial and public transfers and, in the latter dependent stage, by asset-based reallocations. Public policies regulate the goods and services provided to dependent individuals of different ages, their monetary value varying from economy to economy. At the household level, the kinds of goods and services transferred to dependent children and elders are governed by social norms and social contracts between household members. A growing concern in developing economies as a consequence of longer life expectancy and declining family size is the ability of families to support elder members (K.O. Mason 1992). Few studies, however, have focused on the role of intergenerational monetary transfers for supporting dependent children and elders in developing countries where generational co-residence continues to be a general social norm and practice. This chapter is an attempt to provide empirical evidence of the magnitude of familial transfers in the Indian economy.

Several studies of intergenerational transfers in Asia focus primarily on parent–child transfers (e.g., Ofstedal, Knodel, and Chayovan 1999; Zimmer and Kwong 2003). In the Philippines, Thailand, Taiwan, and Singapore, transfers from adult children are the main source of income for elder persons (Hermalin, Chang, and Roan 2002). In mainland China between 30% and 50% of elders receive financial support from adult children (X. Chen and Silverstein 2000). In their study of intergenerational transfers in Taiwan and the Philippines, Agree, Biddlecom, and Valente (2005) found that in both countries the elderly rely on kin but that in Taiwan transfers are concentrated among lineal kin, whereas in the Philippines transfers are more broadly distributed among family relations, particularly siblings. Lillard and Willis (2002) have found that parents in Southeast Asia give loans to children that are later repaid and that, in Indonesia, transfers within families serve as insurance for family members.

The aforementioned studies of familial transfers in East and Southeast Asia are limited to a few countries and focus on *inter*household transfers. *Intra*household transfers, emphasized in this chapter, are much greater in their magnitude. The National Transfer Accounts (NTA) methodology provides a framework for determining the nature and magnitude of familial transfers consistent with National Income and Product

Accounts (NIPA). Using the NTA framework (A. Mason et al. 2006), we attempt in this chapter to discern age patterns of consumption of public and private monetary resources for education, health, and other needs and the role of intrahousehold transfers in supporting the lifecycle deficit of economic dependents in India in 2004–05. To provide a background for understanding the age patterns of lifecycle consumption of education, health care, and other goods and services in India, we begin by discussing the factors that have a bearing on lifecycle consumption and intrahousehold transfers.

Factors affecting the lifecycle deficit and familial transfers

The ability of individuals to pay for essential goods and services during their lives depends on their earning potential, which in turn depends on their education and skills as well as on the availability of jobs. At the same time labor income depends on macroeconomic conditions that cannot be controlled by individuals. Employment growth in India has improved considerably, doubling the 1.3% pace of growth during the 1990s over the first five years of the current century (OECD 2007, 120). This represents an unprecedented improvement in India's labor market performance (Anant et al. 2006; GOI, Ministry of Finance 2006; Nagaraj 2004). The average daily wages of workers in the formal sector are biased in favor of urban workers and males, although the gap between urban and rural workers and between men and women has been narrowing over time.

No economy can afford to risk under investing in human resource development through education. The Constitution of India established the goal of universal and free basic education for all children through the age of 14. Today nearly four out of five children in the 6–14 age group are in school and two out of three are functionally literate (Govinda 2002, 1). Between academic years 1950–51 and 1999–2000, enrolment increased about six times at the primary stage, 13.5 times at the upper primary stage, and 17 times at the secondary and senior secondary stages combined. Enrolment of girls has registered an even faster growth, increasing 9 times, 34 times, and 52 times respectively at these three stages (NCERT 2003, 115). Public expenditure on education and private transfers are closely linked with enrolment rates and educational attainment. Private spending on education is strongly correlated with a family's income level. Public health expenditure was merely 0.94% of GDP in 2001–02 (as against 0.04% in 1970–71), still too meager to meet the demand for health care of a huge population with a pronounced burden of disease. In contrast with education expenditures, most spending on health is in the private sector, which accounts for 77% of total health expenditures in India (GOI, Ministry of Health and Family Welfare 2005, 1). Most household expenditure on health care is out-of-pocket. As a percentage of per capita income it has doubled, rising from 2.71% to 5.53%, between 1960–70 and 2001–03 (Bhat and Jain 2006, 67).
India's social security measures are many and divided between the central and state governments on the one hand, and the private sector on the other. The National Social Security Program is a system for transferring public goods, such as health services and education, to the population. It has three parts. The first consists of programs intended for the entire population, the second comprises targeted programs for beneficiaries in specified income categories, and the third includes spatial and social categories. The social security program thus coincides with the poverty-alleviation program in providing in-kind transfers of public goods and services for consumption.
In addition, social security schemes exist for organized workers both in the public sector (the government and quasi-governmental agencies) and in the private sector (registered factories and companies). The schemes are implemented through various labor laws. Their benefits include medical care, sickness and

maternity leave with pay, a retrenchment benefit, old-age benefits (e.g., a pension or a provident fund with gratuity), and compensation for injury. For specified industrial workers (e.g., miners), welfare funds provide housing benefits, medical care, and education for their children, all of which are financed by taxes on exported items (e.g., iron ore). Organized workers further benefit from voluntary and tax-exempted schemes, such as small savings schemes and pensions offered by life insurance companies.

Sources of data

The data for this study are drawn from multiple sources. Macroeconomic controls for the fiscal year 2004–05 as regards salaries and wages of employees, mixed income (that is, income from household enterprises), and private expenditures on education, health, and other goods and services were extracted from the National Accounts Statistics (CSO 2006). The India Human Development Survey (IHDS), conducted during 2004–05, was the source of micro data on income from wages and salaries and from self-employment; on household expenditures on food, nonfood items, health care, education, and housing rent; on money borrowed and household credit; on the enrolment status of children in public and private educational institutions; and on the treatment status of individuals for minor and major illnesses (Desai et al. 2008). The IHDS was a nationally representative survey covering more than 200 thousand individuals from 41,554 households in 1,503 villages and 971 urban neighborhoods.

Income, consumption, and the lifecycle deficit

Age patterns of consumption for education and health by sector and income were obtained directly from individual-level data. We derived the age pattern of other private consumption by using an empirical equivalent scale discussed in A. Mason et al. (2006), whereas we calculated the age pattern of other public consumption on a per capita basis. We derived aggregate labor income, private and public consumption by sector, and the lifecycle deficit for broad age groups, all of which are consistent with the NIPA for the fiscal year 2004–05, by applying the NTA framework. At a nominal price, aggregate consumption was 17,505 billion rupees as against the aggregate labor income of 15,845 billion rupees, leading to a lifecycle deficit of 1,660 billion rupees in that fiscal year. We found that the prime working age group, 20–59, contributed 92%

of the total labor income, whereas the share of the age group below 20 years was 3% and that of the elderly age group (60 years and older) was 5%. The respective contributions to aggregate labor income by the three broad age groups reflect the sizable population of children and the moderate size of the aged population in the country's age distribution.

While contributing 3% of the total aggregate labor income, the population under age 20 accounted for 34% of the total aggregate (public and private) consumption. In contrast, the elder population enjoyed just 9% of aggregate consumption. The remaining 57% of public and private consumption belonged to the prime working age group. The investment in children and youths is about 3.5 times greater than that in population over age 60. This result signals a near-absence of public policies to provide social security and health care for India's elders. Private consumption on health care and other goods and services is much greater than public consumption; only education receives major public support.

The discussion so far indicates that young and aged populations consume far more than their share of labor income and thus experience a lifecycle deficit. For the prime working-age population, however, aggregate labor income exceeds aggregate consumption, producing a monetary surplus. As a consequence of their greater consumption of both private and public resources in relation to their share of aggregate labor income, the young and the elderly together produce a lifecycle deficit 1.4 times the monetary surplus of the prime working-age population. Figure 1 shows the age patterns of aggregate labor income, consumption, and life cycle deficit in 2004–05.

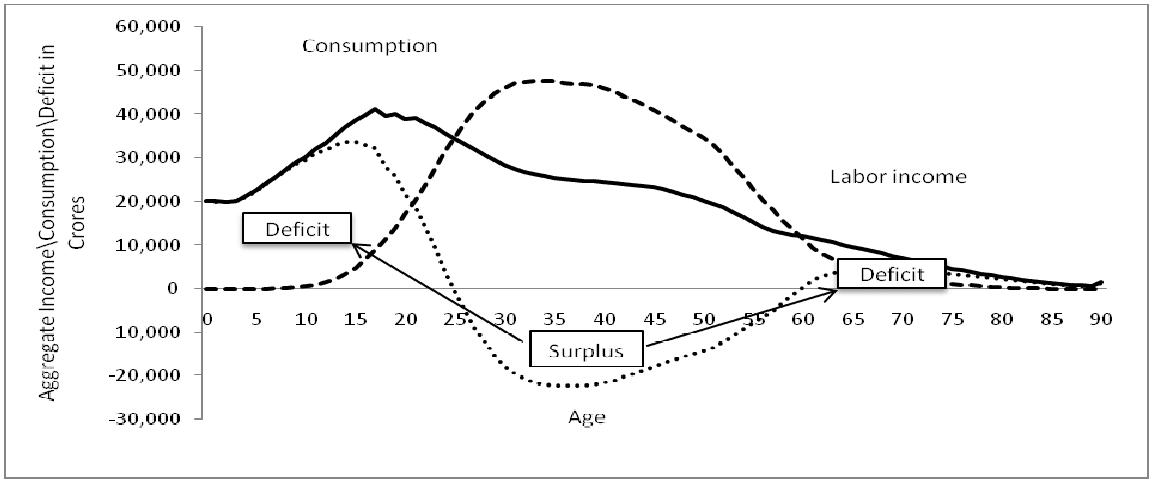

Figure 1: Aggregate labor income, consumption, and the lifecycle deficit. India, 2004-05

The age profile of aggregate consumption indicates that India's population has a large proportion of children and a much smaller, but increasing, proportion of elders. This age distribution translates into a larger lifecycle deficit for the under-20 population and a smaller deficit for the 60+ population. The age profile of labor income shows a larger share of aggregate labor income in the prime working age group of 20–59 years and a concentration of surplus due to the excess of income over consumption.

Next we look at consumption patterns. Per capita consumption profiles can be more relevant to policy than aggregated consumption profiles. To reveal the Indian age patterns of education, health, and other consumption by sector, Figure 2 shows per capita consumption profiles consistent with the NIPA. It indicates that the surplus of the prime working age group supports the deficit of the under-20 and 60+ age groups overwhelmingly through familial transfers. Table 1 summarizes the proportions of per capita consumption by sector.

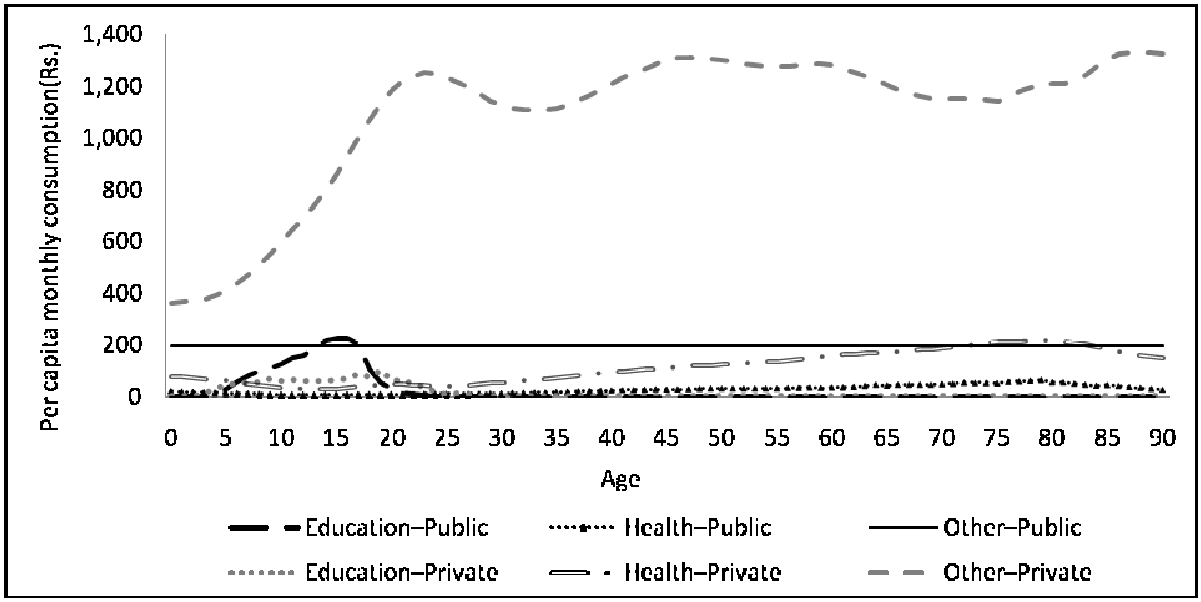

Figure 2: Age patterns of per capita consumption by sector, India, 2004-05

Moreover, the public and private age profiles of consumption have sharply contrasting features. In the private sector, consumption of goods and services other than education and health care constitute 74.7% of total consumption (Table 1). Per capita private other consumption (consumption excluding health and education) is low during the first five years of life, increases sharply with age until the mid-20s, and thereafter remains more or less flat. Per capita private education is concentrated in the 4–25 age range, showing a slight peak at late teens, the stage of higher secondary education; but its share of total consumption is only 1.2%. The per capita private health care profile is more or less trough-shaped up to age 30 and steadily rises until about age 80; it constitutes 6.6% of total consumption of the fiscal year 2004–05. The age pattern of public per capita consumption contrasts with that of private consumption mostly because of the much lower (and flat) public investment in services other than education and health. In the school-going age group, however, there is significantly greater public than private investment in education. The per capita public consumption profile for health care shows a slight rise at advanced ages. The shares of public consumption on education, health, and others are 2.1%, 1.6%, and 13.9%, respectively, making up only 17.6% of total consumption.

Table 1: Summary of per capita consumption, India, 2004-05

Sector	Share (%)	Mean age
All sectors	100.0	41.0
Public	17.6	35.5
Health	1.6	49.6
Education	2.1	13.7
Other	13.9	37.1
Private	82.4	42.2
Health	6.6	49.5
Education	1.2	14.7
Other	74.7	42.0

Note: Per capita values are weighted using L(x) from India's life table to calculate the shares and the mean ages

The mean age for total consumption is 41 years. In the public sector the mean age for consumption is 35.5 years, and in the private sector it is 42.2 years. For health consumption in the public and private sectors, the mean ages are nearly identical (49.6and 49.5 years, respectively). The high mean age for

private health consumption reflects the fact that individuals incurred out-of-pocket expenditures for health care at advanced ages, in the near absence of social security and India's inadequate public health care expenditure. As for education, the mean ages for public and private consumption are 13.7 and 14.7 years, once again signaling a longer period of private support for education. The mean age for other public consumption (infrastructure, defense, etc.) is 37.1 years. In the private sector other consumption relates to housing, food, clothing, social needs, etc.; and the corresponding mean age is 42.0 years. The lifecycle-deficit implication of consumption at young and old ages is better understood when the per capita labor income and the per capita age-specific consumption patterns are plotted together, as in Figure 3. The age profile of per capita labor income reflects several distinctive features. It is an inverse broad U-shaped curve that starts in the early teens, gradually increases with age, peaks in the mid-40s, remains high until the mid-50s, and thereafter declines rapidly, tapering off with advancing age.

[Figure 3 about here]

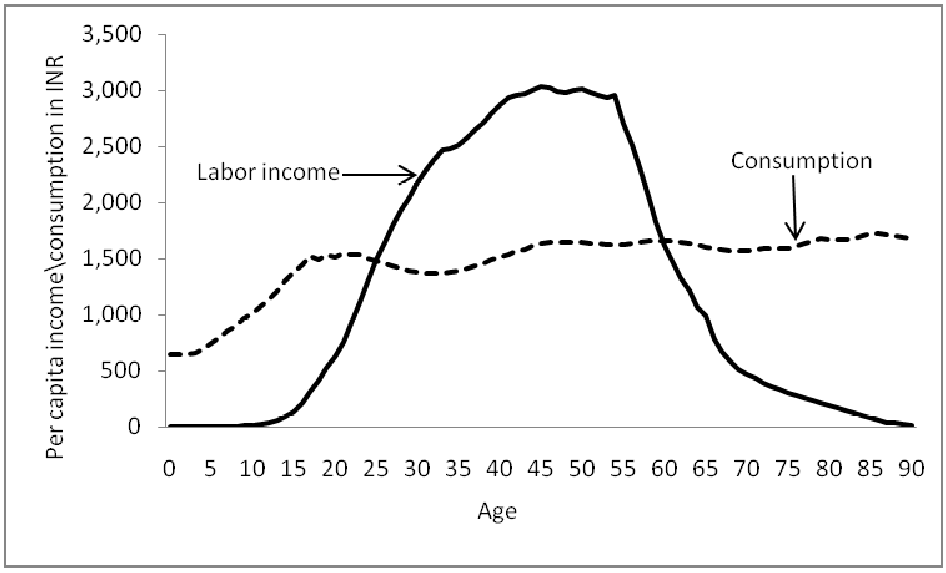

Figure 3: Per capita labor income and consumption, India, 2004-05

The existence of child labor is evident in the early age of entry into economic work and young persons' marginal share of labor income. The age profile of per capita consumption also exhibits interesting features, particularly during the school-going ages and at older ages. Per capita monthly consumption increases sharply from about age 4 until it attains an early peak at about 19 years, reflecting some investment for education, and at the same time a sharp increase in consumption other than education and health. The consumption profile crosses the income profile at ages 25 and 60, the average ages of entry into the labor force and retirement respectively. During the 35 years of economically gainful activities the per capita consumption profile is more or less stable, rising marginally after retirement age owing to health care costs.

For individuals below age 25 and above age 60 the gap between the per capita labor income and consumption profiles is the magnitude of the lifecycle deficit. The NTA framework recognizes the role of public and private asset reallocations and transfers as a means to support the lifecycle deficit, depending on the structure of the underlying economy. In a welfare state the lifecycle deficit is funded mostly by public intervention. In many other societies, it is funded by a combination of private asset-based reallocations and transfers. In India the family plays a major role in such transactions.

Familial transfers to support the lifecycle deficit

Intrahousehold and interhousehold transfers are the two forms of familial transfer considered in the NTA framework (A. Mason et al. 2006). Household members with a surplus fund the

consumption of members with a deficit through intrahousehold transfers. Familial transfers as a means of supporting the lifecycle deficit of current consumption are important in India because of the large number of joint families living under the poverty line in rural areas.

Figure 4, which shows age profiles of the beneficiaries and donors of aggregate intrahousehold transfers for education, health, and other types of expenditure, reveals that monetary transfers for education are larger than are those for health. A distinctive feature of the transfers is that although most donors are in the working age groups, a sizable proportion are elders, whose support includes education for grandchildren. The main consumption need for household members below age 20 is for schooling, whereas for those above age 60 it is for health care, in addition to other essential goods and services.

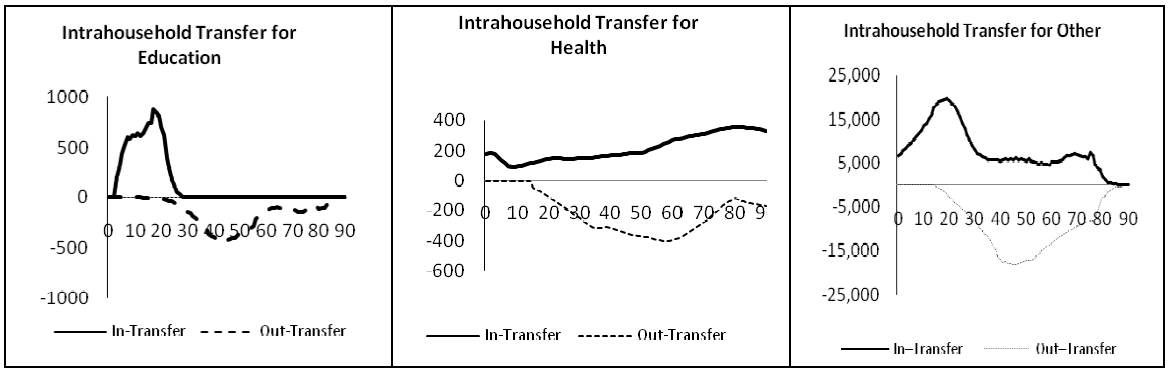

Figure 4: Aggregate Intrahousehold transfers (in crores) for education, health and other, India, 2004-05

Figure 5 depicts the age profiles of the per capita lifecycle deficit, net intrahousehold transfers, interhousehold inflows, and familial transfers, which constitute the totality of net intra- and interhousehold inflows. It is evident that familial transfers are heavily biased toward children, whereas elders scarcely benefit from them. This suggests that although elders help fund the education of their grandchildren, they are left to care for themselves from their own past saving and assets in the absence of a robust public social security program.

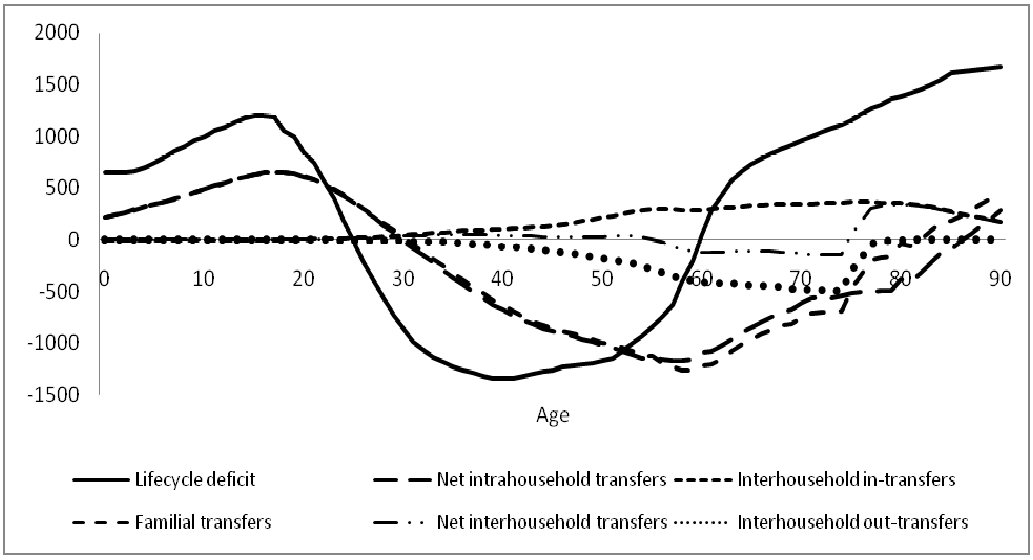

Figure 5: Per capita familial transfers and Lifecycle deficit, India,2004-05

The mean ages of beneficiaries and donors and the magnitude of intrahousehold transfers for education, health care, and other consumption are summarized in Figure 6. In this figure the direction of each arrow indicates the direction of the flow of intrahousehold transfers—that is, from older to younger or from younger to older ages; the head and the tail represent the mean ages of beneficiaries and donors respectively; and the thickness of the arrows represents the magnitude of the transfer. The numerical values shown along with each arrow are the monetary values of intrahousehold transfers in crores (1 crore = 10 million rupees). The mean ages of beneficiaries and donors are based on aggregate age profiles of those groups.

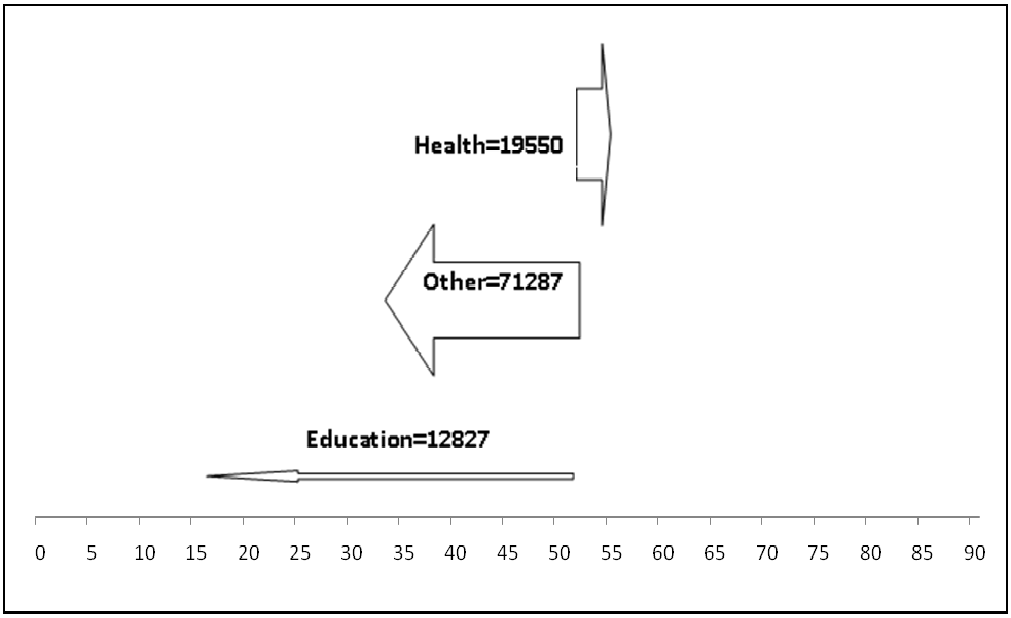

Figure6: Aggregate intrahousehold transfers by sectors, India, 2004-05

Total intrahousehold transfers make up 51% of the lifecycle deficit of the population below age 20, whereas intrahousehold transfers to the population of ages 60+ fall short of their lifecycle deficit. Most of the intrahousehold transfers are for current consumption of goods and services other than health care

and education. The respective mean ages of beneficiaries and donors are 32.6 and 50.9 for the residual (other) category of consumption. The mean age of children who receive familial financial support for education is 14.5 years, and that of household members who support them is 50.1 years. The mean age of family members who support health care for other members is 53.4 years, and that of the recipients is 55.1 years. All mean ages were calculated using the value of transfers to and from each age group. Indian children below age 20 years receive familial support from other household members, whereas elders are not at all supported by familial transfers. This finding is contrary to the widespread belief that in the absence of a viable public social security safety net Indian elders depend on their kin, particularly on sons, for their wellbeing.

