

Privatization and Employment: A Study of the Jute Industry in Bangladesh

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This paper uses firm-level data from jute mills in Bangladesh in order to analyze the effects of privatization upon employment and output. The privatization program provided an almost controlled experiment on the economic effects of a change in ownership. Thirty-one of the 62 mills in the sector were privatized, with the rest remaining in the state sector, allowing us to use the latter as a control in order to separate the time-varying industry-wide effects. Further, the selection of the mills that were privatized was exogenous, since it was not based on current financial performance. The mills which had belonged to Bangladeshi nationals at the time of nationalization were returned to their former owners, while the mills which had belonged to West Pakistanis remained in the state sector. For this reason we believe that the data allow us to isolate the effects of ownership per se on output and employment. The advantages of this data set compare favorably with other studies comparing private and public sectors.

Our findings are that privatization has reduced employment significantly, while the reduction in output is not statistically significant. The breakdown of employment reduction by category of employee is particularly interesting. The reduction in employment was primarily directed toward clerical and managerial employees (i.e., the cate-

gory of white-collar workers), and to a lesser extent toward permanent manual workers. The proportionate employment reduction was substantially larger (by a factor of five) among white-collar employees as compared to permanent manual workers. In contrast, the employment of casual manual workers actually increased in the privatized mills, leaving the overall employment of manual workers virtually unchanged. Our results shed light on public-sector behavior and objectives, since they suggest that public-sector employment of white-collar workers was particularly excessive. We explore briefly the political economy of this form of clientelism in Bangladesh.

The remainder of this paper is organized as follows. Section I provides the background to the privatization program. Section II describes the data used in the paper. Section III sets out a simple model of the effects of privatization. Section IV reports the empirical results, and our conclusions are summarized in the final section.

I. Background

Until the recent changes in Eastern Europe, few countries had carried out as dramatic and far-reaching a privatization program as Bangladesh. In 1982 the military regime of General Ershad announced its New Industrial Policy, under which more than 650 industrial and commercial enterprises were transferred from public to private ownership by 1986, many of them within months of the policy's inception. By 1986 only around 160 units were left in the public sector, and its share in industrial-sector assets fell from around 85 percent to roughly 40 percent. Privatization had its greatest impact on Bangladesh's premier industry and export earner, jute textiles. Thirty-three out of 62 jute textile mills, accounting for 38

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percent of capacity, were earmarked for privatization in 1982, and 31 of these mills were actually privatized. This program is often dubbed "reprivatization" since it partially reversed the nationalization which followed Bangladesh's independence from Pakistan in 1971. With independence, the Pakistani entrepreneurs abandoned their immovable assets, making the Bangladeshi state the de facto owner of 544 industrial enterprises. Three months later, the state announced the formal nationalization of these abandoned enterprises, as well as the nationalization of all jute and cotton textile mills owned by Bangladeshis. The government also nationalized almost the entire banking sector (except for three foreign-owned banks), insurance, the import trade, the raw jute export trade, and most of inland water transport. As a result of these measures over 90 percent of industrial fixed assets passed into public ownership.

The performance of these public enterprises in Bangladesh has been far from satisfactory (see Rehman Sobhan and Muzaffer Amed, 1980; Akthar Mahood, 1989). Public enterprises suffered sustained losses and were a major burden on the exchequer. The jute industry incurred substantial losses in the period between 1972–1973 and 1984–1985, and it was in the red in 10 out of 13 years. Mahmood (1989) uses employment norms before nationalization to estimate that, at the beginning of the 1980's, 15 percent of the labor force in the industry was "excess."

Although some minor privatization occurred in the 1970's (see Sobhan and Ahmad Ahsan, 1984), the major denationalization took place following the New Industrial Policy of 1982. By the end of June 1984, 31 jute mills, which accounted for 38 percent of capacity in the sector, and 26 textile mills, accounting for 44 percent of spinning and 53 percent of weaving capacity, were returned to their former Bengali owners. By 1986, over 650 enterprises had been privatized, bringing down the share of the public sector in industrial fixed assets to around 40 percent by the end of 1985 as compared to 85 percent in 1982. The privatization program of the Ershad government is, in pro-

portionate terms, one of the largest in the world.

