

Inter-relationship between Labour Market and Macroeconomic Policies: Pakistani Manufacturing Industries under the Structural Adjustment Programme

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Abstract

To resolve its structural deficiencies, Pakistan launched a structural adjustment programme with the assistance of donor agencies. The programme was an amalgam of trade, fiscal and monetary policies aiming to improve economic efficiency and international competitiveness. These policies had economy-wide implications including the manufacturing industries. The programme although did not directly address the issues of the labour market but influenced it through the secondary effects. It, therefore, becomes pertinent to analyse the way the functioning of macroeconomic policies and the labour market interact to determine the international competitiveness. For Pakistan who faces persistent balance of payments problems, it is critically important to improve and maintain the competitiveness of export products in international market. This paper shows how labour market flexibility along with macroeconomic policies affects the behaviour of competitiveness of the manufacturing industries, which in turn affects the growth of manufactured exports. The paper concludes by offering some policy recommendations.

Keywords: *Labour market, macroeconomic policies, labour productivity, structural adjustment programme, international competitiveness, wages*

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1. Introduction

Pakistan's economy has remained subject to many structural weaknesses. To resolve its structural deficiencies, Pakistan launched a structural adjustment programme (SAP) in 1988 with the assistance of foreign donor agencies. The SAP was expected to have important economy-wide implications, including the manufacturing industries. The SAP was an amalgam of macroeconomic policies – trade, fiscal and monetary policies.¹ These policies influenced the competitive strength of the manufacturing industries by affecting prices of their products and that of factor inputs (particularly, labour), and raw materials they use. The SAP although does not directly address the issues of the labour market but influence the market through the secondary effects of macroeconomic policies.

In the above context, it is important to analyse the way the functioning of the labour market and macroeconomic policies interact to determine Pakistan's international competitiveness. For Pakistan who faces chronic balance of payments problems, it is critically important to improve and maintain competitiveness for its exports in international markets. In this paper an attempt is made to study the competitiveness of the manufacturing industries of Pakistan.² The paper thus shows how labour market flexibility along with macroeconomic policies affects the behaviour of Pakistan's international competitiveness, which in turn influences the growth of manufactured exports.

The methodology used to estimate competitiveness is the determinants of the unit cost of labour. Its selection is made due to the fact that it gets

¹ The policies introduced in the context of the SAP include comprehensive tax reforms, removal of subsidies, trade and tariff reforms, exchange rate adjustment, deregulation of agricultural commodity prices, financial and capital market reforms and privatization.

² It may be noted that none of the earlier studies focusing on the implications of the SAP on Pakistan's economy analysed the inter-relationship between labour market and macroeconomic policies. See, for instance, Anwar (1996), Iqbal and Siddiqui (1999), Kemal (1994), Naqvi and Mahmood (1996) and Mahmood (2008). On the other hand, studies dealing with competitiveness did not focus on SAP (see for example, Ara (2004), Mahmood (1981), Zia and Mahmood (2010), Mahmood (2004)).

influenced by the changes that take place in the labour market and macroeconomic policies. Thus, the analysis of the determinants of the unit cost of labour and the factors affecting its behaviour over the time is the focus of the paper.

This paper is divided into six parts. After this introductory section, using different indicators section 2 presents an overview of the manufacturing sector and manufactured exports. Section 3 presents the methodology used to prepare estimates of the unit cost of labour and its different components. Data sources and construction of variables are discussed in section 4. Section 5 presents the empirical findings. Finally, section 6 concludes the paper and makes some policy recommendations.

2. Manufacturing Sector and Exports

Till the mid-1980s, the growth record of Pakistan's economy remained satisfactory. Thereafter, the economy started showing signs of a gradual decline. The average annual growth rate of the gross domestic production (GDP) declined from 5.58 percent in the pre-SAP period (FY 1970-1988) to 4.77 percent in the SAP period (FY1989-2006) (Table 1). The breakdown of the SAP period shows that the growth rate of the GDP declined to 4.81 percent in the SAP-I period (FY1989-1996) and further to 3.68 percent in the SAP-II period (FY1997-2001), but afterwards it rose to 5.39 percent in the SAP-III period (FY2002-2006).³

