

Impact of Privatisation on Employment and Output in Pakistan

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1. INTRODUCTION

The paper aims to assess the impact of privatisation on employment and output in Pakistan. It uses edible oil and cement sectors as a case study in a pre- and post-privatisation comparative framework. Assessing the impact of privatisation in Pakistan is important at this juncture for two reasons. Firstly, the country is facing a severe economic crisis and privatisation forms an integral part of an array of reform measures recommended by multi-lateral donors as well as policy-makers within and without the country. Burki [(2000), p. 152] observes, “The economy and state of Pakistan are in crisis.... Pakistan has not faced a crisis of this magnitude in its entire 50-year history”. He refers to the five different crises that have combined to create this situation. These are: the global financial crisis, Pakistan’s short-term liquidity problem, economy’s structural weaknesses, severe social backwardness, and, finally, the crisis of governance. Burki (2000) suggests several solutions to the problems, and privatisation is one of the ways to restructure the economy and improve the quality of governance.

Secondly, privatisation is at an initial stage. Most of the enterprises privatised are either small or capital-intensive, and their impact on the economy and society has so far been relatively limited. All the large public enterprises are yet to be divested. If a large proportion of employees are divested without taking appropriate measures to provide necessary safeguards for them, it can have severe social, economic and political repercussions. This research allows us to assess the impact of privatisation on already divested smaller enterprises, and draws lessons for the privatisation of larger and more labour-intensive enterprises in the future. Privatisation is a holistic term and over the years has assumed a wide range of meanings and connotations. Broadly, it stands for transferring the right of the state to other agents to influence directly the allocation of capital resources to non-state entities, to whom the residual or net profits of utilising assets accrue [Brabanti (1995)]. Cook and Kirkpatrick (1994) have cited *The Economist* (August 21-27 1993) that refers to at least 57

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varieties of privatisations reflecting differences in economic and political conditions and structural characteristics of each economy. In Pakistan, privatisation includes “a transaction by virtue of which any property, right, interest, concession or management thereof is transferred to any person from the Federal Government or any enterprise owned or controlled, wholly or partially, directly or indirectly, by the Federal Government” [PC (2000), p. 1].

The rest of the paper is as follows. The introduction is followed by a brief literature review on the relationship between privatisation, equity and employment. Section 3 provides the background on Pakistan’s privatisation programme. Sections 4 and 5 describe the dataset and discuss methodology and inference procedures, while Section 6 reports the results. The penultimate section lists policy implications accruing from the study, and the last section concludes the discussion.

2. PRIVATISATION, EQUITY, AND EMPLOYMENT: REVIEW OF ISSUES

Discussion on the relationship between privatisation and equity is a much-neglected area in academic literature [Oestmann (1994); De Luca (1997); Birdsall and Nellis (2002)]. Though a lot of research has been done to understand the dynamics of privatisation and efficiency, equity or distribution is generally introduced as a gratuitous, though still a ubiquitous, issue in the whole discussion, and here too, in the words of Birdsall and Nellis (2002), it is meant to grease the wheels of the process to make it “politically more palatable” (p. 8). It has been considered more of an aside and at best a “natural corollary” to privatisation. It is only lately that empirical studies have tried to change the context of the debate by focusing on distributional issues.

Though the social or welfare impact of privatisation has broad connotations, it is employment that has been central to the debate. Most of the literature [see Birdsall and Nellis (2002); Khan (2003) for a review], while referring to the social impact of privatisation, is actually restricted to its employment dimension only. Even the reduction in wages and worsening working conditions are not that acute a problem relative to the loss of employment, which is regarded as an important indicator of poverty [Azam (1994)]. It is for this reason, that one of the earliest studies on the social impact of privatisation, [Kikeri (1997)], confines the analysis to the employment aspect only.

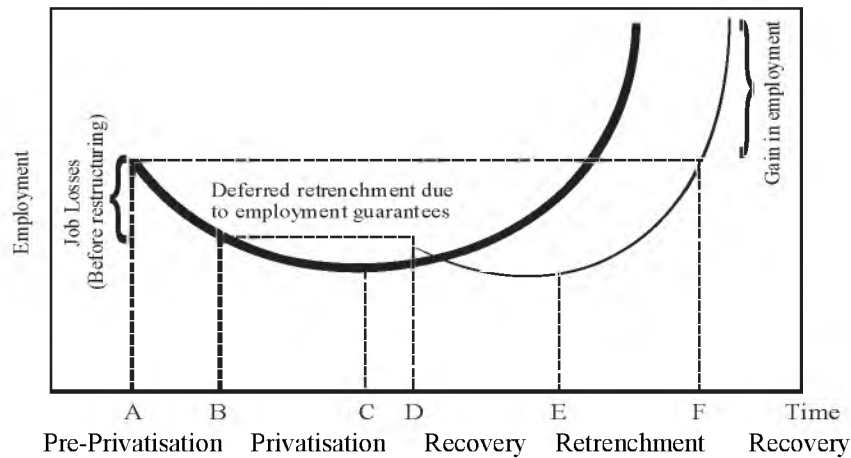
There is consensus among researchers and academicians that privatisation has implications for the employees and their conditions of work. However, there are differences of opinion on the nature and extent of the impact of privatisation. Cook and Kirkpatrick (1998) point out that the impact of privatisation on employment will correspond with the comparative importance of public enterprise sector in the national economy as well as its share in formal employment. Gupta, *et al.* (1999) find an inverse relationship between retrenchment and competition.

