

**A Compilation of “Executive” Summaries of PPRU
Project Reports
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(Prepared by Satya P. Das, PPRU Convenor)**

ARE THE LOCATIONS OF PUBLIC AMENITIES OPTIMAL?

ATHREY SIVA AND ROHINI SOMANATHAN, A STUDY OF OPTIMALITY IN THE ALLOCATION OF PUBLIC AMENITIES ACROSS VILLAGES IN INDIA, WORKING PAPER NO. 04-17, WEBSITE OF THE PLANNING UNIT, 2004

Objective

Central to the functioning of any government are decisions on the location of government-provided goods and services. Our project has been concerned with solving the planner’s problem of facility location given some arbitrary spatial distribution of a large but finite number of users. We are concerned with methods that provide allocations to approximately minimize the distance traveled by users of a public good over a period of time. These are then applied to Indian data on public-good locations in order to get a measure of the extent of inefficiency in such location decisions between two census years.

Data & Methods

A recent mathematics literature shows that as the number of facilities and individuals becomes large, optimal solutions to such problems cannot be ‘derived’ but *approximately optimal* solutions can be computed. Algorithms have been presented as solutions to static problems. We show that an existing algorithm can be easily adapted to arrive at such a solution to our problem at hand. We also have written a computer program which uses spatial data from the Map Institute in Pondicherry and census data on villages and post offices in the administrative block of Vriddhachalam in Tamil Nadu for 1981 and 1991.

An examination of the efficiency with which public goods have been allocated in the past cannot be done satisfactorily using data from a single point in time. This is because of differences between the static and dynamic optimality of given allocations. When facilities have different vintages, even if planners allocate these optimally (in a static sense) in each time period the resulting allocation may not be optimal in a dynamic sense. In cases where no future allocations of public goods are to be made, we can use data for two census years to arrive at a measure of the inefficiencies of allocating additional goods. In cases where future allocations are to be made, our algorithm provides a measure of the possible saving in travel costs that could have been achieved over a given period.

Of various public amenities, we choose post offices because, unlike some other public goods, the services provided are standardized and individuals would generally use the post office closest to their village. There are a total of 156 villages in this block. Of these 61 had post offices in 1981 and new facilities were constructed in another 24 villages between 1981 and 1991. We compare the distance traveled by the population of the block under the actual allocation of the additional post offices with what would have been traveled if these facilities had been allocated according to our algorithm.

Findings & Policy Significance

In 1991, under the observed allocation of post offices in the block, the total distance that would have been walked for one visit to the post office by each person in the population is 1,21, 588 kilometers. Under the allocation suggested by our algorithm, they would have walked just under 98, 000 kilometers – a savings of about 20%. This is a lower bound on the inefficiency in the observed allocation since our algorithm only guarantees a solution with costs that are within a factor of 1.6 of the actual minimized cost.

The algorithm and computer program created during the course of the project can be used for other amenities and for other parts of the country. Geo-coded data for most regions in the country is now available with the Survey of India and the algorithm can therefore assist in planning the location of such amenities in future years. By providing measures of inefficiencies in actual allocations, algorithms such as these can also generate the data required for empirical analyses of the determinants of good governance.

HOW IS THE GENDER BIAS IN MAHARASTRA?

CHAKRABARTY, MAISHA, A REPORT ON GENDER BIAS IN CHILDREN IN RURAL MAHARASTRA, PPRU PAPERS, 1999

Using NSS 50th-round (1993-94) data for rural sector of Maharashtra, the project estimated the cost of children and identified gender bias. It found some evidence of gender bias, but contrary to common notion, the bias is towards female children.

ARE EXCHANGE RATE AND REAL TRADE BALANCE CO-INTEGRATED? HOW DO WE EXPLAIN MOVEMENTS OF REAL AND NOMINAL EFFECTIVE EXCHANGE RATES OF THE INDIAN RUPEE?

CHAUDHURY, KAUSHIK, EXCHANGE RATE DYNAMICS AND ITS IMPACT ON TRADE BALANCE: A CASE STUDY OF THE INDIAN EXPERIENCE, PPRU PAPERS 2000

Objective

It has two parts. (1) It studies the impact of rupee devaluation on trade balance in the post-liberalisation period. (2) It attempts to explain the movements of real and nominal effective exchange rates for Indian rupee in terms of real and nominal disturbances.

Data & Methods

It applies time-series methods, using monthly data from July 1991 to September 1997.

Finding & Policy Significance

1. Real exchange rates and real trade balance are co-integrated, i.e., there is a long-run stable relationship between them. The impact of real devaluation on trade balance is negative. Devaluation helps to improve trade balance only in the short run.
2. Real shocks play a dominant role in explaining both real and nominal exchange rate for rupee.

Publication

“Real Exchange Rate Fluctuations in Indian Currency: Role of Real and Nominal Factors,” *The Empirical Economics Letters*, 1 (2), November 2002.