³ Between FY1989 (Fiscal Year 1988-89) and FY2001 Pakistan implemented different donor-assisted structural adjustment programmes. However, their implementation remained rather periodic. Pakistan embarked on the SAP in FY1989 which was more or less implemented continuously till FY1992. Between FY1993 and FY1996, second Enhanced Structural Adjustment Facility (ESAF)/Extended Fund Facility (EFF) was launched with the assistance of IMF and other donor agencies. Third ESAF was launched for the period up to FY2001. This programme was suspended following the nuclear tests in May 1998. In January 1999, the IMF lending to Pakistan was resumed after the country was driven towards default amid plunging of foreign exchange reserves. In May 1999, the IMF lending was suspended after Pakistan failed to honour conditionalities attached to the loan. The new government and the IMF resumed negotiations for lending in January 2000, and the IMF approved Stand-by arrangements (SBA) loan in November 2000. After 9/11 in 2001, Pakistan and the IMF concluded a three year programme covering debt rescheduling by the Paris Club and lending

In contrast with the national GDP, the manufacturing industries registered a higher growth rate of its value-added during the SAP period (9.26 percent) as compared to the pre-SAP period (6.42 percent). The SAP-I period growth rate of manufacturing industries was, however, fairly low as compared to the pre-SAP and the SAP-II and SAP-III periods (Table 1). Fall in the growth rate of the manufacturing value-added in SAP-I can partly be attributed to declining competitiveness. In this context, Table 1 reveals that that the growth rate in the labour productivity of manufacturing industries declined sharply from 5.26 percent in the pre-SAP period to 2.59 percent in the SAP-I period.⁴ After SAP-I, both the SAP periods experienced rise in the labour productivity, in fact in the SAP-III period the growth in labour productivity surpassed the growth that was realized in the pre-SAP period. Continuous growth in the labour productivity enabled Pakistan to realize very high growth rate of manufacturing value added (7 percent per annum) in the SAP-II period and 17.14 percent per annum in the SAP-III period.

Table 1 Average Annual Growth Rates in Selected Variables *(percentage)*

Period	Real GDP	Real Value Added	Employment	Real Labour Earnings	Labour Productivity	Output Elasticity of Labour Demand	Exports at constant prices
Pre-SAP	5.58	6.42	1.23	5.26	5.26	0.19	9.17
SAP-I	4.81	4.19	1.67	0.94	2.59	0.40	8.73
SAP-II	3.68	7.00	3.17	-1.04	3.18	0.45	4.19
SAP-III	5.39	17.14	6.04	2.13	10.45	0.35	8.48
SAP	4.77	9.26	3.48	0.70	5.58	0.38	7.67

Source: Economic Advisor's Wing (1998 and 2010), Statistics Division (2002 and 2008).

programmes of the World bank and Asian Development bank. The rescheduling freed up resources for social sector expenditures and infrastructure development projects. For the purpose of this paper, two sub-periods of the SAP are defined: SAP-I (FY1989-1996) and SAP-II (FY1997-2001). There is no specific reason behind this division of the SAP period; however, the analysis of trends of different variables used in this paper suggests that the characteristics of the two periods are significantly different from each other.

⁴ Other reasons for the decline in value-added include a fall in the local and world demand for goods produced and exported by Pakistan (Mahmood, 2008).

Given the growth in real value added and a response to a mix of policy-induced and market-driven forces, the manufacturing industries observed a trade-off between employment growth and real wage growth. Table 1 shows that the growth rate of the manufacturing employment was 1.23 percent in the Pre-SAP period, which rose to 1.67 percent in the SAP-I period, 3.17 percent in the SAP-II period and 6.04 percent in the SAP-III period. On the other hand, a decline in the growth rate of real wage can be noted from 5.26 percent in the pre-SAP period to 0.94 percent in SAP-I period and -1.04 percent in the SAP-II period; however, it went up to 2.13 percent in SAP-III period. In the first two SAP periods, the labour productivity grew at a slower pace compared to the pre-SAP period, while it surpassed the pre-SAP during the SAP-III period. During the whole SAP period, the growth in real wage did not match the growth rate of the labour productivity at all, in fact in the SAP-I period growth in real wage was very slow (0.94 percent per annum) and it was negative in the SAP-II period, while it was positive (2.13 percent per annum) in the SAP-III period. This shows that workers opted to bear the brunt of changes in macroeconomic policies and economic conditions to save and secure their employment. In the SAP-III period, growth rates of employment (6.04 percent) and labour productivity (10.45 percent) were all time high in the manufacturing industries. High growth in the labour productivity resulted into the growth of the real wage by 2.13 percent per annum in the SAP-III. Thus, workers who retained their jobs while accepting lower wages in SAP-I & II periods were able to get the higher reward during SAP-III period along with the new entrants to the labour market.