Summary and conclusion

This paper has examined age patterns of per capita consumption in India by sector, emphasizing the sociocultural significance of intrahousehold transfers to support the lifecycle deficit. As in any developing economy with a large population of children and a smaller but increasing aged population, at the aggregate level the lifecycle deficit of the Indian population under age 20 is 6.5 times than that of 60+ population. At the per capita level, however, the lifecycle deficit of the 60+ population is more pronounced and comparable to that of the under-20 population. Education and health care are the main forms of consumption that produce a lifecycle deficit among the young and elderly individuals. Familial transfers from household members with disposable income go mostly to members below age 20, accounting for 51% of the lifecycle deficit of this age group, whereas intrahousehold transfers to members of ages 60+ fall far short of their lifecycle deficit. The main conclusions we draw from this study are that India has a shortage of public funding to meet the lifecycle deficit of its population, and that children and the elderly would not be able to consume essential goods and services were it not for the existence of familial transfers in general and intrahousehold transfers in particular.

References

Agree, E.M., A.E. Biddlecom, and T.W. Valente. 2005. Intergenerational transfers of resources between older persons and extended kin in Taiwan and the Philippines. *Population Studies* 59(2): 181–95.

Anant, T.C.A., R. Hasan, P. Mohapatra, R. Nagraj, and S.K. Sasikumar. 2006. Labor markets in India: Issues and perspectives. In J. Felipe and R. Hasan (eds.), *Essays in industrial policy, pp. 148–165.* New Delhi: Oxford University Press.

Bhat, R., and N. Jain. 2006. Analysis of public and private healthcare expenditures. *Economic and Political Weekly*, January 6: 57–68.

Chen, X., and M.Silverstein. 2000. Intergenerational social support and psychological well-being of older parents in China. *Research on Aging* 22(1): 43–65.

CSO [Central Statistical Organisation]. 2006. *National accounts statistics 2005.* New Delhi: Government of India.

Desai, S., A. Dubey, B.L. Joshi, M. Sen, A. Sheriff, and R. Vanneman. 2008. India Human Development Survey. Unpublished report, University of Maryland, .College Park, MD.

Govinda, R. 2002. *India education report.* New Delhi: Oxford University Press.

GOI [Government of India], Ministry of Finance. 2006. Economic Survey 2004–2005. http://indiabadget.nic.in/es 2004-05/esmain.htm (accessed 5 October 2008).

GOI [Government of India], Ministry of Health and Family Welfare. 2005. National Health Accounts India 2001–02, National Health Accounts India. New Delhi.

Hermalin, A.I., M.C. Chang, and C. Roan. 2002. Economic well-being: Insights from multiple measures of income and assets. In A.I. Hermalin, ed., *The well-being of the elders in Asia,* pp. 295–360. Ann Arbor: University of Michigan Press.

Lillard, L., and R.J. Willis . 2002. Patterns of intergenerational transfers in Southeast Asia. *The Journal of Marriage and Family* 64: 627–41.

Mason, A., R. Lee, A.C. Tung, M.S. Lai, and T. Miller. 2006. Population aging and intergenerational transfers: Introducing age into national accounts. Working Paper No. 12770. Cambridge, MA: National Bureau of Economic Research.

Mason, K.O. 1992. Family change and support of the elderly in Asia: What do we know? *Asia-Pacific Population Journal* 7(3): 13–32.

Nagaraj, R. 2004. Fall in organized manufacturing employment: A brief note. *Economic and Political Weekly* 39(30): 3387–90.

NCERT [National Council of Educational Research and Training]. 2003. *Compendium of educational statistics.* New Delhi.

OECD [Organisation for Economic Co-operation and Development]. 2007. *OECD economic surveys: India.* New Delhi: Academic Foundation.

Ofstedal, M.B., J. Knodel, and N. Chayovan. 1999. Intergenerational support and gender: A comparison of four Asian countries. *Southeast Asian Journal of Social Science* 27(2): 21–41.

Zimmer, Z., and J. Kwong. 2003. Family size and support for older adults in urban and rural China. *Demography* 40(1): 23–44.

Dynamic Panel Data Model and The FDI Determinants: Revisited in India

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Abstract

The paper deals with different characteristics of panel data models to examine the determinants of FDI inflows in India. Using the data over 2001-2008, it finds that the main determinants of FDI inflows are the availability of power, domestic investment and profit. It further justifies that higher profitability increases FDI inflows into a state, while larger variability in it can reduce the same.

Keywords: Dynamic panel data model, FDI, India

1. Introduction

The finding of an adequately fitted model for an economical phenomenon has been a great intension of researchers since very ancient times. The functional form and the different methods of estimation of a classical model are the main and powerful sources to satisfy this intention. In the way, panel data model is an attempt of the same type. Panel data usually refers to a cross section repeatedly sampled over time, but where the same economic agent has been followed throughout the period of the sample (Pasha et al., 2007). A number of studies can be found in the favour of panel data modelling. For instance, see Hsiao (1986), Judson and Owen (1996), Nerlove (2000), Baltagi (2001), etc. among many others. The panel data models are themselves well explanatory, when we encounter the data on a set of economic units observed at more than one point in time.

But it is very often that the response variable depends not only on pure exogenous variables but also its own lag values. In the present context, we have compared different characteristics of panel data models while dealing with the determinants of FDI inflows in India.

The rest of the paper is organized into four different sections. Section 2 offers the theoretical framework of FDI inflows. Section 3 discusses the structure of panel data models. Section 4 presents the results and discussion. Section 5 offers conclusion.

2. The Theoretical Framework of Determinants

In the international economics and business literature, foreign direct investment (FDI) is a growing global phenomenon, with flows reaching 1.2 trillion by 2010 (WIR, 2010). The numbers of home and host countries and two-way flows have increased. As an increasing number of countries are both home and host to international investments, the traditional dichotomy between home country and host country interest have clouded and a more balanced perception of the benefits and costs of FDI has emerged (Apergis et al., 2006; Frenkel et al., 2004; Tang and Qi, 2006; Yue, 1996). FDI is a key ingredient for successful economic growth, particularly in developing countries. This is because the very essence of economic development is the rapid and efficient transfer and adoption of best practice across the borders (Kok and Ersoy, 2009). Besides, FDI has innumerable other effects on the host country's economy. It effects production, employment, prices, development and general welfare of the recipient country. It is also probably one of the most significant factors leading to the globalization of the international economy. Hence, the enormous increase in FDI inflows across countries is one of the signs of globalization of the world economy over the past few years (WIR, 2006). On the contrary, FDI inflows may have some negative effects such as environment, disparities, transfer pricing, etc.

FDI takes place in response to home country push factors and host country pull factors as well as firm specific factors. Dunning (1980) identifies three sets of determinants of FDI inflows: first, the investing firm must have an ownership advantage over competitors in the host country, usually technology, marketing expertise and/ or financial resources; second, the host country must possess some locational advantage to attract investments, usually the availability of specific resources, infrastructure, market size or potential and lower costs; and third, there must be internationalization advantage that induces the investing firm to choose the direct investment option over other arrangements such as licensing, franchising or exporting. There are numbers of studies that have been conducted to identify the determinants of FDI. But no consensus conclusion has been emerged, particularly in the sense that there is no widely accepted set of explanatory variables that can be considered as the true determinants of FDI. The results

produced by studies of FDI are typically sensitive to these factors, indicating the lack of robustness. For instance, factors such as labour, trade, inflation, exchange rate, etc. have been found to have both negative and positive effects on FDI. So the determinants of FDI inflows are highly sensitive. Keeping in above backdrop, present paper seeks to investigate the determinants of FDI inflows in India.

3. Methodology and Data Description

Panel data have both cross sectional and time series dimensions. So the applications of regression models to fit econometric models are more complex than those for simple cross sectional data sets and time series data sets. Nevertheless, they are increasingly being used in applied work. In this section, we briefly highlight the same

The general framework of panel model is as follows:

$$Y_{it} = \beta_1 + \sum_{j=2}^{p} \beta_j X_{jit} + \alpha_i + \delta t + \varepsilon_{it}$$

Where Y is dependent variable, X_j are observed explanatory variables, i refers to the unit of observation, t refers to time period, α_i is unobserved effect ε_{it} is a disturbance term assumed to satisfy the usual regression modelling condition. If α_i is correlated with any of the X_j variables, the regression estimates from a regression of Y on X_j variables will be subject to unobserved heterogeneity bias. Even if the unobserved effect is not correlated with any of the explanatory variables, its presence will in general cause OLS to yield inefficient estimates and invalid standard errors. We will now consider ways of overcoming these problems. However, if the X_j controls are so comprehensive that they capture all the relevant characteristics of the individual, there will be no relevant unobserved characteristics. In that case, α_i term may be dropped and a pooled OLS regression may be used to fit the model, treating all the observations for all of the time periods as a single sample. Moreover, there two approaches to fit the panel data: fixed effect regression model and random effect regression model.

The fixed effects regression model is of three different forms: within-group fixed effect model, first difference fixed effect model and least square dummy variable (LSDV) fixed effects model. The within-group fixed effects model is in following form:

$$Y_{it} - \overline{Y_i} = \sum_{j=2}^{p} \beta_j \left(X_{ijt} - \overline{X}_{ij} \right) + \delta(t - \bar{t}) + \varepsilon_{it} - \bar{\varepsilon}_i$$

This is known as the within groups regression model because it is explaining the variations about the mean of the dependent variable in terms of the variations about the means of the explanatory variables for the group of observations relating to a given individual.

The first difference fixed effect model is as follows:

$$\Delta Y_{it} = \sum_{j=2}^{p} \beta_j \Delta X_{jit} + \delta + \varepsilon_{it} - \varepsilon_{it-1}$$

Here the unobserved effect is eliminated by subtracting the observations for the previous time period from the observation for the current time period, for all time periods. The LSDV regression model is as follows:

$$Y_{it} = \beta_1 + \sum_{j=2}^{p} \beta_j X_{jit} + \delta t + \sum_{i=1}^{n} \alpha_i Z_i + \varepsilon_{it}$$

Here, the unobserved effect is brought explicitly into the model. Z_i is considered as dummy variable, where it is equal to 1 in the case of an observation relating to individual I and 0 otherwise. Formally, the unobserved effect is being treated as the coefficient of the individual-specific dummy variable. The weight of $\alpha_i Z_i$ represents the fixed effect on the dependent variable Y_i for individual i.

It is to be noted that when the variables of interest are constant for each individual, a fixed effects regression is not an effective tool because such variables cannot be included. So the alternative approach is the use of random effect regression model. It has two conditions. First, Z_i should be drawn randomly from a given distribution. This may well be the case if the individual observations constitute a random sample from a given population. If this is the case, the α_i may be treated as random variables, drawn from a given distribution and we can write the model is follows:

$$Y_{it} = \beta_1 + \sum_{j=2}^{p} \beta_j X_{jit} + \delta t + \varepsilon_{it}$$

Where $u_{it} = \alpha_i + \varepsilon_{it}$ and $\sigma^2_{u_{it}} = \sigma^2_{\alpha} + \sigma^2_{\varepsilon}$

The second condition is that the Z_i variables are distributed independently of all of the X_j variables. If this is not the case, α and hence u, will not be uncorrelated with the X_j variables and the random effects estimation will be biased and inconsistent. We would have to use fixed effects estimation instead, even if the first condition seems to be satisfied.

The empirical analysis is based on a panel of 16 Indian states over the period from 2001 to 2008. The variables used under this study are FDI inflows; power (POW), measured as a percentage of power supply; education (EDU), measured as the ratio between educational institutions to students; health (HEA), measured by infant survival rate; transport (TRA), measured by density of road and railway; research and development (R&D), measured as a percentage of R & D expenditure; domestic investment (DOI), measured as the percentage share of implemented industrial entrepreneur memoranda to the total industrial investment proposals; profit (PRO), measured as the percentage share of output; and risk (RIS), measured as the variation of profit.

4. Results and Discussion

This section scans the estimated results of FDI determinants by using dynamic panel data model. The results are presented and discussed under two heads: the fixed effect model and random effect model (see Table 1). Starting with fixed effect model, the estimated results indicate that the main determinants of FDI inflows are power (POW), domestic investment (DOI), profit (PRO) and risk (RIS). While the coefficients of POW, DOI and PRO are positive, the coefficient of RS is negative. This represents that the availability of power and high domestic investments and profits have significant impact on FDI inflows in India. But the variation of profit has significant negative impact on FDI inflows. Coming to random effect model, the results are also somewhat same. That means the main determinants of FDI inflows are the availability of power, domestic investment and the existence of profit. But the high volatility of profit leads to negative impact on FDI inflows in India. That means higher profitability increases FDI inflows into a state, while greater variations in it reduce the same. This may be fact that higher profitability signals better business environment and possibility of greater return in future. This raises the ability and willingness of the existing firms to grow and encourages new firms to enter the market. But the variations in profitability discourage new investors who are risks averse and also restrict the existing enterprises for expanding their business. The results are substantially supported by Wald χ^2 and overall R^2 (see Table 1). Further the Breusch and Pegan Lagrange

Multiplier test yields $\chi 2$, which suggests the selection for REM over the pooled regression model.

The impacts of other variables, such as education, health, transport and R&D, are, however, not significant. This gives lots of contradictory results. For instance, the insignificant relationship between R&D and FDI inflows contradict to the proposition that the states closer to technology frontier attract more investment (Nunnenkamp and Strake, 2007; Aghion et al., 2006). This may be due to fact that the foreign firms more on their own R&D base than on sourcing the same from outside. Similarly, it also contradicts that the availability of infrastructure is necessary for attracting more FDI (Kumar, 2002). This is very important, as the lack of infrastructure certainly cause for low FDI inflows in many of the Indian states. This may be the situation, when foreign investors create their own infrastructure as per their need instead of depending on the domestic existing infrastructure. If it is so, availability of infrastructure is not a precondition for investment. Moreover, FDI can be directed directly towards the creation of infrastructure, especially when domestic investment is not sufficient enough to meet the infrastructure requirements. In such cases, infrastructure is not a cause but an effect of FDI inflows. Besides, the requirement of infrastructure is largely industry specific. So depending upon the nature of industry for investment, a state with even poor infrastructure can attract more FDI inflows in the economy.

4. Conclusion

The paper examines the determinants of FDI inflows in India during the period 2001-2008. Using dynamic panel data model, it finds that the main determinants of FDI inflows are the availability of power, domestic investment and the occurrence of profit. But the high volatility of profit leads to negative impact on FDI inflows in India. This indicates that higher profitability increases FDI inflows into a state, while larger variability in it can reduce the same. The impact of other factors, particularly, infrastructure, do not provide any significant impact on FDI inflows in India during the period under investigation.

The findings give some important policy implications in the Indian economy. First, since FDI inflows and the required infrastructure are industry specific, different clusters of industries should be designed depending upon their nature and needs of infrastructure. This demands that infrastructure facilities should be developed as per the need of the investment. Second, the policy framework should ensure high return from investment in future. This requires removal of entry

barriers to input/ output markets, flexibility in labour laws and easy access to utility services, simplifying tax structure and widening the market space. Third, government should pay a proactive role in regulating market operations. Efforts should be made towards making the capital market more stable, along with regulating restrictive and unfair business practices by incumbents. Finally, there should be greater transparency and accountability in government functioning. The laws and orders should be strictly maintained and the industrial disputes should be resolved at the earliest. This may give the prospective investors necessary confidence and hence, encourage investing in the respective state.

Table 4: Results of Panel Data Model

Test Statistics	Fixed Effect Model	Random Effect Model
Intercept	0.51 [0.58]	0.33 [0.31]
PWR	0.03 [0.02]	0.004 [0.01]
EDU	-1.00 [0. 8]	-0.01 [0.33]
HEA	1.42 [0.24]	-0.188 [0.13]
TRA	0.52 [0.44]	0.834 [0.65]
R&D	-0.56 [0.8]	3.04 [0.71]
DOI	0.01 [0.00]	0.01 [0.00]
PRO	0.03 [0.02]	0.024 [0.01]
RIS	-0.06 [0.06]	-0.053 [0.03]
R^2 (within)	0.20	0.300
R^2 (between)	0.001	0.831
R^2 (overall)	0.0001	0.687
HFR	5.110	
BPL		6.95

Note: PWR: Power; EDU: Education; HEA: Health; TRA: Transport; R&D: Research and Development; DOI: Domestic investment; PRO: Profit; RIS; Risk, represented by volatility of profit.

References

Apergis, N., Katrakilidis, C. P. and Tabakis, N. M. (2006). Dynamic Linkages between FDI Inflows and Domestic Investment: A Panel Cointegration Approach. *Atlantic Economic Journal*, 34: 385-394.

Baltagi, B. H. (2001). Econometric Analysis of Panel Data. John Wiley and Sons Ltd., Chichester, England.

Baltagi, B. H. and Kao, C. (2000). Nonstationary Panels, Cointegration in Panels and Dynamic Panels: A Survey. Centre for Policy Research, Working Paper, No. 16, Syracuse University, New York.

Cuadros, A., Orts, V. and Alguacil, M. (2004). Openness and Growth: Re-examining Foreign Direct Investment, Trade and Output Linkage in Latin America. *Journal of Development Studies*, 40: 167-192.

Dunning, J. (1980). Towards An Eclectic Theory of International Production: Some Empirical Tests. *Journal of International Business Studies*, 11: 9-31.

Frenkel, M., Funke, K. and Stadtmann, G. (2004). A Panel Analysis of Bilateral FDI Flows to Emerging Economies. *Economic Systems*, 28: 281-300.

Hsiao, F. S. T. and Hsiao, M. C. W. (2006). FDI, Exports and GDP in East and Southeast Asia-Panel Data Versus Time Series Causality Analysis. *Journal of Asian Economics*, 17: 1082-1106.

Judson, R. A. and Owen, A. L. (1996). Estimating Dynamic Panel Data Models: A Practical Guide for Macroeconomists. *Economic Letters*, 65: 9-15.

Kok, R. and Ersoy, B. A. (2009). Analyses of FDI Determinants in Developing Countries. *International Journal of Social Economics*, 36: 105-123.

Kumar, N. (2002). Infrastructure Availability, Foreign Direct Investment Inflows and Their Export Orientation: A Cross Country Exploration, RIS Discussion Paper, 26, RIS, New Delhi.

Nerlove, M. (2000). An Essay on History of Panel Data Econometrics. Proceedings of Ninth International Conference on Panel Data, Geneva, Switzerland.

Pasha, G. R., Aslam, M. and Abdullah, M. (2007). Dynamic Panel Data Model for Investment, Real Value and Capital Stock Data. *Pakistan Journal of Operation Research*, 3: 13-17.

Qi, C. and Tang, J. C. S. (2006). Foreign Direct Investment: A Genetic Algorithm Approach. *Socio Economic Planning Science*, 40: 143-155.

WIR (2006). World Investment Report, United Nations Conference on Trade and Development, New York.

WIR (2010). World Investment Report, United Nations Conference on Trade and Development, New York.

Yue, C. S. (1996). ASEAN Strategies on Foreign Direct Investment and Prospects for ASEAN-India Investments. *Journal of Asian Economics*, 7: 701-721.

Decentralized Urban Governance in West Bengal: Does Rhetoric Match Reality?

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Introduction

Decentralization, broadly, the assignment of fiscal, political and administrative power to local levels of governments, has assumed central role in matters of governance in the developing world over the last few years. This process formalizes the causal chain of devolution leading to more active citizen involvement and voice in the formulation and implementation of public policies. This, in turn, increases the ability of the citizens to hold local politicians/officials accountable. Essentially, the major promise of decentralization is that it brings popular participation and accountability to local governance and, therefore, makes local government more responsive to citizens' desires and more effective in delivering services. In reality, participation may occur in three different ways: (a) representative (usually but not necessarily elective) government[1]; (b) direct participation either at community or project level[2] and (c) mobilisation from above[3]. One need to be very much careful about the distinction between 'participation which permits representations or directly active involvement in local institutions from mobilisation which may well involve large numbers of people right down to the grass roots, but which nevertheless has little to do with enhancing the responsiveness of government bodies'. A public policy decision is not a 'once-and-for-all' act. It involves a number of stages ranging from putting an item on the agenda, through technical advice, discussion of favored proposals, to enforcement of final decision. Thus which (what) segment (proportion) of population taking part in which mode (stage) of local decision making process is crucially important. The operation of accountability mechanism, both internal (i.e., within institutional processes) as well as external (i.e., in relation between the local institutions and the public), determines the efficacy of

[1] Under this variant, participation encompasses the followings: (i) voting in election, (ii) contesting election as a candidate, (iii) taking part in election campaign, (iv) trying to influence government activities through, e.g., protesting etc. Here elections serve as a check to hold the representatives accountable to the people.

[2] Direct participation, with the help of wide range of small scale community level (or project based) institutions provides the citizens equal chance of actively taking part in the decision making process by subjecting all decisions to discussion and approval by all members of the relevant community. Thus, a pressure of accountability is built up on the (political) decision makers to respond to the needs and preferences of the citizen.

[3] The mobilisational form of participation is generally pursued by the authorities and/or political parties with the purpose of co-opting and, thereby, increasing the effectiveness of implementation of their own policies.

participation process[4]. In the end, participation is considered as an input to the building of accountability and as an output of sense of empowerment. Moreover, effective participation is reinforcing in nature in the sense that once the process is started, it lead to further increase in the level and scope of participation (Crook *et. al.* 1999: 6-11).

However, the causal chain of devolution leading to greater citizen participation and voice and resultant increase in accountability has been questioned both on theoretical and empirical grounds. As such, there is no necessary correlation between the perceived broad based local participation and decentralization and the resultant improvement in the accountability mechanism. This correlation presupposes both the desires of individuals to take part in local government as well as the existence of appropriate forums that allow and encourage the free expressions of their interests. Moreover, societies in general and communities in particular are, in fact, spaces of internal differentiation and hierarchies. Consequently, participation would always be open to manipulation by better equipped sections of the community in terms of their social position, economic power or better skills (both with respect to information and communication). In essence, specific social, economic and political setting and the type of decentralization influence the relationships between participation and accountability.

Of late, the commitment towards popular participation in governance at the local level has been reinforced through recent policies of the Central and the State governments in India, which have given an opportunity to the citizen to express their voice and influence the decision making process affecting their lives. In particular, the 74th Constitutional Amendment Act (1992) opened up a new chapter in the history of democratic decentralization in India by devolving power to the people. The implementations of provision of the CAA vary from one state to another. In this wave of decentralization, West Bengal's attempt has been unique in its scope and intensity. West Bengal is the only state in the country where municipal elections are being held at regular intervals, since the 1980 amendment of Bengal Municipal Act 1932. Further, in this state, from 1980s onwards the municipal governments have been subjected to some radical institutional and fiscal reforms. The West Bengal Municipal Act 1993, in conformity with the 74th CAA, ushered in a new era of democratic decentralization aiming at functional as well as

[4] It is important to note the difference between participation and related responsiveness in terms of process and the same in terms of outcomes. Local government may consult the residents regarding the local decision. The process produces a sense of genuine satisfaction among the local residents and, as a result, they may be concerned, at least initially, more with the process than the actual results. But, 'accountability requires that local governments both develop processes that make residents feel their opinion being solicited and provide outcomes that make residents feel that their public service needs are being met' (Smoke, 2001: 19)

financial empowerment of the ULBs[5]. Under the new institutional framework, citizens can actively participate in their own administration and development through a two-tier system of local governance – the municipality and the Ward Committee (WC). The former is an elective body at the level of municipality consisting of elected representatives of the people (councilors) and the latter is a nominated body at the level of the ward.

Against this background, the present paper attempts to evaluate the implications of constitutional provisions for participation and accountability at the municipal level in West Bengal. To serve our research purpose, we purposively chose three municipalities, namely, Bally municipality, Bolpur municipality and Cooch Behar municipality. Bally municipality is located within the Kolkata Metropolitan Area whereas the other two selected municipalities are non-KMA municipalities. From political point of view, while Bally municipality was under the absolute control of the Left Front, the other two municipalities were run by the Indian National Congress. Then, four wards in each of the three selected municipalities were selected randomly. The socio-economic-political scenarios in our selected wards are different and, therefore, data collected from those wards are likely to be useful to trace the underlying changes in the urban governance framework following the 74th CAA. From each ward, we randomly selected 25 households, thereby drawing a sample of 300 households in all. In addition, we randomly selected three WC members from each selected ward, thereby having 36 members in all. We also interviewed the elected representatives of twelve randomly selected wards.

The plan of this paper is as follows. In the first section, we discuss peoples' participation in the WC meetings. The second section deals with the WC members' participation in WC meetings along with their perception on functioning of the WCs. In the third section, we assess the functioning of the elected representatives by examining their regular municipal activities. The final section summarizes the main findings of this paper.

[5] West Bengal is located in northeastern part of India. In terms of absolute size of urban population, West Bengal ranks fourth amongst the Indian States. In particular, as per Census 2001, 28.03 percent of the total population resides in various urban areas. The rate of growth of urban population during 1991-2001 has been 20.20 percent. The average density of the urban population in West Bengal is 6798 per square kilometer, which is the highest in the country. Municipalisation has also kept pace with the number of municipal bodies rising from 96 in 1951 to 126 (6 Municipal Corporations, 117 municipalities and 3 Notified Area Authority) in 2005. These bodies are normally dichotomized as municipal bodies located within the Kolkata Metropolitan Area (KMA) and the non-KMA municipalities (Government of West Bengal, *Administrative Report of Municipal Affairs Department 2001-2005*: 1-3).