ARE THERE NEGATIVE MARGINAL PRODUCTIVITIES IN THE STEEL INDUSTRY?

Das, SANGHAMITRA, STUDY OF IMPACT OF ECONOMIC REFORMS ON THE PRODUCTIVITY OF FIRMS, 1999

Objective

The Steel Authority of India (SAIL) is a public sector giant that leads the steel industry in India and is the 11th largest steel firm in the world. In this project, we estimate the productivity of various inputs for the most capital and energy intensive part of the steel making process, namely, the production of iron hot metal in the blast furnaces of SAIL.

Data & Methods

- Our data consists of 825 observations on monthly output (iron hot metal) and input data on 16 blast furnaces over the post-reform period, 1991-1997.
- The inputs are coal, iron ore, chemicals that remove impurities from the ore, furnace characteristics such as age, production workers and their supervisors (executives).
- Our approach has the following distinguishing features vis-à-vis earlier studies of productivity.
 - (a) First, our unit of analysis is a production unit rather than a firm or plant.
 - (b) We use a nonparametric approach known as the projection-pursuit regression.
 - (c) The productivity of inputs is estimated separately for the production process and the utilization (negative delay) process. The total output elasticity of an input is then given by the sum of the elasticity of the production function and that of the utilization function.

Findings & Policy Significance

- Among all the inputs productivity of the blast furnace can be improved most significantly by reducing the ash content of coal. A 1% decrease in the ash content of coal increases hot metal production by 0.5%, i.e. the output elasticity is 0.50. The second in order of importance is the non-executive labour with an output elasticity of 0.24 followed by that of quality of iron ore with an elasticity of 0.19.

- However, the current training programs for non executives, which is in the form of multi-skill training (being able to do more than one type of job), has an adverse effect on output with an elasticity of -0.3 .
- The elasticity of output with respect to supervisory workers is -0.01 and statistically insignificant, whereas their training is “productive” with an elasticity of around 0.3 .
- It follows that SAIL’s performance and profits are likely to be enhanced by improving the quality of its coal and iron ore used, changing the current training program for the non-executive workers and laying off executive workers.

Publication

“Projection Pursuit Regression and Disaggregate Productivity Effects: The Case of the Indian Blast Furnaces,” *Journal of Applied Econometrics*, 2004, coauthored with Ramprasad Sengupta.

IS THE PERFORMANCE OF PRIVATE SUGAR FACTORIES BETTER THAN THE CO-OP ONES?

DAS, SANGHAMITRA AND DILIP MOOKHERJEE, OWNERSHIP AND PERFORMANCE IN THE INDIAN SUGAR INDUSTRY, 2001, WORKING PAPER NO. 04-06, WEBSITE OF THE PLANNING UNIT, 2004, TITLED, “OWNERSHIP FORM AND CONTRACTUAL INEFFICIENCY: COMPARING PERFORMANCE OF COOPERATIVES AND PRIVATE FACTORIES IN THE INDIAN SUGAR INDUSTRY”

Objective

India is the second largest producer of sugar in the world but its rank as a low cost producer and hence as an exporter is much lower. The two most successful states in the Indian sugar industry are UP and Maharashtra but they have very different dominant organizational forms. In UP the private factories are most productive whereas in Maharashtra the coops are most productive. Since cane accounts for about 70% of the production cost, we examine relationship of cane farmers with the real claimants to factory profits and its effect on the growth of private sector firms vis-a-vis co-op firms.

Data & Methods

- Our data covers the period 1982-95 and consists of annual factory level data on inputs and outputs, free market and levy sugar prices, state advised sugarcane prices and prices of other competing crops.
- We also use agricultural census data on irrigated area as well as area on which sugarcane is grown and their corresponding land size distribution by district at five year intervals, 1980-81, 1985-86 and 1990-91.
- For each organizational form we estimate an econometric model of the cane price distortion and its relation to land fragmentation, which indicates the ratio of small to big farmers that a factory has to deal with.
- We then estimate the implied relationship of participation rates (fraction of land allocated to cane) to the extent of land fragmentation in both organizational forms.

- Finally, we estimate the production functions for each type of factory, enabling us to examine how the changes in cane supply affect sugar output and hence the observed growth performance.

Findings & Policy Significance

- In the private sector of UP, small growers do indeed supply more cane, and in a less elastic fashion, participation rates of both small and big farmers fall as landholdings become more fragmented over time.
- In Maharashtra co-ops participation rates of both small and big growers move in opposite directions.
- This confirms the central premise of our theory that the key conflict of interest in the UP private factories is between the factory owners on the one hand, and growers (both small and large) on the other. But in the Maharashtra coops, the main conflict is between the small and large growers, who are residual claimants to the factory's surplus.
- Cane supply is most responsive to cane price changes vis-à-vis changes in other factors such as cane quality, technology, sugar prices or irrigation.