Above results can be reconfirmed by interpreting the trends in output elasticity of labour demand. It may be noted from Table 1 that slower growth rate in value added accompanied by a significantly positive growth rate in employment throughout the SAP period allowed the output elasticity of labor demand to increase sharply.

The real average annual growth of manufactured goods exports, however, declined from 9.17 percent in the pre-SAP period to 7.67 percent in the SAP period (8.73 percent in SAP-I, 4.19 percent in SAP-II and 8.48 percent in SAP-III), this happened despite the manufacturing industries

experienced increase in the labour productivity growth during the SAP period.

In sum, the above review suggests that all in all in the SAP period with gradual rise in labour productivity, the manufacturing industries experienced higher growth in value added especially in the SAP-III period when they offered relatively higher real wages, and retained and hired more workers. Thus, the workers bore the brunt of slow growth in value added in the initial SAP periods by accepting lower wages in order to save their jobs and benefited from higher wage reward later. Exports of manufactured goods went down during the first two SAP periods but reverted to the pre-SAP growth rate. This analysis of different indicators although provides useful insights about the situation but refrain from answering questions such as, what happened to the international competitiveness, as measured by the unit cost of labour, when macroeconomic policies were introduced to remove structural deficiencies? Did depreciation/devaluation of the currency help country to improve its international competitiveness? How far inflationary pressures harmed export growth through their effect on competitiveness? To find answer for these questions, we proceed to the following analysis.

3. Methodology⁵

The literature presents at least five measures of competitiveness; namely, trade-related (e.g., revealed comparative advantage), productivity related (e.g., total factor productivity), technology-related (e.g., research and development intensity), efficiency-related (e.g., technical efficiency) and price-related (e.g., unit labour cost index). Out of these measures, the unit cost of labour in US dollars (U_c) is used here to measure competitiveness. Selection of this index is dictated by the fact that it gets influenced by the events taking place in the labour market as well as by changes in the macroeconomic policies. The analysis of the determinants of U_c and the

⁵ Methodology reported in this section is due to Mazumdar and Basu (1994).

factors affecting its behavior – in the long run and during cyclical fluctuations – is thus the focal topic for rest of the paper.

Let us define the U_c , as

$$U_c = \frac{W}{V} \cdot \frac{1}{e} \quad \dots \quad (1)$$

where,

W = wage per worker

V = value added per worker

e = exchange rate (rupees per dollar).

The following relation can be derived from Equation (1)

$$\dot{U}_c = \dot{W} - \dot{V} - \dot{e} \quad \dots \quad (2)$$

$$\dot{U}_c = (\dot{w} + \dot{P}_c) - (\dot{v} + \dot{P}_p) - \dot{e} \quad \dots \quad (3)$$

$$\dot{U}_c = (\dot{w} - \dot{v}) + (\dot{P}_c - \dot{P}_p) - \dot{e} \quad \dots \quad (4)$$

where,

w = real wage (in terms of consumer goods),

v = index of the physical productivity of labour,

P_c = index of the cost of living, and

P_p = index of prices of manufactured goods.

The dot on top of a variable represents the proportionate rate of change in the variable.

Equation (4) decomposes the percentage change in the unit labour cost into three components: (i) the wage- productivity gap; (ii) the shift in the ratio of consumer to producer prices; and (iii) the change in the nominal exchange rate of the domestic currency.

The first component depends on the behavior of the labour market. The second is the domestic real exchange rate (DRER) on the assumption that P_c

is the price of non-traded goods and P_p is the price of traded goods. This is by and large true for open economies. A large proportion of the manufactured goods produced in an open economy are generally exported,⁶ so the index of manufactured goods prices can be treated as the index of traded goods prices. Non-traded services, such as transport, electricity, housing, etc., have a dominant place in the consumer budget. Therefore, P_c is a good proxy for a price index of non-traded goods.

Movements in DRER are likely to be related to changes in the nominal exchange rate, e . Thus, when there is a depreciation/devaluation of the currency, both P_c and P_p rise in the local currency. But the price of the traded goods is exogenously determined in the world market, placing a limit on the extent to which P_p can rise in the domestic market. P_c , instead, depends much more on domestic fiscal and monetary policies and generally has a tendency to exceed increases in P_p in an inflationary situation fuelled by the devaluation.⁷

It is pertinent to note that the competitive strength often gets affected by the "feedback" of the depreciation/devaluation on DRER and wage-productivity differential. Devaluation feeds the inflationary spiral causing the DRER to increase which erodes the effect of devaluation on competitiveness. The objective of the devaluation might also be frustrated by a wage-price spiral causing the relative change in real wages to increase faster than the percentage increase in labour productivity.