Though it is generally believed that privatisation leads to a fall in employment and wages at least in the short term, the literature survey conducted by Cook and Kirkpatrick (1998) shows that this is not always the case. Gupta, *et al.* (1999); Boubakri and Cosset (1998); Megginson, Nash, and van-Randenborgh (1994); Kikeri (1997); Ramanadham (1989) and Estrin and Svejnar (1998), among others, point out that privatisation may even increase employment if due to overall improvement in the economy, privatised firms are tempted to inject new capital investments. This is also the view proffered by the World Bank and associates who believe that there is a positive correlation between privatisation and economic growth [Galal, *et al.* (1994); Plane (1997); Barnett (2000); Davis, *et al.* (2000)].

Cook and Kirkpatrick (1998) cite a number of reasons for this counter-intuitive result. First, they argue, the sample of divested firms is likely to suffer from a selection bias. Due to the private entrepreneurs' preference for more profitable and efficient firms, it is more likely that profitable or potentially profitable firms are privatised first. Secondly, in many instances government has provided employment guarantees to the employees for a certain period of time. This defers the employment impact of privatisation up to the time such guarantees are valid. Thirdly, many governments have undertaken restructuring programmes in case of large enterprises to prepare them for privatisation. Such public enterprises are already lean and are ready for expansion in the post-privatisation period. Finally, the rise in employment and productivity may conceal the deteriorating contractual conditions of those workers who remain in employment after privatisation [see also Cam (1999) for discussion].

Gupta, *et al.* (1999) graphically present the dynamics of employment changes over the three periods, i.e., pre-privatisation, privatisation and post-privatisation, and show that the level of employment follows a U-curve: declining during the first two periods and increasing in the third one (Figure 1 below). They also take account of the "deferred retrenchment" phenomenon, which occurs when governments guarantee employment for a certain period of time. The dark line in the figure refers to the employment U-curve without any post-privatisation employment guarantees, while the one in light shade accounts for delays in employees' lay offs due to employment guarantees. They, however, acknowledge that in some cases, restructuring and privatisation may reduce the employment levels almost permanently and in case of liquidation, all the employees may lose jobs. In such circumstances, the U-curve pattern will not be valid.

Gupta, *et al.* (1999), however, ignore another dimension of the issue. Kemal (2000) points out that in case of Pakistan, employment guarantees have expedited, rather than postponed, the process of retrenchment. Employees, fearing to lose their jobs or employment benefits after the one-year guarantee period, opted for voluntary retirement scheme. A rather generous golden handshake package provided further incentive to them.

Fig. 1. Employment U-Curve with/without Deferred Retrenchment.

Source: Adopted from Gupta, *et al.* (1999).

While privatisation is likely to have severe consequences for the workers, managers are mostly the beneficiaries. They, therefore, either advocate it [see Harris (1995) or at least show lower levels of uncertainty and stress [Nelson, *et al.* (1995) and Cam (1999)]. It has been well-documented that in both developed and developing economies, the managers have benefited in terms of better pay and perks packages after privatisation [De Luca (1997); Martin and Parker (1997) among others]. This differential between the workers and managers should be present in Pakistan as well, though it has not been recorded so far.

3. PRIVATISATION IN PAKISTAN: ITS DEVELOPMENT AND SCOPE

Though Privatisation Commission (PC) was established in Pakistan as one aspect of the 1988 IMF/World Bank structural adjustment package [Kemal (1996); Cameroon (1997) and Paddon (1997)], there was not much conviction behind it on the part of government of Pakistan [Kemal (1996)]. PC [(2000), p. 5] asserts that privatisation is a "very much home-grown programme", but the fact is that aid was conditioned with the restructuring and privatisation of public enterprises [see Mirza (1995) for examples].

Since privatisation is an imported phenomenon in Pakistan, it had no clearly spelled out objectives initially. The government reports on privatisation do not list even a single privatisation objective until 1992 [Qureshi (1992)]. It was as late as 1996, that the broad contours of privatisation policy and its objectives emerged [PC (1996b)]. This failure can be attributed to the fact that privatisation was adopted on the instructions of multilateral donors, and the emphasis was more on understanding the procedural aspects of privatisation rather than policy and its implications.

The objectives of privatisation are not much different from those in other countries of the world. According to Kh. Muhammad Asif, ex-Chairman Privatisation Commission, the government programme for privatisation is based on “the principle of reducing its direct participation in commercial activities” and ensuring “equity and economic justice” [Asif (1998)]. PC [(2000), p. 7] highlights the need for privatisation: “distorted prices, lack of competition, and poor government management of business have hindered economic development, introduced inefficiencies, generated unproductive and unsustainable employment, slowed down investment, reduced access to services by the poor, resulted in sub-standard goods and services, and contributed to fiscal bleeding”. By privatising, government intends to reverse the shortcomings outlined above.

Kemal (2000) points out that six regular and six caretaker governments have been in power from 1985 and privatisation has been the cornerstone of the economic programme of each government [also see Qureshi (1992); PC (1996a, 1997, 2000)]. During this time, the privatisation objectives have more or less enjoyed a national consensus. However, there has been some change in emphasis and priorities. This is especially noticeable after the army came to power in 1999. Due to the scandals and controversies that blemished the privatisation efforts of previous civilian governments, transparency and fairness has become an important policy objective that has now been spelled out more clearly in the Privatisation Ordinance 2000 [PC (2000)]. Another objective that does not appear in explicit terms before is seeing privatisation as a means to reduce corruption. However, there has been little change in priority: placing the consumers, taxpayers and employees at the bottom of the list.

By the end of May 2002, the GOP had completed or approved 122 transactions [PC (2002)]. This number also includes some multiple transactions for the same unit. The gross privatisation proceeds stand at Rs 82.0 billion or US\$ 2.3 billion based on the exchange rate prevailing at the time of respective transactions. Telecom and power sectors alone account for around 65 percent of all the proceeds [PC (2002)]. Kemal (2000) points out that with privatisation, around 35000 employees in the manufacturing sector were transferred to the private sector, out of which 63.3 percent opted for the golden handshake scheme (GHS).