HOW IMPORTANT ARE IMPORTED INPUTS FOR PRODUCTIVITY IN THE AUTO COMPONENTS INDUSTRY?

Das, SANGHAMITRA AND CH. SAMBASIVA RAO, NATURE OF LINKAGE OF THE AUTOMOBILE AND AUTO COMPONENTS INDUSTRY AND PRODUCTIVITY EFFECTS OF IMPORTED INPUTS IN THE COMPONENTS INDUSTRY, 2002, WORKING PAPER NO. 04-05, WEBSITE OF THE PLANNING UNIT, 2004, TITLED, "TRADE LIBERALIZATION, IMPORTED INPUTS AND FACTOR EFFICIENCIES: EVIDENCE FROM THE AUTO COMPONENTS INDUSTRIES IN INDIA."

Objective

A common argument in favour of liberalization rests on efficiency or productivity gains engendered by increased competition. This study explores a new channel of change in productivity that can result from liberalization: namely via imported inputs of higher quality. The Indian auto industry is the object in this study. The choice of this industry in understanding the effect of liberalization on productivity is based on the facts that this industry has gone through varying phases of liberalization, and, imported raw materials such as high quality steel is very important in the production of auto components.

Data & Methods

- Firm-level data on auto component sales and inputs were obtained from the Company Finances division of RBI-Mumbai – spanning over three phases of liberalization, 1977-84, 1985-91 and 1992-99. These time periods respectively denote eras before liberalization, partial liberalization and economy-wide liberalization.
- The Arellano-Bond GMM estimator is used to estimate the factor marginal products.
- We use a translog production function, allowing efficiency levels to vary over firms in each phase of liberalization.

Findings & Policy Significance

- Average size of firms (measured by real sales) is monotonically related to the degree of liberalization. Since size of firms is expected to be positively related to the efficiency of firms, this suggests that liberalization is more conducive to the growth of the efficient firms.
- The average capital stock as well as its marginal product has increased monotonically with liberalization indicating increasing returns to capital.
- The average employment of firms declined monotonically with liberalization while its marginal product declined in the initial phase of liberalization but increased in the last phase.
- The average amount of domestic materials used by firms increased monotonically while its marginal product moved in the opposite direction.
- The average imported raw materials initially increased as firms tried to vent their pent-up demand while its marginal product declined. But in the last phase of economy wide liberalization imported materials used declined while its average marginal product became negative! One possible reason for the decline in imported materials is its substitution by domestic production of many items made feasible by the liberalization of import of capital and technology in the last phase. Negative marginal product suggests that the quality of domestic production of an item that was earlier imported is quite inferior to the quality of its imported counterpart.
- The distribution of output elasticities of all inputs including imported materials in all the three phases of liberalization range from negative to positive. Negative output elasticities mirror the difficulties faced by losing concerns in exiting the industry.

HOW SUSTAINABLE ARE LOCAL FORESTS IN MIDDLE-HIMALAYAS

DAS, SANGHAMITRA AND RINKY SARKAR, LOCAL GOVERNANCE, POVERTY AND LOCAL FOREST RESOURCES; PAPER TITLE, "SUSTAINABILITY OF LOCAL FORESTS IN THE MIDDLE-HIMALAYAS," COAUTHORED WITH JEAN-MARIE BALAND, PRANAB BARDHAN AND DILIP MOOKHERJEE

Objective

Forest endowment and the condition of the forest stock are crucial from the perspective of ecological balance, deterrence towards flood and landslides and resource base for daily living of the local people. The project investigates the nature of forest degradation in the India Middle-Himalayas of Himachal Pradesh and Uttaranchal.

Data & Methodology

- Primary data was collected, by extensive field-work in 165 villages and local forests, over the period 2000-2003.
- Villages were randomly selected on the basis of independent stratification criteria pertaining to altitude ranges, demographic size of villages and accessibility characteristics, data from which was acquired by scrutinizing Survey of India contour maps and the 1981 Census of India data.
- 20 households were surveyed in each village and 5 in the nearest town locations.

- A set of three questionnaires was used: pertaining to (i) household, (ii) village and (iii) ecology.

Findings & Policy Significance

- Firewood continues to be the primary source of cooking and heating in the region.
- Local forests bear the brunt of firewood and leaf fodder extraction pressures.
- Nearly 450 tons of firewood is extracted annually per village from the local forests. If this trend continues, there is a great threat to the long run sustainability of these forests

HOW MUCH HAVE IMPORT PROTECTIONS COST US?

SATYA P. DAS, WELFARE COST OF TRADE PROTECTION, 2000

Objective

The virtue of freer trade or trade liberalization in India is often taken on its face value. There is little quantitative assessment of welfare loss due to import protection granted to various product groups. This project has estimated deadweight losses for selected product groups in the post-liberalization era, from 1993-94 to 1997-98.