4. Data

Two main data sources are used to produce various estimates for this paper. These are: (i) "Census of the Manufacturing Industries" (CMI), which

⁶ In 2008/09, 74% of Pakistan's exports were consisted of manufactured goods and 9% semi-manufactured products.

⁷ In the traditional theoretical literature, the objective of devaluation is to increase P_p relative to P_c to help shift resources from the non-traded sector to the traded sector. The argument here is that this objective may be frustrated if the secondary effect through inflation is sufficiently strong.

is available periodically and published by the Statistical Division, Government of Pakistan and (ii) "Pakistan Economic Survey", an annual document and is published by the Finance Division, Government of Pakistan.

The latest CMI is available for the year 2005/06, released in 2008. For those years for which CMI is not published, the data are interpolated. Data on daily wage employment, employment cost, and value added are obtained from CMI. Data on exports at constant prices (US dollar), GDP, manufacturing wholesale price index (producer's price index), consumer price index (CPI) and nominal exchange rate (Rupee vs. US dollar) are obtained from various issues of the Pakistan Economic Survey. All the price indices are converted into a single base year: 1990-91. Data on all the series are reproduced in Appendix Table A1.

Nominal wage rate is computed by dividing total employment cost in the manufacturing sector by its average daily employment. Real wage rate is obtained by dividing nominal wage rate by the CPI. Labour productivity is obtained by dividing the manufacturing value-added by the average daily employment. Output elasticity of labour demand is worked out by taking ratio of growth rate of employment to growth rate of value-added (col. 3 over col. 2 in Table 1).

5. Empirical Findings

The components of the unit labour cost are presented in Table 2. Averages for the components of the percentage changes in the unit labour cost are reported for pre-SAP and SAP regimes. Estimates of various components indicate that there has been a long-term depreciation of nominal

exchange rate.⁸ Pakistan frequently used depreciation of currency as a vehicle to improve competitiveness of its export products.⁹

Table 2 The Unit Cost of Labour and its Components (percentage growth rate)

Period	Wage-Productivity Gap	Consumer-Producer Price Differential	Nominal Average Exchange Rate	Unit Cost of Labour in US Dollars
	(1)	(2)	(3)	(4) = 1+2-3
Pre-SAP	-0.95	1.13	5.08	-4.90
SAP-I	-4.12	-0.43	7.93	-12.48
SAP-II	-4.07	2.02	10.58	-12.63
SAP-III	-8.80	2.20	0.004	-6.604
SAP	-5.45	1.05	7.47	-11.87

In quantitative terms, the role of exchange rate depreciation was more important than any other component of the unit cost of labour, with the sole exception of SAP-III. It can be noted from Table 2 that while the pre-SAP period depreciation of currency kept DRER positive, the offsetting effects of DRER and wage-productivity gap were extremely small in magnitude. Consequently, the manufacturing industries were able to reduce the unit cost of labour in US dollar terms. As a result, the country was able to maintain an average annual export growth rate of 9.17 percent during the pre-SAP period.

During the SAP period rate of currency depreciation was higher than the pre-SAP period. Consumer prices grew relatively slowly (8.13 percent per annum) during the SAP period as compared to the pre-SAP period (10.05 percent per annum) but they grew faster than producer prices. The gap between the two prices in the SAP period became narrower (1.05) as compared to the pre-SAP period (1.13). Slower growth in consumer prices

⁸ It may be noted that before 1982, Pakistan maintained a fixed-peg regime of its exchange rate. In 1972 rupee was depreciated and in 1973 it was appreciated, barring these two years the rupee-dollar parity remained constant. In 1982, the country replaced pegged system with managed floating exchange rate system. Since 2000, Pakistan is maintaining a free floating exchange rate regime.