4. DESCRIPTION OF DATA

Data has been collected from both primary and secondary sources. The primary source is field surveys, while the secondary source is the “Monthly Survey of Industrial Production and Employment” published by the Punjab Bureau of Statistics. The names of privatised companies and relevant information is given in Table 1 below:

Table 1
List of Privatised Firms¹

Name of the Firm	Date Privatised	Price Sold (Rs Millions)	Production (Metric Tons)	Total Employees (No.)	Employees Retrenched (No.)
Edible Oil Firms					
1. Sh. Fazal and Sons Ltd.	April 1992	64.28	19,499	–	285
2. Kakakhel Industries Ltd.	May 1992	71.40	20,647	304	240
3. United Industries Ltd.	May 1992	53.46	28,867	550	–
4. Crescent Factories	Jan 1993	63.00	15,185	423	368
5. Khyber Vegetable Mills (Pvt) Ltd.	Jan 1993	8.00	5,793	–	–
6. Suraj Ghee Industries Ltd.	Jan 1993	41.58	20,790	296	–
7. Punjab Vegetable Oil Ghee	May 1999	18.74	8,914	–	–
Cement Firms					
1. Maple Leaf Co. Ltd.	Jan 1992	291.28	408,410	707	109
2. White Cement Ltd.	Jan 1992	137.47	Merged	131	30
3. Pak Cement Co. Ltd.	Jan 1992	188.95	-do-	231	9
4. D. G. Khan Cement Co. Ltd.	May 1992	1799.67	544,034	503	28
5. Gharibwal Cement Ltd.	Sep 1992	836.67	537,514	817	226
6. National Cement Industries (Pvt) Ltd.	Jan 1995	110.00	47,428	–	–
7. Associated (Wah) Cement	Feb 1996	2752.10	361,406	–	–
8. Dandot Cement Co. Ltd.	Feb 1996	636.69	237,333	740	33

Source: Privatisation Commission (2000); PAD (1995), and Personal Survey.

The above Table above provides desegregated information on seven edible oil and eight cement sector firms, while the time series dimension includes twenty years (1981-2000). However, for different reasons, it was not possible to include all the firms in the dataset, and the data was also missing for some years in a few cases. Firms had to be excluded from the sample due to the closure or merger of units before and after privatisation. In the edible oil sector, four firms remained closed during different periods before and after privatisation. Suraj Ghee Industries stopped working in 1993 within two months of privatisation [PAD (1995)]. Due to the closure of this unit, it is not possible to undertake any comparative pre- and post-privatisation study. Sh. Fazal & Sons Ltd. was closed in 1997 five years after privatisation. Here again, three years are lost in the post-privatisation period. Both Khyber Vegetable Ghee Mills and Punjab Vegetable Ghee Mills were closed, and employed only a few watchmen at the time of privatisation of their assets in 1993 and 1999 respectively [PAD (1995)]. Due to the closure of these units for the entire sample period, they have been excluded from the analysis. This effectively leaves us with just five (including Sh. Fazal and Sons Ltd.) firms in the edible oil sector to undertake the pre- and post-privatisation performance exercise.

As for the cement sector, it also underwent major changes after privatisation. Since most of the units were profitable, they were bought by reputable business houses that had considerable stakes in the industry. These acquisitions, therefore, led to mergers

¹“...” indicates data not available.

between different firms. White and Pak cement units were merged with Maple Leaf cement, since one business group had purchased these units. Due to these mergers, data is not available separately for these three units. Dandot Cement, which was bought by a foreign entrepreneur, was closed at the end of 1997 after privatisation and resumed operation in March 2000 [Ghausi (2000)]. National cement has also been closed from 1999. As a result, data is not available for these units after 1997 and 1999 respectively.

The omission of three (in one case partial) out of seven firms in the edible oil sector and the closure of two firms in the cement sector at the end of the sample period have introduced a substantial selection bias. Healthy and profitable firms that were able to compete in the market and show vigour and resilience at times of economic recession have been included in the sample, while the poorly-performing firms had to be closed down, and are omitted for the absence of data. The results, therefore, are expected to be upwards biased and are likely to present an over-optimistic scenario.

4.1. Definition of Variables

The data has been collected for employment, wages and production for each firm in the sample. The data for employment are monthly averages and refer to the number of workers employed at the end of the month. The same is true for wages that are given in thousands. The employment and wage data are available separately for both 'production' and 'non-production' workers. In the questionnaire used by the Punjab Bureau of Statistics, the production workers are defined as those "engaged on work directly associated with production. It includes those engaged in manufacturing, assembling, packing, repairing, etc. Work supervisors should be included. Persons engaged in repair and maintenance are also to be included. ... [Nonproduction workers mean] managers, engineers, professional and administrative employees. [This category] includes salaried directors, managers, administrative supervisors, accountants, engineers, research workers, etc." These two categories broadly represent manual and non-manual staff. The manual workers in our sample do not include daily-wagers or part time employees, though the survey covers contractual workers. Wages and salaries mean "payments made to employees as remuneration for their work. It includes advances, and payments for leave", but does not include other cash benefits such as allowances, bonuses, commissions and employers contribution to social security schemes or provident fund. Similarly non-cash benefits do not form part of wages.

The data for production/output is in metric tons and is a monthly average. However, instead of output/production, value of production has been used in the regression. This interaction variable combines the effect of price and output, and is a proxy for sales. For the edible oil, it is the mean price of 12 urban centres of Pakistan [Pakistan (2002)], while data for the price of cement has been gathered from the State Cement Corporation and pertains only to the ordinary grey cement at the beginning of each financial year (1st July).