II. The Data

We have data on the employment at the mill level for the years 1983 and 1988, for the following three categories: manual workers, clerical employees, and managers. Manual workers are in turn disaggregated into registered permanent workers and casual workers, the latter being commonly known as *bodli* workers in Bangladesh. The data are summarized in Table 1. The data were collected in 1988 from records kept by the Bangladesh Jute Mills Corporation, which oversees the public-sector mills, and from the records kept by the Bangladesh Jute Mills Association, the private-sector employers' organization. These records are compiled from reports submitted by individual members, which are based upon employment registers, and are tabulated roughly every six months. One of us (Khan) conducted a number of informal interviews with managers in both public and private sectors, who confirm that the reported figures are accurate, with mills having no incentive to systematically misreport employment figures. The figures we use were compared with returns submitted six months earlier and six months later, to check for any discrepancies. Privatization was initiated in 1982, and at that time, the government enforced a one-year ban on layoffs, so that the employment figures for 1983 (which are the first available figures) show the situation at the time of privatization. Table 1 shows that public-sector mills were somewhat larger than the privatized mills; however, a large part of this difference is due to the giant Adamjee mill, which accounted for over 20 percent of public-sector employment.

While private mills have had freedom to adjust their work force after 1983, this freedom has not extended to setting wage rates. The government has been enforcing minimum wage rates for both private and public sectors. Basic official hourly rates of pay for various categories of workers are identical in all mills, and there is no evidence that

TABLE 1—AVERAGE EMPLOYMENT BY SECTOR

Category	All mills		State mills		Privatized mills	
	1983	1988	1983	1988	1983	1988
Managerial	97	108	122	149	72	66
Clerical	328	332	406	450	251	213
White-collar	425	439	528	600	323	279
Permanent manual	2,480	2,475	3,242	3,325	1,719	1,625
Casual manual	1,071	998	1,395	1,230	747	765
Number of mills:	62		31		31	

Note: The public-sector averages are significantly influenced by the giant Adamjee mill, which alone accounts for over 20 percent of public-sector employment.

Sources: Employment records of the Bangladesh Jute Mills Corporation (for the public-sector mills) and of the Bangladesh Jute Mills Association (for privatized mills), 1983 and 1988.

the private sector exceeds the statutory requirement.¹ In fact, a major complaint of private-sector mills is that the government sets excessively high wage rates, which the public sector is able to cover since the government underwrites their losses. Although wage rates are identical across firms, they do differ across categories of workers. One differential worth noting is that between permanent and casual manual workers, who essentially perform the same type of work. While initial daily wages of permanent and casual workers are identical, the daily wage of a permanent worker goes up by one taka for each year of service, while casual workers earn no increments. Permanent workers are also entitled to some additional allowances. Consequently, the wage differential between a casual worker and a permanent worker who has been employed for 15 years may be as much as 50 percent. Casual workers can be employed and laid off relatively easily, whereas permanent workers have greater job security. Permanent workers are also better organized. This is partly a reflection of Bangladesh's labor legislation and industrial-relations structure. There is a

multiplicity of competing unions at the workplace, and these unions have an incentive to compete more intensively for the support of permanent workers since Bangladesh labor law grants a union recognition only if it has the support of at least one-third of the permanent workers in the workplace.

The output data were similarly collected from mill-level monthly production figures for three major product groups: hessian, sacking, and carpet-backing cloth.² These monthly figures were used to get annual output figures for 1981–1982 and 1984–1985. We also constructed an index of aggregate output, using base-year prices.

While our data have the advantage of being a panel data set, we note that the data are quite limited, since we have information only on employment and output, and that too at different points of time. Since wages have been constrained to be equal in all mills, we are unable to see how privatization may have affected wages. This may now change and should provide further evidence from this unique natural experiment.

¹This policy of the government's effectively setting private-sector wage rates is currently under review, but this does not affect earlier years.

²We are grateful to Akhtar Mahmood for allowing us to use these data.

III. The Model

The main effect of privatization is to change the objective function of the firm. Private mills are usually owned by a single owner, and the owner is usually closely associated with the management of the mill. Principal-agent problems between owners and managers are consequently relatively unimportant, and it is plausible that private mills are concerned mainly about profits. In any case, private mills are likely to be more concerned with profits than publicly owned mills, and less concerned about employment as an objective.

