

PNABF-913

67954

HIID
Employment and Small Enterprise
Policy Planning Project
Planning Commission
Government of the People's
Republic of Bangladesh

January 10, 1990

Revised, Updated May 29, 1990

JANUARY 10, 1990

SHORT SUMMARIES OF
WORKING PAPERS AND OTHER RESEARCH
OF THE PROJECT

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I. WORKING PAPERS

WORKING PAPER #1
A HISTORICAL SURVEY OF SMALL INDUSTRIES
AND INDUSTRIAL POLICIES IN BANGLADESH

Objective

A critical survey of small enterprises and industrial policies and investment incentives since Liberation.

Analysis

This is a historical survey of two topics: (1) the growth of small enterprises relative to large enterprises in the manufacturing industry of Bangladesh with comparisons with other countries at selected stages of their growth, and (2) industrial policies.

In this working paper, we critically examine existing studies on small industries and identify gaps in data and analysis. The survey provides a setting in which the problems of employment and small enterprises will be examined in this project.

The policies from the country's wholesale nationalization in 1972 through gradual liberalization during subsequent years, the NIP 1982, the RIP 1986, and other policy reforms are summarized, surveyed, and critically examined. Possible impact of these policies on small enterprises is speculated in theory and in the prevailing environment. Various incentives and policy instruments to promote industrialization of small and large

subsectors, exports, and employment are briefly described.

Findings

The country has enacted all kinds of policies to promote investment and industrialization. A major task of this project will be to assess the impact of policies on the stated objective.

Policy implications

From the critical survey, we derive implications for research rather than for policies.

WORKING PAPER #2
METHODOLOGY OF POLICY ANALYSIS

Objective

To describe the main methodology of research and analysis of the project.

Analysis

Two methodologies, among others, are discussed and empirical relations are derived:

(1) Effective rate of assistance.--The concept of the effective rate of protection (ERP) is extended to, what is here called, the effective rate of assistance (ERA). For it, an empirical relation is derived to obtain the net incidence of all policies, including domestic, trade, fiscal, monetary, regulatory, industrial as well as agricultural. For an industry may be protected not only against foreign competition but also against another domestic industry, e.g., industry against agriculture. In addition to the policies affecting material inputs, those impacting primary inputs are also treated.

(2) Qualitative policies.--The methodology of translating regulatory and other qualitative policies into quasi-tax and quasi-subsidy measures is described, and several empirical measures are actually worked out, for example subsidies to fertilizer, water control, HYV seeds, and rental equipment for agriculture; treatment of overdue debt in different sectors,

credit subsidy, and so forth.

It may be noted that the ERA is a new concept in economic literature and, to the best of my knowledge, has not been used or estimated before. Nor would one find a time-series of ERPs, not to speak of time-series of ERAs, anywhere in literature.

(3) Total factor productivity.--The methodology of total factor productivity analysis is described. In this chapter, we briefly derive only the Solow formula. However, we handle 5 types of assets and 6 types of labor here, unlike Solow who has only aggregate capital and labor. In the empirical part, we extend it to the frontier analysis, where translog stochastic frontier production functions are estimated.

The augmented I-0 Table

The treatment of these measures through general equilibrium models is described. Some general equilibrium models, such as an augmented I-0 table with 14 skill classes of labor, are only theoretically described in this working paper. A preliminary empirical analysis based on the augmented I-0 table appears in the flood report. A revised one is under preparation (as of Jan.10, 1990).

Findings

The relations derived are simple and are expected to yield rich analysis.

Policy implications

The ERA is a summary measure of all policy variables, which will be handy in assessing the impact of policies on industrialization.

WORKING PAPER #3
TOTAL FACTOR PRODUCTIVITY AND EFFICIENCY
BY SIZE-CLASS OF MANUFACTURING ENTERPRISES
AND IMPACT OF POLICIES

Objective

To measure total factor productivities

Analysis

In this study, we measure year-to-year rates of growth of total factor productivities (TFPs), factor intensities, and several other ratios at the firm level and four-digit-industry level, from the panel data for about 2000 establishments of the CMI data. The panel data were created by merging 12 years' files (from master tapes) of the CMI from 1974-75 through 1985-86. Establishments are divided into three classes: "old" firms which existed throughout the reference period, "new" firms which did not exist in the first year but entered the industry in later years, and "moribund" firms which were in the sample in the initial year but exited in subsequent years. The results are obtained by size-classes of firms.

Working Paper No.3 was prepared when the data upto 1983-84 only were available. By December 1989, the data for two additional years became available. The calculations were redone. In the new set of data, the "old" subsample shrinks from 393 units to 277 units, while the subsample of "new" firms becomes correspondingly bigger. The results are analyzed in a subsequent

working paper (WP #15).

Findings

The results suggest that total factor productivity has declined in the manufacturing industries of this country. Puzzlingly, it has declined more in the 50-100-worker range than in other size-classes. The impact of the major policy package of the period, the NIP82, is not clear, as the data for only one year after that are available.

Policy implications

A major effort is needed to improve the productivity and technology of industries of this country.

Working Paper No. 4

AN IDENTIFICATION OF DYNAMIC SECTORS

(Evidence from the Economic Census, 1986)

Objective

To identify dynamic subsectors from the recently done Economic Census (1986)

Analysis

The economic census was carried out mainly to develop a frame for future surveys of enterprises. It, however, generated three variables of interest to economists, namely employment, number of units (separated into mechanized and not mechanized), and the year in which the firm was born, went into production. These variables pertain to year 1986. Using the date of birth of the firm, we created time-series ^{(i) year birth rate of enterprises and (ii)} of employment, under the assumption that the firms had the same employment in the year of their birth as in the enumeration year 1986. It is also to be noted that this census consists of only the survivors. The results should, therefore, be interpreted with these caveats in mind. The purpose is simply to use another independent data set to identify relative growth rates of different subsectors and to assess

the impact of policies.

Findings

The years 1979-80 and 1980-81 reveal far higher industrial expansion than the years after 1982. Some industrial policies were also promulgated in 1979-81. At the time of writing this working paper, we did not have a precise measure for the

magnitudes of assistance in different years. That series of data became available in due course. That analysis will be presented in a subsequent study.

To assess the impact of policies, we cannot just look at one or two benchmark years when policies were issued. The impact may appear with a lag or even instantaneously by the change of environment.

Small establishments clearly show a rising trend over the last two decades. Among them, food-processing industries, especially in least-developed areas, show a dynamism. The findings create more questions than are answered. The worker/establishment ratio has declined over the reference period.

Policy implications

Whether the noted higher increase in employment in the small sector is because of policies or despite of them remains to be verified. The result about food-processing industries suggests that policymakers should keep them in mind for future plans.

WORKING PAPER #4A

APPENDIX B

DETAILED CROSSTABULATION

ECONOMIC CENSUS 1986

This appendix consists of detailed historical tables for employment at the district level, by econographic areas, and some other dimensions.