Two dummy variables have been also added to the equations. Dummy for privatisation, denoted by O_{it} , captures the impact of ownership change from public to private hands. It is 0 for the pre-privatisation period and 1 afterwards. Since privatisation leads to fall in employment and wages in the short run, we would expect this variable to be negative. However, as the literature shows, privatisation in so many cases has benefited the managers rather than the workers. It is quite probable that the coefficients for ownership dummy are positive for managers' employment.

The second dummy variable, denoted by Sap_{it} , attempts to control for other non-privatisation macro-economic policy instruments that might affect a firm's performance. These policies are reflected through the structural adjustment programmes (SAP), which Pakistan started implementing from 1988. It is 0 before 1988 and 1 afterwards. Since SAP leads to reduced demand (for discussion in case of Pakistan see [Kemal (1993, 1994); Murasaki and Matsushita (1998); Majid (2000); Kemal (2001)], which in turn results in lower output and employment levels, the dummy variable for the structural adjustment programme is expected to be negative.

5. EMPIRICAL DESIGN AND INFERENCE PROCEDURE

This paper uses an econometric model, which is an extension of the single equation model used by Bhaskar (1992) and Bhaskar and Khan (1995). While their studies compare the performance of jute mills in Bangladesh *in the same period*, this study focuses on the *pre- and post-privatisation* performance of similar firms, which switched hands from the public to private sector.² The econometric model for describing employment for the i th firm in the t th time period is given by the following function:

$$E_{it} = f(W(w)_{it}, W(m)_{it}, V_{it}) \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (1)$$

While E_{it} is the employment in number of the i th firm, $i = 1, 2, 3, \dots, 15$ in the t th time period, $t = 1, 2, 3, \dots, 20$; $W(w)_{it}$, $W(m)_{it}$ and V_{it} are the wages in thousands for workers, for managers and value of production in the t th time period for the i th firm respectively. A general stochastic model corresponding to Equation (1) above will be:

$$Y_{it} = \alpha + X_{it}\beta + \mu_{it} \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

Here, X_{it} is a vector of explanatory variables, while μ_{it} is the conventional error term. The equation estimated is a double log model in first difference of the following form:

$$\begin{aligned} \Delta \ln(e(t)_{it}) = & \alpha_i + \alpha_{it-1} + \beta_1 \Delta \ln(w(w)_{it}) + \beta_2 \Delta \ln(w(m)_{it}) + \\ & \beta_3 \Delta \ln(v_{it}) + \beta_4 (O_{it} + sap_{it}) + \varepsilon_{it} \quad \dots \quad \dots \quad (3) \end{aligned}$$

Here, the dependent variable is the first difference of the natural log of total employment for firm i in time period t . On the right hand side of the equation appear,

²Frydman, *et al.* (1997) call them synchronic and historical approaches respectively.

in sequential order, the constant term, lagged dependent variable, the first difference of natural log of average real wages for workers, for managers and total value of output for firm i in time period t . The parameters of interest are the dummy variable O_{it} and sap_{it} that control for the impact of changes in ownership and macro-economic policies respectively. Similar models have been formulated to assess the impact of privatisation on employment for workers ($dlew_{it}$), managers ($dlem_{it}$) and output ($dlprod_{it}$). The use of first difference of level variables in logs corresponds to the log annual rates of growth [Mairesse (1990) and Mukherjee, *et al.* (1998)].

Generalised Methods of Moments (GMM)³ type instruments have been used to control for the problem of endogeneity, which arises due to dynamic panel data estimation. In dynamic models, the OLS estimator of α will be inconsistent and upward biased due to serial correlation between the autoregressive ($y_{i,t-1}$), parameter and the error term ($\eta_i + v_{it}$). This inconsistency persists even when N or T grows large. Though Pesaran and Smith (1995) have suggested that serial correlation can be removed by first differencing, they express their reservations as to the generalisation of this approach. In such a situation, a dynamic panel data model with instrumental variable (IV) should provide accurate and consistent results.

There are different IV estimators,⁴ but Blundell and Bond (1998) recommend using a SYS-GMM (also called Combined-GMM) estimation procedure that uses lagged *levels* of y_{it} as instruments in addition to the lagged *differences* of y_{it} for equation in first differences. These additional instruments improve the precision and efficiency of the basic first-differenced GMM estimators proposed earlier by Arrelano and Bond (1991). The idea is to make use of the orthogonality condition that exists between y_{it} and the disturbances v_{it} . An efficient GMM estimator will typically exploit different number instruments in each time period.

Although there are certain advantages in using differenced equations, the transformation provides results which reflect only a short term perspective. Secondly, as O'Mahony and Vecchi (2001) point out, when dummies are included in the SYS-GMM which compounds a specification in first difference and in levels, they pick up level effects. Such level effects are not justified, since real values are not defined in a comparable sense. It is, therefore, necessary to find a procedure, which allows us to estimate dummies and also control for the level effects. Black and Lynch (2001) suggest a two-stage procedure, which has also been used by O'Mahony and Vecchi (2001) and Hay (2001) amongst others. In the first stage, Black and Lynch (2001) estimate a standard production function on the panel dataset and save the firm-specific components of the residuals, which are then regressed, in the second step, on dummy variables to obtain time-invariant estimates. This two-stage procedure has also been used for estimation in this paper.

³For a detailed discussion, see Baltagi (2001).

⁴For a discussion, see Arrelano and Bond (1991); Ahn and Schmidt (1995); Arrelano and Bover (1995); Blundell and Bond (1998).