The objective function of a publicly owned firm is more complex, and merits some discussion. We assume that public mills are concerned about employment as well as profits, although this concern for employment could arise due to a number of distinct reasons. The standard explanation for the public sector's concern for employment is a "welfarist" one: the public sector seeks to maximize social welfare. With widespread prevalence of unemployment in Bangladesh, the shadow price of labor is less than the wage rate, so that a welfare-maximizing public-sector firm should push employment beyond the point where marginal cost equals marginal revenue. For the same reason, output would also be greater in the public firm.

Excessive public-sector employment could also arise for a second, less laudable reason. The public sector may be used by politicians in order to dole out jobs in response to political pressure. This phenomenon, which we call "clientelism," is discussed more fully in Khan (1995). The difference between welfarist and clientelist public-sector behavior is likely to be in the *pattern* of excess employment. Welfarist criteria would dictate employment creation among manual workers, since the cost of an additional job is lower, and since the alternative opportunities of manual workers are also more limited. On the other hand, clientelism is more likely to generate greater employment creation for white-collar sections, since the educated and articulate middle class has a greater role in political mobilization in

Bangladesh. Within the set of manual workers, clientelism should generate more employment for the better-organized permanent workers even though the cost of job creation is greater for this subset.

The third explanation is sociological and complementary to the clientelist explanation, which is primarily political. This emphasizes the motivations of public-sector managers in the determination of the pattern of excess employment. While the overall sociopolitical milieu may favor the creation of additional public-sector jobs, the exact pattern of job creation and allocation is to some extent the prerogative of public-sector managers. These managers are mainly middle class and are more likely to create jobs for those to whom they are tied by kinship or social bonds. While clientelism stresses the political motivations of the politicians who are in the nature of the "principals" in the running of the public sector, the sociological explanation stresses the social psychology of the managers, who can be seen as "agents" of the politicians, or the state. Obviously, the two explanations may reinforce each other.

The model we propose for employment, E_{it} , is as follows (the model for output will be similar):

$$(1) \quad \ln(E_{it}) \\ = \alpha_i + \delta_t + \gamma w_{it} + (\beta + \theta_i)O_{it} + \varepsilon_{it}$$

where α_i is the firm-specific effect, δ_t is the period effect, w_{it} is the real wage, and ε_{it} is a white-noise error term. O_{it} is the ownership dummy, taking a value of 1 when the firm is publicly owned. The parameter of interest is β , the mean effect of public ownership on employment. However, pressures to increase employment may vary across public-sector firms, and this is captured by a firm-specific coefficient θ_i , which has an expected value of zero. Since the wage rate is uniform across firms in any time period (as we have discussed in Section II), γw_{it} can simply be absorbed in the period effect, δ_t . First differencing (1), we obtain:

$$(2) \quad \Delta \ln(E_{it}) = \Delta \delta_t + (\beta + \theta_i)\Delta O_{it} + \Delta \varepsilon_{it}.$$

Equation (2) is the equation we estimate. If the selection of firms which are privatized is exogenous, as is the case in our sample, ΔO_{it} is uncorrelated with θ_i and with the error term $\Delta \varepsilon_{it}$, and an ordinary least-squares regression of the percentage change in employment upon a privatization dummy will give us unbiased estimates of β . This is an important advantage of our data set, since usually, the selection of privatized mills will be based on economic criteria—the government may, for example, find it easier to sell mills which have a smaller excess employment.³

We may contrast the advantages of our data set with existing empirical evidence on the relationship between ownership and economic performance. Thomas E. Borcherding et al. (1982), Robert Millward and David M. Parker (1983), and Anthony E. Boardman and Adian R. Vining (1989) provide useful surveys. The main evidence is either cross-sectional (i.e., comparing private and public firms at the same point of time) as in Boardman and Vining (1989) or studies of privatization or nationalization of the “before–after” variety. Cross-sectional studies cannot satisfactorily control for firm-specific fixed effects, while “before–after” studies cannot control for period effects.

IV. Empirical Results

Our results are reported in Table 2, which shows the mean percentage change in employment (by category of employee) and output in state mills and the privatized mills. The effect of privatization is given by the “difference in difference” (i.e., by the difference between the percentage change of employment in the two sets of mills) and is shown in the column labeled “privatization effect.” Privatization has had a negative effect on aggregate output, but this effect is not statistically significant. Analysis of out-

put data at the product-group level shows a (statistically significant) change in output composition between privatized and public-sector mills. Privatized mills shifted toward sacking production and away from hessian as compared to public-sector mills.⁴ This is in line with the calculations in Mahmood (1989), showing that relative profitability is higher in sacking as compared to hessian.