1. Peoples' Participation

1.1 Peoples' Participation in Municipal Election and Other 'Proactive' Forms

Universal suffrage, for electing and/or subsequently disposing representatives, offers citizen the opportunity to influence structure as well as policies of the government. Regular elections are the best democratic instruments through which the issue of accountability can be addressed with substantial positive results on accountability and service delivery (Mathew *et. al*., 2003: 35). In other words, elected representatives are most clearly held accountable through free,

Table 1: Sampled Respondents' Participation in Municipal Voting

Municipality	*Voting in municipal election*		
	Never	*Occasionally*	*All*
Cooch Behar	0	0	100
	(0.00)	(0.00)	(100.00)
Bolpur	2	1	97
	(2.00)	(1.00)	(97.00)
Bally	0	0	100
	(0.00)	(0.00)	(100.00)
All	2	1	297
	(0.67)	(0.33)	(99.00)

Note: Figures in the parentheses are the percentages to the total.
Source: Field Survey, 2007.

fair and regularly held elections. In our survey, almost 99 percent of the respondents voted in all the municipal elections that were held since they had become old enough to vote[6] (Table 1).

Now, the important question is whether these extraordinarily high voting figures are reflective of vibrant democracy. Scholars have challenged the fairness of the election process[7]. Consequently, the high level of participation in local municipal election cannot be regarded as a reliable indicator of high levels of broad political participation. Of late, the definition of political participation has been widened to include 'proactive' forms of participation, such as campaigning during election, attending rallies and meetings, contacting public representatives etc. (Crook *et. al.*, 1998: Chapter 2; Alsop *et. al.*, 2000: 170). Rates of participation in those 'proactive' forms declined sharply as compared to that in municipal election. Table 2 shows that

[6] It is important to mention here that there is a tendency, common to surveys undertaken in different parts of the world, for respondents to over-report participation in voting (Alsop *et. al.*, 2000: 211).

[7] As argued by some scholars, the election processes might lose significance because of prevalence of undesirable practices likes vote buying, violence, lack of information about local policies and outcomes, citizens' inability to relate their voting decisions to local performance and so on (Grant, 2002; Beher *et.al*., 2002; Azfer *et.al.*, 2006).

only 39 percent of the respondents in our surveyed municipalities actively took part in election campaign, political meetings etc.

Table 2: Sampled Respondents' Participation in Political Activity

Municipality	*Political Participation*	
	Active	*Passive*
Cooch Behar	46	54
	(46.00)	(54.00)
Bolpur	26	74
	(26.00)	(74.00)
Bally	45	55
	(45.00)	(55.00)
Total	117	183
	(39.00)	(61.00)

Note: Figures in the parentheses are the percentages to the total.
Source: Field Survey, 2007

1.2 Institutionalizing Citizens' Participation: The Role of the Ward Committees (WCs)

Apart from regular municipal election, the 74th CAA also seeks to institutionalize citizens' participation through the formation of WCs in ULBs with three lakhs or more population. The Government of West Bengal makes it mandatory to constitute the WCs for all municipalities, irrespective of the size of the population. In fact, West Bengal is one of the few states, which in the first opportunity after the municipality elections in 1995, ensured that WCs are formed in all municipalities[8]. However, significant variations have been observed in the functioning of the WCs among the municipalities in the state as well as among the wards in same municipality (Ghosh *et. al.*, 2004: 29-30).

As par the provisions of WC Rules 2001, two types of meetings are to be conducted by the WCs: (a) ordinary meeting in which members of the committee must meet at least once in every month and (b) annual general meeting (AGM), to be held within June 30 of each year and preferably be arranged in a public place within the ward, in which all residents of the ward are invited. A detailed report on activities performed by the WC in the ward during the preceding year and also the programs to be taken up during the current year are presented in the AGM. The 2003 amendment suggests that the WC will also have to convene a half-yearly general meeting in the same way as they convene the AGM. Ordinary monthly meetings are not open to the

[8] This arrangement is superior to the provision of constituting the WCs only in corporation areas for a group of wards, as practiced in states like Karnataka, Maharastra, Tamil Nadu, Delhi etc. In other words, the degree of decentralization in this state has been higher with greater scope of participatory governance through closer proximity of citizens with the elected representatives.

public. Besides these types of meetings, WCs can also meet to discuss any emergency issues in the ward.

Peoples' Participation in AGM of the WCs

Theoretically, annual general meeting (AGM) of the WC provides a forum where people from every parts of society can voice their opinion, criticize elected officials and suggest solutions to practical problems. In such meetings, the scope of deliberations, between citizens and elected representatives on issues concerning local citizens, provide a mechanism by which elected representatives can be made accountable to the local constituents. In spite of being an important forum providing genuine opportunity for participation, AGM of the WC was held only in four out of 12 municipal wards surveyed by us. However, the most disturbing fact, which has serious implications for accountability and transparency of municipalities, is very poor attendance of the respondents in the AGM of the WC. Only 28 percent of the total respondents attended the AGMs in those four wards. The attendance rate was highest in ward 6 of Bally municipality with almost half of the respondents reported their attendance in the AGM. But, the scenario was truly bleak in the other three wards with the corresponding figure ranging from only 16 percent in ward 4 of Cooch Behar municipality to 28 percent in ward 6 of Bolpur municipality (Table 3). If we compare the attendance of the respondents for two sexes (Table 4), a striking fact is that higher proportion of our female respondents in those four wards actually attended the AGMs. Moreover, women belonging to the SC/ST category attended the AGM relatively in a larger proportion compared to the women from general category. This indicates that official policies, targeted towards greater participation of socially and economically disadvantageous section of people, started producing positive results.

Table 3: Respondents' Participation in the AGM of WC

Municipality/Ward	*Attendance in AGM*	
	Yes	*No*
Cooch Behar (W-4)	4	21
	(16.00)	(84.00)
Bolpur (W-6)	7	18
	(28.00)	(72.00)
Bally (W-1)	6	19
	(24.00)	(76.00)
Bally (W-6)	11	14
	(44.00)	(56.00)
Bally (All)	17	33
	(34.00)	(66.00)
All	28	72
	(28.00)	(72.00)

Note: Figures in the parentheses are the percentages to the total.
Source: Field Survey, 2007.

Table 4: Gender and Caste Profile of Respondents Attending the AGM of WC

Sex of Respondents	*Caste of Respondents*	*Attendance in AGM*	
		Yes	*No*
Male	General	15	48
		(23.81)	(76.19)
	SC/ST	4	11
		(26.67)	(73.33)
	All	19	59
		(24.36)	(75.64)
Female	General	5	11
		(31.25)	(68.75)
	SC/ST	4	2
		(66.67)	(33.33)
	All	9	13
		(40.91)	(59.09)

Note: Figures in the parentheses are the percentages to the total.
Source: Field Survey, 2007.

The available empirical findings, mostly related to village level meetings in India, also demonstrated that that the *Gram Sabhas* (village level deliberative body) often fail to fulfill their role as deliberative bodies partly because of low levels of participation among the electorate

(Alsop *et. al.*, 2000: 171; Ghatak *et.al.*, 2002: 50; Beher *et. al.*, 2002: 36; Johnson 2003: 29; Sarkar, 2008: ABP 14th May). Nevertheless, the situation is far gloomy in the urban areas as participatory involvement of citizens in local governance structure is almost totally absent there[9]. For example, in Bangalore, there were 31 WCs, which were fatally hampered by the combination of a debatable nomination process, limited citizen representation and an ambiguous mandate (Ramanathan, 2007: 674).

Several studies have attempted to identify the reasons behind insufficient participation and the reasons identified are: lack of awareness about meetings, hesitation among women to actively participate because of social taboos, lack of awareness among people in general, and specifically among women and socio-economically backward sections, about their roles and rights in these meetings, inconvenient meeting time and venue, pre-conceived notion about futility of those meetings, disadvantaged sections or backward castes believing that their voices will not be honoured as the leadership comes from the higher echelons of the society, corruption, and so (Mathew *et. al.*, 2003: 48; Johnson 2003: 29; Ghatak *et. al.*, 2002: 50-51; Beher *et. al.*, 2002: 37).

Factors Explaining Low Participation of People in WCs

In this study, we identified the factors that might explain the low attendance in the AGM of the WCs. We observed that a significant majority of respondents in all the three municipalities were completely ignorant about existence, constitutional status and rules and activities of the WCs. Although the WCs were constituted in every ward, only 57 percent of the total respondents were aware of existence of WCs (Table 5). The concept of WC as a constitutional body for

[9] According to Ramanathan, although the 73rd and 74th constitutional amendments created units of local self governments at the rural and urban levels respectively, urban decentralization has received far less attention in the country because of increasing significance of *panchayati raj* institutions in the villages. This lopsided approach has its root in the very process of drafting of two seminal pieces of legislation that have given rural and urban local governments their current positions. Four decades of struggle and intense debates by the policy makers culminated in the 73rd CAA while an urban decentralization amendment was drafted within a period of few months, mirroring in some ways the structural aspects of rural decentralization, capturing some unique needs of urban areas but missing the essential spirit of rural amendment-the centrality of the citizen and the bottom up nature of local self-government. In particular, as par the 73rd CAA, *Gram Sabha* means "a body consisting of persons registered in the electoral rolls relating to a village comprised within the area of *panchayat* at the village level". On the other hand, the 74th CAA discusses the institutional arrangement of the WC rather than recognizing the centrality of the registered voter. Under the 74th CAA, "the legislature of a state may, by law, make provision with respect to (i) the composition and the territorial area of a ward committee; (ii) the manner in which the seats in a ward committee shall be filled". Thus, from a constitutional standpoint, a clear and formal status of urban voter, like their rural counterpart, is absent. This, in turn, exacerbates the 'organic connection' between urban citizen and the government (*ibid* 2007: 674-681).

grassroots participation was not at all popular among the citizens. Almost three-fourths of the total respondents were not sure about constitutional status of the WC. Only 26 percent of respondents recognized the WC as a constitutional body. Quite expectedly, the level of awareness regarding rules and activities of the WC was even lower than the above-mentioned two aspects. More than 80 percent of the respondents were not aware of the rules and activities of the WC.

Table 5: Respondents' Awareness about the WCs

Municipality	**Awareness Regarding**							
	Existence of WC		*Status of WC as a Constitutional Body*			*Rules & activities of WC*		
	Yes	*No*	*Yes*	*No*	*Not Sure*	*Yes*	*No*	*Not Sure*
Cooch Behar	54	46	33	6	61	28	66	6
	(54.00)	(46.00)	(33.00)	(6.00)	(61.00)	(28.00)	(66.00)	(6.00)
Bolpur	68	32	25	0	75	20	72	8
	(68.00)	(32.00)	(25.00)	(0.00)	(75.00)	(20.00)	(72.00)	(8.00)
Bally	49	51	20	1	79	9	90	1
	(49.00)	(51.00)	(20.00)	(1.00)	(79.00)	(9.00)	(90.00)	(1.00)
All	171	129	78	7	215	57	228	15
	(57.00)	(43.00)	(26.00)	(2.33)	(71.67)	(19.00)	(76.00)	(5.00)

Note: Figures in the parentheses are the percentages to the total.

Source: Field Survey, 2007.

Interestingly, significant majority of the respondents of ward numbers 1 and 6 of Bally municipality reported that they do not know about the rules and activities of the WCs. This is surprising because in both the wards, the AGMs of WCs were held in 2006-07. Some of these respondents are reported to have attended the AGMs, in spite of being unaware of rules and activities of the WCs. The implication is that political allegiance motivated respondents to attend the AGMs in their wards[10]. This is indicative of '*clientilsm*', which is a practice of favoring political supporters at the expense of non-supporters. People attending the AGMs belonged to the same political party as that of the elected councilor. Those belonging to a different political party

[10] Analysis of socio-economic profile of respondents reinforces the political nature of attendance. We found that 24 percent of total male respondents in four wards attended the AGMs. The corresponding figure for women was 41 percent. Relatively greater attendance of female respondents might be due to the fact that the councilors were females in three out of those four wards. On the other hand, as compared to the general category (25 percent), a higher percentage of respondents from SC/ST groups (38 percent) attended the AGM. However, no clear-cut relationship could be discerned between educational / occupational backgrounds of the respondents and their rate of participation in the AGMs.

or apolitical kept themselves away from such meetings[11]. This seriously dampened the constitutionally envisaged apolitical spirit of the functioning of the WCs as the vibrant policy-making bodies with active involvement of common people.

Thus, against such a bizarre background of overwhelming majority of respondents being simply unaware of mere existence, constitutional status, as well as rules and activities of the WCs, peoples' low attendance in the AGMs of WCs is nothing but natural outcome. This underscores the supreme importance of providing information to citizens about constitutional provisions as well as rules and regulations related to democratic decision making. It matters little whether the constitutional provision guarantees decision-making rights of the citizens or not when the people are not aware of what right and opportunity they have, and they are unable to enforce their constitutional rights. Quite understandably, if there are many such individuals who do not have information on constitutional provisions, then their ability to enforce responsiveness and accountability will be low. Reducing this gap in information is, indeed, a key task in designing appropriate urban development policy.

Considering all the four wards in which the AGMs were held, majority of the respondents are found unaware of any such meetings in their wards. The percentage of respondents, having information about AGMs, ranged from 16 percent in ward 4 of Cooch Behar municipality to 60 percent in ward 6 of Bally municipality. It is also interesting to note that not all people having information on date and time of AGM attended the meeting. About 20-25 percent of informed respondents did not attend the AGMs in two wards of Bally municipality. Not even half of the informed respondents in ward 6 of Bolpur municipality took part in the AGM. One might explain this in terms of peoples' adverse perception about fruitfulness of such meetings. This observation can be substantiated by analyzing data on the respondents' knowledge about the decisions taken in WC meetings and their actual implementation. Taking all the four wards together, where the AGMs were held, a significant majority of the respondents expressed that they had no information about the WC decisions (Table 6). Only about 21 percent of respondents revealed that they knew about the decisions taken in the WC meetings.

[11] One study on municipalities in KMA areas found that most of the participants in the AGMs organized by WCs were either close to the ward councilor or were attracted by various incentives offered by the ward councilors to enhance attendance rate in the AGMs. In one ward of Kalyani municipality, the councilor arranged some small gifts for the participants, through lottery, to increase attendance rate in the AGM (Pal, 2006: 517).

Table 6: Respondents' Perception on Availability and Implementation of WC Decisions

Municipality	*Ward*	*Availability of WC decisions*				*Implementations of WC decisions*			
		Available	*Sometimes available*	*Not available*	*Not sure*	*Mostly*	*Some*	*None*	*Not sure*
Cooch Behar	W-4	1	5	19	0	0	4	1	20
		(4.00)	(20.00)	(76.00)	(0.00)	(0.00)	(16.00)	(4.00)	(80.00)
Bolpur	W-6	1	9	15	0	0	6	19	0
		(4.00)	(36.00)	(60.00)	(0.00)	(0.00)	(24.00)	(76.00)	(0.00)
Bally	W-1	1	4	19	1	0	4	1	20
		(4.00)	(16.00)	(76.00)	(4.00)	(0.00)	(16.00)	(4.00)	(80.00)
	W-6	10	3	12	0	5	6	0	14
		(40.00)	(12.00)	(48.00)	(0.00)	(20.00)	(24.00)	(0.00)	(56.00)
	All	13	21	65	1	5	20	21	54
		(13.00)	(21.00)	(65.00)	(1.00)	(5.00)	(20.00)	(21.00)	(54.00)

Note: Figures in the parentheses are the percentages to the total.
Source: Field Survey, 2007.

Among these wards, ward 6 of Bally municipality came first in terms of dissemination of information among the residents about the WC decisions. Considering these four wards together, however, three-fourths of the respondents revealed their ignorance about actual implementation of the WC decisions (Table 6).

All these indicate lack of transparency in functioning of the WCs. Under present decentralized setup in municipalities, people have option either to approach the councilor or any WC member with day-to-day problems of their wards. The WC members meet once in a month to discuss the problems faced by local people of their wards and also to assess the progress of ongoing developmental projects and prospects for future developmental works. The Ward councilor forwards WC decisions to the municipality for consideration. He/she also reports the actions taken by the municipality regarding WC proposals in the next monthly meeting of the WC. The WC members are expected to apprise local residents about municipality's decisions subsequently. The process, if properly executed, would surely increase the legitimacy of the WC as a genuine decision making platform at municipal level. This, in turn, would have positive effect on willingness of people to attend meetings convened by the WCs. It is obvious that only when people know what is going on, they can hold their elected representatives to account. Reliable and accessible information makes it possible for the people to judge municipalities'

performances and hold them accountable. Indeed, transparency is key to systematic accountability[12]. However, the reality, based on our survey experiences, depicted something else. The non-availability of information on decisions of the WCs and their implementation created a sense of disbelief about effective functioning of WCs among the local residents. This, in turn, induced respondents not to participate in any kind of activities of the WCs.

Peoples' Perception about WC Deliberations

Let us now have a glimpse on functioning of the WCs based on the experiences of individual respondents who attended the AGMs of the WCs. Quite understandably, public deliberations on issues affecting common people, exchange of ideas among the different stakeholders etc. legitimize the democratic decision making process which, in turn, improve accountability and transparency of the entire process. However, our analysis in the preceding sections reveals that the scope of any public deliberations was severely limited due to irregularity in convening the AGMs as well as insignificant attendance of the respondents in such meetings. Nevertheless, we enquired about the mode of participation of respondents who attended the AGMs. Simply sitting and listening to the proceedings of the meetings was the most dominant

Table 7: Individual Respondents' Responses on Functioning of AGM of WCs

Municipality	*Manner of Participation*			*Mode of Decision Making*		
	Sit & listen	*Passive**	*Active***	*Councilor alone*	*By few members*	*Collectively*
Cooch Behar	3	0	1	1	2	1
	(75.00)	(0.00)	(25.00)	(25.00)	(50.00)	(25.00)
Bolpur	6	0	1	0	0	7
	(85.71)	(0.00)	(14.28)	(0.00)	(0.00)	(100.00)
Bally	5	7	5	0	1	16
	(29.41)	(41.17)	(29.41)	(0.00)	(5.88)	(94.11)
All	14	7	7	1	3	24
	(50.00)	(25.00)	(25.00)	(3.51)	(10.71)	(85.71)

Notes: Figures in the parentheses are the percentage to the total. Total number of respondents is 28.

*: Participate in discussions initiated by others. **: Initiate the discussion himself/herself.

Source: Field Survey, 2007.

[12] Interestingly, under decentralized set up, local participation in government processes can increase the flow of information and hence accountability. But, this sequence in itself may be enough to discourage the elected representatives to make information on local government decisions publicly available (Grant, 2002: 19).

form of participation as half of the respondents did so (Table 7). Only one-fourth of the respondents actively participated in discussions. Among the municipalities, significant proportion of respondents (almost 70 percent) in Bally municipality participated in the discussions; majority of those respondents belonged to ward 6. Almost 86 percent of the respondents reported that decisions were taken on a consensus basis. According to only 11 percent of the respondents, few members dominate the decision making process. Few more points need to be noted in this context. Most of the participants in the AGMs were close to the ward councilor as well as his/her political party. Those who are critical of the ward councilor's leadership, including people belonging to other political parties, were reluctant to participate in the AGM for voicing their concerns. In this situation, one would not expect a participant to oppose any suggestion or decision made by the ward councilor. This, in fact, is one of the important reasons behind our respondents' inactive participation. In reality, there is a general unwillingness among the local people to voice their opinion publicly as they avoid antagonizing their local party leaders.

Thus, it clearly appears that non-occurrence of AGM in most of the municipal wards seriously undermined the constitutionally envisaged aim of '*deepening democracy*'. In our survey, democratic local governments in most cases failed to offer potential participatory possibilities, even unable to convene AGM on a regular basis, to a large number of citizens. However, despite these limitations, the AGM, at least for those who attended, seemed to be an important institutional forum contributing to the ideal of participatory governance. The experience of deliberating in public forums on issues such as garbage collection, streetlights, roads etc. can expand citizens' skills. Moreover, positive experiences are likely to induce other citizens to participate in such public forums[13].

[13] Citizens, in reality, need skills along with motivation to take the full advantage of participatory possibilities provided by the decentralized setup. As Gaventa says, "citizen participation does not just happen, even when the political spaces and opportunities emerge for it to do so. Developing effective citizenship and building democratic institutions take effort, skill and attention" (Gaventa, 1999: 50). More the citizens get opportunity to deliberate in public forums, more will be their skills and motivation. This, in turn, paves the path for effective/meaningful participation.

2. Ward Committee Members' Participation

As per the constitutional provision, the WC members are required to participate in the monthly meetings of the WCs. Another aspect of their participation in municipal activities is related to their interaction with local residents, which allows them to know the needs and priorities of the residents and attend those. This type of participation is also related to the concept of accountability. The present section examines the actual process of participation by the WC members. As per the constitutional provision, each WC should have 4 to 14 members (depending upon the size of population of the ward), excluding the local councilor. The members are categorized as the councilor's nominees and chairman's nominees. The local councilor is the chairperson of the WC and is empowered to select the members from amongst local residents. People belonging to the socially and economically disadvantageous sections are also expected to represent the WC. The chairperson of the municipality also has the power to nominate a certain number of members to each WC. Moreover, there are provisions for reservation of some seats in the WCs for social workers, educationists, cultural activists, women from backward classes etc. The WCs, thus, are envisioned as the separate apolitical citizens' body to provide local residents much needed platform to make demands and to have them forwarded to the municipality.

However, our empirical observations suggest otherwise. In general, councilors as well as chairman of the municipality nominated members for the WC from among their own party supporters. In Bally municipality, none of the WC members belonged to any opposition political party. The councilors of all four wards surveyed were from the same political party, which also formed the board at the municipality[14]. The chairman of the municipality and the councilor did not nominate any member from the opposition political party in the WC[15]. In some wards of Bolpur municipality and Cooch Behar municipality, members from different political backgrounds were selected in the WCs. But, in majority cases, members having different political affiliations were not informed about date and time of the monthly meetings of the WCs[16]. Thus, the basic purpose of the WC as an apolitical citizens' body, as envisaged by the

[14] In fact, in Bally municipality, candidates of the Left Front won all the municipal seats.

[15] Informally, some councilors reported that they approached some members of the opposition political party to become members of the WC, but none of them showed any interest.

[16] Two WC members belonging to the opposition political party, one each from Bolpur municipality and Cooch Behar municipality, reported that they did not receive any invitation to attend the monthly WC meetings. One of the

74th CAA, was defeated at the very onset, because it seems that councilors were interested to convert the WC into an extension of their party by allotting majority of the places in the WC to their loyalists. This politicization of the WCs is also documented elsewhere in studies relating to the composition and functioning of the WCs (Chandra, 2004: 32-34; Pal 2006: 517; Baud *et. al.*, 2008: 498). The implication is that the successful bottom-up planning process, through for example WC, can only materialize when initiatives from the bottom are given the necessary political spaces and when the state and the formal political/administrative structure allow them to do so.

2.1 Ward Committee Members' Knowledge about the Functioning of the WCs

Until and unless, members are aware about the constitutional importance of the WCs and the problems in their respective wards, their participation in the WC meetings would be of little practical relevance. The responsibility of being a member of an important participatory forum was new to the three-fifths of the surveyed members. However, a significant majority of them claimed to be aware of the legal status of the WC as a constitutional body as well as its rules and activities (Table 8). But, it is to be noted that their awareness was limited to

Table 8: WC Members' Awareness about WC

Municipality	**Awareness Regarding**			
	Status of WC as a Constitutional Body		*Rules and Activities of WC*	
	Yes	*No*	*Yes*	*No*
Cooch Behar	11	1	12	0
Bolpur	11	1	11	1
Bally	8	4	11	1
All	30	6	34	2
	(83.33)	(16.67)	(94.44)	(5.56)

Note: Figures in the parentheses are the percentages to the total.
Source: Field Survey, 2007.

hearing about the existence of the rules and remaining unfamiliar about the details. This is likely to cause adverse impacts on the working of the WCs.

2.2 Incidence of Ward Committee Meetings

As per the WC Rules 2001, ordinary meeting of the WC should take place at least once in a month. A notice for the meeting specifying date, venue, time and agenda are to be circulated

respondents was not even interested to attend the monthly WC meetings as she felt that, in any case, the ward councilor and her nominated members would do whatever they would like to.

among the members at least seven days before the date of the meeting. All the respondents in our survey, except one, had information on date and timing of the WC meetings. However, large intra- as well as inter-municipality variations were found in case of frequency of holding the WC meetings (Table 9). Only 36 percent of the respondents reported that the

Table 9: WC Members' Responses on Incidence and Their Attendance in WC Meetings

Municipality	*Frequency of WC Meetings*				*Attendance in WC meetings*			
	Once in a month/As needed	*Every 3/4 months*	*Irregular*	*None/Not sure*	*Few*	*Most*	*All*	*None*
Cooch Behar	0	5	6	1	1	1	9	1
Bolpur	5	5	1	1	6	3	2	1
Bally	9	2	1	0	3	3	6	0
All	14	12	8	2	10	7	17	2
	(38.88)	(33.33)	(22.22)	(5.55)	(27.78)	(19.44)	(47.22)	(5.56)

Note: Figures in the parentheses are the percentages to the total.
Source: Field Survey, 2007.

monthly meetings of the WCs were held on a regular basis. Quite a significant proportion of the respondents (22 percent) mentioned the irregular nature of such meetings. As per the respondents' responses, it seemed that, except ward number 27, regular monthly meetings were held in all the surveyed wards of Bally municipality. In Bolpur municipality, it is reported that the meetings were held with an interval of three/four months in all the sampled wards. In wards 4 and 19 of Cooch Behar municipality, the WC meetings were very irregular. Moreover, the members' participation in these meetings was very thin. Less than half of the respondents claimed to have attended all the WC meetings, held during 2006-2007 in their respective wards. Two WC members, belonging to the opposition political party, reported that they did not attend any WC meeting in the reference year as they were unaware of any such meetings. The participation of the WC members in monthly meetings was rather passive. Only one third of the respondents participated in the meetings actively, which means initiating and getting involved in the discussions (Table 10). About one-half of them claimed to have

Table 10: WC Members' Responses on Mode of Participation in WC Meetings

Municipality	*Sit & Listen*	*Passive*	*Active*
Cooch Behar	3	5	3
Bolpur	1	6	4
Bally	1	8	3
All	5	19	10
	(14.71)	(55.88)	(29.41)

Notes: Same as in Table 9
Source: Field Survey, 2007.

taken part in discussions in a passive manner. On the other hand, for 14 percent of the respondents, the participation in the meetings was limited to simply sitting and listening to the proceedings and nodding their heads. Among the active participants, an overwhelming majority was males (90 percent). Only one female respondent actively participated in the meetings. In essence, WC members' mode of participation hardly produces any surprise. As mentioned earlier, almost cent percent of the WC members belonged to the political party of the elected councilor. Moreover, the members belonging to opposition party were rarely invited to attend the meetings. Thus, it is fair to conclude that the actual function of the members was limited to rationalizing the political decisions already made by the higher leadership. Naturally, the extent of active participation was highly limited and very rarely the WC members proposed any new plan/activities or alternatives to existing plan/activities or opposed any of the proposals of the councilors.