WORKING PAPER #5
SET OF QUESTIONNAIRES
FOR THE MULTISECTORAL ECONOMIC SURVEY

Objective

The objective of this set of 7 questionnaires for the nonagricultural sector was an attempt by data-users to start an interaction with the data-generators of the Economic Census Department of BES, with a view to increasing the usefulness and productivity of the upcoming economic surveys.

Analysis

An unofficial data-users group was set up with the inspiration of the Secretary of the Statistical Division of the Ministry of Planning, which included members from BIDS, University of Dhaka, a retired Member of the Planning Commission, and the HIID advisor. They tried to open a dialogue with the data-generators.

Seven questionnaires were prepared for 7 major sectors of the nonagricultural sector:

manufacturing

whole and retail trade

construction

transport, communications, and storage

community, social, personal, and business services

finance, insurance, and real estate

fishery

Findings

The dialogue broke down, as the Economic Census Department was reluctant to accept the input of data-users. So labor was wasted and nothing came out of this undertaking.

Policy implications

The effort at improving the quality of data was then shifted to the Planning Commission, where a subcommittee, called Data-Assessment Group, was set up (also by the Secretary of the Statistical Division) under the chairmanship of Acting Joint Secretary Mamdel Hossain. It worked for about 4 months and submitted a 30-page report on data gaps to the Secretary, Statistical Division. Nothing came out of it.

The matter was raised by this advisor again when the Secretary of the Statistical Division asked for his comment in early January 1990 on the Aide Memoire on National Accounts prepared by a UNDP mission for improving national accounts.

WORKING PAPER #6
A METHODOLOGICAL NOTE ON
EFFECTIVE RATE OF ASSISTANCE
BY INDUSTRIES OF THE I-O TABLE

Objective

To clarify certain methodological issues in the preparation of the effective rates of assistance.

Analysis

The issues involved are:

- 1) Price and quantity control policy, specifically food procurement price policy for rice and wheat.
- 2) Debt overdues
- 3) Subsidies to:
 - a) farm machinery
 - b) fertilizer
 - c) HYV seeds
 - d) irrigation (water control: drainage, floods, etc.)
 - e) other

Findings

The tax-subsidy-equivalent measures were calculated for each of the policies listed. This is one specimen of how intersectoral discriminatory policies are handled in the calculation of the ERAs.

Policy implications

This is an intermediate study. It creates data for other studies. Hence there is no policy implication.

WORKING PAPER 7
ESTIMATES OF EFFECTIVE ASSISTANCE
TO TEXTILE PRODUCTS
1974-75 through 1987-88

Objective

To estimate effective rates of assistance (ERAs) to textile products.

Analysis

This was the first study on ERAs done in this project. Subsequent to that ERAs were calculated for about 100 other products. This paper contains estimates for cotton saree, cotton lungi, mill-made fabrics, polyester fabrics, knit fabrics, and readymade garments for export.

Findings

Historically we can observe certain changes or fluctuations in the levels of assistance to individual products. However, this level has remained high throughout the reference period for the import-substituting products. An upward bulge is clearly discernible after the NIP82. Realized or observed effective assistance is modest for handloom products, knit fabrics, and export products.

Policy implications

Since export products enjoy less protection even after various export incentives, a reduction in the assistance to domestic producers is in order, as otherwise, producers tend to

sell as much as they can domestically (at higher prices) at the expense of exports.

WORKING PAPER #8

AN ANALYSIS OF THE IMPACT OF POLICIES BY SIZE-CLASS
OF ESTABLISHMENTS IN BANGLADESH: PAPER PRESENTED AT THE
HIID RESEARCH CONFERENCE, MARRAKECH, MOROCCO,
OCTOBER 26-29, 1988

This was a conference paper prepared for HIID's International Seminar, Marrakech, Morocco, held in October 26-29, 1988. Being a summary of various working papers, it is not given here.

WORKING PAPER #9
DOCUMENTATIONS
OF VARIABLE RECORDS OF
VARIOUS DATA TAPES

Objective

Documentations are prepared so that future researchers can use the data computerized by this project.

Analysis

This project has created nine important data sets, almost all of them from master tapes or office records of raw data from the data-generating sources. These are:

1. The CMI Merge File

A 12-year merge file of the panel data generated after extensive edition from the CMI. This source contains data on production, costs, employment, etc., and is probably the first-ever-prepared panel data on enterprises in the world. Perhaps not all scholars are aware of the fact that the creation of the panel data, also called longitudinal survey data, is an innovation in statistical data generation that has improved the quality of empirical research immensely, in the past two decades. It started with the "War on Poverty" in the late 1960s in America, when data were recorded for chosen individuals or households each year or month or for even shorter periods to see the impacts of experimental programs and policy measures between

controlled and uncontrolled groups. The so-called "repeat" farm management surveys of India and some other developing countries were not addressed to the same farm households in subsequent periods. Instead they were filled for different farms in different periods, though in the same district or village. As such one cannot study the changes in the economic positions and other characteristics of the same micro unit over time.

While it is practical to design panel surveys for households, firms, or farms by nongovernmental agencies; it is not ordinarily feasible to do so for enterprises by agencies other than the constitutionally authorized census bureaus. To the latter alone a refusal to reveal cost and production information is illegal. Firms have many reasons to keep their accounts and operations secret. By expunging all identification codes from the CMI data, we prepared 12-year-long panel data series of industrial enterprises. For the same reason, we do not calculate or report results for individual firms, but do so only for industries and groups. Nor is there any need to make calculations for individual units. In a multiple regression based on micro units, for instance, the identity of firms is not needed at all, and is eliminated without any trace. Same thing happens in crosstabulations, calculations by size-classes, and so forth. Without micro data, on the other hand, no behavioral relation can be estimated. A high degree of insight into the firm behavior and firm efficiency can, for instance, be gained by fitting stochastic frontier production functions to the panel

data, which would not be possible from a single cross-section, or a single time-series sample, or even combined time-series and cross-section data, or repeat survey data for that matter.

The Merge File has been kept on both the tape and diskettes, so it can be used on the mainframe computer and personal computers, to whichever a researcher has access. The bigger, master tape data are on 15 diskettes and the smaller, summary tape of 4 variables--output, capital, raw materials, and labor by six skill-classes--on 3 diskettes.

2. The DI File

A 10-year time-series data from the Department of Industries on "sanctioned" investment with a few other variables.

3. The Economic Census File

A 15-year time-series of employment by 4-digit industries developed from the Economic Census, 1986, by various dimensions.

4. The ERA File

A 15-year time series of ERAs for over 100 products, prepared from diverse sources. It contains various tax and subsidy rates, quantified policy variables, border prices, and other variables listed in the appendix to Working-Paper No. 14.

5. The Household Expenditure

Survey, 1985-86

This is a tape of selected records. The daily records of food expenditure have been summed up to monthly magnitudes. Only the latter variables, along with other records, appear on the tape.