⁹ See, Zia and Mahmood (2010).

should have given a rise in real wages, but this did not happen. Table 1 reveals that the growth in the real wage (0.7 percent per annum) during the SAP period was lower as compared to the growth in labour productivity (5.58 percent per annum), which created a high negative wage-productivity gap. It can, thus, be noted that the unit cost of labour in US dollars in the SAP period (-11.87 percent per annum) declined significantly as compared to the pre-SAP period (-4.9 percent per annum); however, this decline could not be translated into a higher growth in exports during the SAP period. The average annual export growth rate was 7.67 percent in the SAP period, a rate smaller than the one (9.17 percent) the country experienced during the pre-SAP period. The main reason behind this outcome is that although overall unit labour cost did fall and the depreciation of currency in the SAP period was more than the pre-SAP period but greater exchange rate volatility in the SAP period as compared to the pre-SAP period induced risk-averse exporters to reduce exports.¹⁰ Moreover, negative wage-productivity gap was achieved through a slower growth in real wage rate as compared to a higher growth in labour productivity. Slower growth in the real wage allowed workers to protect their jobs. Despite all this exporters could not maintain their competitive strength in the export market.

In order to unfold the information that may have been concealed by the aggregate estimates of the unit cost of labour for the SAP period, the analysis of the total SAP period is divided into three sub-periods; namely SAP-I, SAP-II and SAP-III. It can be noted from Table 2 that during SAP-I, the rate of currency depreciation was higher than the pre-SAP period and it became further higher in the SAP-II period, but the exchange rate was virtually stable during the SAP-III period. Even with higher rate of depreciation during SAP-I, the rate of growth in consumer prices became lower compared with the producer's prices.¹¹ Slower growth in consumer prices did not result into higher growth in real wages. At the same time, growth in labour productivity became slow due to a sharp fall in the growth of real value-added and a rise

¹⁰ See, Zia and Mahmood (2010).

¹¹ Structural adjustment programs often focus on containing inflation that is based on consumer price indices.

in employment growth. Growth in real wage, however, remained smaller than the growth in labour productivity, thus the net result was a higher negative wage-productivity gap. All these factors worked together to reduce unit cost of labour but the resultant improvement in competitiveness could not help in achieving better growth for exports. The growth in exports during SAP-I period was 8.73 percent as compared to 9.17 percent in the pre-SAP period (Table 1).

Given the weak performance of the export sector during the SAP-II period, the government further devalued the currency – the rate of currency depreciation during this period was the highest of all the period under study (Table 2). Higher and positive estimates of DRER suggest that depreciation of currency resulted into inflationary spiral. Consequently, the DRER increased that in turn partially eroded the effect of devaluation. During the SAP-II period, rising consumer prices resulted into negative growth in real wages, while the labour productivity experienced a higher growth as the real value-added growth started showing some signs of a revival of industries. Consumers on their part switched and re-arranged their consumption baskets in favour of domestic goods as with devaluation imported goods became expensive. Increase in the DRER was virtually offset by the negative wage-productivity gap. Devaluation, however, was the main factor that led to a decline in the unit cost of labour, this improvement in competitiveness was the highest during the period of study, but this strength was not translated into export expansion as the matching exportable surplus was not available due to the switching of consumers from imported goods towards domestic goods. In fact, Pakistan experienced the slowest growth in manufactured exports during SAP-II (Table 1).

During the SAP-III period, currency depreciation was extremely slow. The DRER increased further despite stable exchange rate. Interestingly growth in both consumer and producer prices was slower as compared to the earlier periods but the difference between the growth of the two prices was higher that made DRER to be higher than SAP-II. During SAP-III, due mainly to better export market access and rescheduling of external debt following 9/11 events, the country experienced sharp growth in

manufacturing value added (17.14 percent per annum), growth in employment (6.04 percent per annum), growth in the wage rate (2.13 percent per annum), and growth in labour productivity (10.45 percent per annum). All of these resulted into high negative wage-productivity gap that outweighed the negative effect of the DRER in the presence of the stable exchange rate. This enabled the country to achieve once again a high average annual growth rate of exports of 8.48 percent as compared to 4.19 percent during SAP-II.

The picture that emerges from the above analysis is that in the first two SAP periods, the main component of competitiveness of Pakistan's manufacturing industries was depreciation/devaluation of the nominal exchange rate when export market access was limited.¹² The effect of the depreciation/devaluation was, however, partially offset by the inflationary spiral but was enforced by the negative wage-productivity gap. Throughout the period, the wage-productivity gap was created by keeping the real wage growth behind the labour productivity growth.

SAP-III experience suggests that even in the absence of depreciation and the presence of higher DRER, the country maintained competitiveness and a surge in its exports. This was made possible by achieving high growth in labour productivity as compared to growth in real wage rate. High labour productivity allowed the country to generate large exportable surplus. But it was better export market access after 9/11 events that was instrumental in enabling Pakistan to achieve high export growth.