The WC members took decisions mostly on consensus basis (Table 11). Only 11 percent

Table 11: Members' Responses on Mode of Decision Making in WC meetings

Municipality	*A*	*B*	*C*
Cooch Behar	2	2	9
Bolpur	1	3	8
Bally	1	3	7
All	4	8	24
	(11.11)	(22.22)	(66.67)

Notes: A -Chairman decides; B - Few members decide, C - Every member decides.
Figures in the parentheses are the percentages to the total.
Source: Field Survey, 2007.

of the respondents reported that the chairperson dictates the decision on any issue. However, there were no instances where the decisions got pending due to lack of unanimity. Dutta (2003) in his study of Rajpur-Sonarpur and Berhampore municipalities and Ghosh *et. al.* (2003) in their study of Siliguri Municipal Corpoation and Bidhannagar municipality found similar results. Dutta hailed absence of serious debate, as a positive step towards achieving the developmental goals quickly and easily (Dutta, 2003: 26). However, given the political nature of the WCs, absence of serious debate put a question mark on the efficacy of the WCs as a true participative forum at the municipal level.

3. Role of the Elected Representatives

In decentralized local governance structure, one of the important mechanisms for ensuring accountability involves a smooth relationship between citizens and elected representatives, which is strengthened by frequent interactions and communications between them. In our study, we found that a significant majority of the respondents (79 percent) approached the local councilor for their problems, followed by the WC members (22 percent) and political party representatives (13 percent). We further enquired about the frequency of interactions and communications between the councilors and local residents. It is found that 65 percent of the respondents approached the councilors at least once during the reference year[17]. Among them, some of the respondents contacted the councilor, quite regularly, with their problems. On the other hand, one-third of the respondents never made any contact with the councilors. According to one-half of the respondents, the councilors frequently visited their wards to get some idea about needs and priorities of the constituents. Majority of the respondents were able to directly approach the councilors and most of them drew some attention from the councilors. Thus, it seemed that there was enough scope for interaction and communication between local citizens and elected councilors. However, it also appears that such interactions have been confined to the people belonging to the same political party while those from opposition parties generally refrained from such interactions and communications.

3.1 Participation of Elected Representatives

We also studied in detail the manner of participation in regular municipal activities and related matters by the councilors. In this context, our first point of enquiry was their familiarity with the 74th CAA. We found that cent percent of them were aware of the 74th CAA. However, while interacting with them more intensively, it was noticed that some of the elected representatives, especially women and those from disadvantaged sections, were yet to fully comprehend the provisions of the 74th CAA. In some cases, the councilors appeared to be ignorant about the WC rules. For example, one of the councilors believed that the person belonging to opposition political party is ineligible to become a member of the WC, which is wrong as per the WC Rules 2001 or its subsequent amendment in 2003. This particular

[17] This figure needs careful interpretation as it seemed that people affiliated to the party to which the councilor represented interacted most frequently.

councilor's utterances revealed not only his ignorance about the WC rules but also a tendency to exclude the element of opposition from the local decision making processes. Moreover, from the conversations with the female elected representatives, especially female representatives from the SC/ST groups, it appeared that the local residents tend to bypass them and prefer to reach the local political party members directly, which minimized their roles in the municipality affairs.

The councilors discussed most of the problems of their wards in WC meetings. Meetings at the municipality are the other forums where they could raise and discuss those problems. The usual convention is to convene the meeting of the board of councilors once in a month to discuss various important issues[18]. Eight out of 12 councilors claimed that they attended all the board meetings (Table 12). The remaining four councilors attended as many (not all) meetings as possible.

Table 12: Councilors' Attendance in Municipal Board Meetings

Municipality	*Most*	*All*
Cooch Behar	1	3
Bolpur	3	1
Bally	0	4
All	4	8

Source: Field Survey, 2007.

However, the important question here is how far their participation or representation has been effective or meaningful. Effective participation implied articulation of desires and problems of citizens in the municipal meetings, participation in the deliberations on citizens' problems, and application of own judgment in matters relating to decision-making. The analysis of elected representatives' mode of participation in the meetings of board of councilors exhibited gender differences with regard to capacity of the representatives to raise issues and participate in the deliberations (Table 13).

[18]Interestingly, according to one Councilor (belonging to an opposition party) the monthly meetings are held at regular intervals not because of the fact that the elected representatives are truly interested at deliberations on local issues but because the councilors get certain allowances for convening and/or conducting as well as attending that meetings.

Table 13: Councilors' Mode of Participation in Municipal Board Meetings

Sex of Respondents	*Caste of Respondents*	*Sit & Listen*	*Passive*	*Active*
Male	General	0	0	3
	SC/ST	0	0	1
Female	General	1	3	0
	SC/ST	2	2	0

Source: Field Survey, 2007.

All the four selected male councilors stated that they raised problems of their locality in the meetings. All of them actively participated in the meetings to the extent that they initiated discussions and/or got involved in deliberations. However, none of our selected female representatives raised issues on their own in the meetings. Five of the women elected representatives stated that they participated in the discussions initiated by others. Simply sitting and listening to the proceedings of the meetings was the form of participation for other three female representatives. The women representatives generally approached the chairman or any other member of the municipality in advance about the problems of their locality, expecting that they will speak on their behalf, rather than speaking in the meetings themselves. This inability to directly raise an issue and also limited participation in deliberations reduced their influence over the decision making process as through the meetings of the municipal boards.

Further, majority of the councilors reported that decisions are taken on the basis of a consensus. Some further enquiry revealed that the decisions to be taken are pre-determined by the chairman and a few influential councilors. Such decisions are just endorsed formally through the municipality meetings. In the event of any dispute, decisions are taken on the basis of majority vote. Thus, it appears that there is limited scope for using one's own judgment in municipal decision making processes. Thus, under the prevailing system, there is little scope of numerical representation by various socio-economic groups in the municipal bodies getting translated into an effectiveness representation, which really undermines the very essence of the system of decentralization.

4. Summing Up

In terms of findings emerging from our analysis of micro data in urban West Bengal, we point out a number of areas that require immediate attention while planning strategies for decentralized urban governance.

Firstly, we observed that irregularity of monthly meetings and annual general meetings of the ward committees weakened the prospect of having more transparent and accountable local decision-making process. It is possible that the councilors themselves desired to keep the activities of the ward committees beyond the scope of public scrutiny. Legally speaking, municipalities could monitor the functioning of the ward committees with the help of a standing committee constituted by the Board of Councilors. At the extreme, the Board of Councilors can dissolve the non-functioning ward committees. However, the irony is that the municipalities do not appear to be much interested in utilizing these provisions and this is indicative of their negligence towards the ward committees. Utilizing the existing legal provisions and enforcing them seriously would be necessary to prevent the non-occurrence of such important meetings.

Secondly, in course of our study, it has been found that even where the annual general meetings were held, low participation of people in such meetings defeated the very purpose of broadening the local decision-making process. Such low rate of participation is quite natural when the urban people are constrained by the lack of information as regards the details of the annual general meetings. Hence, there is a need to redress this information deficiency through, for example, adequate house-to-house campaigns with special emphasis on reaching women and those belonging to lower castes. It would also be useful to engage local media to disseminate the relevant information as has been done in some other states of India.

Thirdly, another important implication arising from our study is that politically motivated selection of the ward committee members diluted the non-political character of the ward committees as envisaged by the 74th CAA. The councilors, in their attempt to eliminate any possible opposition, selected members from their own political parties. In this situation, some efforts to de-politicize the process of selection of ward committee members are called for. In fact, the Amendment to the WC Rules in 2003 proposes that names of the members selected by the councilor would have to be presented before the first annual general meeting for people's approval. The strict adherence to this rule might be helpful to democratize the selection process of the ward committee members. Existence of impartial media and involvement of the voluntary organizations might also act as possible counterweights to reduce the degree of politicization. These institutions might be used to expose the political nature of the selection process, increase the consciousness of the people as regards the constitutionally envisaged character of such committees, and provoke public opinion against such politicization.

Fourthly, it is quite understandable that meaningful participation under decentralization is crucially dependent on the capacity of the citizens to participate. In course of our field study, we observed rather passive participation of the citizens in the annual general meetings of the ward committees. It seemed to us that as the participating citizens were usually supporters of the councilor, they were expected to comply with the decisions made by the councilor in such meetings. Some people might also have felt inhibited to freely express their views as the participation in a public forum was completely a new experience for them. Hence, the government should take steps to ensure greater and more effective participation by the citizens, as through launching a sustained campaign program to generate the citizens' interest / awareness about the ward committees and their necessity. The non-governmental organizations could also be mobilized to play an important role in this regard.

Fifthly, the elected representatives (the councilors) themselves play a crucial role in the present decentralized set up. However, their 'numerical representation' does not necessarily produce desired results towards 'effective representation' as most of the members from socially and economically disadvantaged sections are unable to directly raise any issue and/or participate in discussions in the meetings. In any case, their limited participation in the deliberations eventually reduces their influence over the decision-taking processes. We need strong and committed political and executive leaders who can comprehend the need for reforms and have courage to initiate the reform process. The leadership must be inspired and committed to carry forward the reform initiatives.

In essence, following Rakodi's classification (2001), the decentralized arrangements in West Bengal upholds the attributes of representative democracy where citizens' interests are met through rules and institutions, elected governments, regular election etc. But, the finer provisions of participatory democracy, which put special emphasis on arrangements where citizens can directly participate in decision making process, are not being seriously explored and utilized. This sort of arrangement, undoubtedly, has much wider connotation for accountability. It stands out clearly that effective decentralization would require attention to both the supply and demand sides of democratic governance. On the supply side, appropriate institutions, rules and incentives mechanisms are needed to link the citizens with the government and their office bearers. On the demand side, capacity development of the citizens is extremely crucial to exploit the opportunities generated through supply side interventions. Conscious and combined efforts by

the government and non-government organizations along with greater involvement of the citizens have the potentiality to improve the municipal governance system.

References

Alsop, R.J, A. Krishna and D. Sjoblom (2000): "Are gram panchyats inclusive? Report of a study conducted in Rajasthan and Madhya Pradesh", Background Paper No.3 of the World Bank's unpublished Overview of Rural Decentralisation in India, Vol. 3.

Bardhan, P and D. Mookherjee (2003): "Decentralisation and accountability in infrastructure delivery in developing countries", November [downloaded from globetrotter.berkeley.edu].

Baud I and N Nainan (2008): "Negotiated spaces for representation in Mumbai: ward committees, advanced locality management and the politics of middle class activism", *Environment and Urbanization*, Vol. 20 (2), 483-499.

Behar, A and Y. Kumar (2002): "Decentralisation in Madhya Pradesh in India: From panchayati raj to gram swaraj (1995-2001)", Working Paper No. 170, Overseas Development Institute, London, September.

Brinkerhoff, D.W and Omar Azfar (2006): "Decentralization and community empowerment: Does community empowerment deepen democracy and improve service delivery?", Paper presented for US Agency for International Development, Office of Democracy and Governance, Washington DC, October.

Chandra, Medha (2004): "Bridging everyday and high politics-the 74th CAA and Inclusion in Kolkata, India", Development Planning Unit, University College London, London.

Crook, R.C and A.S. Sverrisson (1999): "To what extent can decentralised forms ofgovernment enhance the development of pro-poor policies and improve poverty alleviations outcomes?", August.

Gaventa, John (1999): "Citizen knowledge, citizen competence and democracy building" in Stephan L.Elkin and Karol E. Sotan, (Eds.) *Citizen competence and democratic institutions*, University Park, PA: Penn State Press, 49-67.

Ghatak, M and M.Ghatak (2002): "Recent reforms in the panchayat system in West Bengal: Towards greater participatory governance?", *Economic and Political Weekly*, January 5, 45-58.

Government of West Bengal (2006): Administrative Report of Municipal Affairs Department 2001-2005, Kolkata

Grant, U (2002): "Local government decision making: Citizen participation and local government accountability-A literature review", International Development Department, University of Birmingham, March.

Institute of Social Science (1996): "Municipal governance in West Bengal people's perception and participation", ISS Manuscript Report-9, ISS, New Delhi.

Johnson, C, P. Deshingkar and D Start (2005): "Grounding the state: Devolution and development in India's Panchayats", *Journal of Development Studies*, Vol. 41 No. 6, August, pp. 937-970.

Kim, A (2008): "Decentralisation and provision of public services: Framework and implementation", Policy Research Working Paper 4503, The World Bank Development Research Group, January.

Klugman, J (1994): "Decentralisation: A survey of literature from a human development perspective", Occasional Paper 13.

Krishna A (2007): "The conundrum of services: why services are crucial for making service provision better" in S Devarajan and I Widlund (eds.) *The politics of service delivery in democracies better access for the poor*, Edita, Stockholm.

Pal A (2006): "Scope of bottom – up planning in Kolkata: rhetoric vs reality", *Environment and Urbanization*, Vol. 18 No. 2 October, 501-521.

Patnaik, P (2005): "Affairmative action and representation of weaker sections participation and accountability in Orissa's panchayats", *Economic and Political Weekly*, October 29, 4753-4761.

Puri, E (2004): "Understanding participation theoretical foundations and practical implications", *Economic and Political Weekly*, June 12, 2511-2517.

Rakodi, C (2001): "Urban politics and governance: A review of the literature", International Development Department, School of Public Policy, University of Birmingham.

Ramanathan R (2007): "Federalism, urban decentralization and citizen participation", *Economic and Political Weekly*, February 24, 674-681.

Robinson, M (2003): "Participation, local governance and decentralised service delivery", Paper Prepared for a Workshop on 'New Approaches to Decentralised Service Delivery' Held in Santiago, Chile, 16-20 March.

Sharma R (2003): "Kerala's decentralization idea in practice", *Economic and Political Weekly*, September 6, 3832-3851.

Smoke, P (2001): “Fiscal decentralisation in developing countries A review of currentconcepts and practice”, Democracy, Governance and Human Rights Programme Paper Number 2, United Nations Research Institute for Social Development, February.

World Bank (2003): “Devolution in Pakistan-preparing for service delivery improvements”, A Working Paper Prepared for the Forum on Intergovernmental Relations and Service Delivery in Pakistan, 27-29 June.

Comparative analysis of Developed vs Developing Countries on varies Economical parameters

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Abstract

Economic development is the increase in the standard of living in a nation's population with sustained growth from a simple, low-income economy to a modern, high-income economy Also, if the local quality of life could be improved, economic development would be enhanced. Its scope includes the process and policies by which a nation improves the economic, political, and social well-being of its people.

Our research work will reflect on the comparing developing & developed countries on the different issues under following parameters as follows:

- Education
- Contribution to GDP
- Socio-Cultural Aspect
- Tends to grow or downsize
- Impact on future economical structure of the country

Key Words: Gross Domestic Product (GDP),Gross National Product **(**GNP**),** Human Development Index (HDI), the less developed countries (LDC), Purchasing power parity (PPP)

1. Economic Development Concepts

Traditionally economists have made little if any distinction between economic growth and economic development using the terms almost synonymously. As a concept, economic development can be seen as a complex multi-dimensional concept involving improvements in human well-being, however defined Critics point out that GDP is a narrow measure of economic welfare that does not take account of important non-economic aspects eg more leisure time, access to health & education, environment, freedom or social justice. Economic growth is a necessary but insufficient condition for economic development. Professor Dudley Seers argues development is about outcomes i.e., development occurs with the reduction and elimination of poverty, inequality unemployment, & illiteracy, within a growing economy.

1.1 Economics For Development

Economic development is the development of economic wealth of countries or regions for the well-being of their inhabitants. This is the short definition of Economic Development. Economic Growth & development are two different terms used in economics. Generally speaking economic development refers to the problems of underdeveloped countries and economic growth to those of developed countries. By Economic Growth we simply mean increase in per capita income or increase in GNP. In recent literature, the term economic growth refers to sustained increase in a country's output of goods and services, or more precisely product per capita. Output is generally measured in terms of GNP.

The term economic development is far more comprehensive. It implies progressive changes in the socio-economic structure of a country. Viewed in this way economic development Involves a steady decline in agricultural shares in GNP and continuous increase in shares of industries, trade banking construction and services. Further whereas economic growth merely refers to rise in output; development implies change in technological and institutional organization of production as well as in distributive pattern of income.

Hence, compared to the objective of development, economic growth is easy realize. By a larger mobilization of resources and raising their productivity, output level can be raised. The process of development is far more extensive. Apart from a rise in output, it involves changes in

composition of output, shift in the allocation of productive resources, and elimination or reduction of poverty, inequalities and unemployment.

In the words of Amartya Sen "*Development requires the removal of major sources of unfreedom poverty as well as tyranny, poor economic opportunities as well as systematic social deprivation neglect of public facilities as well as intolerance or over activity of repressive states."*

Economic development is not possible without growth but growth is possible without development because growth is just increase in GNP It does not have any other parameters to it. Development can be conceived as Multi-Dimensional process or phenomena. If there is increase in GNP more than the increase in per capita Income then we can say that Development is possible. When given conditions of population improves then we can say that this is also an indicator of economic Development.

Professor Michael Todaro sees three objectives of development:

"*Producing more life sustaining necessities such as food shelter & health care and broadening their distribution raising standards of living and individual self esteem*
Expanding economic and social choice and reducing fear.".

The UN has developed a widely accepted set of indices to measure development against a mix of composite indicators:

UN's Human Development Index (HDI) measures a country's average achievements in three basic dimensions of human development: life expectancy, educational attainment and adjusted real income ($PPP per person). UN's Human Poverty Index (HPI) measure deprivation using % of people expected to die before age 40, % of illiterate adults, % of people without access to health services and safe water and the % of underweight children under five. Development economics emerged as a branch of economics because economists after World War II become concerned about the low standard of living in so many countries of Latin America, Africa, and Asia. There are, however, important reservations in making development economics as branch of economics as opposed to the ultimate objective of the study of economics. The first approaches to development economics assumed that the economies of the less developed countries (LDCs)

were so different from the developed countries that basic economics could not explain the behaviour of LDC economies. Such approaches produced some interesting and even elegant economic models, but these models failed to explain the patterns of no growth, slow growth, or growth and retrogression found in the LDCs.Slowly the field swung back towards more acceptance that opportunity cost, supply and demand, and so on apply to the LDCs also. This cleared the ground for better approaches. Traditional economics, however, still couldn't reconcile the weak and failed growth patterns. What
was required to explain poor growth were macro and institutional factors beyond micro concepts of the firm, individual preferences, and endowments? Institutional analysis has been able to explain the poor growth patterns much better than the market failure theories did. However, there is no generally accepted institutional theory of economic development that a large share of development economists agrees upon. There is not even agreement on how important institutional factors are.

1.2 Economic Development

Economic Development is a branch of economics that deals with the study of macroeconomic causes of long term economic growth, and microeconomics; the incentive issues of individual households and firms, especially in developing countries. This may involve using mathematical methods from dynamical systems like differential equations and inter-temporal optimization, or it may involve a mixture of quantitative and qualitative methods. Development is a phenomenon which occurs over a long period of time but economic growth is increase in GNP which can occur when we are able to achieve increase in number of resources or increase in technology or by the combination of both. Freidman defines growth as an expansion of the system in one or more dimensions without a change in its structure and development as an innovative process leading to the structural transformation of social systems for the development for the society. Thus Economic growth is related to a quantitative sustained increase in the country’s per capita output or income accompanied by expansion in its labour force, consumption capital and volume of trade. On the other hand economic wants goods incentives and institutions.

2. Measurement Of Economic Development

2.1 Gross Domestic Product (GDP)

GDP includes all the various form of spending on domestically produced goods & services. To understand how the economy is using its scares resources, economist studied the composition of GDP.GDP divided into four components.

Notation for GDP=Y

$$\mathbf{Y= C+I+G+NX}$$

C= Consumption
I=Investment
G=Government Purchases
NX=Net Exports

2.2 Gross National Product (GNP)

GNP is the total income earned by nations permanent residents(called Nationals).It is different from GDP by including income that are citizens earned abroad & excluding income that foreigners earned here.

2.3 Human Development Index (HDI)

Apart from measuring income with the help of per capita GNP we have one more method to calculate Economic development, it is HDI. HDI does not replace GNP but adds considerably to an understanding of the real position of as society in much respect as would be clear from the following discussion

- HDI measures education and health and is thus multi dimensional rather than One Dimensional

- It focuses the attention of the policy makers on the ultimate objective of development not just the means
- It is more meaningful as a rational average than GNP

It shows that Human development gaps between nations are more manageable than the ever widening disparities in income HDI is composite of 3 basic indicators of human development– longevity, knowledge and standard of living. Longevity is measured by life expectancy at birth; knowledge by a combination of adult literacy and combined primary and secondary and tertiary enroll. Ratios and standard of living is measured by real GDP per capita.

2.4 Purchasing power parity (PPP)

In their simplest form, PPPs are price relatives, which show the ratio of the prices in national currencies of the same good or service in different countries. Purchasing power parity (PPP) is an economic technique used when attempting to determine the relative values of two currencies. It is useful because often the amount of goods a currency can purchase within two nations varies drastically; based on availability of goods, demand for the goods, and a number of other, difficult to determine factors. PPP solves this problem by taking some international measure and determining the cost for that measure in each of the two currencies, then comparing that amount.

Purchasing power parity is, of course, an imperfect device for determining things such as GDP, as the exchange rate will vary based on the basket item used for the index. This effect is lessened by looking at a large sample of commodities, rather than one or two, but this simply minimizes the problem rather than eliminating it entirely. It is also worth noting that PPP lumps items together into broad classes, not taking into account things such as quality — a hat is a hat is a hat, and its value in the index remains static, even though a shoddy hat's value on the international market would be much lower than a well-made hat's value.

3. Define Developing & Developing Country

Developing country is a term generally used to describe a nation with a low level of material well-being. Since no single definition of the term *developed country* is recognized internationally, the levels of development may vary widely within so-called developing countries. Some developing countries have high average standards of living.

Top references for **developing countries**:

- India
- China
- Brazil
- Bangladesh
- Nigeria
- South Africa
- Philippines
- Indonesia

The term **developed country** is used to describe countries that have a high level of development according to some criteria.

Top references for **developed countries**:

- Japan
- Australia
- Canada
- Germany
- France
- Sweden
- Italy

- New Zealand

The designations "developed" and "developing" are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process

4. Statistic Facts For Developing Vs Developing Countries

Countries distribution based on Income distribution:

Richest top 3 are:

Swaziland, Nicaragua & Brazil,

Poorest bottoms 3 are:

Sweden, Belarus & Slovakia

5. CONTRIBUTION TO GDP

List of top 3 & bottom 3 players by GDP (Listed by World Bank)

Top three Player	**GDP (millions of USD)**
United States	14,119,000
Eurozone	12,455,979
Japan	5,068,996
Bottom three Player	
Palau	191
Marshall Islands	153
Kiribati	130
India(Rank 11)	1,310,171

List of top 3 & bottom 3 players by GNP

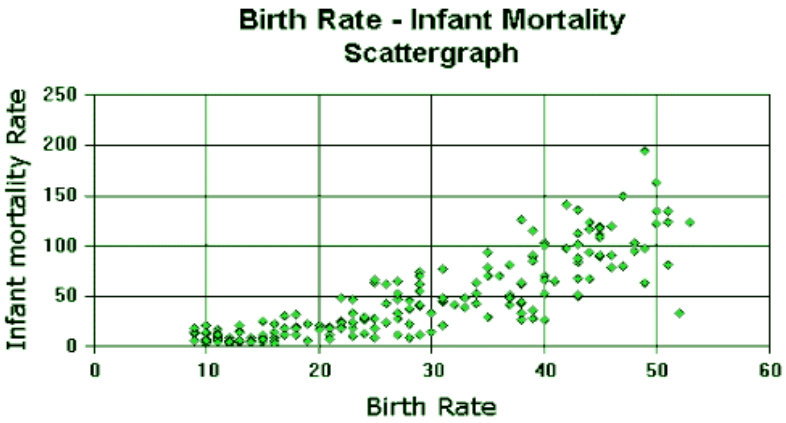
Top three Player	**GNP ($ per person)**
Luxembourg:	37,499.20
Switzerland:	36,987.60
Japan:	35,474.10
Bottom three Player	
Somalia:	0
Iraq:	0
Libya:	0
India(Rank 128)	441.56

6. Socio-Cultural ASPECT FOR Developing VS Developed COUNTRIES

6.1 BIRTH RATES

Developing countries have high birth rates because

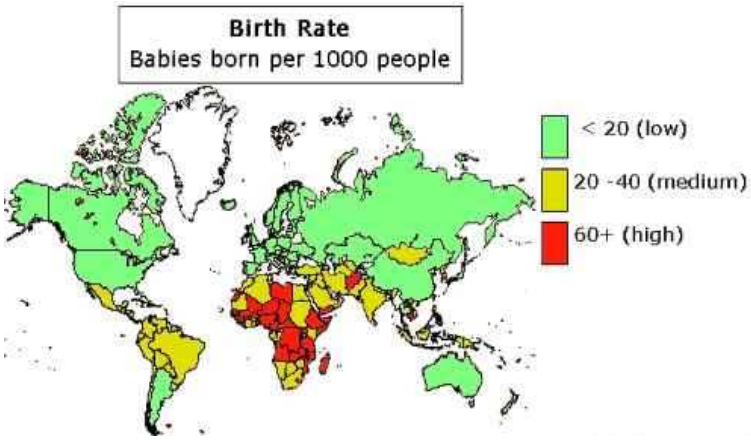
- Many parents will have a lot of children in the expectation that some will die because of the high infant mortality rate
- Large families can help in looking after the farm
- The children will be able to look after their parents if they become old or sick; there may not be a old age pension scheme
- There may be a shortage of family planning facilities and advice



This scatter graph shows that a country with a high infant mortality (many children dieing young) will tend to have a higher birth rate.