6. The Labor Force

Survey, 1985

This tape consists of data for the latest labor force survey. The labor force survey is done at the household level. Note that neither the household expenditure surveys nor the labor force surveys can be merged to form panel data. They do not cover the same households, in periodical surveys. They are not done annually. In recent years, the labor force survey has been done in every other year. No attempt was made to combine various years' surveys.

7. HIID/IND Survey

1988-89

This survey was done by the HIID/ESEPP Project. It consists of two subsurveys: the factory establishment survey and the household or cottage industry survey. The documentations for these have not been photocopied. They are available on diskettes.

8. Updated Census of Manufacturing Industries, 1974-75, 1975-76, 1979-80 through 1985-86, Master Tape, revised documentation.

9. Updated Census of Manufacturing Industries, 1974-75, 1975-76, 1979-80 through 1985-86, revised documentation: Summary tape: data for output, capital, materials, and labor (by 5 skill classes).

Findings

These data are both on diskettes and tapes. They will be the property of the Planning Commission when this project comes

to an end. Requests for copies may be addressed to the Member, GED.

Policy implications

Not relevant. But this office has a policy of free access to any researcher to the entire data bank. Documentations and the accompanying diskettes or tapes will be supplied on request to desirous researchers. We encourage such sharing of data with other research centers.

WORKING PAPER #10
THE EXTENT AND THE DISTRIBUTION
OF THE 1988 FLOOD DAMAGES
IN BANGLADESH

Objective

To make a rapid assessment of the extent and distribution of the damages caused by the 1988 floods.

Analysis

The damages were assessed across various sectors, including agriculture, industry, public infrastructure, housing, employment, and so forth. The distribution was estimated between socioeconomic classes, skill categories, occupations, size-classes of establishments, size-classes of farm holdings, geographic areas, and other groups. The results reported are based on a sample of 77 upazilas.

Damages are analyzed in two parts; (a) one-shot, temporary loss of output due to the idling of productive capacity and workers during the inundation period, destruction of crops, spoilage of raw materials, and similar interruption in the flow of income, and (b) permanent losses due to damages to machinery and buildings, livestock, infrastructure, and similar capital stock. For the latter, both direct and indirect effects on employment and output are estimated.

Findings

While the poor were found more vulnerable to the ravages of natural disasters, there is little evidence for small enterprises suffering more damages than large ones. It all depends upon the geographic area where a sector is concentrated. The handloom industry suffered probably more because it is concentrated more in flood-prone areas.

Policy implications

The magnitudes and the distribution of the damages were brought to the notice of policymakers. It was left to them to derive policies.

WORKING PAPER #11
AN IDENTIFICATION OF DYNAMIC SECTORS
FURTHER EVIDENCE FROM THE ECONOMIC CENSUS, 1986

Objective

The main purpose of this second study based on the Economic Census is to identify dynamic sectors.

Analysis

Mean annual rates of expansion of establishments and employment were calculated by 4-digit industry from 1971 through 1986. They were also done by three epochs, 1972-75, 1976-81, and 1982-86. The industries that satisfied the following criterion were categorized as dynamic: industries in which employment grew at a higher rate in Epoch 3 than in the previous two epochs and attained at least 10 percent incremental rate of growth of employment during the entire period.

Findings

Different size-classes predominate as dynamic in different industries.

Policy implications

Will be derived when combined with other results.

WORKING PAPER #12
AN IDENTIFICATION OF DYNAMIC SECTORS
AND AN ASSESSMENT OF THE IMPACT OF POLICIES
Evidence from the DI Data in Investment

Objective

To measure investment, to analyze the impact of policies on investment, and to look at the dynamism of various industries in combination with other results.

Analysis

The investment data were computerized from the files of the Director General, Department of Industries, for a period of 10 years, from 1975-76 through 1985-86. Information from this source is available for "sanctioned" investment, including the import component of investment and production capacity. These statistics are available by source of credit, by industry, by geographic area, etc. The data analyzed here pertain to "sanctioned" investment and not "realized" investment. The latter series is, however, available from the same source (now BOI), but only at the aggregate level. For that, see the postscript below.

Findings

This is the third source used to identify growth sectors and to assess the impact of policies. The results of this paper will be combined with those of TFP and employment of earlier studies

in a subsequent paper.

Overall private investment as a percentage of sector GDP rose rapidly till year 1980-81. Then slumped precipitously in the early 1980s.

Policy implications

On the whole, investment remains sluggish. Some of the remedies will be discussed in a subsequent working paper

Postscript:

The DI data have been updated, to year 1989. Both "sanctioned" and "realized" series are available from 1973 through 1989 though the latter at the aggregate level only. The results of the analysis of the extended data will appear in a subsequent paper.

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WORKING PAPER #12a
DETAILED TABULATION ON INVESTMENT
(APPENDIX TO WORKING PAPER #12)

This appendix presents detailed tables of investment and documentation for the variable records in the data tape.

WORKING PAPER #13

IMPACT OF POLICIES

EVIDENCE FROM A SURVEY OF INDUSTRIAL LEADERS

Objective

To elicit the views of industrial leaders about the impression that they have not responded to investment incentives and other policies aimed at promoting industrialization.

Analysis

Over 53 senior office-bearers of industrial associations, chambers of commerce and industry, corporations, banks, and other houses were interviewed on behalf of the Planning Commission. The response was very good, in that many associations met us in committees, several appointed committees to fill our 20-page questionnaires, the interviews were held invariably with senior office bearers as the spokes persons, and they expressed their views frankly.

Findings

Industrial leaders are, by and large, unanimous in admitting their feeble responsiveness to incentives. For that they blame smuggling, rent-seeking, corruption, long delays and complexities in obtaining various sanctions and in other dealings with bureaucrats. At the same time they are not willing to forego high assistance to their industries, including protection of

their products. A few of them, however, tend to agree that the root cause of smuggling is high tariffs and import bans; the root cause of many other ailments is too much regulation, controls, and licenses. Some of their complaints about labor indiscipline seem genuine. Their explanations for default on debt remain unconvincing.

Policy implications

The root cause of smuggling, rent-seeking, and corruption needs is high protection and other assistance. It needs to be uprooted. There are too many high-cost industries kept alive by high assistance. These industries are the main cause of industrial sickness. A productivity growth policy is in order.

WORKING PAPER #14

EFFECTIVE RATES OF ASSISTANCE

Objective

To analyze the net incidence of policies

Analysis

The relation chosen to summarize the net incidence of all sorts of policies is the ERA. This index was calculated for over 100 products from 1973-74 through 1987-88. The purpose of calculating the time-series of ERAs is to estimate their impact on production efficiency, investment, employment, TFP, and other pertinent variables, which can be fruitfully done only over time when both policies and the stated variables change. Observed over time, Bangladesh is a laboratory of experiments in policies, as they have varied very frequently, quite disparately between industries, and by wide degrees. For a survey of industrial policies, see Working Paper No. 1.