Following many authors [Arrelano and Bond (1991); Blundell and Bond (1998); Blundell, *et al.* (2000); Bond and Windmeijer (2001); Hay (2001); Bond (2002); Bond and Windmeijer (2002); Christev and Fitzroy (2002) amongst others], time dummies have also been used to adequately reflect and control for the internal and external shocks to the economy. They have been used in both the first and second stages of estimation.

6. EMPIRICAL EVIDENCE

The evidence has been reported in two ways. The preliminary results are reported by using graphs to depict different trends emanating from the data. Though the analysis here is rather basic and crude, it highlights some initial trends, and sets the stage for a more complex and dynamic regression analysis at a later stage.

6.1. Preliminary Data Analysis

Figure 2 and Figure 3 below compare the public and private sector firms for the 1981–2000 period in the edible oil and cement industries respectively. In the graphs, “PEs” stands for the privatised public enterprises, while “Priv” denotes the remaining private sector firms. In other words, the former are firms in the sample, while the latter are remaining firms in the sector. Though the firms were divested in different years, as is evident from Table 1, most of them were privatised during 1992–93, and is denoted by the vertical dotted lines in the graphs. This year, therefore, serves as the divide between the pre- and post-privatisation periods, though this approximate and imprecise division between the two phases limits the accuracy of analysis.

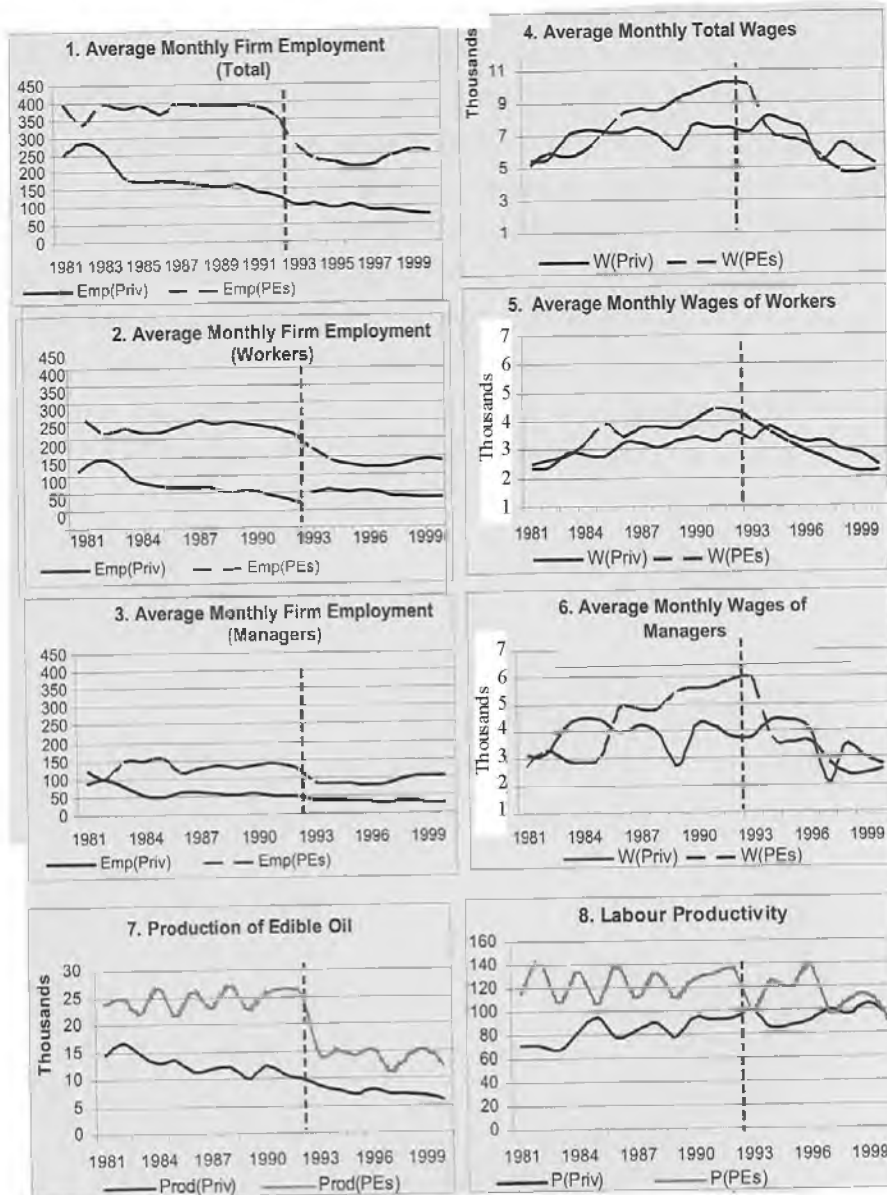
6.1.1. *The Edible Oil Sector*

Figure 2 has 8 graphs, each representing trends for employment, wages, output and productivity. Graphs 1 to 3 show that public enterprises, on average, employed more workers and managers than the private sector firms in the edible oil sector. The latter have lower level of employment and also show a slow but steady decline. This is in sharp contrast with the public sector firms in which employment falls abruptly and sharply in 1992–93, the year they are privatised. After the initial shock of privatisation is over, the employment is rising after 1997.⁵ Second and third graphs, depicting trends for workers’ and managers’ employment, also follow a similar pattern. However, compared with the private sector, the public sector initially employed lower number of managers. The situation changed when their number continued to decline steadily in the private sector, though they increased in the public sector.