Developed countries have low birth rates because

- It is expensive to look after large families
- More women prefer to concentrate on their careers
- Increasing sexual equality has meant women have more control over their own fertility
- There is a ready availability of contraception and family planning advice



6.2 Death Rates

Developing countries have high death rates because, in many cases, there are

- Dirty, unreliable water supplies
- Poor housing conditions
- Poor access to medical services
- Endemic disease in some countries
- Diets that are short in calories and/or protein

Developed countries have low death rate because, in many cases, there are

- Good housing conditions
- Safe water supplies
- More than enough food to eat
- Advanced medical services which are easy to access

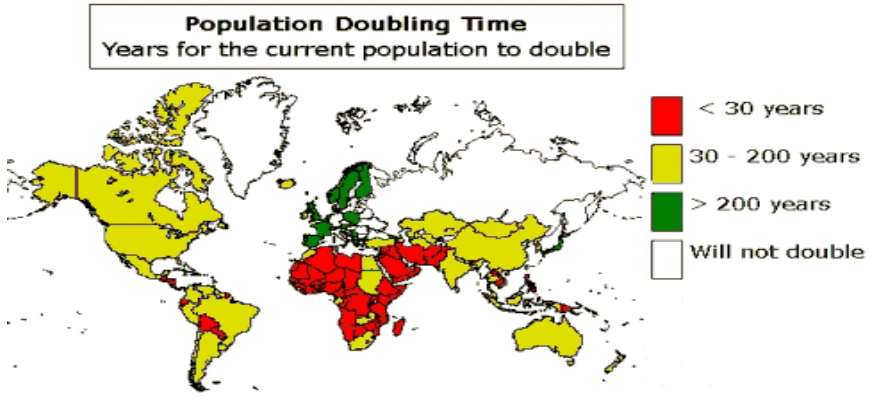
Some developed countries have a high death rate as they have an ageing population with many older people.

6.3 Natural Increase

Developing countries have high rates of natural increase as their birth rates are high, and although their death rates are also high there is usually a big gap between the two figures. Malawi's natural increase is 30 per year for every 1,000 people. This is calculated from the birth rate of 51 minus the death rate of 21 (51 - 21 = 30).

Developed countries have both a low death rate and low birth rate, with only a small gap between the two. Norway's natural increase is 3 per year for every 1,000 (14 - 10 = 3).

Countries that have a high rate of natural increase will have a short population doubling time.

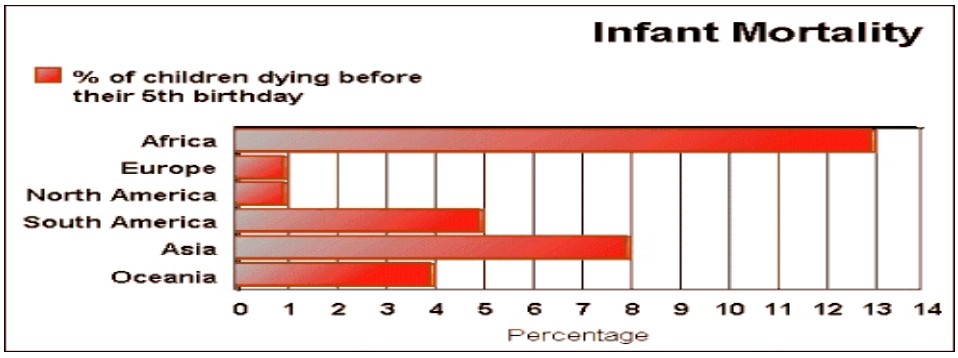


6.4 Infant Mortality

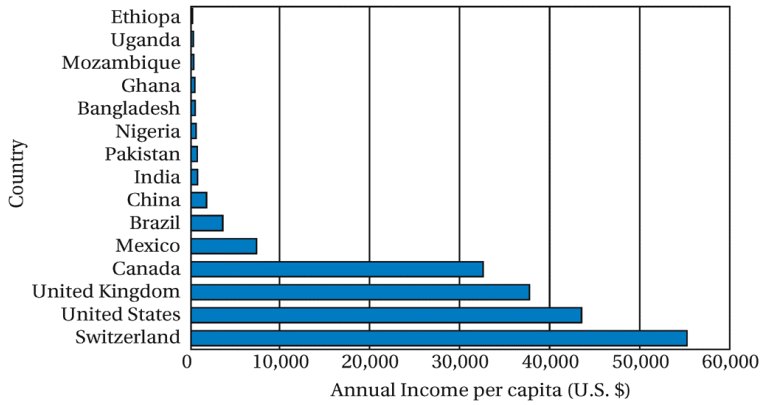
The infant mortality rates are higher in developing countries. The reasons for these higher rates are that developing countries often have

- A shortage of medical services
- A greater number of children born to mothers
- Poor nutrition of mothers and babies
- Less knowledge of health matters
- Dirty water supplies

The chances of surviving to your fifth birthday depend on where you are born in the world



6.5. Per capita Income



Source: Data from World Bank, *World Development Indicators, 2007* (Washington, D.C.: World Bank, 2007), tab. 1.1.

7. Education Sector Analysis

The following change factors described have fuelled the current interest in the quality of higher educational institutions in developed as well as developing countries:

• The rapid expansion of student numbers in the face of public expenditure worries;
• The general mission for better public and private services of education;
• Increasing competition within the educational 'market' for resources and students;
• Tension between efficiency and quality

They have been one of the motivators for implementation of new way of educational delivery also in developing & developed countries.

Socio-cultural barriers to student enrolment in education in developing countries include poverty, direct cost of schooling, gender socialization, level of parental education and cultural and traditional practices, such as early marriage, customary fostering, puberty rites Students enrolled in school are more likely to be withdrawn from school to help in household chores and family business. Gender biased educated of the people in less developed countries.

Achieving equal access to education for boys and girls faces several challenges in developing countries including:

- Implementing strategies for gender equality in education that take into account the need for changes in attitudes, values and cultural practices.
- Expanding and strengthening incentive and scholarship schemes for girls improving the quality and relevance of basic education.
- Increasing the transition rate for girls to senior secondary schools.
- Sensitizing parents and communities about the importance of girl's education.

The provision of incentives to encourage female enrolments has greatly enhanced and reduced the gender disparities existing. Donor assistance must also focus on funding initiatives aimed at improving access to and delivery of Technical / Vocational Institutions that seek to improve the relevance of education to employment opportunities.

Example from developing country: India

Indian GDP –Trend Of Growth Rate

1960-1980 : 3.5%
1980-1990 : 5.4%
1990-2000 : 4.4%
2000-2009 : 6.4%

The contributions of various sectors in the Indian GDP for 2007-2008 are as follows:
Agriculture: - 17%
Industry: - 29%
Service Sector: - 54%

Indian education sector has gained significant attention from policymakers, investors, and media in the few last year. The year 2010 will continue to be an important year with increasing demand for education and corresponding new ways of meeting those demands. The top five trends expect are:

- **Internationalization would become more glamorous:**

Internationalization as a strategy for building reputation will gain more prominence. This may range from establishing international collaborations for student/faculty exchange programs to joint research projects and offshore campuses.

- **Policy landscape will become tougher, wider spectrum of institutional quality:**

Quality of Indian higher education system has lagged behind the growth in quantity. Given the unfortunate state of regulatory mechanism in India, there are several changes expected in the

direction of transparency and stricter norms. Several institutions need to shape up to fulfil the norms.

- **Growth of multicampus model, not-for-profit will not be welcomed:**

Competition and opportunity would compel institutions with resources to gain scale, move beyond their traditional markets and innovate the educational offerings

- **Technology adoption will increase:**

With the growth in scale of the institutions and multicampus models, there will be increasing need for streamlining and controlling processes. Technology solutions in the form of campus management software packages will gain ground. Even course management tools will become prominent among faculty for efficiently organizing their classes.

- **Demand of professional talent in education sector will increase:**

Indian education sector is growing at a fast pace but the professionals including faculty and administrators are lagging behind both in quantity or quality. This will pose even more threatening scarcity about the availability of faculty.

Example from developed country: Australia

Economic contribution

2007-08 $M

Expenditure 6,435.9
Labour 4,597.3
GOS 482.8
Value-added 5,080.1

The contributions of various sectors in the Australian GDP for 2007-2008 are as follows:

Agriculture: 4.1%
industry: 26%
services: 70% (2009 est.)

Note: This entry gives the percentage contribution of *agriculture*, *industry*, and *services* to total GDP. The distribution will total less than 100 percent if the data are incomplete.

In 2005, the higher education sector comprised the following:

- 37 public universities;
- 2 private universities;
- 1 approved branch of an overseas university;

- 4 self-accrediting higher education providers; and
- Around 130 non self-accrediting higher education providers.

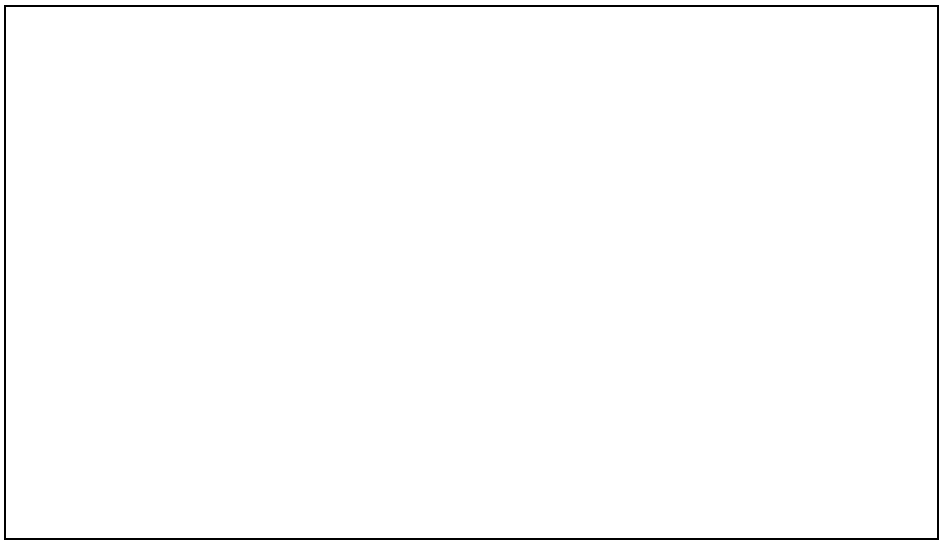
In 2005, there were 957,176 students attending Australian higher education providers.

Compare the trends of developing & developed countries education sector. Developing countries have some drawbacks like gender biasness, quality & number of educational institutes, funding, global facilities etc. From the facts & figures of the contribution to the GDP, we can say the following:

- Developing countries are in growing stage
- New market for the developed countries to set-up their university
- Developed countries are in saturation in their own countries
- Scopes of growth are more in developing countries

8. Trend of Growth

Economic growth is the increase of per capita gross domestic product (GDP) or other measure of aggregate income. It is often measured as the rate of change in real GDP. Economic growth refers only to the quantity of goods and services produced. An industrial economy gets its resource from other countries. There is no need to worry about farms because they get their produce from other countries just like their natural resources. Economic growth can be either positive or negative. Negative growth can be referred to by saying that the economy is shrinking. Negative growth is associated with economic recession and economic depression. In order to compare per capita income among countries, the statistics may be quoted in a single currency, based on either prevailing exchange rates or purchasing power parity. To compensate for changes in the value of money (inflation or deflation) the GDP or GNP is usually given in "real" or inflation adjusted, terms rather than the actual money figure compiled in a given year, which is called the nominal or current figure.



GDP Accumulated growth

From the above graph we can see the growth rate of developing countries with higher % in compare of developed countries. Most promising developing country is china with highest % of growth.

Developing countries are growing with faster pace than the developed countries. Growth parameter need to be innovative for the developed countries to match with the developing countries as many parameter of economical growth are all ready saturated in developed country.

9. Conclusion

More than 150 countries in Asia, Africa, the Middle East, and Latin America are classified as developing nations and others are developed. They are a diverse group in terms of culture, religion, geography, economic progress and activities, and types of government. There is no agreed upon way for geographers to designate “developed" as opposed to "developing" countries. But most agree that a developing country is a country with a relatively low standard of living, undeveloped industries, and low Human Development Index. There are other factors need to be taken care by developing countries to immerging as a developed country in the future like: control on overpopulation, infrastructural development, political stability, access and quality of health care etc.

Even the growth rates of Developing countries are high then also lots of effort required to be developed. Developed country need to be innovative to expand their economical growth. They can target the developing nation as a market. In education sector, developing country need to be

improve on quality & need to be open-up for foreign players. Developed countries are must look positive to enter the developing counties and utilize the opportunity to grow. Developing countries need to overcome from the social barriers like: illiteracy, gender biasness etc. Economical structure will be more dynamic in the future for both the developing & developed countries.

References

- Access Economics Pty Limited for Australian Council for Private Education and Training,The Australian education sector and the economic contribution of international students,April 2009
- Dr. Rahul Choudaha ,Trends for Indian education sector in 2010, January 14, 2010
- Education Sector Strategic Plan (ESSP)Ghana, 2007
- Mirna, CORIC & Karmela, ALEKSIC-MASLAC form Zagreb School of Economics and Management,Zagreb, Croatia,Research paper E-learning potential in education sector of developing countries:relationship marketing tool and cost cutting tool in times of financial downturn
- N.Gregory Mankiw, Principles of Macroeconomics,5th edition, page 208 & 209

- http://www.acuma.org.au/resource_library/vsu/vsu_impact_study/section03/index.htm
- http://www.economics4development.com/
- http://www.indexmundi.com/australia/gdp_composition_by_sector.html
- http://www.nationmaster.com/graph/eco_inc_dis_ric_10-economy-income-distribution-richest-10
- http://www.scalloway.org.uk/popu6.htm
- http://www.tradechakra.com/indian-economy/gdp.html

- http://en.wikipedia.org/wiki/Developing_country
- http://en.wikipedia.org/wiki/File:WeltBIPWorldgroupOECDengl.PNG
- http://en.wikipedia.org/wiki/List_of_countries_by_GDP_(nominal)

- http://www.wisegeek.com/what-is-purchasing-power-parity.htm
- http://www.economics4development.com/

Economic Reform, Extortion and the Informal Sector

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Abstract

Informal economy involving unrecorded, unregistered, extra legal activities employs majority of the workforce in the developing world. Such extra legal existence of informal manufacturing and service sectors is facilitated through extortion by agents of political forces in power. Such extortion activities themselves constitute an informal segment. We develop a general equilibrium model to explore the possible consequences of a change in the fee of extortion, change in the quality of administration, tariff reform etc. Economic reform of various kinds has interesting effects on the size of the extortion sector. Various reformatory policies may actually lead to an expansion of the extortion component of the informal sector.

Key words: International Trade, Extortion, General Equilibrium.

1. Introduction

Informal sector is an important ingredient of the contemporary world economy particularly in the developing regions as this segment occupies a formidable chunk of the unskilled labor force. The informal sector covers primarily the non-agricultural employment of unskilled labor. It accounts for 50-80% employment in South Asia, 30-50% in South East Asia, 40-50% in Africa, 55% in Latin America and Caribbean, 24% in Southern Europe, 10% in Western Europe, 18% in Canada and 8% in USA. However, the main derogatory feature of informal sector is its extralegality or illegality by law since it does not conform to government regulations. These units do not abide by labor regulations of the government, and do not pay taxes. In fact a large part of it would have vanished if they had to confront government regulations. The paucity of legal protection makes the informal sector an easy pray for extortion and corruption. It has been reported in Ethiopia that the urban informal sector of this rural country is comprised of almost one million people and is vastly distorted with extortion. While Morocco experiences an annual loss of $ 3.6 billion because of lack of transparency related extortion/corruption/bribe (Drakard, 2009). In order to reduce extortion in the informal segment countries like Ghana, Senegal, Kenya etcetera have already attempted to facilitate and promote registration and license to informal units. This has resulted in a significant reduction in the degree of extortion (Fjeldstad, 2001). Existing literature on informal sector conventionally defines informal activity as something which takes place underground, covers smuggling, mafia etc. (Konrad and Skaperdas, 1998). Informal sector has not been considered as a segment which provides livelihood to a sizeable amount of mass without doing any dangerously harmful illegal activity as such. There are also a few papers (Johnson, Kaufmann and Zoido-Lobaton, 1998; Johnson, Kaufmann and Shleifer, 1997; Gerxhani, 2004; Loayza, 1996; Shneider and Enste, 2000) where it has been shown how the existence of bureaucratic control, corruption and higher tax rates in the formal counterpart induces firm to operate in the informal sector. The interface of contract theory and informal economy is analyzed in Quintin (2008). It has been shown there that the size of the informal sector has an inverse relation with an increase in contract enforcement in the formal sector. It is noteworthy to mention here is that by using a competitive framework Amaral and Quintin (2006) has shown why the most talented managers operate with more physical capital and self-select into the formal sector than managers in the informal units. This analysis emphasizes that most skilled labor work in the formal sector as long as the enforcement gap between formal and Economic Reform, Extortion and Informal Sector informal sectors is ample. In another interesting paper Dijkstra (2006) shows how under different circumstances an economy may end up with good (no informal sector), bad (no formal sector) and mixed (both formal and informal sectors) equilibria. But

none of these papers recognize the existence of corruption in the informal sector itself. Nonetheless, Friedman, Johnson, Kaufman and Zoido-Lobaton (2000) have found the existence of corruption and production both as separate activities within the informal sector. Their paper is a partial equilibrium one where the existence of corruption in the informal sector is slightly touched upon. In this model we intend to bring in both these two parts of informal fragments in a simple general equilibrium framework.

To suit our purpose we shall define the informal sector as the one which does not have to pay the minimum wage. Several papers have used this interpretation of the informal sector such as Agenor and Montiel (1997), Carruth and Oswald (1981), Marjit (2003), Kar and Marjit (2001), Beladi and Chao (1993), Beladi and Yabuuchi (2001), Chaudhuri (2003) etc. The survival of the informal segment requires negotiation with administration as this part of the economy is illegal by structure. Sometimes this negotiation is done by politically supported intermediaries, the "extortionists". These extortionists take care of legal troubles and other hurdles for the informal producers. They keep the police at bay by paying bribes which in turn are extracted from the informal entrepreneurs, labor, capitalists etc. There is a substantial literature on extortion and mafia related activities such as Skaperdas (1992, 2001), Konard and Skaperdas (1998) etc. Our work is substantially different from that literature.

First, we consider extortion as a facilitating device for organizing production in the informal sector. It is not pure extortion involving all segments of the society. Second, more significantly, we consider mobility of labor between extortion sector and informal production sector as well. Thus extortionists also have the option to work in the informal sector. Such mobility is then embedded in a general equilibrium structure where capital mobility also plays an important role. The story of the paper runs as follows. Let us assume that there are three goods out of which two are produced in the formal sector and the rest is produced in the so-called informal sector.

All goods are different and only formal goods are traded. Informal good is non-traded. One commodity in the formal set up uses skilled worker as specific factor and the other uses unskilled

labor as the same, with capital moving between them. Here formal workers are organized but not the informal workers which mean that the formal sector has to pay minimum wage, but not the informal sector. Informal unskilled workers have to face a competitive market. Therefore, unskilled wage in the formal and informal segments are not identical. Whoever does not find a job in the formal sector will get one in the informal sector and wage there can have a free fall. No one can afford to remain unemployed because they have to survive. Formal

workers are likely to get higher administered wage than their informal counterpart because of the existence of trade unions.

In this context we need to mention that our work is related to the research area dealing with economics of corruption. Marcoullier and Young (1995) has developed a two sector model on graft and corruption demonstrating tacit political support for informal sector. But they do not model extortion in a general equilibrium framework. Similarly Marjit, Ghosh and Biswas (2007) brings in informal sector and corrupt bureaucrats but they do not constitute labor mobility between various informal segments and does not consider a general equilibrium framework. The model we develop is in the tradition of more recent work in trade theory on extensions of the basic Heckscher-Ohlin-Samuelson (HOS) set up drawing from an early work of Gruen and Corden (1970) and from later contributions of Jones and Marjit (1992, 2008), Marjit and Beladi (1999), Beladi and Marjit (1992) etc.

It should be noted at the very outset that the extortionists in our model will be intermediaries lubricating the activities of the informal sector and have the option of engaging in informal production activities as well. Given this set up various reformatory policies may have counterintuitive outcomes with unintended expansion of the informal segment. The basic results that we derive in this paper are as follows: higher fee for extortion causes a squeeze in informal productive activity but informal extortion sector must expand; better quality of administration might bring about more informal production in the economy though corruptive activity shrinks; and under reasonable condition a tariff reduction may amplify the informal output whereas under the same condition informal workers would be worse off in money terms but not in real terms. Interestingly a reform policy is more likely to increase the extortion activity in the economy.

Section 2 discusses the basic model and the equilibrium. Section 3 deals with the impact of a change in the degree of extortion, change in the monitoring or auditing probability and tariff cut

on outputs, informal wage, informal good's price and the size of extortion sector. The last section concludes the paper. The relevant mathematical derivations are provided in the Appendix.

2. The Basic Model and Solutions

There are three goods *X, Y* and *Z* produced in the neo-classical framework using four factors such as skilled labor *(S)*, unskilled labor (L) and two types of capital (K and T). Capital is perfectly mobile across X and Y but T is specific to Z. S is specific to X and gets Ws as wage. L is mobile between Y and Z. Laborers are unionized in Y. They get $\bar{W}$ as their wage. K gets identical return r across X and Y while T gets R in Z. Who are not fortunate enough to work in Y, have to go out of the formal

segment. Because of their livelihood they need to find out alternative workplace. This is provided by the production of Z. However, Z can not be produced by these two factors only. It requires the service of another factor that actually negotiates between producers and administrators since Z is not permitted to be produced legally. But if Z is never produced some labor must remain unemployed and they will not survive. Therefore Z is a necessary for a perfectly competitive full employment framework. Nonetheless, producers of Z need to comply with some institutional and political menace as it is an extra-legal, if not illegal, activity. To combat such menace producers obtain service of intermediaries who actually watch out for these institutional perils. Intermediaries are unproductive in that no additional output is produced by them. Their marginal productivities in terms of the volume of goods are zero though they get positive return for their work. However, without such an arrangement production of Z could not have taken place. We call this sector Z as an informal sector.

Intermediation is done only by labor. People engaged in intermediation activities get pecuniary benefit without producing goods. Let L_N be the people and N be the sector representing intermediation/ extortion. Important to note that the return to extortionists, W_N must be greater than competitive informal wage, W. The difference between P_Z and sum of the returns to productive factors in Z goes to extortionists as a payment for intermediation activities. N people also need to take care of the police personnel who are supposed to go for evicting these informal production units as these are illegal from government's perspective. Let the probability of being caught in act is q and under this condition intermediators need to pay b fraction of W_N as bribe. After paying out for the police the return to L_N must be equal to W since labor is mobile between Z and N. Here it is worth mentioning that L_N people always receive W_N as return it does not matter whether administration can identify the informal units or not. Thus here both, a part of Economic Reform, Extortion and Informal Sector administration and N people are involved in corrupt practices. N people pay bribe to police not only for the informal production units but also for their own existence. If there are no informal activities the return to N people goes down to zero. And on the other hand whether Z survives or not that crucially depends on how many people are involved in extortion activities or how much is paid for these extortionists. Say α is the fraction of output that is lost due to these political/ institutional complications related intermediations. Precisely speaking α represents the fee of extortion. Here it is advisable not to confuse between "fee" and "wage": fee means the fraction or the value of per unit of output that is lost due to extortion whereas extortionist's wage is the return to a single extortionist for his service. Thus we can coin this sort of intermediations as directly unproductive profit-seeking activities (Bhagwati, 1982). This is the concept of corruption and/or related extortion that we are going to use in our model.

We have a small open economy with competitive markets for production as well as for extortions related intermediation or corruption. Competitive corruption market implies that the lost output due to intermediation is fully exhausted in paying out extortionists out of which a part (may be fixed or variable) goes to police. Moreover, we have the standard neo-classical assumptions of constant returns to scale and diminishing return to factors. The following set of equations describes the model and the interpretations of symbols are usual and well used in trade models (Jones, 1965, 1971). Let the prices of X and Y be normalized to unity. Y is the importable commodity and subject to a tariff t.

The competitive price conditions are given by:

$$W_S\, a_{SX} + r\, a_{KX} = 1 \qquad (1)$$

$$\bar{W} a_{LY} + r\, a_{KY} = (1+t) \qquad (2)$$

$$W a_{LZ} + R\, a_{TZ} = P_Z(1-\alpha) \qquad (3)$$

Note that, $\alpha \in [0,1]$; a low α will mean lower fee of extortion and conversely. Note that, the production function for Z is represented by

$$Z = Z(T, L_Z) \qquad (4)$$

The expected wage for intermediators satisfies the following equation

$$(1-q)W_N + q(1-b)W_N = W \qquad (5)$$

$$\text{Or, } (1 - b\, q)W_N = W$$

Note that, this equality is established because of labor mobility between informal production and extortion segments. This has to hold true. If the LHS (RHS) of equation-5 becomes greater

than RHS (LHS) everyone would try to be involved in extortion (production) related activities and would result in non-feasibility of both the informal segments. The reason is the complementarity between extortionists and productive workers in the informal sector. And equation-5 further makes informal workers, essentially, indifferent between extortion and production. Therefore,

$$W_N = \frac{W}{(1-b\, q)} \qquad \text{Where } 0 < b < 1 \text{ and } 0 \leq q \leq 1 \qquad (6)$$

Equation (6) always ensures that $W_N > W$ except the extreme case where $q = 0$. Note that $\bar{W} > W_N > W$.