Findings

The ERA to industries varies from -24 percent for jute textiles to as high as 250 percent for tobacco products. On the whole, the assistance rates are very high.

Policy implications

High ERAs and ERPs are the main cause of smuggling, corruption, and high costs of production in many industries. A drastic reduction is called for.

Addendum

The report contains ERAs by 4-digit industries and I-O categories. A little more work was done in a subsequent report including an aggregation of ERAs at the overall industry level. According to the latter measure, ERAs increased by over 30 percent during the 1980s.

See Supplement as "Note" on p. 56.2

WORKING PAPER #15
PRODUCTIVITY AND ECONOMIC DEVELOPMENT
IN BANGLADESH

Objective

The objective of this study is, first, to spell out the role of productivity in economic development in general and, second, to present estimates of year-to-year changes in productivity in the manufacturing industry of Bangladesh, by size-class of firms.

Analysis

This study measures year-to-year changes in total factor productivity and presents several other indices of productivity in the manufacturing industries of Bangladesh. The data base is the CMI Merge File, 1974-75 through 1985-86.

The methodology of this study differs from that of the efficiency study in the same industries, presented in a subsequent working paper. This study is based on the accounting method of Laureate Solow, which does not assume any specific form of the production function. As such, it suffers from no specification bias. On the other hand, it has the weakness of being nonstochastic, in that it is a measure of the residual factor of productivity. It picks up the effect of scale economies, excess capacity, technological improvements, change in factor qualities, and even random influences. In this paper we have not tried to decompose productivity into different components or to search for the sources of productivity growth.

The other paper is based on frontier production functions and does attempt to separate out some of the sources of productivity growth.

The objective of this study is a limited one, to study changes in total factor productivity by size-class of industries and some other dimensions.

Findings

The findings are depressing: Over two-thirds of 4-digit industries have suffered a decline in total factor productivity (TFP) in Bangladesh. The TFP performance is higher in large industries than in medium and small industries. Other indices support this result.

Policy implications

The main source of productivity growth is technology and human capital. We find that technology is one of the most neglected factors in this country. Treating this result as a hypothesis, we carry out an extensive analysis of other growth factors in Working Paper No. 16.

WORKING PAPER #16
AN ASSESSMENT OF THE IMPACT OF INDUSTRIAL POLICIES
IN BANGLADESH

Objective

To assess the impact of policies on pertinent growth variables.

Analysis

We begin by measuring annual rates of change of several pertinent growth variables, such as investment, productivity, firm efficiency, employment, industrial output, and the like. We also prepare a summary measure of policies at the aggregate manufacturing industry level, to see whether overall effective assistance (ERAs) has increased or decreased over time. However, the main series of ERAs were prepared at the micro level, which are used for econometric and related analysis.

Next we view the changes in these variables in relation to policies (ERAs). In this analysis, most of the series calculated in earlier working papers are brought together. In particular, the impact of policies is tested by regressing various growth variables on ERAs and several control variables.

Findings

The findings of this analysis are as distressing as they are startling. The growth rates of almost all variables--investment, productivity, industrial production--have decelerated in the

1980s. Total factor productivity has, indeed, declined. Not only the productivity of industries is low in absolute terms, the gap has increased between Bangladesh and its neighbors (e.g., Thailand and India).

Policies, as measured by ERAs, are negatively related with the stated variables. That is to say, high ERAs have done more harm than good to the economy.

Policy implications

Two of the main policy implications are (a) a sharp reduction in ERAs and deregulation in general and (b) a much higher level of Industrial R&D than that it is today with a view to raise the rate of industrial innovations.

WORKING PAPER #16B
EMPLOYMENT AND SMALL ENTERPRISES
THE CASE OF BANGLADESH

Objective

This paper was written for HIID/Cambridge multicountry ZEPA Project. By the nature of it, it is largely a summary of other papers, including introduction, survey of policies, and so forth. Therefore, it is not given a separate number. Since it draws more upon WP #16, it is assigned No. 16B, a sort of appendix to it.

Analysis

For analysis, see in particular papers Nos. 3 and 16.

Findings

Small enterprises have an important role to play in Bangladesh. But their growth depends scarcely on fiscal incentives and similar assistance, but largely on demand, i.e., the overall rate of growth of the economy, to which they also contribute. At the same time for improving resource allocation and increasing the rate of economic development a reduction in policy discrimination against them is in order. No more fiscal and monetary incentives to small enterprises are going to be productive. What is needed is a sharp reduction in the fiscal and monetary incentive to large enterprises, which policy would bring them at par with small enterprises, both in the efficiency terrain and on equity grounds. With the high effective

protection and assistance, large enterprises tend to look inward to the domestic demand and crowd small enterprises out rather than outward to exports to make room for small enterprises to fill the gap domestically.

Have 1980's Industrial Policies

Impacted Industrialization?

There are serious doubts about it.

The Economy Is Chokingly

Over-Regulated

Investment has been sluggish. Industrial output growth rates have decelerated. Exports with relatively lower ERAs have shown some progress, whereas the import-substitution groups of products with many times higher ERAs have stagnated. Small industries with low ERA, too, have experienced some progress. Growth and efficiency are negatively impacted by policies.

Policy implication

1. Deregulation in several areas.
2. A big effort needed to promote technology transfer from abroad, for which purpose a substantial increase in R&D is recommended.

WORKING PAPER #17
AN ACTION PROGRAM
PURSUANT TO THE NATIONAL
SCIENCE & TECHNOLOGY POLICY 1986
December 1989

This note was prepared on request by Mr. Eusuf, Secretary, Division of Science and Technology, for being included in the agenda of the meeting of the National Council on S&T (chaired by President, Hossain Muhammad Ershad).

WORKING PAPER #18
AN ECONOMIC ANALYSIS OF INDUSTRIAL DISPUTES
IN BANGLADESH

Objective

One of the problems pointed out by almost every industrial leader in HIID's survey of industrial associations is, in their words, indiscipline among workers of Bangladesh. Gheracs, hartals, industrial disputes, and roughing up of managers for such matters as the hiring of temporary (instead of permanent) workers, firing of workers, political reasons unconnected with the firm, rationalization and reorganization of jobs, and so forth are stated to be common occurrences. When we met labor leaders, they blamed employers equally vociferously for undercutting workers' privileges. Any study of industrial growth in Bangladesh would, therefore, not be complete without an analysis of industrial relations.

Two studies are planned: one on industrial disputes and the other on labor laws. The present working paper is devoted to an economic analysis of industrial disputes. An analysis of the labor code is in progress.

Analysis

Industrial disputes are classified by regions/districts and by economic and political reasons. Both cause and effects of disputes are studied. A section is devoted to unions and industrial disputes.

Particular focus is the relationship between industrial disputes and productivity. An unsuccessful attempt is made to determine the causal direction of the relationship between the two variables.