As for wages (Graphs 4 to 6), they are initially the same but later increase in the public sector in the pre-privatisation period, though this trend is reversed after

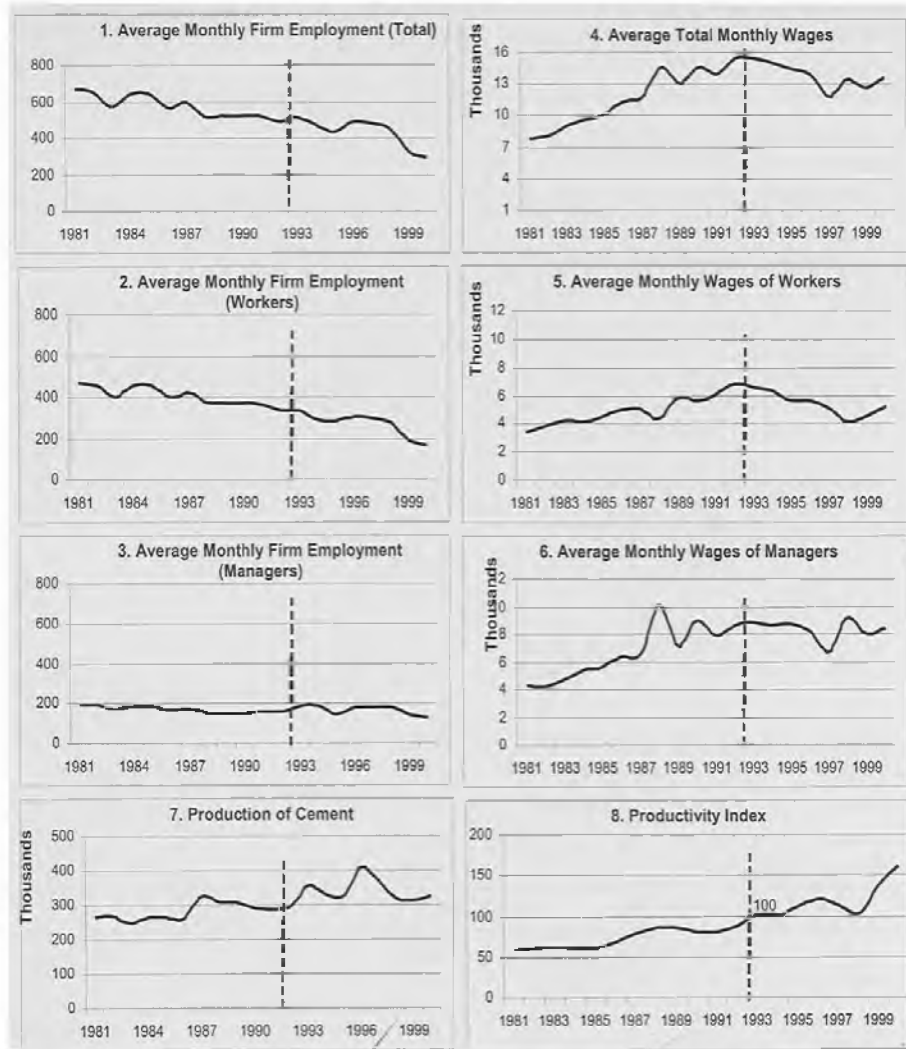
⁵We must keep the important and crucial caveat in mind that the sample includes only those firms which were robust enough to withstand the shock of privatisation and were the most profitable ones.

Fig. 2. Comparative Performance of Edible Oil Firms in the Public and Private Sectors.



Sources: PAD (1995); Punjab Bureau of Statistics (2000); Pakistan (2002), and Personal Survey.

Fig. 3. The Comparative Performance of Public Sector Cement Firms in Punjab.



Sources: Punjab Bureau of Statistics (2000); and Personal Survey; Pakistan (2002).

privatisation. While wages in the public sector show a sharp decline coinciding with privatisation, this is less pronounced in the private sector. Privatisation also pushes the wage level below the one being paid in the private sector, though it gets even at a later stage. This shows the acute and intense nature of privatisation that afflicts the wage levels of employees, and it is some time before the employees recover from it. As for output, it was much higher when the firms were in the public sector, and shows a sudden fall after privatisation. This fall coincides with an almost 80 percent increase in prices, and it seems that the manufacturers lowered output levels to raise prices and maximise their profits. As for labour productivity, the privatised firms perform better than their private sector counterparts, though the difference is getting minimised at the end.

6.1.2. *The Cement Sector*

Figure 3 presents employment, wage and output trends for the cement industry. The analysis is restricted to firms in the public sector only, because the cement industry was a state monopoly up to 1994. The graphs, however, show a trend different from the one observed for the edible oil sector. Privatisation results in a sharp fall only in case of workers' wages (Graphs 5), while there is a steady but smooth decline in employment (Graphs 1 to 3), total wages and a rise in both output and productivity (Graphs 7 to 8). Unlike the edible oil sector, the fall in employment is smooth and surprisingly starts from the mid-1980s, when the units were still in the public sector. There is no sharp fall in employment in the post-privatisation phase due to only 36 percent retrenchment in the cement sector against 74 percent for the edible oil industry. A comparison between workers and managers (Graphs 2 and 3) shows that, while the workers steadily lost their jobs, this has not been the case for managers despite some ups and downs in wages. However, this trend is not unpredicted in capital-intensive industries [Majid (2000)]. This means that white-collar employees or those in higher income brackets are not only less likely to lose their jobs, as the Graph 3 shows, but will also continue to get a consistently better pay package, as is evident from Graph 5. This puts managers in a far better position than the workers. The output level also declined at the end due to excess supply and regressive demand [Majid (2000)], but Graph 8 depicts high productivity, which has increased in the last few years.