Data & Methods

1. It has created a data set on effective import duty rates (different from ERP), taking into account, the basic duty, additional duty, special additional duty and various exemptions. This is done for all chapters (commodity groups) according to the Harmonized Code of Classification for years 1994-95 to 1998-99.
2. It uses a partial-equilibrium analysis and measures deadweight welfare losses (as the sum of production and consumption losses) for eight commodity groups. These are (i) machinery except electrical and electronic products, (ii) pearls, precious and semiprecious stones, (iii) Iron & steel, (iv) inorganic chemicals, (v) newsprint, (vi) raw wool, (vii) primary steel and cement.
3. It devises a formula for this purpose based only on (a) price elasticity of import, (b) the rate of tariff, (c) import expenditure. It does not require price of quantity information individually.

Findings & Policy Significance

The following table reports the results for a subset of the selected commodity groups.

Deadweight Welfare Loss Estimates in Crores of (Current) Rs.						
Commodity (Code in HCC)	Price Elasticity (absolute) of Imports	1993- 94	1994- 95	1995- 96	1996- 97	1997- 98
Machinery except electrical and electronic products (84)	1.00	1593.6 3	1507.7 4	1433.4 5	434.25	180.30
Pearls, precious and semiprecious stones (71.01)	0.97	230.29	344.74	478.89	94.27	78.41

Iron & steel (72.02-72.29)	0.97	651.53	358.19	480.33	205.83	435.27
Inorganic chemicals (28)	0.89	255.63	270.46	187.43	220.62	361.42
Newsprint (48)	0.91	14.09	77.32	11.08	54.50	41.92

Hopefully, the proposed method can be applied to other industries.

Publication

“Welfare Cost of Import Protection: Some Selected Estimates,” *Economic and Political Weekly*, May 15, 2004.

HOW HAVE INTERSTATE DISPARITIES CHANGED?

DASGUPTA, DIPANKAR, Pradip Maiti, Robin Mukherjee, SUBRATA SARKAR & SUBHENDU CHAKRABARTI, GROWTH AND INTERSTATE DISPARITIES IN INDIA: A STATISTICAL ANALYSIS, PPRU PAPERS 1999

Objective

It offers an analytical description of the manner in which the Indian states behaved in terms of growth vis-à-vis one another over the period 1960-61 to 1995-96. The analysis – which involves primary, secondary and tertiary sectors – is more disaggregative than other research papers in this topic.

It looks beyond the issue of convergence of growth rates. It also considers the ranks enjoyed by the states with respect to the levels of their per capita (net) state domestic product at 1980-81 prices over the sample period.

Data & Methods

State Domestic Product (SDP) data were collected and some imputed from data available from CSO. Standard growth-theoretic convergence analysis was done. Also, a rank correlation matrix was constructed to determine the manner in which the rank structure changed over time.

Findings & Policy Significance

There was a tendency for Indian states to diverge in per capital SDP. Surprisingly, the divergence is largest in agriculture and least in infrastructure. Furthermore, the structure of ranking of states remained remarkably stable. The correlation between the ranks enjoyed by the states in any chosen pair of years was pretty close to unity. Weaker states remained worse off and a stronger state better off compared to the average. The rank concordance analysis revealed very little mobility of the states over time. Finally, structure defined in terms of the shares enjoyed by the sub-sectors in the state domestic products indicated convergence rather than divergence.

Publication

Dasgupta, Dipankar, Pradip Maiti, Robin Mukherjee, Subrata Sarkar and Subhendu Chakrabarti, “Growth and Interstate Disparities in India: A Statistical Analysis”, *Economic & Political Weekly*, July 2000.

WHY HAVE INTERSTATE DISPARITIES INCREASED?

DASGUPTA, DIPANKAR, PRADIP MAITI, ROBIN MUKHERJEE, SUBRATA SARKAR & SUBHENDU CHAKARBARTI, GROWTH AND INTERSTATE DISPARITIES IN INDIA: A STATISTICAL ANALYSIS, INTERREGIONAL DISPARITIES AND GROWTH IN INDIA, 2000 (NOT SURE)

Objective

Sequel to the earlier project, it attempts to explain the reasons underlying the divergence in interstate disparities. The period covered is from 1960-61 to 1995-96.

Data & Methods

SDP data were collected and some of imputed from data available from CSO.

Findings & Policy Significance

It establishes that that each state in isolation did not satisfy the postulate of diminishing returns when state-specific variables (SSV) affecting labor augmenting technical progress (physical and financial infrastructure, literacy, industrial disputes, development related transfers from the Central Government to the states etc.) were not controlled. Further, diminishing returns prevailed when the effects of the latter variables were removed. This seems to imply that the operation of overall diminishing returns was prevented in the Indian states by the possibly erratic behavior of the SSV 's. But whether this implied social increasing returns (as in certain versions of New Growth theory) is unclear. However, the behaviour of the SSV 's was adverse enough to preclude the possibility of conditional convergence across Indian states also.

WHAT DETERMINES THE FISCAL POLICIES OF A GOVERNMENT?