Findings

In recent years, political factors have taken over economic factors as the cause of disputes. Bargaining procedures have been undermined to some extent, inasmuch as an increasing number of disputes have ended in unconditional return to work. Estimates of production and employment losses through disputes are analyzed.

Policy implications

The main cause of industrial disputes in Bangladesh seems to be the stagnation of industrial expansion.

Working Paper No. 19

Technical Efficiency and Prod-

uctivity Growth in Bangladesh:

Frontier (TL) Production Functions

Objective

To estimate technical efficiency between firms (small and large firms).

Analysis

Translog frontier production functions are fitted to about 30 industries, using the CMI panel data. This is the most suitable production for the purpose. Efficiency differences between firms are then related to policies and other variables to explain the estimated differences in efficiency.

Findings

Small firms suffer from technical inefficiency in comparison to large firms.

We failed to find any relationship between efficiency and policies.

Policy implications

There is urgent need to raise the technological level of small firms. Large allocations to R&D are needed, as these small units cannot develop innovations and new products.

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Working Paper No. 20

An Identification of Dynamic

Subsectors

Objective

To identify dynamic and otherwise desirable subsectors.

Analysis

The analysis of this paper is based on HIID/ESEPP Project's new survey, named HIID/IND Survey, 1988-89 (data for 1987-88). It uses mainly the methodology of crosstabulations. It is carried out at two planes: (1) time-series data for 8 years for investment, sales, employment, and number of new units. The analysis is done by old and new firms, by 10 subsectors, and by 8 size-classes. (2) cross-section data for 1987-88 for over 300 variables, problems, incentives, and related information. Historical and current variables are then brought together to rank four-digit industries by using multiple criteria. A total of 77 four-digit industries are analyzed. In the time-series analysis, only the following 12 subsectors are treated.

1. Public Jute mills
2. Private Jute mills
3. Public cotton mills
4. Private cotton mills

Jute and cotton textile mills are all old units in this sample. Nontextile industries are separated into old (those which reported data for 1980-81 and continued reporting thereafter) and new cohorts (those which entered after 1980-81).

5. Agrobased industries

6. Electronics
7. Electrical appliances
8. Wooden furniture
9. Ready-to-wear garments
10. Tanning and finishing
11. Fish and seafood
12. Light mechanical engineering industries

Findings

Among size, Size-Class 4 (20-49 workers) recorded higher gains during the 1980s. Overall sample investment fell sharply in 1983-84 and has not recovered since. The rates of growth of output have been positive in the lower 4 size-classes of the new sample but negative in the upper size-classes. Investment per worker has declined over time, indicating a labor-using bias. The results of growth between private (divested) and public textile enterprises are somewhat unclear. On the whole, differences, if any, are not significant. A couple of results are awkward: Employment has decreased in old public mills and has increased in old private mills. Investment has declined, by and large, in both old textile groups of industries. A puzzling result is a substantial increase in investment in the newly divested cotton mills for five-six years while their sales have simultaneously declined. Possible explanations are offered.

Among new nontextile firms, agrobased industries, wood furniture, ready-to-wear garments, and electronics have experienced significant increase in investment.

Among the top 30 industries in terms of sample size in the HIID/IND Survey, the following are the results according to single criterion test:

<u>Index</u>	<u>Top Rank</u>
1. Q/KK = Output/Capital ratio	3807: Heat and Cooking Equipment
2. L/KK = Labor/capital ratio	3206: Handloom textiles
3. VA/Q = Value added to Output ratio	3805: Structural Metal Products
4. X/Q = Export ratio	3221: Ready-to-Wear Garments
5. INV Ratio = Ratio of the domestic component of investment to total investment	3223: Local Garments
6. RM Ratio = Ratio of domestic raw materials in the corresponding total raw materials	3569: Misc. Plastic Products
7. I/K = Investment/Capital ratio	3223: Local Garments
8. LF/LM = Female labor to male labor ratio	3221: Ready-to-Wear Garments
9. Q/L = Output/labor ratio	3231: Tanning and Leather
10. RR = Rate of return	3805: Structural Metal Products
11. S = Small is beautiful	3829: Machinery & Equipment etc.
12. GL = Growth of rate of employment	3204: Silk and Synthetic Textiles
13. GS = Growth rate of sales	3819: Fabricated Metal Products
14. GI = Growth rate of investment	3128: Edible salt
15. GU = Growth rate of units (establishments)	3311: Saw and Planing Mills
16. R = Composite index	3805: Structural Metal Products

According to the multiple criteria employed here, the top 10 industries are: structural metal products, tanning and finishing, heat/cool equipment, ready-to-wear garments, jeweleries, edible salt, fish and seafood, saw and planing mills, handloom textiles, and rice milling, and in that order.

Finally, we failed again to find any relationship between policies and growth of output, employment, or investment.

Policy implications

Industrial policies do not seem to show the intended results. Some sectors are doing well (getting higher rank) because of policy-caused distortions, for example, structural metal products, which may be due to the investment bias towards residential investment. Other growth industries are showing up because of their own dynamism, e.g., garment, seafood, and so on.

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Working Paper No. 21

Role of Women in Bangladesh

Manufacturing

Objective

To study the emerging role of female entrepreneurs and female workers in Bangladesh manufacturing industries

Analysis,

Separate analysis is carried out for female entrepreneurs (who are only 7 in a sample of 592) and female workers (who form 2.3% of labor in all sample industries and 24.2% in the nontextile industries of the HIS sample). Female workers predominate in garment and have high visibility in electronics and fish and seafood, while male workers have monopoly in jute and tanning and finishing.

Much of the analysis dwells upon employment and wage rates. Characteristics of male and female entrepreneurs are compared. An econometric analysis of production functions is carried out to estimate value marginal products of male and female labor.

Findings

Bangladesh female workers have lower average product than male workers. Their wage rates are only one-third to one half of those of male co-workers. On the other hand, surprisingly, female workers' value marginal product (VMP) is significantly higher than the VMP of male

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workers even in absolute terms. Naturally, their VMP to wage rate ratio is even larger than that for male workers. As entrepreneurs, they produce more output and provide higher employment per million takes of fixed and working capital than do male entrepreneurs. The industries in which they predominate have done relatively better in the past decade as compared to manufacturing as a whole. Thus a relatively high productive role is awaiting for Bangladesh women in the country's economic development.

Policy implications

Low employment of women in industry, despite their much higher VMP/wage ratio, needs to be further verified. It deserves the attention of policymakers.

Working Paper No. 22

Impact of Policies on Small Industries

Objective

To assess the impact of industrial policies on the development of small and cottage industries.

Analysis

Over a score of sets of incentives and problems are analyzed as to their impact on small and large industries.

Findings

See table next page.