6.2. Results from Regression Analysis

6.2.1. *Dynamic Panel Data Estimation*

The empirical findings have been reported in Table 2. The regressions were run separately for total employment ($le(t)$), employment for workers ($le(w)$), managers ($le(m)$) and output ($lprod$) as dependent variables. T -values have been reported within brackets below the coefficient values with a, b and c representing 1, 5 and 10 percent level of statistical significance respectively.

Table 2

Results for the Employment Equations (SYS-GMM Estimator)

X	Y	<i>dle(t)</i> (1)	<i>dle(w)</i> (2)	<i>dle(m)</i> (3)	<i>dlprod</i> (3)
First Stage					
<i>Lagged Dependent Variable</i>		0.72 ^a [7.43]	0.81 ^a [8.86]	0.84 ^a [5.89]	1.085 ^a [9.53]
<i>dhw(w)</i>		-0.27 ^b [-2.01]	-0.31 ^b [-2.51]	-0.77 ^b [2.22]	-0.96 [1.15]
<i>dhw(w)_1</i>		0.13 [0.49]	0.23 ^b [2.19]	-0.70 ^b [-1.99]	1.42 [1.15]
<i>dhw(m)</i>		-0.11 [0.55]	0.10 [-1.05]	-0.717 ^b [-2.10]	-0.69 ^b [-2.19]
<i>dhw(m)_1</i>		0.232 ^c [1.66]	0.081 [0.123]	0.582 ^b [2.05]	-0.18 [0.78]
<i>dlv</i>		0.05 ^c [1.69]	0.023 [0.040]	0.389 ^a [3.69]	-
<i>dlv_1</i>		-0.08 ^b [-2.35]	-0.038 [0.071]	-0.406 ^b [-3.49]	-
<i>N</i>		167	167	167	175
<i>Wald (Joint)</i>		2596.0 ^a	5447.0 ^a	194.1 ^a	2334.0 ^a
<i>Sargan</i>		35.63 [0.840]	38.77 [0.732]	32.02 [0.277]	39.65 [0.658]
<i>AR(1)</i>		-2.21 [0.027]	-1.859 [0.063]	-1.615 [0.106]	-1.717 [0.086]
<i>AR(2)</i>		-0.5890 [0.556]	0.3331 [0.739]	0.8897 [0.374]	0.2244 [0.822]
Second Stage					
<i>O</i>		-0.13 ^b [-2.84]	-0.116 ^a [-2.61]	-0.188 [-1.27]	-0.123 [-0.48]
<i>sap</i>		-0.002 [-0.148]	-0.03 ^c [1.91]	0.018 [0.519]	-1.60 ^a [-6.21]
<i>R</i> ²		0.02	0.010	0.01	0.01
<i>N</i>		157	157	157	165

a, b, c denote statistical significance at 1, 5, and 10 percent levels.

Constant and time dummies included in both the first and second stages of regressions.

The diagnostics have been analysed and discussed before proceeding to the main results. An important test in GMM-type estimation is the Sargan χ^2 test for the validity of instruments used in the regressions. This test passes in all four regressions. The test for first and second-order autocorrelations, represented by AR(1) and AR(2)

respectively, has also been provided. Arrelano and Bond (1991, pp. 281-282) point out that the presence of first-order autocorrelation in the differenced residuals does not imply inconsistency in the estimates. However, the presence of a second-order autocorrelation does prove that the estimates are inconsistent. The results for 16 the AR(2) shows that the second-order autocorrelation does not exist, and the estimates are consistent and unbiased for all the four regressions.

Intercept term and time dummies were included in both first and second stages of all the regressions but have not been reported. Regressions were also run without time dummies (results not reported) to see their impact on different explanatory variables. They had a dramatic effect on the ownership and *sap* dummies with respect to the signs of the coefficients as well as their statistical significance, while their impact on other variables was only marginal. This shows the importance of including time dummies in the regressions to control for the effect of internal and external shocks.

In the main results, the variables of interest are the dummies for ownership (*O*) and for the structural adjustment programme (*sap*), proxying for the impact of macro-economic changes in the country. Results show that ownership change leads to 13, 11.6 and 18.8 percent fall in total employment, and workers' and managers' employment respectively. Privatisation also results in 12.3 percent drop in output. However, the coefficients are statistically significant for total and workers' employment only.

The results for the dummy of macro-economic changes (*sap*) show that they are statistically significant for workers' employment and output only. It is, however, positive, though statistically insignificant, for managers' employment. The positive result for manager's employment is rather unexpected. However, it can be interpreted and justified intuitively. Firstly, the industrial sector and labour market in the country have reached a certain level of maturity, and now reward education and specialisation compared with non-technical manual work. This is indicated by the positive impact of employment for non-workers. Since this factor is independent of the change of ownership, it has not been reflected there, but manifests itself through the second dummy variable. Secondly, the result seems to reflect a change of emphasis in investment from labour-intensive to capital-intensive industries in Pakistan, a trend which has been captured by the dummy for structural adjustment programme. Lastly, the result shows a growing divergence between high-paid and low-paid workers. The structural adjustment programmes are known to recommend difficult economic decisions such as reduction of subsidies, which increase the incidence of poverty, and have been notorious for increasing inequality between the rich and the poor. This trend is also supported by the studies on Pakistan conducted by Kemal (1996, 2000) and Majid (2000), who find that both privatisation and structural adjustment programme are responsible for the negative impact.

As for the other variables included in the first stage, the relationship is supported by economic theory. The lagged dependent variables are positive and statistically significant, highlighting the importance of allowing for partial adjustment. The relationship between wages and employment is inverse, indicating that higher wages will lead to lower employment levels. Similarly, the value of output is positively related with employment, showing a positive relationship with employment levels. The last regression shows that though a rise in output leads to better employment prospects, it is negatively related with wages. This is because a rise in wages increases the price of a product and lowers its competitiveness in the market, which would eventually reduce the output level.