The results on employment are more reliable since the end point, 1988, allowed sufficient time (over five years) for the effects of privatization to be felt. Table 2 shows that privatization had a large negative effect on white-collar employment, clerical as well as managerial, and a smaller but still significant negative effect on the employment of permanent manual workers. This is offset by a significant increase in the employment of casual manual workers, so that the overall effect on employment of manual workers is not significantly different from zero. Since the regressions for managers and clerical staff were almost identical, Table 2 also reports the regression with the pooled data, under the category white-collar workers. The most striking feature is the neat ranking of the privatization effect: from -35 percent for white-collar categories to -7 percent for the permanent manual worker category, to a 24-percent positive effect for the casual manual workers. It is also significant that the employment-reducing effect of privatization on the clerical and managerial categories has been five times as great as the effect on the permanent-manual-worker category, even though it is in the latter category that substitution possibilities were easily available.

What are the reasons for the differential reduction in employment across the manual and white-collar categories? The most plausible explanation is that excess employment in the public sector was more substantial at the level of white-collar employees than among manual production workers. This in-

³Alternatively, privatized firms could have greater excess employment if the government used privatization essentially as a way of reducing employment.

⁴Details of these results are available from the authors upon request.

TABLE 2—PERCENTAGE CHANGE IN EMPLOYMENT AND OUTPUT

Variable	All mills	State mills	Privatized mills	Privatization effect
Employment				
Managerial	11	27 (3.7)	-5 (3.8)	-32** (5.3)
Clerical	3	20 (3.4)	-13 (3.5)	-33** (4.9)
White-collar	7	23 (2.5)	-9 (2.6)	-32** (3.6)
Permanent manual	-3	0.9 (2.0)	-6.1 (2.0)	-7* (2.8)
Casual manual	0.5	12 (7.7)	12 (7.7)	24* (10.9)
Total manual	-2.4	-2.5 (2.6)	-2.3 (2.5)	0.2 (3.6)
Output	6	12 (7.5)	2 (7.1)	-10 (10.3)

Notes: There are 62 mills in the sample: 31 in the state sector and 31 privatized. The results for white-collar workers are obtained by pooling the data for managerial and clerical workers, and hence the sample size is doubled. The percentage change for output is given from 1981–1982 to 1984–1985; the percentage change for employment is given for the period from 1983 to 1988. Standard errors are reported in parentheses. Since there is no significant difference in the variance of employment changes between privatized and state mills, these are unweighted standard errors.

Sources: Employment and output records of the Bangladesh Jute Mills Corporation (for the public-sector mills), and of the Bangladesh Jute Mills Association (for privatized mills), 1981–1982, 1983, 1984–1985, and 1988.

*Statistically significant at the 5-percent level.

**Statistically significant at the 1-percent level.

terpretation is supported by our results, which show that private mills did not reduce the overall level of manual employment. The reduction in employment of permanent manual workers was offset by increased employment of casual workers. An alternative explanation is that manual workers in privatized firms were in a better position to resist employment reduction than their white-collar counterparts. This explanation is unsatisfactory for two reasons. First, privatized firms increased their levels of employment of casual manual workers, indicating that the total level of manual employment was not excessive. Second, white-collar workers are unionized and are as much a part of the political fronts of the major political parties as manual workers. Their louder political voice often more than compensates for their smaller numbers. Finally, we should note that, although our analysis suggests that there was no significant excess employment in the manual-worker category, this is con-

tingent upon the work-norm in force. It may be the case that private mills have adopted a strategy of first eliminating excess employment without seeking to change the work-norm. Interviews with mill owners in 1991 suggest that, in the current phase, they would like to intensify the work-norm for manual workers, thereby reducing employment and labor costs.

We therefore interpret our results as indicating that excess employment in the public sector was substantially greater in the white-collar category.

V. Conclusions

This paper has used a unique data set which allows us to infer the effects of privatization on employment and output in a particular, significant privatization program. Our findings are that privatization had a large and significant negative effect on the employment of white-collar workers and

prompted the substitution of casual labor for permanent manual workers, leaving the overall level of manual-worker employment unchanged. We interpret these results as indicative of public-sector behavior and as evidence of a clientelist political economy in Bangladesh.

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