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**Impact of Policies and Problems Faced
by Small and Cottage Industries**

Problem or Incentive	Findings	
	Small Units	Large Units
I. <u>Factory Establishments</u>		
1. Serious problems	Lack of easy availability of raw material	Procedural complexities
2. Incentive used/liked widely	Ban imports of product	WES premium (Garment industry dominates)
3. Assistance by agency	Credit, some training, marketing, BSCIC	Same upto 100-worker units
4. Sources of equity credit	Among creditors, moneylender and RM-supplier 7.5%; Banks and DFIs 16.5%	Among creditors, moneylender and RM-supplier 2.2%; Banks+DFIs 12%
5. Reasons for not availing of incentives	Low value put on incentives (67% indifferent)	Low value put on incentives (67% indifferent)
6a. Delay in sanctions	Mean 6.8 months	Mean 7.5 months

6b. Causes of delay	Admn. complexities, corruption	Adm. complexities
7. Implementation practicies suggest- ed by entrepreneurs	Make bank credit easy, bn imports	Solve raw material problems, make bank credit easy
8. New policy measures suggested by entre- preneurs	Ban imports, facilitate bank credit	Solve raw material problem; facilitate bank credit
9a. Reasons for good years	Domestic demand, good harvest. (Policies do not get credit)	Domestic demand, good (Policies do not get credit)
9b. Reasons for bad years	Decline in demand, increase in input prices. (Policies do not receive blame.) Economic causes underscored	Decline in demand, increase in input prices. (Policies do not receive blame.) Economic causes underscored

II. Cottage industry

(68% of units belong to
handloom industry)

- | | |
|--|--|
| 10. Serious problems
(specified list) | High priority problems: Lack of working
capital; procedural complexities (in credit);
lack of minimum own resources. |
| 11. Open-ended prob-
lems identified by | Lack of working capital, lack of availability
of raw materials |

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12. Major reasons for contemplating to leave the cottage occupation 24 respondents were found contemplating to leave the cottage occupation and 312 (or 7.7%) against that step. Practically the only objective of wanting to leave is aspiration to go abroad
13. Major reasons for preferring children to quit the cottage occupation No fewer than 70% prefer their children not to leave the cottage shop. About 60% of these say so because they do not think outside opportunities exist for their children to get better-paid jobs
14. Measures suggested for the promotion of cottage industries Give easy lending facilities, eliminate black marketing, and give adequate government support in general. Handloom industry dominates. Availability rather than a subsidization of credit is the felt need
15. Possible reasons that led to bad years Lack of capital for agrobased industries and cost of raw material for handloom industry. Increase in input prices a general reason
16. Assistance agency Among individually separated agencies, Grameen Bank the largest lender across all quintiles. BSCIC is a lead player in small sector but a small player in the cottage sector.

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17. Source of equity
credit

Handloom industry big borrower from
moneylender and raw-material supplier.
Higher the quintile, the larger the
proportion of handloom borrowers from the
moneylender

18. The ERA by
size-class

Work in progress. Preliminary results
indicate that the advantages that small
enterprises have from their relatively higher
propensity not to comply with labor
legislation are, by and large, offset by their
low capacity to benefit from fiscal and
financial incentives.

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Policy implications

The results confirm our earlier findings (see WP # 16). The development of small industries calls not for more fiscal and financial incentives, but assistance for increasing their productivity through improved technology and infrastructure in rural areas.

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OCCASIONAL NOTE 1
DATA GAPS FOR THE FOURTH
AND FUTURE FY PLANS

April 10, 1988

The following topics are discussed:

- 1) Why data on the impact of policies is so crucial
- 2) Defining the quality of a survey
- 3) Data on the structure of production and employment
- 4) Data on household income and employment
- 5) Vertical integration of the planning and data-generating processes
- 6) Need and high value of public-use micro data tapes
- 7) The data-generating process.

OCCASIONAL NOTE 2
DECENTRALIZATION OF PLANNING
IN BANGLADESH
June 18, 1988

The following topics are discussed:

- Why participation is necessary?
- Search for optimal planning unit
- What is district planning
- Methodology
- Organization
- Division of planning tasks
- District budget
- District data
- Technical staff for district development planning
- Short course on district development planning
- The content of district planning
- Where to begin?

OCCASIONAL NOTE 3

INTEGRATING MICRO AND MACRO PLANNING

July 15, 1988

The following topics are discussed:

Introduction

Definition of integration of macro and micro planning:
limited integration (linking projects with macro variables); global integration: microfoundations of macro planning (linking behavioral characteristics of the private sector and the technological characteristics of public projects with national variables)

Methodology of integration of macro and micro planning:
general equilibrium the only logical method

Data needed for integrating macro and micro planning

Data available as of now

Data expected to become available in 1989 and 1990

Data needed

Some questions.

OCCASIONAL NOTE 4

COMMENT

ON BANGLADESH AGRICULTURAL SECTOR REVIEW
OF THE UNDP

Jan 28 - Feb 2, 1989

It is in effect a dissenting (17 pages + 19 pages of tables) note to the entire approach and content of the multivolume review by a team of 4 expatriate and national experts (with a score of background papers by short-term consultants) working for a year, which was evaluated by a group of 25 international experts in a week-long forum, under the auspices of the UNDP/Ministry of Agriculture. The Planning Commission Resident Economic Advisor was an invited member of that forum, in which capacity he wrote this note. The critic disagrees with the authors on their analysis, prioritization, as well as policy recommendations.

OCCASIONAL NOTE 5
COMMENT
ON USAID MISSION'S
AGRICULTURAL SECTOR REVIEW

April 28, 1989

A critical review of the USAID Mission's Review of Bangladesh's Agricultural Sector. One of the points the present advisor makes is that a balanced, optimal approach to resource allocation in Bangladesh's agriculture will be more productive than the unbalanced-development, irrigation-led approach recommended by the mission. For instance, although most agricultural economists believe that the green revolution was successful in the Punjab because the precondition of irrigation facilities were in place there, much of irrigation was, indeed, induced by high-yield variety seeds--the rate of return increased so sharply that farmers dug wells, bored tube wells, and even government was induced to dig additional canals mainly to raise the water table for tube wells, which were installed by individual farmers without public support.

OCCASIONAL NOTE 6
PRELIMINARY THOUGHTS ON
THE THIRD PHASE
OF THE USAID-FUNDED PROGRAM OF
EMPLOYMENT AND SMALL ENTERPRISES

April 28, 1989

A preliminary position paper written for USAID. Two major projects suggested are based on the twin policy recommendations of this project, namely deregulation and raising the level of technology.

OCCASIONAL NOTE 7

THE NATIONAL ACCOUNTS OF BANGLADESH

VALUE ADDED IN MANUFACTURING

May 5, 1989

The advisor has written three invited short notes on the topic:

- (1) Value Added in Manufactu-
ring (May 5, 1989), 4 pages

A short note on improving the estimates of value added in manufacturing, when requested by the Member, GED, Planning Commission, who is a member of the National Commission on National Accounts of Bangladesh.