DASGUPTA, SUGATO, INCENTIVE IMPLICATIONS OF ALTERNATIVE ELECTORAL RULES, PPRU PAPERS, 2000.

Objective

This project tests some of the political economy theories of government behavior in the context of a developing country. Fourteen major states of India over twenty-one financial years (1974-75 to 1994-95) are examined and the following question is asked: Does the proximity of a state legislative assembly election or the extent of government cohesion affect fiscal policies in the states of India?

Date & Methods

The empirical analysis assumes that the political circumstances of a state-year are described by two variables. First, a zero-one dummy variable is created, called "election year dummy" which equals 1 if the state-year witnesses a scheduled state legislative assembly election. Second, the "nature" of the state government is determined as follows. A state government is deemed to be a *coalition* if it consists of at least two *pivotal* political parties (a political party is defined to be pivotal if its withdrawal from the government causes the government to lose majority support in the state legislative assembly). A variable, called "Fragment," is created that indicates the proportion of the state-year during which the state government was a coalition.

To see if state governments' fiscal policies are affected by political situations, fixed effects regressions are estimated with (1) various fiscal policy measures as regressands, and

(2) the election year dummy, Fragment, and a set of control variables as regressors. The political economy theories tested deal exclusively with the sign, statistical significance, and magnitude of the coefficients of election year dummy and Fragment.

Findings & Policy Significance

There is clear evidence that state governments' fiscal policies are tempered by political considerations.

- State governments in India raise less commodity tax revenues, spend less on the current account, and incur larger capital account developmental expenditures in scheduled election years than in all other years.
- Coalition governments are smaller than their single-party counterparts. Relative to single-party governments, coalitions have lower own non-tax revenue and lower current account expenditure.

DO POLITICAL FACTORS INFLUENCE THE ALLOCATION OF GRANTS BY THE CENTRE TO THE STATES?

DASGUPTA, SUGATO, AMRITA DHILLON AND BHASKAR DUTTA, POLITICAL ECONOMY OF CENTRE-STATE TRANSFER, PPRU PAPERS 2000.

Objective

The allocation of grants from central to sub-national governments has always been an important issue of fiscal federalism. Central government grants help to break the linkage between revenue and expenditure assignments by levels of government, and permit the centre to pursue various objectives. While the traditional literature on fiscal federalism assumes that the central government is a benevolent planner, interested in maximizing social welfare, political-economy considerations imply that policy makers are partly opportunistic.

This project constructs a model of re-distributive politics, where the central government makes grants to state governments on the basis of political considerations. These considerations are the degree of alignment between the incumbent party at the central and state levels and whether a state is a swing state or not. The project specifically asks whether discretionary per capita central transfers (defined to be the aggregate of per capita transfers on account of centrally sponsored schemes, central plan schemes, and state plan schemes) to the fifteen major states of India are affected by political factors.

Data & Methods

The sample period spans twenty-nine financial years (1968-69 to 1996-97). The political circumstances of a state-year are described by three variables: “alignment” (indicating the extent to which a state and the center are ruled by the same political party or coalition), a dummy variable “swing” (if central grant allocations could affect the outcome of the forthcoming state legislative assembly election) and “MP” denoting the proportion of the states' MPs belonging to the party or coalition ruling at the centre. Fixed-effects regressions are carried out with (1) per capita central transfers to the states as regressand, and (2) various interactions of Alignment, Swing and MP as regressors.

Findings & Policy Significance

The evidence shows that central transfers to the states are tempered by political considerations.

- Within the set of non-swing states, the allocation of central transfers is not conditioned on whether the central and state governments are aligned.

- When the central and state governments are aligned, transfers for swing states exceed that for non-swing states.
- States with relatively more MPs from the ruling party at the center receive larger central transfers.

HOW EFFICIENT & EQUITABLE IS THE PDS? WHAT REFORMS WOULD HELP?

DUTTA, BHASKAR AND BHARAT RAMASWAMI, COMMODITY BASED TARGETING AND PUBLIC DISTRIBUTION SYSTEM, 2000

Objective

It has three related but distinct themes.

1. The cost effectiveness of food subsidies is a major issue in India. Our first goal was to use household level consumption data from the NSS 50th round to examine (a) the targeting performance and (b) the efficiency with which the public distribution system transferred a rupee of subsidy to the target groups.
2. On possible reforms to improve targeting, our second objective was to evaluate whether it would be better to subsidise coarse cereals instead of rice and wheat. More precisely, we ask the question whether it would be welfare-improving to transfer a rupee of subsidy from wheat and rice to coarse cereals. This was done for Andhra Pradesh and Maharashtra also on the basis of the 50th round data from NSS.
3. Our third objective was to present a data and research based review of India's food policy with respect to the equity and efficiency objectives.