The value of output lost in Z must be identical to the payment made for extortionists. Thus,

$$\alpha . P_Z . Z = W_N L_N \quad (7)$$

Plugging (6) into (7) one gets,

$$\frac{\alpha . P_Z . Z(T, L_Z)}{L_N} = \frac{W}{(1 - b\, q)} \quad (8)$$

Full employment of all the factors guarantee the following equations,

$$a_{SX} . X = S \quad (9)$$

$$a_{KX} . X + a_{KY} . Y = K \quad (10)$$

$$a_{TZ} . Z = T \quad (11)$$

$$a_{LY} . Y + a_{LZ} . Z = L - L_N \quad (12)$$

Let us further assume that the demand for Z follows standard Cobb-Douglas preference where β fraction of consumers' income is spent on the informal good. Therefore demand supply equilibrium in the informal sector implies,

$$\beta\{X + (1 + t)\, Y\} = (1 - \beta) P_Z . Z \quad (13)$$

This completes the structure of the model. Now let us solve for the unknown variables. Note that $t, \alpha, \bar{W}, K, T, L$ and S are exogenously given and we need to solve for $W_S, W, r, R, P_Z, X, Y, Z$ and L_N to solve for from equation (1) - (3) and (8) – (13). We have nine equations and nine unknown variables. Thus the system is solvable. Given the tariff rate, t we solve for r from (2) as $\bar{W}$ is exogenously determined by workers' union. Equation (1) would determine Ws for already determined r. Thus a_{SX}, a_{KX}, a_{LY} and a_{KY} are determined through CRS assumption. Hence (9) give us the value of X and given this value of X we can solve for Y from (10) as endowment of S and K are constants. However, W, R, P_Z, Z and L_N are still to be determined.

Substituting from (9) equation (12) can be rewritten as

$$L_Z + L_N = L - \frac{a_{LY}}{a_{KY}}\left(K - \frac{a_{KX}}{a_{SX}} S\right) \quad (14)$$

Given the commodity prices we already know the values of $a_{LY}, a_{KY}, a_{KX}, a_{SX}$ and L, K and S are given. Thus RHS of (14) is constant for these given values. This implies a negative relationship between L_Z and L_N for equation (14) to be satisfied.

Again equation (8) can also be represented as follows,

$$\frac{\alpha.Z(T,L_Z)}{L_N} = \frac{W}{P_Z}.\frac{1}{(1-b\,q)} \qquad (15)$$

Here $\frac{W}{P_Z}$ is the real wage of informal workers; bq and α are given. Following an increase in L_Z the RHS of (15) would fall as the marginal productivity of Lz falls. And simultaneously the numerator of the LHS must go up as the supply of variable factor increases. Thus to bring back the equality in (15) L_N has to increase. Therefore, L_N and L_Z are positively related following equation (15).

Hence we can represent equation (14) and (15) in L_N and L_Z plane to determine the equilibrium values of L_N and L_Z in our set up. Let us portray it in figure-1.

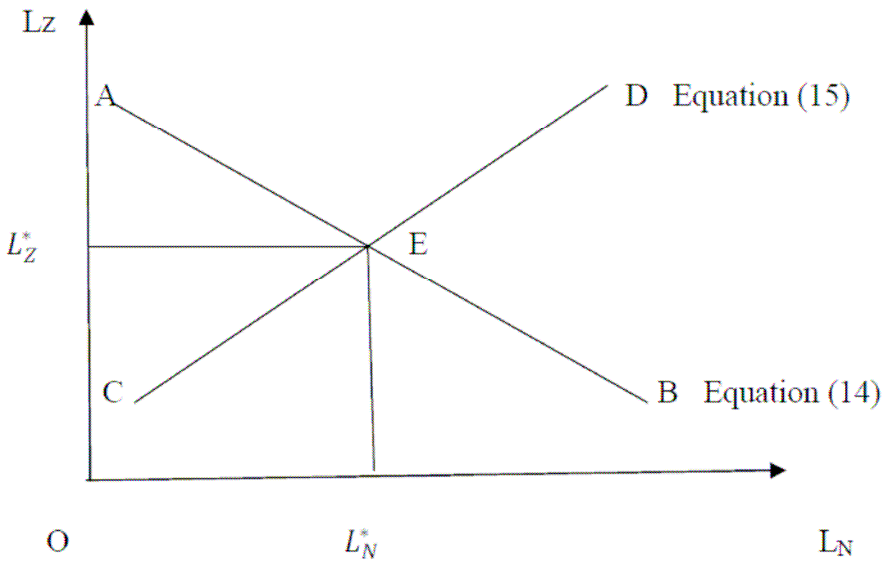

Figure –1
Determination of equilibrium L_N and L_Z.

Now given the equilibrium values of L_Z^* and L_N^* we can easily calculate the value of Z from (15) as all the remaining variables are given. In fact, the equilibrium value of L_N can also be calculated for any given value of Lz .

Once Z is determined, Pz is easily solved for from the Cobb-Douglas preference function symbolized in (13). From equation (13) it is apparent that given the values of X and Y, the demand for Z that comes from the formal sector remains constant. Hence if Pz goes up Z has to fall in the RHS of (13), signifying the standard negative relationship for demand. On the other hand an increase in Pz must be followed by a rise in the return to informal workers and specific factor. The return to specific factor would increase more compared to informal labor (for a detailed mathematical derivation see Appendix A). Therefore, producer will try to economize on usage of dearer factor, a_{TZ} falls implying a rise in Z. This explains the positive supply side relationship between Pz and Z. This is precisely how, from the intersection of demand and supply, the equilibrium Pz is determined in this model. Therefore, given the equilibrium value of Pz, W is determined from (8). And eventually using Pz and W we can calculate the value of R. Thus the entire system is solved. However, it is worth mentioning that once W is determined we can easily get the wage rate for extortionist, W_N, from equation (6).

3. Comparative Static Results

3.1 An increase in the fee of extortion

Let us assume that owing to some reasons the fee of extortion goes up in the informal sector. It is easily understandable that keeping all other things remaining same an increase in α is in fact tantamount to a fall in *Pz*.Given Pz differentiating equation (3) we get,

$$\widehat{W}\ \theta_{LZ} + \hat{R}\ \theta_{TZ} = (-)\alpha.\hat{\alpha} \qquad (16)$$

(where θs bear the usual meaning)

Note that, X and Y would remain unchanged as $\widehat{\bar{W}} = \widehat{W_S} = \hat{r} = \hat{t} = 0$.

The elasticity of substitution (represented by σ) for Z gives,

$$\hat{Z} = (-)\sigma_Z.\theta_{LZ}\left(\widehat{W} - \hat{R}\right) \qquad (17)$$

The full employment condition of unskilled labor provides (assuming no change in L and Y)

$$\hat{Z} = (-)\widehat{L_N}\ \frac{\lambda_{LN}}{\lambda_{LZ}} \qquad (18)$$

Substituting $\widehat{L_N}$ from (8) and setting no change in Pz and (1-bq)

$$\hat{Z} = (-)\ \frac{\lambda_{LN}}{\lambda_{LZ}}(\hat{\alpha} + \hat{Z} - \hat{W}) \tag{19}$$

Comparing (17) and (19)

$$(\hat{W} - \hat{R}) = \frac{\lambda_{LN}}{\lambda_{LZ}+\lambda_{LN}} \frac{1}{\sigma_Z.\theta_{LZ}}(\hat{\alpha} - \hat{W}) \tag{20}$$

Multiplying both sides of (20) by θ_{TZ} and adding it with (16) yields,

$$\hat{W}\left(1 + \frac{\Delta}{\sigma_Z}.\frac{\theta_{TZ}}{\theta_{LZ}}\right) = \hat{\alpha}\left\{\frac{\Delta}{\sigma_Z}.\frac{\theta_{TZ}}{\theta_{LZ}} - \alpha\right\} \tag{21}$$

Here, $\Delta = \frac{\lambda_{LN}}{\lambda_{LZ}+\lambda_{LN}} < 1$ and $0 < \alpha < 1$.

$$\hat{W} = \hat{\alpha}\frac{(\Delta.\theta_{TZ} - \alpha.\ \sigma_Z.\theta_{LZ})}{(\Delta.\theta_{TZ} + \sigma_Z.\theta_{LZ})} \tag{22}$$

Hence $\hat{W}$ is ambiguous.

$\hat{W} > 0$

if $\Delta.\ \theta_{TZ} > \alpha.\ \sigma_Z.\theta_{LZ}$

or, $\frac{\Delta}{\alpha.\ \sigma_Z} > \frac{\theta_{LZ}}{\theta_{TZ}}$. (23)

It is apparent from equation (16) that $\hat{R}$ has to be negative when $\hat{W} > 0$. Therefore under condition (23) $(\hat{W} - \hat{R}) > 0$ and the output of Z must fall following equation (17).

Manipulating (20) and using (16) one can easily derive the value of $\hat{R}$.

$$\hat{R} = (-)\alpha.\hat{\alpha} - \frac{\Delta}{\sigma_Z}.\hat{\alpha} + \frac{\Delta}{\sigma_Z}.\hat{\alpha}\ \frac{(\Delta.\theta_{TZ} - \alpha.\ \sigma_Z.\theta_{LZ})}{(\Delta.\theta_{TZ} + \sigma_Z.\theta_{LZ})} \tag{24}$$

We have already mentioned that $\hat{R}$ must be negative. This can only happen if the following condition holds good. And it has to hold true from (16).

$$\left|\alpha + \frac{\Delta}{\sigma_Z}\right| > \left|\frac{\Delta}{\sigma_Z}.\frac{(\Delta.\theta_{TZ} - \alpha.\ \sigma_Z.\theta_{LZ})}{(\Delta.\theta_{TZ} + \sigma_Z.\theta_{LZ})}\right| \tag{25}$$

However, if the reverse of condition (23) is satisfied there would be a reduction in the informal wage due to an increase in the degree of extortion. Thus,

$\hat{W} < 0$

if $\Delta.\ \theta_{TZ} < \alpha.\ \sigma_Z.\theta_{LZ}$

or, $\frac{\Delta}{\alpha.\ \sigma_Z} < \frac{\theta_{LZ}}{\theta_{TZ}}$. (26)

Interestingly, under condition (26) $\hat{R}$ becomes unambiguously negative. At the same time a closer investigation of (22) reveals that $|\widehat{W}| < |\hat{\alpha}|$. This implies $|\hat{R}| > |\widehat{W}|$. Note that both are negative. This argument ensures $(\widehat{W} - \hat{R}) > 0$. This makes $\hat{Z} < 0$. Therefore, it does not matter what happens to $\widehat{W}$ *and* $\hat{R}$, Z must contract. Contraction of Z is made possible through a reduction in Lz and a simultaneous increase in L_N. This can be shown diagrammatically as follows.

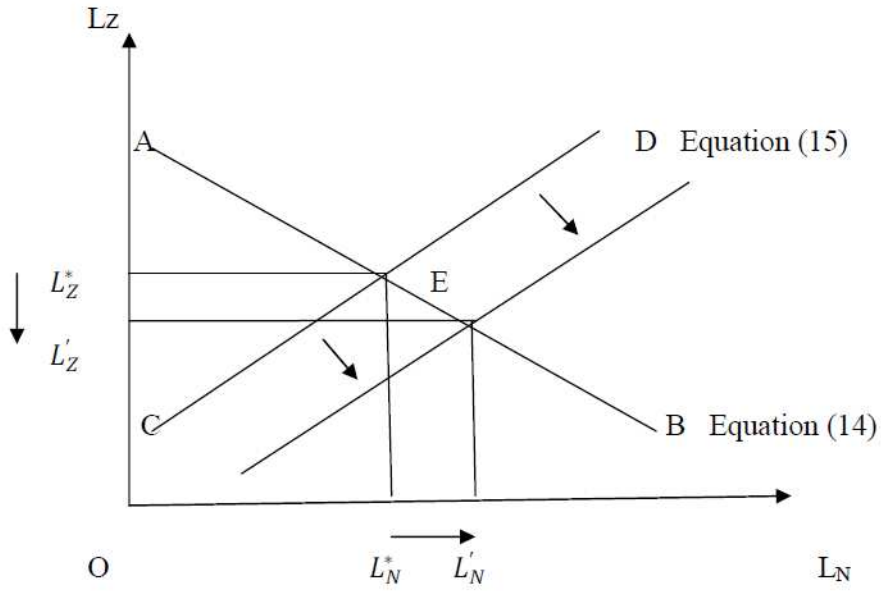

Figure – 2
Determination of equilibrium L_N and L_Z due to an increase in α

However, we need to know the effect on Pz to get the upshot on real wage. We already know that output of Z contracts consequent upon an increase in the degree of extortion. From the LHS of (13) it remains unchanged as there is no expansion or contraction in X and/or Y. But in the RHS we have negative effect through a fall in Z. Hence Pz must rise at equilibrium. Nevertheless it is not less interesting to see what happens to the real wage. As T is fixed and Lz has gone down, marginal productivity of labor should increase in Z. Consequently the real wage should also increase. This is possible iff W rises since Pz has already increased. Hence we can rule out the leeway of a negative $\widehat{W}$ (and precisely the condition (26)). The only possibility is an increase

in W along with a fall R and Z in tandem. Therefore W_N goes up. This indicates an expansion of extortion sector which is denoted by $W_N.L_N$ ($=\alpha.P_Z.Z$).

Thus the following proposition would summarize the outcome.

Proposition I: *An increase in the fee of extortion would be immediately followed by a decrease in the size of the informal production sector and an expansion of the size of the extortion sector. However, size of the informal sector as a whole does not change.*

Corollary I.1: *If the fee of extortion increases, both the informal workers and extortionist get relatively high return. The exact condition for this to happen is* $\frac{\Delta}{\alpha.\ \sigma_Z} > \frac{\theta_{LZ}}{\theta_{TZ}}$. *However, the return to T falls, unambiguously*

3.2 An increase in monitoring

An improvement in the quality of administration in a kleptocratic set up is straightway reflected by an increase in monitoring /auditing probability of identifying the people who defy laws. Here the law breakers are informal units. Therefore a better administration would be followed by an increase in bq.

Differentiating the price equation of Z,

$$\widehat{W}\ \theta_{LZ} + \hat{R}\ \theta_{TZ} = 0 \qquad (27)$$

Just like the previous section output of X and Y would not change as $\widehat{\bar{W}} = \widehat{W_S} = \hat{r} = \hat{t} = 0$.

From the full employment condition of labor and using (8)

$$\hat{Z} = (-)\ \frac{\lambda_{LN}}{\lambda_{LZ}}\left((1\widehat{-bq}) + \hat{Z} - \widehat{W}\right) \qquad (28)$$

Comparing (17) and (28) we have,

$$\widehat{W} = \frac{\Delta.(1\widehat{-bq})}{(\Delta.\theta_{TZ} + \sigma_Z.\theta_{LZ})} \qquad (29)$$

Therefore, $\widehat{W}$ is unambiguously negative as $(1\widehat{-bq}) < 0$. If that is the case $\hat{R} > 0$. This is obvious from equation (27). This judgment guarantees $\left(\widehat{W} - \hat{R}\right) < 0$ which in turn make sure that $\hat{Z} > 0$ (from (17)). Basically this takes place through relocating adjustments of Lz and L_N. Here Lz increases and L_N falls.

Nonetheless, the clear-cut expression for $\hat{R}$ is

$$\hat{R} = (-)(1\widehat{-bq})\frac{\Delta}{\sigma_Z}\left\{1 - \frac{\Delta}{(\Delta.\theta_{TZ} + \sigma_Z.\theta_{LZ})}\right\} \qquad (30)$$

We have already argued that $\hat{R} > 0$. This implies an automatic and obvious satisfaction of the inequality, $\frac{\Delta}{(\Delta.\theta_{TZ} + \sigma_Z.\theta_{LZ})} < 1$. The effect on Pz is straight and simple. It must decrease as supply goes up without changing the demand implying an ambiguity in the real wage of informal productive workers. However, an increase in Lz, given T ensures the fall in real wage of informal laborers. But what happens to the money or real wage of extortionists that is not yet clear. From equation-(6) we get,

$$\widehat{W_N} = \widehat{W} - \widehat{(1-bq)} \qquad (31)$$

In the RHS, W has already fallen and $\widehat{(1-bq)}$ is also negative. Thus W_N would decrease if W falls at a rate faster than (1-bq). Accordingly, extortionists are relatively less worse-off than informal workers, if they lose at all. Symbolically,

$$\widehat{W_N} \lesseqgtr 0 \text{ iff } \left|\widehat{W}\right| \gtreqless \left|\widehat{(1-bq)}\right| \qquad (32)$$

Therefore, the eventual consequence on the size of extortion sector is also ambiguous.

Thus we propose that,

Proposition II: *Stringent administration or an increase in monitoring probability would end up with an expansion of so-called illegal informal productive counterpart of the economy. On the other hand the extortion sector contracts though informality of the economy remains same sizewise*

Corollary II.1: *Even if the informal production activities increase, the informal workers lose unambiguously consequent upon the qualitative improvement of administration.*

3.3 Effect of tariff reform

To start with assume that the government has initiated the liberalization strategy and accordingly opted for a tariff cut in the importable sector. Setting $\widehat{\bar{W}} = 0$, we derive

$$\hat{r} = \hat{t}.\frac{t}{\theta_{KY}} < 0 \qquad ; (\text{as } \hat{t} < 0) \qquad (33)$$

$$\widehat{W_S} = -\frac{\theta_{KX}}{\theta_{SX}}.\frac{t}{\theta_{KY}}.\hat{t} > 0 \qquad ; (\text{as } \hat{t} < 0) \qquad (34)$$

And setting $\hat{\alpha} = \widehat{P_Z} = 0$ equation (16) would be modified as follows

$$\widehat{W}\ \theta_{LZ} + \hat{R}\ \theta_{TZ} = 0 \qquad (35)$$

Applying the elasticity of substitution in X and Y sector we obtain,

$$\hat{X} = (-)\sigma_X.\frac{\theta_{KX}}{\theta_{SX}}.\frac{t}{\theta_{KY}}.\hat{t} \ > 0 \text{ ; as } \hat{t} < 0. \qquad (36)$$

$$\hat{Y} = \sigma_X . \frac{\theta_{KX}}{\theta_{SX}} . \frac{\lambda_{KX}}{\lambda_{KY}} . \frac{t}{\theta_{KY}} . \hat{t} \; < 0 \; ; \text{as } \hat{t} < 0. \qquad (37)$$

These results are quite obvious as both X and Y share same mobile capital, K. As Y shrinks some unskilled labor would be released. They would immediately rush to the informal fragment. Therefore, informal activity must expand. Note that informal activity consists of both production and extortion activities. This implies an increase in (L_N+L_Z). Thus whether output of Z would spread out that depends on as to where these relinquished labors get employed: in production (Lz) or in extortion related intermediation (L_N) or in both. Thus the interesting question is what happens to L_N and Lz separately.

From equation (14) the RHS must increase as labor employed in Y dwindles and simultaneously the LHS has to go up. This is portrayed in figure-3. It is evident from the diagram that Lz will increase coupled with an increase in L_N as well. Hence output of Z should rise as T remains fixed at an exogenously given level.

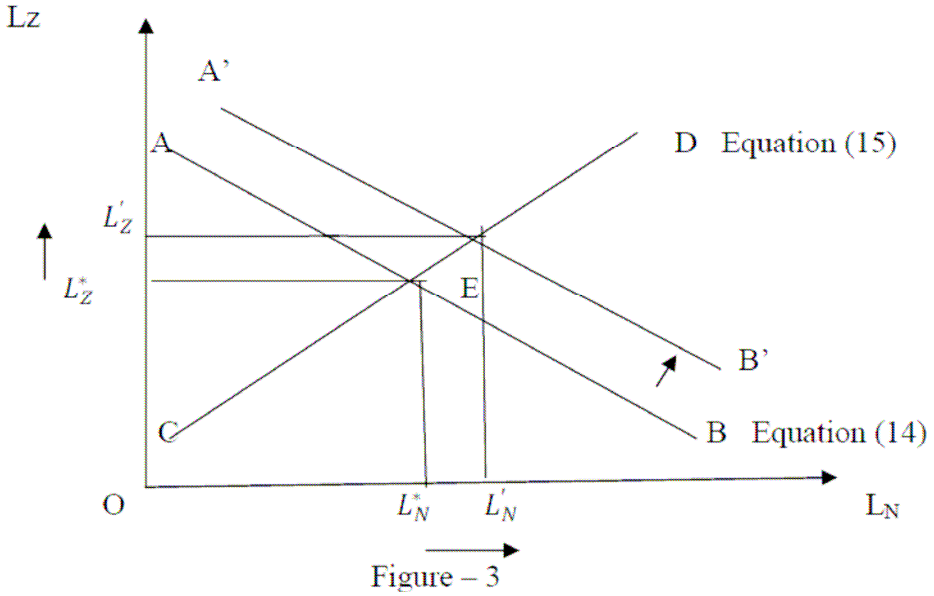

Figure – 3
Determination of equilibrium L_N and L_Z due to a fall in t

Nevertheless there are some other real possibilities regarding L_N and L_Z. Keep Lz fixed by assumption. This will ensure an increase in L_N. In figure-3 CD has to shift right along with an upward shift of AB. Thus the point is, as a consequence of such assumption how much likely that Lz will remain unchanged. Lz would remain unchanged if "in equilibrium" Z remains

unaltered as T is exogenously fixed. From the Cobb-Douglas preference it is apparent that (a) as Y falls demand for Z should fall; (b) as X increases demand for Z should rise and (c) demand for Z also rises because of an increase in L_N (note that to start with Lz is kept frozen). "In equilibrium" if (a) is offset by the (b) and (c), informal production does not change and hence an unchanged Lz. This insures an unconditional expansion of L_N or extortion activity as informal labor has already risen. This would be obvious from equation (44) with an equality sign. However, if (a) is strong enough Lz must fall and $\frac{L_N}{L_Z}$ must rise. On the other hand if positive demand effect is sufficiently strong both L_N and L_Z are likely to expand. This is the situation that have been shown in figure-3. Therefore it is more likely that L_N or extortion activity may increase due to a tariff cut.

Now let us go back to the analysis where we have focused on a simultaneous increase in Lz and L_N. Manipulating the unskilled labor constraint and plugging (37) into it and setting $\hat{L} = 0$ one obtains

$$\hat{Z} = (-)\left\{\widehat{L_N}.\frac{\lambda_{LN}}{\lambda_{LZ}} + \delta_Y.\hat{t}\right\} \tag{38}$$

$$\text{Where,}\delta_Y = \frac{\lambda_{LY}}{\lambda_{LZ}}.\sigma_X.\frac{\theta_{KX}}{\theta_{SX}}.\frac{\lambda_{KX}}{\lambda_{KY}}.\frac{t}{\theta_{KY}}.\hat{t}$$

It has already been discussed that both $\widehat{L_N}$ and $\hat{Z}$ would be positive due to a tariff slash.[1] Therefore to make $\hat{Z} > 0$ the following condition needs to be satisfied,

$$\left\{\widehat{L_N}.\frac{\lambda_{LN}}{\lambda_{LZ}} + \delta_Y.\hat{t}\right\} < 0$$

$$|\delta_Y.\hat{t}| > \left|\widehat{L_N}.\frac{\lambda_{LN}}{\lambda_{LZ}}\right| \tag{39}$$

Comparing (38) and (17)

$$\sigma_Z.\theta_{LZ}(\widehat{W} - \hat{R}) = \left\{\widehat{L_N}.\frac{\lambda_{LN}}{\lambda_{LZ}} + \delta_Y.\hat{t}\right\}$$

$$\text{Or, } (\widehat{W} - \hat{R}) = \left\{\widehat{L_N}.\frac{\lambda_{LN}}{\lambda_{LZ}} + \delta_Y.\hat{t}\right\}\frac{1}{\sigma_Z.\theta_{LZ}} \tag{40}$$

Multiplying both sides of (40) by θ_{TZ} and adding it with (35) yields,

$$\widehat{W} = \left\{\widehat{L_N}.\frac{\lambda_{LN}}{\lambda_{LZ}} + \delta_Y.\hat{t}\right\}\frac{\theta_{TZ}}{\sigma_Z.\theta_{LZ}} \tag{41}$$

Hence informal wage, W, would fall after liberalization if and only if Z expands, i.e. when $\left\{\widehat{L_N}.\frac{\lambda_{LN}}{\lambda_{LZ}} + \delta_Y.\hat{t}\right\} < 0$. And subsequently the wage to extortionists will also decrease. The absolute number of extortionist, L_N, must increase. However, what happens to the size of the extortion sector ($=W_N L_N$) that is unclear as though L_N rises unambiguously the effect on W_N is not unconditional.

Economic argument behind this outcome is very easy to follow. Due to liberalization as the output of Y shrinks the supply of unskilled labor increases in the informal sector. This is likely to depress W as the supply of complementary factor, T is fixed. The fixity of T causes a decrease in the marginal productivity of labor in informal sector. However, Z must go up.

Still, what happens to the informal price consequent upon a tariff cut that is not very undemanding as liberalization conventionally raises the formal income[2]. This increased income induces higher demand for informal good whose supply has already been raised. In what follows the eventual impact on Pz relies on the relative strength of these two effects.

Differentiating and manipulating equation (13) we get,

$$\widehat{P_Z} = (-)S_X\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{t}{\theta_{KY}}\hat{t} + S_Y\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{\lambda_{KX}}{\lambda_{KY}}\frac{t}{\theta_{KY}}(1+t)\hat{t} + \left\{\widehat{L_N}\frac{\lambda_{LN}}{\lambda_{LZ}} + \delta_Y\hat{t}\right\} + t\hat{t} \qquad (42)$$

Where, $S_X = \frac{\beta.X}{(1-\beta).P_Z.Z}$ and $S_Y = \frac{\beta.Y}{(1-\beta).P_Z.Z}$

Equation (42) confirms that $\widehat{P_Z} < 0$ iff $\left\{\frac{S_Y}{S_X}\frac{\lambda_{KX}}{\lambda_{KY}}(1+t)\right\} > 1$. (43)

Therefore if the share of expenditure on Z coming from Y is not sufficiently less the above inequality is likely to hold true. And hence informal price would fall due to a tariff cut.