- (2) A Brief Comment on the UNDP
Mission's Aide Memoire on
National Accounts (Dec.28,
1989), 3 pages

A comment on the Aide Memoire prepared by a UNDP mission for BBS, written when specially requested by Mr. Salam, Secretary, Statistical Division (BBS being a division of the Statistical Division.)

- (3) A Short Comment on Draft
Ch.3 of the Commission on
National Accounts

A comment on Ch.3 of the draft report of the National

Commission on National Accounts written by the Member, GED, Planning Commission, who had asked for the advisors comment.

(4) A Very Brief Comment

(Jan 1988), 2 pages

A very brief rapidly written 2-page comment on an article on the Fourth Five Year Plan by the Member, GED, Planning Commission.

OCCASIONAL NOTE 8
COMMENT
ON THE BIDS STUDY
OF THE TEXTILE SECTOR

June 18, 1989

It is an invited critical note presented in a day-long seminar of BIDS on its study of the textile sector, in particular the handloom sector. One of the most interesting results that struck this advisor is that handlooms experienced higher rates of growth, productivity, and profitability than powerlooms and mills in the teeth of much lower ERP for handlooms than powerlooms or mills.

The result is consistent with our findings of Working Paper 15 in which ERAs are negatively correlated with growth and other desirable variables. The remedy recommended by BIDS, however, is reverse of what the present advisor would recommend: BIDS experts recommend an increase of assistance to handlooms to bring assistance to them at par with powerlooms and mills. This advisor would recommend a reduction in the assistance to powerlooms and mills to bring it at par with handlooms. For one of the important findings of this project's research is that higher the effective assistance, the more inefficient the firm. Accordingly, equity of treatment by levelling down rather than levelling up of assistance is a logical policy implicated by the findings of both the BIDS study and the HIID research.

OCCASIONAL NOTE 9
SOME POLICY IMPLICATIONS
OF THE HIID/ESEPP RESEARCH

June 28, 1989

Research Findings that Indicate
that Private Investors have not
Responded to Industrial Policies

1. Private investment has been sluggish.
2. Private investment has fallen far short of TFYP targets. It was only 22 percent of the 5-year target in the first 3 years.
3. New investment usually embodies improved technology and hence rise in productivity, but in Bangladesh there is no evidence of any increase in productivity growth. By implication, new investment is likely to be low.
4. Foreign investment has picked up a bit, but is still only a dribble.
5. Interestingly, even overall real investment in the public sector has decelerated.
6. Industrial sickness has increased. This has been reported by industrial leaders. A factual evidence is the increase in "discouraged" industries from 11 in 1986 to 21 today.
7. The rate of growth of industrial production is lower in the 1980s than the 1970s.
8. The rate of growth of GDP has also decelerated, though that may be attributed to other factors than deceleration in

investment, e.g., floods.

9. Industrial leaders agree with the above results, but blame smuggling, rent-seeking, corruption, and bureaucratic sloth for their sluggish response to incentives. But these are only the symptoms of a deep-rooted malaise, which is high protection and over-regulation of the economy.

10. Investment, TFP, and production efficiency are negatively correlated with the effective rates of assistance (ERAs) in Bangladesh.

Conclusion: Policies of promoting industrialization by reducing industrialists' costs of production through subsidies, raising their product prices through protection, and increasing their profits through tax holidays seem not to have delivered. More fiscal, monetary, and regulatory assistance is hardly the answer. The remedy probably lies in giving assistance in developing technological innovations, new products, improved processes of production, superior organization of production, and improved managerial practices.

Research Findings that Implicate Technology Policy

1. Total-factor-productivity growth rate has been declining in Bangladesh

2. Small firms are farther below the frontier of Bangladesh's prevailing best-practice technology (are more inefficient) than large firms, reflecting inferior technology of the former

3. Bangladesh lags behind its neighbors in technology improvements

4. The Apex-agency survey confirms the above results

5. The present R&D organizations of Bangladesh cannot meet the demands for technology of today

6. Output growth rates have been much lower than the growth rates of conventional inputs, suggesting technological decadence

7. Investment, which is both a cause and an effect of technological advance, has been sluggish

8. Bangladesh's input in the development of technological innovations, namely R&D, is meager

9. Political will for a leap frog in technology now exists in Bangladesh

10. Pecuniary (fiscal and monetary) policies have failed to arouse the Bangladesh investor. Instead they have caused distortions, widespread inefficiencies, and malallocation of resources. A shift to technological policies is in order.

Conclusion: The key to the malaise of Bangladesh's industry is a leap frog in technological innovations.

May 28, 1990

OCCASIONAL NOTE II

1. Note 90.1

Agriculture-industry and spatial linkages and economic development

Objective

To trace agriculture-small industry linkages as well as the spatial effects of infrastructure, industrial-urban nexus, migration, etc., on small industries.

Analysis

The theory of agriculture-industry linkages is clarified. A regression analysis of spatial variables on industrialization is carried out. The data were generated as a part of the HIID/~IND Survey. About a score of variables were generated at the mouza level.

Findings

Nearness to markets and infrastructural facilities, experience of entrepreneurs, export of labor, entrepreneurs' schooling, quality of education, and industrial estates promote industrialization. The construction of paved roads and other infrastructure in the country side, therefore, is likely to yield a relatively high payoff in terms of the growth of rural industries as well as agriculture, with growth-promoting feedbacks to the rest of the economy.

Policy implications

Rural infrastructure promises a high payoff in terms of rural industrialization.

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BACKGROUND STUDIES

1. Survey techniques and Questionnaire

About a dozen background studies have been spiral-bound. They include questionnaires for different surveys done by this project; tabulation formats for data processors; manuals of investigators; and similar material.

Background Paper No. 1: Prefatory Discussion Note
Sept. 21, 1987

Background Paper No. 2: A Ten-day Workshop on Investment,
Planning Commission, June 29-July 5, 1989

Background Paper No. 3: HIID Industrial Survey of Establishments
Apr 9, 1989: Questionnaire

Background Paper No. 4: HIID Industrial Survey of
Establishments, July 1989: Tabulation
Formats

Background Paper No. 5: HIID Industrial Survey of Cottage
Industries, Apr 9, 1989: Questionnaire

Background Paper No. 6: HIID Industrial Survey of Cottage
Industries, Summer, 1989: Tabulation
Formats

Background Paper No. 7: Flood Damage Survey, Oct 3-10, 1988:
Questionnaire

Background Paper No. 8: A Survey of Industrial Leaders on the
Impact of Policies, June-July 1988:
Questionnaire

2. Printouts of computer

inputs and outputs

Computer printouts contain a lot more computed results than
can be reported in working papers. The results used in

analysis as well as a lot more have been saved and properly flagged. Interested researchers are welcome to read them. They will be saved till the termination of the project. A few, more useful ones, will also be saved as a part of the HIID/ESEPP data bank even after the project is closed.

3. Data tapes

A number of data tapes and scores of data diskettes as well as softwares form the data bank of this project. In what organization and form the Planning Commission will save them is not yet known.