Data & Methods

1. To evaluate the cost effectiveness of food subsidies, we devised a procedure that decomposes the cost of food subsidy into the income transfer received by consumers, leakages from the public distribution system and the costs due to the inefficiency of the public distribution system. To implement this procedure, we need household level consumption data (from NSS), state-level figures on PDS "lifting" and government expenditures on food subsidies.
2. To evaluate whether it would be welfare improving to subsidise coarse cereals, we developed methods that draw from tax reform analysis. As budget share data is not sufficient, the underlying structure of demand must be estimated. This is however problematic for the subsidised commodities which exhibit little price variation. Hence we modify standard procedures by (a) reducing the number of demand parameters by considering policy experiments that do not alter the relative prices between the subsidised commodities and by (b) using the homogeneity restriction of demand theory to identify the other "troublesome" parameters.

Findings & Policy Significance

1. The cost-effectiveness of food subsidies depend not just on the quality of targeting but also on the efficiency of the delivery system. In the two states of AP and Maharashtra, 40% of food subsidy costs are because of leakages and excessive costs of the PDS, while about 30% of the costs are because of improper targeting.
2. Transferring subsidy from superior cereals to coarse cereals increases welfare (especially of the poor) in Maharashtra but not in Andhra Pradesh. This was because

- of the high consumption by superior cereals even by the poorer households in Andhra Pradesh. This points to the desirability of local food security systems based on local diets and preferences.
3. From the review, immense scope is seen in terms of improving both equity and efficiency through greater decentralization of food procurement and distribution.

Publications

Dutta, B. and B. Ramaswami, "Targeting and Efficiency in the Public Distribution System: Case of Andhra Pradesh and Maharashtra, *Economic and Political Weekly*, XXXVI (18), 1524-1532, 2001.

Ramaswami, B., "Efficiency and Equity of Food Market Interventions," *Economic and Political Weekly*, 37 (12): 1129-1135, 2002.

Dutta, B. and B. Ramaswami, "Reforming Food Subsidies: Estimating the Gains from Self-Selection," *Review of Development Economics*, May, 2004

WHAT ARE THE CHARACTERISTICS OF GENDER BIAS IN INDIA?

DUTTA, BHASKAR AND MANOJ PANDA, GENDER BIAS AND DIFFERENTIAL EMPLOYMENT OPPORTUNITIES, PPRU PAPERS, 1999.

Objective

It examines the time series evidence on the incidence of gender bias in India.

Findings & Policy Significance

- Female literacy reduces both male and female infant mortality rates, but it has no significant differential effects male and on female infant mortality rates.
- Poverty also has a similar, neutral effect on child mortality rates.
- An increase in participation of females in the labour force increases child mortality of both sexes, but again, there is no significant difference between the effects on male and female children mortality.

Publication

Dutta, Bhaskar and Manoj Panda, "Gender Bias in India," *Journal of Quantitative Economics*, Volume 16, 2000.

ARE FEMALE-HEADED HOUSEHOLDS MORE VULNERABLE TO POVERTY THAN MALE-HEADED HOUSEHOLDS?

DUBEY, AMARESH, SHUBHASHIS GANGOPADHYAY AND WILIAM WADHWA, "FEMALE HEADED HOUSEHOLDS IN INDIA: INCIDENCE, POVERTY AND SOCIOECONOMIC CHARACTERISTICS," PPRU PAPERS, MARCH 1999

Objective

It investigates whether female-headed households (FHHs) in India are more vulnerable to poverty than male-head households (MHHs). If it true, then what factors might mitigate this gender bias.

Findings & Policy Significance

- It was estimated that there is no significant difference in the incidence of poverty among FHHs and MHHs in the rural sector. But there is a significant difference between the two in the urban sector.
- If we drop those FHHs where the heads are currently married, then poverty incidence among the FHHs is higher than in MHHs in both urban and rural sectors.
- In both sectors women heads are less educationally trained than male heads. Thus gender bias is present.
- Differential poverty incidence can be partially explained by that female heads are less educated than their male counterparts. In the rural sector, in addition to educational differences, FHHs also have smaller land holdings.
- Each additional year of school has greater impact on reducing poverty of FHHs than that of MHHs. In rural areas, the size of land holding has a similar marginal effect.

HAVE LOANS FROM DEVELOPMENT FINANCIAL INSTITUTIONS HELPED FINANCIALLY CONSTRAINED FIRMS?

GANGOADHYAY, SHUBHASHIS, SUDIPTO DASGUPTA AND LAVEESH BHANDARI, "DEVELOPMENT FINANCIAL INSTITUTIONS, FINANCIAL CONSTRAINTS AND GROWTH: EVIDENCE FROM THE INDIAN CORPORATE SECTOR," PPRU PAPERS, 2000.

Objective

In many countries, Development Financial Institutions (DFIs) are major conduits for channeling funds to particular firms, industries and sectors during their process of development. In India, they are a major source of long-term funds (mainly debt) for industries – more so than bank loans and other sources of debt. Using data from the Indian Corporate sector, the role of DFI is evaluated for the period 1989-1997 by examining how firms' investment decisions are affected by their ability to access DFIs.