In fact Pz may even fall under the following condition,

$$\left|S_Y\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{\lambda_{KX}}{\lambda_{KY}}\frac{t}{\theta_{KY}}(1+t) + \left\{\widehat{L_N}\frac{\lambda_{LN}}{\lambda_{LZ}} + \delta_Y\right\} + t\right| > \left|S_X\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{t}{\theta_{KY}}\right| \qquad (44)$$

Plugging (41) into (42) we have,

$$\widehat{P_Z} = (-)S_X\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{t}{\theta_{KY}}\hat{t} + S_Y\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{\lambda_{KX}}{\lambda_{KY}}\frac{t}{\theta_{KY}}(1+t)\hat{t} + \widehat{W}\frac{\sigma_Z.\theta_{LZ}}{\theta_{TZ}} + t\hat{t} \qquad (45)$$

Thus if Z expands and equation (43) is satisfied Pz is likely to fall more than that of W entailing an increase in real wage. If the reverse of (44) is true Pz will increase. But that is unlikely since the skilled sector is not expected to spend a sufficiently large share on the informal good (high S_Y relative to Sx).

Therefore the following proposition is immediate.

Proposition III: *Extortion activity is more likely to expand under trade reform. Liberalization may not necessarily increase informal production. Under some reasonable condition informal production will get the boost.*

Proof: For detailed mathematical calculations refer to appendix B.

Corollary III.1: *The informal workers would be worse off in money wage under the same condition for which informal output increases. But the real wage may well go up.*

4. Capital Mobility between Formal and Informal Sector

In the basic model we have not allowed the capital to move from formal to informal sector. Allowing capital mobility simplifies the structure and solution of the model a bit. Under this situation the formal sector represents the standard specific factor model whereas the sectors Y and Z (using unskilled labor force) together resembles the HO structure. Therefore the output effects and the change in factors' return crucially depend on the factor intensity comparison between Y and Z.

Let us first look at the effects of a change in the fee of extortion. Assume an increase in α. Following this the return to capital, r will remain unchanged while the return to informal workers will unambiguously decrease. And at the same time skilled workers would also remain unaffected. In the output front Y will increase if the importable commodity happens to be capital-intensive relative to Z. The number of extortionists will rise just like the result of the basic model. Therefore, Z must contract. The results that we get in this variant of the model are almost same with the basic model except the effect on informal workers and extortionists. Contrary to the basic results W and W_N fall due to an increase in the fee of extortion iff capital mobility is allowed for. Also note that importable production goes up here which was constant in the basic model.

Secondly, when monitoring probability enhances all factors' return but W_N remain unaltered. W_N goes up. L_N must fall and hence L_Z and Z would increase. This increase in Z would squeeze Y because of Heckscher-Ohlin structure. Interestingly the real wage of informal workers and extortionists go up as P_Z falls through Cobb-Douglas demand for Z.

Lastly, initiation of trade liberalization policy raises the informal wage and extortionits' return. The explanation is as same as the basic model. Through Rybczynski type effect Y shrinks and Z expands simultaneously on the one hand. And on the other hand number of extortionists goes down. This again leads to a second round expansion of Z. Therefore Y gets squeezed from both X and Z as capital goes to X and labor moves to Z. Note that here X expands as Ws increases. Unlike the basic model, here informal productive sector, Z expands and number of extortionist, L_N fall unambiguously. The effects on monetary and real wage of informal workers and extortionists are unambiguous. These returns go up. However, the effect on money wage of unskilled labor was exactly opposite in the basic model.

5. Concluding Remarks

In this paper our endeavor is to propose an apt extension of HOS framework where both formal and informal sectors work in tandem. Formal goods are produced in the fair segment of the economy while informal sector is affected by extortion. But informal good is never unwarranted. Under these circumstances an increase in the fee of extortion definitely contracts the informal productive segment while the size of the extortion sector must expand. On the other hand if the administrative people ask for larger pie of the unsolicited cake, the informal activity increases. Nevertheless the effect of liberalization is ambiguous. It is more likely that the extortion counterpart of the informal economy would expand. However, informal workers would be better off in terms of real wage under liberalization if informal sector inflates. If we allow capital to move between formal and informal sectors some of the basic results get changed and we in fact may get exactly opposite result.

Footnote

1. One can easily follow the steps for $\widehat{L_N}$ as in previous sections. This is provided in Appendix C. We retained $\widehat{L_N}$ in order to avoid nagging cumbersome calculations since the intuition behind $\widehat{L_N}$ is crystal clear.
2. One special case under this situation could be the unchanged income from X and Y. It is very much possible as X goes up and Y falls.

APPENDIX A

Given all other variables except Pz, differentiating equation (3) and using the standard notations for general equilibrium trade model we get,

$$\widehat{W}\ \theta_{LZ} + \hat{R}\ \theta_{TZ}\ = \widehat{P_Z}\,(1-\alpha) \tag{A.1}$$

Note that, nothing would happen to X and Y as $\widehat{\bar{W}} = \widehat{W_S} = \hat{r} = \hat{t} = 0$.

Mathematically, using the elasticity of substitution for Z one gets,

$$\hat{Z} = (-)\sigma_Z.\theta_{LZ}\left(\widehat{W} - \hat{R}\right) \tag{A.2}$$

Again from the full employment condition of unskilled labor and assuming no change in L and Y

$$\hat{Z} = (-)\widehat{L_N}\ \ \frac{\lambda_{LN}}{\lambda_{LZ}} \tag{A.3}$$

Substituting $\widehat{L_N}$ from (8)

$$\hat{Z} = (-)\ \frac{\lambda_{LN}}{\lambda_{LZ}}\left(\widehat{P_Z} + \hat{Z} - \widehat{W}\right) \tag{A.4}$$

Comparing (A.2) and (A.4)

$$\left(\widehat{W} - \hat{R}\right) = \frac{\lambda_{LN}}{\lambda_{LZ}+\lambda_{LN}}\frac{1}{\sigma_Z.\theta_{LZ}}\left(\widehat{P_Z} - \widehat{W}\right) \tag{A.5}$$

Multiplying both sides of (A.5) by θ_{TZ} and adding it with (A.1) yields,

$$\widehat{W}\left(1 + \frac{\Delta}{\sigma_Z}.\frac{\theta_{TZ}}{\theta_{LZ}}\right) = \widehat{P_Z}\left\{(1-\alpha) + \frac{\Delta}{\sigma_Z}.\frac{\theta_{TZ}}{\theta_{LZ}}\right\} \tag{A.6}$$

Here, $\Delta = \frac{\lambda_{LN}}{\lambda_{LZ}+\lambda_{LN}}$ and $0 < \alpha < 1$.

Hence $\widehat{W}$ is unambiguously positive if $\widehat{P_Z} > 0$.

Manipulating (A.6)

$$\widehat{W} = \widehat{P_Z}\left\{1 - \frac{\alpha.\sigma_Z.\theta_{LZ}}{\sigma_Z.\theta_{LZ}+\Delta.\theta_{TZ}}\right\} \tag{A.7}$$

The RHS is definitely positive. Because,

$$\widehat{W} = \widehat{P_Z}\left\{\frac{\sigma_Z.\theta_{LZ} + \Delta.\theta_{TZ} - \alpha.\sigma_Z.\theta_{LZ}}{\sigma_Z.\theta_{LZ} + \Delta.\theta_{TZ}}\right\} = \widehat{P_Z}\left\{\frac{\sigma_Z.\theta_{LZ}(1-\alpha) + \Delta.\theta_{TZ}}{\sigma_Z.\theta_{LZ} + \Delta.\theta_{TZ}}\right\}$$

As $0 < \alpha < 1$, $\widehat{W} > 0$ due to an increase in Pz.

A positive $\widehat{W}$ also implies $(\sigma_Z.\theta_{LZ} + \Delta.\theta_{TZ}) > \alpha.\sigma_Z.\theta_{LZ}$.

Equation (A.7) asserts that,

$$\left(\widehat{W} - \widehat{P_Z}\right) = (-)\widehat{P_Z}\left(\frac{\alpha.\sigma_Z.\theta_{LZ}}{\sigma_Z.\theta_{LZ}+\Delta.\theta_{TZ}}\right) \tag{A.8}$$

Therefore, for $\widehat{P_Z} > 0$, $\left(\widehat{W} - \widehat{P_Z}\right) < 0$ Or, $\widehat{W} < \widehat{P_Z}$ (A.9)

Equation (A.9) coupled with the argument of (A.1) ensures a positive $\hat{R}$ and $\hat{R} > \widehat{W}$. This is evident from (A.5) as $\widehat{W} < \widehat{P_Z}$. Therefore, $\left(\widehat{W} - \hat{R}\right) < 0$ which indicates a positive $\hat{Z}$ due to an increase in Pz through equation (A.2).

APPENDIX B

Using a circumflex over a variable to represent proportional change,

From (1), (2) and (3) we have,

$$\widehat{W_S}\theta_{SX} + \hat{r}\theta_{KX} = 0 \tag{B.1}$$

$$\widehat{\widehat{W}}\ \theta_{LY} + \hat{r}\ \theta_{KY} = \hat{t}.t \tag{B.2}$$

$$\widehat{W}\ \theta_{LZ} + \hat{R}\ \theta_{TZ} = (1-\alpha).\widehat{P_Z} - \alpha.\hat{\alpha} \tag{B.3}$$

From full employment conditions one can arrive at,

$$\hat{X} = \hat{S} - \widehat{a_{SX}} \tag{B.4}$$

$$\hat{X}.\lambda_{KX} + \hat{Y}.\lambda_{KY} = \hat{K} \tag{B.5}$$

$$\hat{Z} = \hat{T} - \widehat{a_{TZ}} \tag{B.6}$$

$$\hat{Y}.\lambda_{LY} + \hat{Z}.\lambda_{LZ} = \hat{L} - \widehat{L_N}.\lambda_{LN} \tag{B.7}$$

Again from equation (13) one gets,

$$\beta.X.\hat{X} + \beta.Y\left\{\hat{Y} + t\left(\hat{Y} + \hat{t}\right)\right\} = \{(1-\beta)P_Z.Z\}\left(\hat{Z} + \widehat{P_Z}\right) \tag{B.8}$$

On the other hand, equation (7) can also be delineated in the following form with proportional changes.

$$\hat{\alpha} + \widehat{P_Z} + \hat{Z} - \widehat{L_N} = \widehat{W} - (\widehat{1-bq}) \tag{B.9}$$

From (B.6) we get

$$\hat{Z} = (-)\sigma_Z.\theta_{LZ}\left(\widehat{W} - \hat{R}\right) \tag{B.10}$$

Where $\sigma_Z = \frac{\widehat{a_{TZ}} - \widehat{a_{LZ}}}{\widehat{W} - \hat{R}}$, representing the elasticity of substitution in Z and θ is the distributive share of factor(s).

Again from (B.7) we have,

$$\hat{Z} = (-)\widehat{L_N}\ \ \frac{\lambda_{LN}}{\lambda_{LZ}} - \widehat{Y}.\frac{\lambda_{LY}}{\lambda_{LZ}} \tag{B.11}$$

Comparing (B.10) and (B.11)

$$\left(\widehat{W} - \hat{R}\right) = \widehat{L_N}\ \ \frac{\lambda_{LN}}{\lambda_{LZ}}\frac{1}{\sigma_Z.\theta_{LZ}} + \widehat{Y}.\quad \frac{\lambda_{LY}}{\lambda_{LZ}}\frac{1}{\sigma_Z.\theta_{LZ}} \tag{B.12}$$

Then manipulating (B.12) and using (B.3) one can easily deduce the value of $\widehat{W}, \widehat{W_N}$. On the other hand using the equation of change from (B.8) and then comparing it with (B.10) or (B.11) we can have the equilibrium value of Pz.

From equation (B.8) and (B.11)

$$\widehat{P_Z} = (-)S_X\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{t}{\theta_{KY}}\hat{t} + S_Y\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{\lambda_{KX}}{\lambda_{KY}}\frac{t}{\theta_{KY}}(1+t)\hat{t} - \hat{Z} + t\hat{t}$$

$$or, \widehat{P_Z} = (-)S_X\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{t}{\theta_{KY}}\hat{t} + S_Y\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{\lambda_{KX}}{\lambda_{KY}}\frac{t}{\theta_{KY}}(1+t)\hat{t} + \left(\widehat{L_N}\ \frac{\lambda_{LN}}{\lambda_{LZ}} + \widehat{Y}.\frac{\lambda_{LY}}{\lambda_{LZ}}\right) + t\hat{t}$$

$$or,\ \widehat{P_Z} = (-)S_X\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{t}{\theta_{KY}}\hat{t} + S_Y\sigma_X\frac{\theta_{KX}}{\theta_{SX}}\frac{\lambda_{KX}}{\lambda_{KY}}\frac{t}{\theta_{KY}}(1+t)\hat{t} + \left\{\widehat{L_N}\frac{\lambda_{LN}}{\lambda_{LZ}} + \delta_Y\hat{t}\right\} + t\hat{t} \qquad \text{(B.13)}$$

Where, $S_X = \frac{\beta.X}{(1-\beta).P_Z.Z}$ and $S_Y = \frac{\beta.Y}{(1-\beta).P_Z.Z}$ and $\delta_Y = \frac{\lambda_{LY}}{\lambda_{LZ}}.\sigma_X.\frac{\theta_{KX}}{\theta_{SX}}.\frac{\lambda_{KX}}{\lambda_{KY}}.\frac{t}{\theta_{KY}}.\hat{t}$

APPENDIX C

Following a reduction in t, from price equations

$$\hat{r} = \hat{t}.\frac{t}{\theta_{KY}} < 0 \qquad \text{(C.1)}$$

$$\widehat{W_S} = -\frac{\theta_{KX}}{\theta_{SX}}.\frac{t}{\theta_{KY}}.\hat{t} > 0 \qquad \text{(C.2)}$$

And setting $\hat{\alpha} = \widehat{P_Z} = 0$ in the price equation of Z we get,

$$\widehat{W}\ \theta_{LZ} + \hat{R}\ \theta_{TZ} = 0 \qquad \text{(C.3)}$$

Using the elasticity of substitution for Z one gets,

$$\hat{Z} = (-)\sigma_Z.\theta_{LZ}\left(\widehat{W} - \hat{R}\right) \qquad \text{(C.4)}$$

Applying the elasticity of substitution in X and Y sector we obtain,

$$\hat{X} = (-)\sigma_X.\frac{\theta_{KX}}{\theta_{SX}}.\frac{t}{\theta_{KY}}.\hat{t}\ > 0\ ;\ \text{as}\ \hat{t} < 0. \qquad \text{(C.5)}$$

$$\hat{Y} = \sigma_X.\frac{\theta_{KX}}{\theta_{SX}}.\frac{\lambda_{KX}}{\lambda_{KY}}.\frac{t}{\theta_{KY}}.\hat{t}\ < 0\ ;\ \text{as}\ \hat{t} < 0. \qquad \text{(C.6)}$$

From the full employment condition of L and plugging $\widehat{L_N}\ \left(= \hat{Z} - \widehat{W}\right)$ from (8) and $\hat{Y}$ from the previous equation

$$\hat{Z} = (-)\left\{(-)\frac{\lambda_{LN}}{\lambda_{LZ}}\widehat{W} - \frac{\lambda_{LN}}{\lambda_{LZ}}\sigma_Z.\theta_{LZ}\left(\widehat{W} - \hat{R}\right) + \lambda_{LY}.\sigma_X.\frac{\theta_{KX}}{\theta_{SX}}.\frac{\lambda_{KX}}{\lambda_{KY}}.\frac{t}{\theta_{KY}}.\hat{t}\right\} \qquad \text{(C.7)}$$

Comparing (C.4) and (C.7) and manipulating a bit

$$\left(\widehat{W} - \hat{R}\right) = \frac{1}{\lambda_{LZ}+\lambda_{LN}}\left\{\lambda_{LZ}.\lambda_{LY}.\sigma_X.\frac{\theta_{KX}}{\theta_{SX}}.\frac{\lambda_{KX}}{\lambda_{KY}}.\frac{t}{\theta_{KY}}.\hat{t} - \lambda_{LN}.\widehat{W}\right\} \qquad \text{(C.8)}$$

Judiciously using (C.3) and (C.8) yields

$$\widehat{W} = \frac{\lambda_{LZ}.\lambda_{LY}.\sigma_X.\frac{\theta_{KX}}{\theta_{SX}}.\frac{\lambda_{KX}}{\lambda_{KY}}.\frac{t}{\theta_{KY}}.\hat{t}.\frac{\Delta.\theta_{TZ}}{\lambda_{LN}}}{1+\Delta.\theta_{TZ}} \qquad \text{(C.9)}$$

where, $\Delta = \frac{\lambda_{LN}}{\lambda_{LZ}+\lambda_{LN}}$.

It is evident from (C.9) that $\widehat{W} < 0$ as $\hat{t} < 0$. Therefore $\hat{R}$ must be positive from equation (C.3). Hence $\left(\widehat{W} - \hat{R}\right) < 0$. This inequality guarantees a positive $\hat{Z}$. This is the same thing that we got in the main text. Furthermore, this also ensures $\widehat{L_N} = \left(\hat{Z} - \widehat{W}\right) > 0$.

References

Agenor, R. and P. Montiel (1997) - Development Macroeconomics, 2nd edition, NJ: Princeton University Press.

Amaral, P. S. and E. Quintin (2006) – A competitive model of the informal sector, *Journal of Monetary Economics*, 53, pp1541–1553.

Carruth, A. and A. Oswald (1981) - The Determination of Union and Non-Union wage- rates, *European Economic Review*, 16 (2), pp 285-302

Beladi, H. and C. Chao (1993) – Non-traded goods, urban unemployment and welfare in LDCs. *European Journal of Political Economy*, 9(2), pp 281-292.

Beladi, H. and S. Marjit, (1992). Foreign Capital and Protectionism, *Canadian Journal of Economics,* Canadian Economics Association, 25(1), pp 233-38.

Beladi, H. and S. Yabuuchi (2001) – Traiff induced capital inflow and welfare in the presence of unemployment and informal sector, *Japan and the World Economy*, 13(1), pp 51-60.

Bhagwati, J. (1982) - Directly Unproductive Profit Seeking (DUP) Activities. *Journal of Political Economy*, 90(5), pp 988-1002.

Chaudhuri, S. (2003). How and how far to liberalize a developing economy with informal sector and factor market distortions, *Journal of International Trade & Economic Development*, 12(4), pp 403-428.

Dijkstra, B. R. (2006) – Good and bad equilibria with informal sector, *University of Nottingham, School of Economics,* Discussion paper 06/01.

Drakard, M. (2009) – Corruption and Bribery as a way of life in Africa. The Cutting Age, 26th October, 2009.

Fjeldstad, O (2001) - Donors turn blind eye to extortion in tax collection in Africa. *Development Today,* Vol. XI, No. 8.

Friedman, E. Johnson, S., Kaufmann, D. and Zoido-Lobaton, P. (2000) - Dodging the grabbing hand: the determinants of unofficial activity in 69 countries, *Journal of Public Economics,* vol. 76(3), pp 459-493,

Gerxhani, K. (2004) – The informal sector in developed and less developed countries : A literature survey, Public Choice, 120, pp 267-300.

Gruen, F. and M. Corden (1970) – *A tariff that worsens terms of trade*. In I. A. McDougall and R. H. Snapes (Eds) Studies in International Economics, Amsterdam: North-Holland.

Johnson, S., D. Kaufman & A. Shleifer (1997) – The unofficial economy in transition, *Brookings Papers on Economic Activity*, vol. 28(2), pp 159-240.

Johnson, S., Kaufmann, D. and Zoido-Lobaton, P. (1998) - Regulatory Discretion and the Unofficial Economy, *American Economic Review,* vol. 88(2), pp 387-92.

Jones, R.W. (1965) – The Structure of Simple General Equilibrium Models. *Journal of Political Economy*, 73, pp.557-572.

Jones, R.W. (1971) – *A three-factor model in theory, trade and history*. In Bhagwati, J et al (Eds) Trade, Balance of Payments and Growth, North- Holland, Amsterdam, pp. 3-21.

Jones, R.W. and S. Marjit (1992) – *International trade and endogenous production structure*. In Neuefeind, W et al (Eds) Economic Theory and International Trade: Essays in honour of J. Trout Rader, Sringer Verlag.

Jones, R.W. and S. Marjit (2008) – Competitive trade models and real world features. *Economic Theory,* doi: 10.1007/s00199-0394-0.

Kar, S. and S. Marjit (2001) – Informal sector in general equilibrium: welfare effects of trade policy reforms, *International Review of Economics and Finance*, 10(3), pp 289-300.

Konard, K. A. and S. Skaperdas (1998) – Extortion, *Economica*, 65(260) pp 461-477.

Loayza, N. V. (1996) - The economics of the informal sector: a simple model and some empirical evidence from Latin America, *Carnegie-Rochester Conference Series on Public Policy,* vol. 45(1), pp 129-162,

Marcoullier D and L. Young (1995) - The black hole of graft : predatory state and the informal economy, *American Economic Review* ,85 (3), pp630-646

Marjit, S. (2003) – Economic reform and informal wage: A general equilibrium analysis. *Journal of Development Economics,* 72(1), pp 371-378.

Marjit, S. & H. Beladi (1999) - Complementarity between Import Competition and Import Promotion, *Journal of Economic Theory*, 86(2), pp 280-285.

Marjit, S., S. Ghosh, & A. Biswas, (2007) - Informality, corruption and trade reform, *European Journal of Political Economy*, 23(3), pp 777-789.

Quintin, E. (2008) – Contract enforcement and the size of the informal economy, *Economic Theory*, 37(3), pp 395-416.

Schneider, F & D. H. Enste, (2000) – Shadow Economies: Size, Causes and Consequences, *Journal of Economic Literature*, vol. 38(1), pp 77-114.

Skaperdas, S. (1992) – Cooperation, conflict and power in the absence of property rights, *American Economic Review*, 82(4), pp 720-739.

Skaperdas, S. and S. Constantinos (1997) – The distribution of income in the presence of appropriative activities, *Economica*, 64(253), pp 101-117.

School Educational Statistics in India:

Changing Status and Persisting Problems

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The status of school education statistics has changed from that of inadequate availability of data to that of, as one observer has succinctly put it, the jungle of statistics. The data on school education particularly relating to elementary education has witnessed enormous growth and increasing diversification of sources during the last couple of decades. The moot question is whether the reliability, validity of school education statistics is improved and the time lag is reduced. Can we now say with confidence how many children are enrolled, how many dropout, how many are out-of-school, how many children attend school regularly, etc. Has the time lag identified as a perennial problem inflicting Indian statistics on education reduced with increasing use of modern technologies? This short paper briefly describes the changing status and attempts to flag the emerging issues that require greater debate.

Changing Status of School Educational Statistics

The data on education can be collected from schools and government bodies on the one hand and households on the other. Though the data on some variables like enrolment, dropout and to some extent fees paid are collected from both sources but a large part of data is supplementary in nature. The overlap with respect to enrolment and other variables do not mean duplication. It helps in validating the official data and in identifying the areas of concern in reliability and validity of data. Much of the data from schools and government bodies on education are collected and collated by Ministry of Human Resource Development (MHRD) and its affiliate autonomous institutions such as National Council of Educational Research and Training (NCERT), National University Educational Planning and Administration (NUEPA) and Ministries of Education in State Governments. The data on education from households are generally collected by National Sample Survey Organization (NSSO). Census and NFHS also provides data on school education from households. Recently a few other organizations have also beginning to collect data on education from households.

Data from Schools and Government Bodies

Numerical Data

MHRD

School educational statistics are collected and collated primarily by MHRD and disseminated in its various publications. These publications include *Education in India (EI), Vol. I and II*. The first volume gives numerical data like schools, enrolment, repeaters, teachers, trained teachers by type of institutions and levels of education. The second volume gives financial data that are discussed in subsequent section. The two volumes of *EI* were further divided into two parts: first two sets *Vol. I(S) and II(S)* gives data for school education and the second set called *Vol. I(C) and Vol. II(C)* gives data on college and higher education. The MHRD also publishes *Education in India Vol. III* giving public examination results and *Vol. IV* giving details about enrolment of SC and ST children. Though these documents indeed give very detailed information but inordinate time lag in publishing makes them less useful. Further the latest publications are bereft of many details with several cells left empty giving only aggregate figures. The time lag in the publication of *Education in India, Vol. III and IV* is much large and hardly any one notices the publication of this document. Even fewer use it for research and planning purposes. Besides these, the MHRD also publishes *Examination Results at High and Higher Secondary Levels* (the latest one is published in 2003 but data refers to 1999/2000). The MHRD publishes few others like *Education in States/UTs, A Handbook of Education and Allied Statistics* that are largely reproduction of data from the previous sources mentioned. Another publication *Selected Information on School Education* gives data on structure of education, working days, number of holidays, etc.

Selected Educational Statistics (SES) is another important and widely used publication of MHRD. It gives data on institutions, enrolment by class, stage, institutions, SC/ST, and gender, teachers, by training, female teachers, Gross enrolment ratio, etc. Information on additional variables like institutions by management, rural areas, etc was added in a couple years. The data provided in this publication are provisional in nature. But huge time lag in publishing other documents makes it the only official source of data that is widely used by researchers, policy makers and administrative personnel, etc. even worse the data are used as if it is final even

though it is provisional and for many states it is simply repetition or an increase over the previous year figures.