IV. SHORT-TERM CONSULTANTS'
REPORTS

IV. Short-Term Consultants' Reports

Consultant	Title of Report	No. of Pages
A. <u>Completed</u>		
1. A.H. Sahadat Ullah,	Macro Framework of Precocious Industrialization in Bangladesh	143
2. A.H. Sahadat Ullah,	Economic Policy Evolution in Historical Perspective in Bangladesh	50
3. A.H. Sahadat Ullah,	Institutional Linkages of Small Producers in Bangladesh	46
4. Robert House,	Technology for Small Enterprises: ^{Interim} Report	10
5. Abdur Rab,	Estimates of Effective Assistance of Textile Products: 1974-75--1987-88	20
6. Iqbal Mahmud & Nawaz Sharif,	Institutional arrangement for Technology Transfer and Development Plan of Action	103
7. A.S.M. Quasem,	Why has the Response of Private Investors to Industrial Policies been so Sluggish?	14
B. <u>Reports in Progress</u>		
8. Subsector:	Agrobased Industries (Consultant: Emdadul Huq)	
9. Subsector:	Electronics (Consultant: Dr. Abdus Syed Sattar)	
10. Subsector:	Light Mechanical Engineering (Consultants: Dr. Nurul Amin & Dr. Ahsan Ali Khan)	
11. Subsector:	Leather & Leather Products (Consultants: Dr. M.M. Huq and Principal Karam Ali Ahmed)	
12. Subsector:	Furniture & Wood Products (Consultant, Prof. A.T.M. Zahurul Huq, Dhaka University)	

Consultant	Title of Report	No. of pages
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13. Subsector: Ready-Made Garments & Textiles (Consultants: Prof. Monty Graham, Duke University, USA, and Prof. Montazuddin Ahmed, Dhaka University)

Reports on Special Topics

1. Robert Evenson Two studies on R&D, Patents, and Technology in Bangladesh

2. K.L. Krishna Study on technical firm efficiency and productivity growth in Bangladesh: Preliminary results written out

3. Kathy Anderson Study on Labor Policies and Small Sector in Bangladesh (in progress)

4. Nawaz Sharif and Iqbal Mahmud, Two reports on technology transfer policy for Bangladesh

5. Robert House Report on the institutional framework for technology transfer for Bangladesh

V. SPECIAL SEMINARS

SEMINARS

Monthly Seminars

These seminars are based on the research done during the month. Since January 1988, a few months have been missed. On the other hand, during some months there were more than one seminar. A total of 30 monthly seminars were given by December 1989.

B. Special Seminars

These are invited or specially organized seminars.

1987

1. Modalities of Modeling of Income Distribution and Poverty, BIDS, Nov. 11.
2. Methodology of research, USAID, December 12.

1988

3. Interim results of the HIID/ESEFP Project research, USAID, Aug 28.
4. The magnitude and the distribution of flood damages, Planning Commission, September 24. Seminar chaired by the Planning Minister,
5. An Analysis of the Impact of Policies by Size-Class of Establishments in Bangladesh, HIID International Seminar, Marrakech, Morocco, Oct. 26-29,

1989

6. Invited comment on the UNDP's Bangladesh Agricultural Sector Review, Week-long Forum of 25 international economists, World Bank/UNDP, Feb. 11-16.
7. Invited comment on the BIDS studies of the textile industry, Day-long Seminar, BIDS, June 18.
8. Some policy implications of the HIID/ESEPP Project research, USAID, June 27.
9. Findings and policy implications of the HIID/ESEPP Project research, Planning Commission, July 22.
10. Impact of policies on efficiency of production by size-class: frontier production functions, Planning Commission, July 29.
11. HIID/ESEPP Project research findings that indicate that private investigators have not responded to industrial policies, USAID, July 27.
12. HIID/ESEPP Project research findings that implicate deregulation and technology policy, USAID, Aug. 10.
13. Total factor productivity growth in Bangladesh, 3-day seminar of the NPC, Ministry of Industries, October 20.
14. Bangladesh's Economic Policies, BIDS, Sept. 7.
15. An Assessment of Bangladesh's Economic Policies, Dhaka University's Center for Advanced Socioeconomic Research, Sept. 7.
16. An Assessment of the Impact of Industrial Policies in Bangladesh, Planning Commission, chaired by Member, GED, Sept. 9.
17. Have Bangladesh's Industrialists Responded to Industrial Policies and Economic Development, World Bank, Sept. 12.

18. Bangladesh's Industrial Policies and Economic Development, UNDP, Sept. 12.
 19. Policies and Economic Development in Bangladesh, Vanderbilt University, October.12.
 20. An Assessment of the Impact of Policies in Bangladesh, Harvard University (HIID), Cambridge, MA, Oct. 4.
 21. Productivity and Economic Development in Bangladesh, National Productivity Organization/International Labor Office, Oct. 23-25.
 22. Productivity and Technological Management--Pertinent Issues in Bangladesh (by HIID Consultant Iqbal Mahmud), Oct. 23-25.
 23. An Assessment of the Impact of Policies in Bangladesh, Planning Commission, Chaired by Minister of Planning, Nov. 19.
- 1990
24. Consistency of HIID Project's Empirical Findings with Theory, Planning Commission, Jan. 2.
 25. Leather and Leather Goods Sector in Bangladesh: Main Findings of a Study, Planning Commission, Jan. 3.
 26. Stochastic Frontier Production Functions and Firm Efficiency, Planning Commission, Jan. 6.
 27. An Assessment of the Impact of Policies in Bangladesh, Ministry of Industry, February 7, 1990
 28. An Assessment of the Impact of Policies on Industrialization in Bangladesh, BSCIC, Government Policymakers, February 11, 1990
 29. An Assessment of the Impact of Policies on Small and Large Industries and Policy Implications

18. Bangladesh's Industrial Policies and Economic Development, UNDP, Sept. 12.
19. Policies and Economic Development in Bangladesh, Vanderbilt University, October.12.
20. An Assessment of the Impact of Policies in Bangladesh, Harvard University (HIID), Cambridge, MA, Oct. 4.
21. Productivity and Economic Development in Bangladesh, National Productivity Organization/International Labor Office, Oct. 23-25.
22. Productivity and Technological Management--Pertinent Issues in Bangladesh (by HIID Consultant Iqbal Mahmud), Oct. 23-25.
23. An Assessment of the Impact of Policies in Bangladesh, Planning Commission, Chaired by Minister of Planning, Nov. 19.

1990

24. Consistency of HIID Project's Empirical Findings with Theory, Planning Commission, Jan. 2.
25. Leather and Leather Goods Sector in Bangladesh: Main Findings of a Study, Planning Commission, Jan. 3.
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28. An Assessment of the Impact of Policies on Industrialization in Bangladesh, BSCIC, Government Policymakers, February 11, 1990
29. An Assessment of the Impact of Policies on Small and Large Industries and Policy Implications