Data & Methods

It uses data from the Indian corporate sector and estimates an investment equation in which one of the explanatory variables is a measure of DFI's willingness to continue funding to a firm.

Findings & Policy Significance

- Firms that had prior access to DFIs continue to receive funds from these sources only if they can be classified as, *a priori*, more financially constrained.
- Access to DFIs for funds spurs investment.
- The results suggest that, contrary to some perceptions, DFI lending is not governed by considerations of lobbying, precedence or sponsoring projects that might be socially desirable but not profitable privately.

HOW HAS AGRICULTURAL INNOVATION AFFECTED HOUSEHOLD WELFARE?

JALAN, JYOTSNA, IMPACT OF AGRICULTURE INNOVATION ON HOUSEHOLD WELFARE IN INDIA, 2004.

Objective

More than three decades have passed since Indian agriculture was revolutionized with the introduction of high-yielding variety (HYV) of seeds. Given that the Indian economy continues to be dominated by the agricultural sector, the question is what has been the socio-economic impact of the Green Revolution on Indian farm households. This study has estimated the impact of new technology on a farm household's welfare both via (i) direct effects of adoption of new technology and (ii) its indirect or spillover effects.

Data & Methods

Secondary data was acquired from the NCAER to do the analysis.

Findings & Policy Significance

- There are strong effects of household's own adoption of HYV seeds in its cultivation process on its welfare. For instance, controlling other factors, there is nearly a 10% gain in household income for those using HYV seeds. Of course, the gains of such investments are only possible for those who own or cultivate land through leasing.
- There is however no trickle-down or spillover effects on the landless. This is suggestive that, if anything, the inequality between the landed and the landless would increase with the adoption of new technology.

HOW DO AGRICULTURAL REFORMS MATTER FOR RURAL GROWTH AND POVERTY REDUCTION?

KOTWAL, ASHOK AND BHARAT RAMASWAMI, AGRICULTURAL TRADE LIBERALIZATION AND SPATIAL DEVELOPMENT, 2001

Objective

It examined why it might be "desirable" to liberalize (domestic as well as external sector regulations) some specific existing policies pertaining to agriculture. We use the word "desirable" in a very specific sense; a measure is "desirable" if it reduces poverty. Previous works have described the static gains that come about because of aligning domestic prices with world prices. The objective of this project, on the other hand, is to describe a particular process of rural growth based on rural entrepreneurship that is feasible in present day India and then to examine the reform measures necessary for its success.

Data & Methods

Based on case studies of rural booms in India, the study constructs a model of rural productivity growth that is associated with two distinct but related sub-processes: (i) ever increasing diversification of the economy, and (ii) rural transformation through spatial diffusion of new activities. The availability of producer services plays a big role in both of them. As land is an essential input in agricultural production process, producer services cannot be utilized by agriculture locating itself in a city or urban area where such facilities are already available. Setting up a firm providing producer services, however, is not costless. The presence of set-up costs creates scale economies and that is why such firms cannot be atomistic in size and locate themselves wherever there is demand for their services. Moreover, the users of their services often tend to need a whole set of them. Whatever

considerations induce one firm to locate in given area also induce other firms to locate in the same area. The cluster of such service firms emerges as an urban centre and benefits the rural area around it by facilitating its diversification. The spatial aspects of this process become important because of the scale economies in the provision of producer services.

Some Findings & Results of Policy Relevance

- The model shows that agricultural trade liberalization measures will induce services to migrate to the hinterland and thereby promote economic growth.
- This model is then used to examine specific policy measures. On external trade, the paper shows that while the govt. seeks greater involvement of private trade in exports or imports, it does so within the framework of existing policies where the government reserves the right to periodically revise the terms of such involvement. Policy uncertainty and the associated cost with credibility of government actions may have as big an inhibiting effect on agricultural markets as quantitative restrictions.
- With regard to domestic trade, several regulations have the effect of increasing marketing and processing costs, which would restrict the opportunity set of new activities that can arise from trade liberalization.

Publications

Kotwal, A. and Bharat Ramaswami, "Economic Reforms of Agriculture and Rural Growth," *Journal of Policy Reform*, 2, 369-402, 1998.

Kotwal, A. and Bharat Ramaswami, "Economic Reforms in Agriculture and Rural Growth," in J. D. Sachs, A. Varshney and N. Bajpai (ed), *India in the Era of Economic Reforms*, pp 121-159, New Delhi: Oxford University Press, 1999.

HOW SHOULD THE INFORMAL SECTOR BE FORMALISED?

MITRA, SIDDHARTH, CONTROLLING INFORMALISATION: PUNITIVE VERSUS STRATEGIC MEASURES, WORKING PAPER 04-20, WEBSITE OF THE PLANNING UNIT

Objective

There are good reasons why we want the size of the informal sector to reduce and that of the formal sector to increase. Forcibly discontinuing informal business is not a good idea, as it may reduce remittance to the rural sector and thereby hurt improvements in agriculture. Instead, incentives should be given for entrepreneurs in the informal sector to move to the formal sector. The paper proposes a theory and provides some estimates.