NCERT

Other sources of data from school include All India Educational Survey (AIES) and District Information System in Education (DISE). The AIES is conducted periodically by NCERT. The periodicity between various surveys has changed. The reference date for the collection of data is 30th September from 5th survey onwards. The data are collected using two forms one for schools and the other for village. The purpose of the surveys is provide detailed information base on schooling facilities in the country at the time of conceiving five year plans. But non-synchronization of plan period and non-availability survey results at the planning stage made it nearly impossible to use survey data in the formulation of five year plans. The AIES are conducted with the cooperation of state departments of education. The NCERT generally appoints field officers for the duration of survey normally from the officers of state education department. From sixth survey onwards the NCERT collaborated with NIC to computerize, aggregate and transmit data to higher levels. This, it is expected that reduces time lags and retains unit level data for further analysis. The survey provides detailed information not only on schools, enrolment by age, sex, caste, religion, etc. but also access to schooling by distance, infra-structural facilities in schools, incentives, management of school, teacher's qualifications, etc. Though these are called surveys but they are essentially census of schools. The survey does not collect data on financial aspects and on higher education. The survey also suffers from inordinate delay in publishing the data even after collaboration with NIC. For example, the publications containing the 7th survey data conducted in 2002-03 have just started trickling in. One noteworthy feature of 7th survey is that the data on select variables at national and state are made available on internet.

Though a large amount of data are collected in surveys but not optimally utilized. Part of the reason lies the manual processing of data, inordinate delays in publishing of data, limited access to unit level data even after collaboration with NIC, etc. Further given the fact that the survey also canvasses village form, it is possible to examine the schooling in relation with several other characteristics of villages available from other sources of data like census, etc. It may be advisable to use village code in common with census. This helps in merging data from different

sources. It is understood that the preparation for 8th survey is on and use of online entry of data are planned to be experimented.

DISE, NUEPA

The DISE of NUEPA is the latest to collect primary data on school education. The externally funded, resource intensive and target oriented interventions in elementary education since 1990 and the need to monitor the progress has led to initiation of DISE. The DISE was started as a monitoring tool as part of District Primary Education Programme (DPEP) initially to collect data on primary education from DPEP districts. It was later extended to cover elementary education in the whole of country. The DISE data are collected annually school as unit. DISE collects data on several variables including those that are proposed to be monitored as part of DPEP and SSA. A standard Data Capture Format (DCF) with built-in mechanism to add a couple of variables by states at their discretion and need is used the collect data. The responsibility to collect data and accuracy of data rests with state governments. The NUEPA only collates unit level data and produces national and state level aggregate data. There is no permanent mechanism at state level to take responsibility to canvass the DCF and transmit reliable data with the least time lag. The State Project Offices have Educational Management Information System (EMIS) units that coordinates entire work. The data flow would start school submitting filled DCF to CRC/BRCs who are expected to check for errors and on satisfaction they will be submitted to Mandal/Block level offices. The Mandal/Block level officers are expected satisfy themselves with accuracy of data received and then return them to the District MIS in charges. In most states, data entry takes place at district level and data in soft form shall be submitted to state level officers. The state office collates data from all districts then in turn submits to NUEPA through MHRD/Ed. CIL. The DISE collects data on a large number variables enrolment by sex, age, caste, religion, etc, facilities in schools, teachers, training, incentives to students and teachers, development grants, etc. It has developed software called DISE to manage the data. Though time lag in the collection and dissemination was reduced but the quality of data questioned. The DISE introduced Post-Enumeration Survey (PES) of 5% sample schools to ascertain validity of data. Unfortunately the quality of several PES reports is deplorably low. A cursory glance at the PES reports (2005-06) reveals that the enrolment figures, epicenter all controversies about data on school education are given faithfully with notable exceptions. But surprisingly largest discrepancies reported with

respect to the data on infrastructure, and other variable like management. The DISE as a mode of collection of data: data are collated and published by a professional body besides providing technical and software support; data are supplied by state governments; end use of data is essentially aimed at designing and monitoring central interventions as part of DPEP and SSA (though several researchers are being liberally provided access to unit level data and many are using it) presents an interesting case study in the methodology of official data collection and collation.

From the above it is clear that there is no dearth of data on elementary education. The MHRD and NCERT are providing data on a variety of aspects of school education like schools, enrolment, infrastructural facilities, incentives, teachers, etc. However, quality of data continues to be a grey area. Further despite increasing use of computers the time lag could not be reduced much. The DISE, temporary arrangement made to collect data to monitor progress under DPEP and SSA has grown into a full-fledged data collection and collation system. As DISE collects data on annual basis, there was some duplication with the efforts of MHRD. A couple of states have abandoned their regular system of data collection and are relying on DISE only. There was a talk to replace the existing mainstream official system of data collection with the DISE. The data provided by MHRD and NCERT supplements each other. A few variables like number of schools, enrolment, teachers figure in more than one source of data. This provides the scope to compare the data of different sources to examine the reliability, validity of data. Indeed large variations particularly with reference to the number and/proportion of children enrolled have been reported between various sources. The enrolment figures reported by MHRD are found to be much higher than the figures given by other sources giving substance to perceptions like inflating of enrolment in government schools for a variety of reasons that includes compulsion to show progress. In order to ward off this criticism the government hired independent consultancy firms to estimate the number of out-of-school children. A few NGOs have also joined the bandwagon or collecting data on out-of-school children along learning levels. The inordinate time lag in publishing data from nearly all sources of govt made it less useful for planning, monitoring and even for research. Therefore it is generally felt that the mechanism for collection of school education statistics needs to be revived to reduce time lag, to increase the reliability, validity of data. Another important limitation of existing data is that it is not provided by management. But given the fact that the data are collected school as unit and use of latest

technologies enables one to transmit unit level data upwards and makes aggregation in different permutations and combinations easier it should be possible to aggregate data by management. At this stage it may be pertinent the remind ourselves in order to fulfill the commitment to achieve universalisation of elementary education several interventions backed by large public allocations have been designed. From this it follows that the implementation of interventions and progress made has to be monitored. The database on elementary education naturally received greatest attention from researchers, critiques, policy makers, etc. As a result we are endowed with large information on the problems with respect to database on elementary education. The problems relating to database on secondary education remained unexplored. What kind data are available? What data are necessary to plan universal secondary education? What are the strengths, weaknesses and gaps of existing database on secondary education? It is difficult to give a satisfactory answer to these questions though some general problems of database on school education may also apply to secondary education as well. This is one important area that requires the attention of scholars, critiques and policy makers.

Financial Statistics

The expenditure on education can be divided into public and private expenditure. The data on expenditure provided by MHRD refers to public expenditure only. Though, fees and other charges paid by students and philanthropic contributions to public institutions of education also figure in some of the publications. It is not clear whether the fees and other charges paid and philanthropic contributions made to private unaided recognized institutions is partially or completely included in the aggregate financial data of MHRD. The data on private expenditure on adults can be gleaned from other sources like CSO estimates of final consumption expenditure and NSSO estimates of household expenditure.

Data on Public Expenditure

The Analysis of Budgeted Expenditure on Education (ABEE) and *Education in India, Vol. II* published by MHRD are most important sources of data on public expenditure on education. The later is renamed as *Education in India, Vol. II(S)* after separating the publications by school and college (higher education) levels. The publication of Education in India, Vol. II(S) is being either

inordinately delayed or nearly suspended for the recent period. The latest year for which *Education in India, Vol. II(S)* available is 1995-96. One can also compile data on public expenditure on education from budget documents of states and centre though it is cumbersome. In fact the *Analysis of Budgeted Expenditure* is compiled from budget documents of centre and states. The MHRD has brought out a publication called *Budgetary Resources for Education 1950-51 to 1992-93* culling data from various publications of MHRD that gives time series data on budgetary allocations to education by levels of education under education department between 1950s up to 1992-93.

The *Education in India* is being published since independence and provides data on important variables on long term. Of course it has undergone several changes and one need to careful in trying to construct time series data from this publication. This publication provides data on expenditure on education by states, by nature of expenditure (recurring and non-recurring), by levels (very elaborated), by functional classification of expenditure, etc. The data on income is similarly provided by states, by levels, by nature of income (recurring and non-recurring), by sources, etc. It provides data on fees and also philanthropic contributions to education by levels. However data for the latest years is in highly aggregate form particularly with respect to functional classification of expenditure and sources of income making it irrelevant to the emerging debates such as levels of cost recovery, contribution of philanthropy, etc in education. The aggregate data in this publication *a priori* should include the data on private recognised schools. However it is not clear the extent of coverage and quality of data relating to expenditure and income from private recognised schools. However due to its methodology i.e. manual collection of data, aggregation of data at various stages i.e. mandals/blocks, districts, states and then at national level not only the final publication is inordinately delayed but also several errors intentionally or unintentionally crept in. The data from this publication are not comparable with the data given in ABEE. But the income from public sources and expenditure data of ABEE are technically comparable. The inordinate time lag, jettisoning of many details in latest publication that otherwise used to be available makes it less useful. However, given the unit for the collection of data i.e. school and current state of art of computer technology it is possible to (i) to reduce the time lag and (ii) reduce the errors that may creep in at various stages of aggregation (iii) transfer of unit wise data upwards that makes it easier to give access to researchers. This shall help improve the quality and usage of data

The ABEE provides data on public expenditure on education by levels of education, by centre and state, plan and non-plan, by revenue and capital accounts, etc. The central expenditure is also given by education and by different departments other than education. The expenditure incurred by states is given by education and other departments but the composition of other departments is not available. The total expenditure is given by education and training (of course what constitutes training is not very clear). The actual expenditure and revised and budget expenditure of subsequent years are given in each year's publication of ABEE. This publication is being published regularly since 1990. The time lag in the availability of actual expenditure is about 4-5 years. Of course the availability of data on revised and budget expenditures for subsequent years moderates it. Several useful indicators can be calculated using the data form this publication like the proportion of revenue and capital expenditure, plan and non-plan expenditure, centre and state shares, proportion of total budget allocated to education. The data from this is useful in calculating the public expenditure on education as proportion GNP.

Though, ABEE provides quite useful data in great detail but also suffers from some deficiencies. Some of these include the following.

- The budget expenditure incurred by departments other than education which constitutes about 20 per cent of total budget expenditure on education is not given by levels. This makes the estimation of actual expenditure on different levels of education imprecise. The SES for the years 2002-03 to 2004-05 apportion the other department expenditure according to the proportions of different levels of education within education department expenditure. Without denying the plausibility of this, it is important to realize that there is no a priori ground to apportion other department expenditure to various levels in the same proportion obtained for the education department expenditure. This is important because much of the expenditure of other departments like Ministry of Agriculture, Health, etc. is on specialized higher and professional education. In addition the contribution of different departments is available only for central government departments. The state departments other than education also contribute to half of other department's expenditure but their composition is not available. As a result any crude estimation may likely to give distorted picture of intra-sectoral allocation. This is one important area that needs immediate attention from MHRD.
- Another important limitation of ABEE is intra-functional allocation of resources. The desegregation of data in ABEE does not follow any rational pattern but given according to administrative classification. The classification adopted by ABEE include assistance government schools, local body schools, non-government schools, text books, teacher training, scholarships, non-formal education and others. In this classification the first three refers to administrative classification of schools and the later refers functional

allocation of expenditure that cut across all three types of schools mentioned above. Therefore it is difficult to gauge the functional allocation of resources from ABEE. Besides, as the expenditure on incentives such as scholarships, etc. is borne by state social welfare departments. Thus the intra-functional allocation derived from ABEE may not be accurate.

- The ABEE also does not give the central expenditure by states. This makes it difficult to assess the central assistance extended to states and whether the central assistance is reducing or increasing the regional inequalities. However as mentioned below another publication of MHRD appears to be addressing this limitation but its publication is rather irregular.

The MHRD also publishes another publication called *Annual Statistics of Education Sector*. It was published for a couple of years since 1997-98 but not continued thereafter. It appears that the publication of this document is revived recently. This publication provides very limited additional information that is not available in ABEE. One aspect on which there are no data in ABEE but are available in Annual Statistics of Education Sector is the allocation of central expenditure under various central and centrally sponsored schemes by states.

Another important publication that gives detailed information on plan expenditure is *Analysis of Annual Plan: Education Sector* brought out by Education Division, Planning Commission. This is a compilation of data within the planning commission. This publication provides data on plan outlays, actual expenditures under various heads by states, by levels of education. It also gives the progress in achieving physical targets in terms of enrolment, etc during the plan period. However, the publication of this document was erratic and not being brought out for the last couple of years.

One important limitation of data on public expenditure that cuts across all publications is non-availability of data on income and expenditure separately for schools under different management and private expenditure under different categories of schools. Though ABEE provides allocation of resources by management, it confined to public expenditure on government, local body and private aided schools. No data are available on fees and other charges levied by schools of different management. The fee and other user charges levied by private schools not only generate operating expenses or even profits but also act as exclusionary device. In fact the data on private schools is limited to number of schools and to enrolment (essentially from AIESs conducted in intervals) and data on no other aspect are available. This is

an important gap in the existing data base on education particularly in the context of changing contours of debate on public financing of education.

From above it can concluded that though there exists several publications (most of them published by MHRD) providing data on public expenditure on education but suffers from time lag, incompleteness of information, duplicity, never ending deferment of publication of some documents, etc. The *Education in India, Vol. II(S)* would have become an important source but time lag and also incomplete information and high level of aggregation in the latest publication (latest data are available for the year 1996-97!) makes it less useful. Other publications like *Annual Financial Statistics of Education Sector* barely include any additional information that is not available in standard publications. Perhaps an important step forward to address some of these limitations is to revive the *Education in India, Vol. II(S)* with computerization of data at block/district level. This publication can be supplemented with ABEE. All other publications can be merged into either of them. Necessary care should be taken to ensure the data from private recognised school are included in *Education in India, Vol. II(S).*

Data on Private Expenditure

As every one knows any planning of education doomed to fail, if it does not take into account the motives, considerations people who are end users of educational facilities. The desirability, ability and willingness people to pay for education are entering into the debates on education in a variety of ways. Data on private expenditure can only obtained from household surveys.

Data from households

NSSO

As mentioned earlier several agencies began to collect data as part their general socio-economic surveys. The NSSO also took very active interest in education since 1990 and collected data specifically on education. The 50^{th}, 52^{nd}, 55^{th}, 61^{st} and 64^{th} round surveys provide educational data. The available data ranges from current attendance status, current attendance by age, years of schooling, attendance by working and not working, attendance management of institute, literacy level, dropouts, never enrolled, reasons for dropout and never enrolled and private

expenditure on education by management of institution, by objects, by income groups, by levels etc. Since NSSO collects data on socio-economic background of households, it is possible to generate a variety of cross tabulations to identify the grey areas in the participation in education. Published reports contain a few such cross-tabulations like current attendance rates, private expenditure, by Monthly Per Captia Expenditure (MPCE) groups, by caste, by quintiles, etc. The NSSO data can also be used to validate official data on enrolment rates, etc. The NSSO provides data on such variables as private expenditure, user charged paid to school by management that no other source could provide. NSSO data can also be used to examine the debates on cost recovery and household contribution to education. Some of the limitations of NSSO data include many a time detailed cross tabulations are not available in desired forms and also not available by states.

NFHS

The Demographic and Health Surveys are being carried out across the world with several common variables. In India it is called National Family and Health Survey. It provides data on several aspects of education like participation, years of schooling completed, level of schooling competed, year of discontinuation of studies, reasons for discontinuation, etc. The NFHS also collects data on several household and individual variables like assets, health status, and educational background of adult household members that can be usefully analysed to understand the nature participation on education. NFHS data can also be used to triangulate participation rates. Till now three surveys were conducted. The educational level of individual household member, current and previous attendance status, reasons for not continuing/never enrolling, are some of the variables of interest to school education. In conjecture with other data in the survey it is possible to undertake interesting research. Since similar surveys are being carried in several countries across the world, it is possible to undertake multi-country studies on school education using this data. In fact some interesting research has emerged from the NFHS data.

NCAER

The increasing importance given to the concept of human development and elementary education as an important component of it has prompted several organizations to collect data on elementary

education as part of human development surveys. The surveys being carried out by National Council of Applied Economic Research (NCEAR) deserves to be mentioned. NCEAR has conducted a couple of surveys since early 1990s and one more survey is going on. The data generated from these surveys appears to have been made available to a few select researchers to undertake further research.

PRATHAM

PRATHAM an NGO has started collecting data on out-of-school children and achievement levels of children by administering tests district wise. A sample of 20 villages (increased to 30 in the one completed recently) and 20 households (households were selected with out master list) from each village were selected for the purposes of collection of data. The personnel of MHRD are heavily involved in the first round of survey. On the basis this the proportion of out-of-school children and learning levels of children in each district were estimated. The entry of NGOs into data collection raises several questions. Can they collect data free from errors? What role the NGOs and the data collected by NGOs would play in the wider debate on education.

Research Consultancy Firms

The government is increasingly resorting to contracting out the job data collection to research consultancy firms. Some these include the study on out-of-school carried by SRI-IMRB. On the basis of this study the government has announced that the number of out-of-school children drastically reduced. A few more on dropouts, teacher and student absenteeism have also been undertaken reports of which are awaited. It has not felt it necessary to involve various autonomous professional institutions and universities to undertake this job. This practice also raises several questions with regard to who should collect data, do the consultancy firms have the capacity and will to carry out studies autonomously, how data are being used in the debates in education, etc.

Others

The general perception that the number of out-of-school children is much higher than the figures reported by official statistics and the response of state is less than adequate has prompted concerned educationists and others to undertake what is now famously called PROBE survey on elementary education. It has generated much discussion and the data collected as part of survey was utilized by researchers to produce a couple of research papers. UNICEF and UNSECO sponsored studies also collected large amount of data on education.

Persisting Gaps and Problems

Despite collection of large amount data by autonomous professional organizations, NGOs, private research consultancy firms, mega research projects, several gaps continue to persist. Some of these include

- The data on private sector particularly on unaided recognized and unrecognized sector continues to be sketchy. Though much more information available on the number of institutions, enrolment in unaided recognized private schools from AIES and DISE. The data on the proportion children who receive incentives, proportion of SC and ST children who attend private schools are also available from AIES and also from mega surveys. The 7th AIES also provides number of unrecognized schools by states and the DISE provides a little more detailed information on private unrecognized schools at elementary level in a couple states. But coverage remains limited. Further these figures are aggregates over the entire private sector. In the context of increasing differentiation within the private sector perhaps the aggregate figures may give distorted picture of private sector. There is a need to not only cover the private recognized and unrecognized sector but fine tune the information to reflect the changing context.
- No institutional financial data are available on private sector. Whatever little financial data are available on private sector essentially reported by households. This aspect also requires greater attention.
- Data on age composition of enrolment by class wise is critical in assessing progress towards universal elementary education but consistently neglected. Part of the problem

may be the age of pupils reported in schools may be highly unreliable. But nevertheless availability of some data on age composition of enrolment gives some idea about the status universal elementary education may also give some indications as to the future requirements. The DISE of course fill up this to some extent. The age reported in DISE is what teacher entered as the age of children most often a guess estimate than found from parents. Perhaps NSSO can also shed some light on this by giving appropriate cross table.

Emerging Issues

Several critical issues emerge from the developments taking place since 1990 in the collection and dissemination of school education data. Some of these are

- The status of school education statistics has changed from that of inadequate availability of data to that of, as one observer has succinctly put it, the jungle of statistics. The data on school education particularly relating to elementary education has witnessed enormous growth and increasing diversification of sources during the last couple of decades.
- School education statistics are being collected by multiple agencies. Conventionally MHRD and state departments of education used to provide data on a few core indicators like schools, enrolment, teachers, public expenditure, examination results, etc. The autonomous professional organizations such as NCERT, NUEPA, and others used to supplement this data with detailed information not only on core variables but also on access, infrastructural facilities in schools, incentives, etc. on recurrent basis in different intervals to provide inputs into policy making. This served two purposes. It provided the detailed data in regular intervals necessary for planning. Secondly it helped to examine the validity of the data provided by MHRD. In the recent past a number of changes have taken place. A few autonomous professional organizations beginning to collect data on regular basis not only on such core variables like enrolment, gender, caste, teachers, etc. but also on infrastructural facilities, etc. Other agencies have also entered into the business of collection of routine data such as enrolment, attendance levels, achievement levels, dropouts, teacher absence, etc. on a large scale. These include NGOs, private consultancy firms and research organizations. In a few of these the officials from MHRD and its consultants are heavily involved in the design and implementation of study.

- What kinds of changes are being fuelled by these developments? Do the gaps and deficiencies in the excising database are addressed by these changes? How does data on school education compare by different sources. Are the data reported in official and semi-official sources reconcilable with the data generated from household surveys? What are the methodological and practical issues that need to be taken into in triangulating data from different sources particularly from schools and households?

- The practice of collecting and disseminating official statistics on school education appears to be changing. The state is increasingly delegating the business of collection of data to professional organizations and even hiring private consultancy firms. Though it may be argued that some of these are in project mode and/or simply a one-time step to fill the gaps in existing data sets but the trend is unmistakable. The state has hired in services of consultancy firms to ascertain the number and proportion of out-of-school children, dropout rates, teacher and pupil absence. The state has overlooked the technical expertise of its affiliate institutions in carrying out the same task

- An obvious question that emerges in the context of diversification of sources of data is who should be primarily responsible of collecting and disseminating the official statistics. Can this function be delegated to autonomous professional institutions? What role the state should play in collection and dissemination of official statistics? What role is expected from autonomous professional organizations in the production and dissemination of official data? Can one expect the consultancy firms to provide data free from biases?

- It is widely recognized that the collection of official statistics must continue to be the responsibility of government. The autonomous institutions can supplement to fill the gaps, provide technical support, and re-organize the data and produce temporal and spatial comparable data sets from the existing official data. But the collection and dissemination of core data must remain the responsibility of the government.

- There is considerable duplicity in the efforts made by different organizations to collect school level data. For example, MHRD and DISE provide data on annual basis on several common variables, though DISE provides data on several variables that are not normally collected by MHRD. Though there is a need to reduce duplicity but it should not lead to

only one source of data. The multiple sources of data help in validating data. What is needed is to forge co-ordination among these agencies to avoid wasteful duplication.

- It is important to analyze the nature of inconsistencies between different data sets. Do differing reference dates, methodologies and definition account for these discrepancies. These are not merely numbers to be reported. They may be symptoms of much deeper malaise in the system

- Another issue that emerges in the context of increasing diversification of data collection agencies is burdening the school teachers who are ultimately responsible for providing data. Further the DCFs also found to be unwieldy in most cases. Many a time it is found that data on variables that are unlikely to change on year to year basis are also collected annually. Perhaps it may be useful to identify core information that is important and changes from year to year. Data on these variables can be collected annually and also by multiple agencies. This reduces the burden imposed on the teachers and helps quick transmission. The data on other variables can be collected in regular intervals and different components can be collected by different agencies with some planned overlapping to ascertain the validity of data.

- The increasing processing power of computers and easy availability of computers and internet at district and even below district levels opens up enormous possibilities to manage large data sets with least difficulty. At one extreme all stages of collection and transmission of data with the exception of filling of forms at school level can be computerized. This reduces the possibility of errors in aggregation and transmission. This will helps in storing unit level data for subsequent analysis. Thus computerization of data collection and aggregation is one of the important emerging areas.

- The persistent time lag continues to be an issue in school education statistics. Despite availability a variety of documents and sources often one finds it difficult to collect latest data on as simple as enrolment, sex composition, etc. The provisional statistics released as quick estimates are nearly being used as if they are final data. It important that the time lag is reduced. Perhaps one way of doing this is that instead of replacing the mainstream data collection system with DISE, a few successful and promising elements in DISE like computerization of data transmission and aggregation, special software for computerization of data, entry at local levels be it *mandal*/block/district level can be

adopted to minimize the time lag in collection, upward transmission, processing and publishing by mainstream data collection mechanism.

- The bottom line to improve the reliability and validity of data is faithful and accurate filling forms at school level. How to ensure faithful and accurate filling of forms by teachers is one of the important long standing problem in Indian educational statistics. It is possible to provide training to teachers at CRC/BRC level if problem is only about inadequate or inaccurate grasping of concepts, definition specific to educational data. Teachers can be encouraged to keep records and provide appropriate information by providing incentives. There is no denying that these do indeed go a long way in improving the quality of data. But if the problem is more than technicalities and the teacher is under compulsion (real or perceived) to show progress, he of course would show progress. The educational system under consistent pressure to show progress since independence. In fact the system geared to show only progress even if the size of school going children is shrinking. It is may be worthwhile to explore how the pressures to show progress have influenced the system in general and quality and reliability of data in particular. Besides there are several mundane issues that effect reliability of data. The placement of teachers is one such issue that may induce teacher to report fake enrolment. Perhaps it may be prudent to delink the placement of teacher with the number of children enrolled in school but can be linked to size of school going age children in the village. Others factors that are considered to be influencing the quality of data include incentives like midday meal, etc

Exhibition Contents

THEME	PANELS
1. History begins-----	1-----3
a. Photograph of Professor Prasanta Chandra Mahalanobis b. Brief history of ISEC c. Agreement between International Statistical Institute & Indian Statistical Institute d. Application Form for Admission e. Certificate f. Selected photographs of Visiting Professors g. Letter of UNO h. Letter of International Statistical Institute i. Other Documents	
2. 60 years: at a glance------	4-----6
a. Number of students in each year (designed by graph for 6o years) b. Number of students from different countries in each year c. Photographs of Golden Jubilee Celebration of ISEC	
3. Participating Countries-------	7----19
a. Total number of students with their nationality b. Photographs of Class room, convocations and other events of ISEC .	
4. From the Archive of ISEC----------	20
a. Collage of ISEC activities and other documents.	
5. Treaty with Mongolia----------	21
a. Agreement Paper b. Signing the Agreement c. Correspondences	

6. Commonwealth countries---------- 22

a. World map showing Commonwealth countries

7. Golden Words---------- 23-24

Messages from--
a. Hon'ble Minister Pranab Mukherjee, Chairman, ISI
b. Professor M G K Menon, President, ISI
c. Professor C R Rao, Chairman, Board of Directors, ISEC
d. Dr. M S Gill, Hon'ble Minister, MOSPI, Gov of India
e. Professor T C A Anant, Secretary, MOSPI, Govt of India
f. Professor R Radhakrishna, Chairman, NSC, Govt of India