7. POLICY IMPLICATIONS

Birdsall and Nellis (2002) point out that in terms of the social impact of privatisation, there are so many variations, discrepancies and inconsistencies across countries that it is not possible to generalise the evidence gleaned from one country. It will, therefore, be fair to assert that the empirical evidence from this study is valid and applicable to Pakistan only, since it is highly unlikely that exactly similar settings will exist in another country. It is possible to infer a number of policy implications from this study.

Firstly, we find that privatisation is expected to have negative consequences, at least in the short-run, and, as discussed earlier, this research reports short term results. It is only after the initial shock of privatisation is over and the economy is geared towards fast economic growth that we should anticipate a positive impact of privatisation. In Pakistan, only a few years have elapsed since privatisation, and a negative impact of privatisation is the most likely and probable outcome. Rather a positive impact would have been unexpected and against the general trend observed around the world.

Secondly, we find that privatisation is an economic strategy that is very closely associated and blended with other macro-economic policies of a country. This is reflected in the statistical significance of dummy variable for the change of ownership and structural adjustment programme.

Thirdly, a generous golden handshake package rather than privatisation is to blame for relatively large number of redundancies in the privatised firms in Pakistan. The result was that on average 63.3 percent workers opted for the golden handshake scheme for which the Privatisation Commission paid Rs 7.9 billion or 9.5 percent of privatisation proceeds [PC (2002)]. This amount is quite significant if we keep in view the fact that most of the enterprises privatised were small, and according to Kemal (1993, 2000), their share in employment was less than 7.0 percent⁶ of total

⁶According to Kemal (1993), the total number of employees in public enterprises are 0.5 million, while Kemal (2000) estimates that 35,000 employees have joined the private sector through divestment of firms.

employment in public enterprises. If a similar package is offered to the several hundred thousand employees working in large enterprises such as WAPDA, Railways, PTCL and Pakistan Steel, the government can end up paying unsustainable sums of money. Another point to note is that this money is “wasted” in the sense that most of the workers were re-employed by the same companies on a contractual basis [ILO (1996)].

Fourthly, though we do not have explicit data to comment on the shifting patterns of casual labour employed in the edible oil and cement sectors, it is still possible to make inferences on the basis of empirical evidence emerging from this study. The regression results show that the impact of privatisation was negative for total and workers employment to the extent of 13 and 11.6 percent.⁷ This is in marked contrast with 63.3 percent overall retrenchment in the country, and 55.2 percent average reduction in employment for the edible oil and cement sectors. We can estimate with the help of this differential that 42.9 percent⁸ new employees were hired in the two sectors, though in the absence of concrete data, it is not possible to suggest how many of these were retrenched employees. This finding is further supported by a study done by ILO (1996); and another study conducted by Shahid Ahmad Associates (1989), and reported by Majid (2000), that the ratio of contract workers in total industrial labour force increased from 4.9 percent in 1980-81 to 6.3 percent in 1987-88. He suggests that it is very likely that this trend has continued through the 1990s. Based on this supplementary evidence, we can presume that a large number of employees were re-employed by the privatised firms who had opted for the golden handshake scheme.

Fifthly, the privatised firms typically employed more workers and managers even after large scale retrenchment. This shows that the erstwhile public sector firms were not able to fully shed their historical legacy, and are less efficient and less productive than other firms in the private sector.

Sixthly, the employees in the privatised sector initially had lower wages compared with their counterparts in the private sector. It so appears that privatisation proved a traumatic experience that not only resulted in a sharp and precipitous fall in wages, but also lowered the wage level so much that it even goes below the market/industry average. It is after a gap many years that the wages reach the industry average.

Seventhly, the study indicates that the industrial sector and labour market in Pakistan have reached a certain level of maturity; and now reward education, technical know-how and specialisation. This is indicated by the positive impact for managers' employment, which is reflected through the second dummy variable for the structural adjustment programme.

⁷It was negative but statistically insignificant for managers' employment.

⁸Average retrenchment in the edible oil and cement sector minus average employment reduction indicated by the results obtained through regression analysis.

Last, but not the least, important policy implication is the significance of institutional approach to reform and restructuring, which should precede privatisation. Lack of effective institutional framework was a deterrent to the initiation of privatisation in the country and is still one of the factors for delaying the divestment of large public enterprises. This is notwithstanding the issues relating to the sequencing of reforms as pointed out by the World Bank (1987), cited in Majid (2000).

8. CONCLUSION

We have looked at the relationship between privatisation, efficiency, and equity from both the theoretical and empirical perspectives. At the theoretical level, we find that privatisation has economic value, though it has social consequences. The empirical results, as a whole, show a negative impact of privatisation and structural adjustment programme in the short term. We find that privatisation has a significantly negative impact on total and workers' employment. It is also negative for managers' employment and output, though it is statistically insignificant. SAP has a negative and statistically significant impact on workers employment and output. However, the impact of the programme is positive for managers' employment, though it is statistically insignificant.

We conclude with an observation from Stiglitz (1992) which he makes for transitional economies but is equally applicable to Pakistan. He says that there is no single right or best way of doing things. If we start looking for that it would lead to a paralysis. He cites from V. Klaus who says: "reform was like playing a chess game. No one, not even the best players, can, at the beginning of the game, see all the way to the end. Better players can, however, see more steps into the future than can worse players" (page 201). What we hope is that the economic and social consequences of privatisations are properly accounted for, and appropriate safeguards are provided when Pakistan goes for the divestment of its large public enterprises.

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