Data & Methodology

It first builds a theoretical model showing corruption in regulating entry into the formal sector is a major factor in the existence of a large informal sector. Next a cross-country regression is carried out with proportion of total employment provided by the informal sector as the dependent variable as an index of informality. There are two explanatory variables: the number of procedures in the formal sector and a corruption perception index. The greater this index, the less is the corruption perception.

Findings & Policy Relevance

A reduction in the number of procedures by 1 results in a decrease in the level of informality by 1.02%. An increase in the corruption perception index by one reduces informality by 5.89%. Formalizing property right and some measures for reducing

corruption in India (e.g., reducing the number of regulations and resolving of corruption cases by independent body) are suggested.

HOW EFFICIENT IS CORPORATE GOVERNANCE IN INDIA?

MUKHERJEE, DIGANTA, ANALYSIS OF CORPORATE PERFORMANCE AND GOVERNANCE IN INDIA: STUDY OF SOME SELECTED INDUSTRIES, WORKING PAPER NO. 04-19, WEBSITE OF THE PLANNING UNIT, 2004

Objective

Corporate governance mechanisms have been an important issue of enquiry for the researchers in financial economics. Both theoretical models and empirical analysis have been developed in this area to explain the occurrence of different contractual mechanisms and their efficacy in terms of improving managerial performance. A related issue in this literature is the independence and competence of the Board of Directors. The Indian corporate scenario was more or less stagnant till the early 90s but, after the liberalisation of the 90s, the position and goals of the Indian corporate sector changed a lot. This paper, using only balance sheet information from 4 selected sectors of the Indian industry, analyses the efficacy of corporate governance.

Data & Methodology

We use the Prowess (CMIE) database and try to locate balance sheet variables that might be used to identify governance mechanisms and reactions to it by the managers. Prowess, compiled by the Centre for Monitoring the Indian Economy (CMIE), is a firm level database on Indian industry. It is broadly similar to the Compustat database of US firms. Prowess is being widely used for applied financial research in India, particularly for firm level analysis. The database consists of data on more than 7,500 firms, compiled from their current reports and various other sources. The selection criteria for a firm are not based on any formal sampling scheme but rather on availability and feasibility of data collection.

We use the linear regression techniques.

Findings & Policy Significance

Our findings, by and large, suggest that corporate governance is still in a very nascent stage in the Indian industry. The decision and policy making are still taken mostly as a routine matter. Among the institutional investors also, the FIIs are the most consistent in stock picking whereas the performances of the domestic institutional investors are sporadic and volatile at best. This is also serious shortcoming on the part of the capital market, not being able to enforce better governance on the part of the directors or performance on the part of the managers.

ARE THERE ECONOMIES OR DISECONOMIES OF SCALE IN OUR CONSUMPTION OF FOOD AND NONFOOD ITEMS AND HOW HAVE OUR FOOD HABITS CHANGED?

MURTY, K. N., INTER-REGIONAL VARIATIONS IN CONSUMPTION PATTERNS IN SEMI-ARID TROPICAL INDIA-A DEMAND SYSTEM ANALYSIS, 2001.

Objective

It examines interregional variations in consumption pattern of seven broad commodity groups in Semi-Arid Tropical (SAT) India over 1972-73 to 1993-94. It covers the following states: Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh.

Data & Methodology

It uses NSS data on consumer expenditure for five quinquennial rounds, along with comparable retail price indices. For estimation, a linear expenditure system approach is used.

Findings & Policy Significance

- Significant changes in consumer tastes away from cereals and pulses toward other food and nonfood commodities have occurred. (Some numbers)
- There are sizeable economies of scale in the consumption of cereals, particularly for poor across all states (except Gujarat) and 'all India.' (explain what economies of scale mean here and give some numbers)
- Nonfood commodity group exhibits diseconomies of scale in many cases.

WHAT ARE THE PROSPECTS OF INDO-ASEAN TRADE AND INVESTMENT?

SARMA, ATUL AND PRADEEP MEHTA, PROMOTING ECONOMIC COOPERATION WITH ASEAN COUNTRIES IN EMERGING ENVIRONMENT, 2002

Objective

It addresses several questions. What is the strength of Indo-ASEAN economic ties as revealed in trade and investment between them? What is their growth profile and intertemporal changes in trade pattern? What are the important market dynamics in bilateral trade? How has the East Asian crisis of 1997 impacted Indo-ASEAN economic relation? What are the glitches in enlarging their investment cooperation?

Publication

Sarma, Atul and Pradeep K. Mehta, *Exploring Indo ASEAN Economic Partnership in Globalising World*, New Delhi: Bookwell, 2002.