6. Conclusion and Policy Recommendations

Main conclusion that emerges from this study is that the macroeconomic policies adopted during the SAP period allowed the manufacturing industries

¹² Note, during this period Pakistan was facing trade restriction from the industrial countries on account of the Multifibre arrangements, so better market access eased the supply constraints on the textile and clothing sectors the main manufacturing and export sectors of Pakistan.

to improve their competitive strength in the international markets. This strength was, however, achieved in the first two SAP periods mainly through depreciation/valuation of currency rather than improvement in productivity and containing inflation. Policymakers did not try to benefit from the flexible nature of the labour market. At the same time, the policymakers did not take timely decisions to introduce complementary policy measures so that the industries draw benefit from improved international competitiveness by translating it into high export growth.¹³ In the SAP-III, however, increased export market access and sharp growth in the labour productivity enabled the country to not only further strengthen its competitiveness but also enable to achieve high export growth of all SAP periods. This happened when macroeconomic policies allowed stable exchange rate and the country was successful in obtaining better market access from industrial countries. The lesson that can be learned from the analysis of this paper is that achieving competitive strength is a necessary condition but not a sufficient condition to achieve higher export growth. The country also needs to introduce complementary policy measures for export promotion, and keeps on striving to obtain global market access both bilaterally and multilaterally.

Pakistan could have performed even better on account of competitiveness had its macroeconomic policies were successful in arresting the sharp growth in consumer prices as compared to the producer's prices. Policy effort was needed to increase the labour productivity especially when the real wage growth was very slow. Productivity enhancement is thus crucial for both production acceleration and strengthening of the competitiveness – a message that was clear and loud in SAP-III. In addition to macroeconomic policies, the focus should have been on policy measures to increase efficiency in the utilization of productive inputs and creating a system that should have increased innovative capacity of industries to achieve greater output per unit of input. This could have been done, for instance, through a policy of resource reallocation towards high-productivity industries with capability to innovate that would have improved

¹³ See also Naqvi and Mahmood (1996).

competitiveness and solved the structural weaknesses faced by the manufacturing industries.

While fully occupied with macroeconomic policies, they failed to recognize the importance of complementary measures to introduce production of such products for which demand in international markets is fast expanding. This may have reversed the fall in the growth of output and exports in the SAP-I & II periods, and intensified the growth of output and exports in the SAP-III period.

References

- Anwar, T. (1996) Structural Adjustment and Poverty: The Case of Pakistan. *The Pakistan Development Review* vol. 35, pp. 911-926.
- Ara, I. (2004) Is Pakistan's Manufacturing Sector Competitive? *The Pakistan Development Review*, 43(4): 685-705 (Part II).
- Economic Adviser's Wing (1998 and 2010), Pakistan Economic Survey. Finance Division, Government of Pakistan.
- Iqbal, Z. and R. Siddiqui (1999) Impact of Fiscal adjustment on Income Distribution in Pakistan. *The Pakistan Development Review*, vol. 38, pp. 1-24.
- Jaffery, S. M. Y. and A. Khattak (1995) Income Inequality and Poverty in Pakistan. *Pakistan Economic and Social Review*, vol. 33 pp. 37-58.
- Kemal, A. R. (1994) Structural Adjustment, Employment, Income Distribution and Poverty. *The Pakistan Development Review*, vol. 33 pp. 901-911.
- Mahmood, A. (2004) Export Competitiveness and Comparative Advantage of Pakistan's Non-agricultural Production Sectors: Trends and Analysis. *The Pakistan Development Review*, 43(4): 541-561(Part II).

Mahmood, Z. (2008) Structural Adjustment Programme and Real Wage in Pakistan's Manufacturing Industries. *The Indian Journal of Economics*, LXXXVIII (350): 393-405.

Mazumdar, D. and P. Basu (1994) 'Macroeconomic Policies, Growth and Employment: The East and Southeast Asian Experience', Paper No. 7, prepared under the ILO/UNDP project *Economic Policy and Employment*, International Labour Office, Geneva and United Nations Development Programme, New York, July.

Naqvi, S. N. H. and Z. Mahmood (1996), 'Globalization, Liberalization, and Employment Strategies in Pakistan', *The Indian Journal of Labour Economics*, vol. 39 pp. 645-671.

Statistics Division (2002 and 2008) Census of Manufacturing Industries. Government of Pakistan.

Zia, U. and Z. Mahmood (2010) Exchange Rate Depreciation and Export Price Competitiveness: The Case of Pakistani Manufacturing Industries. (in progress).

Appendix Table A1: The Basic Data

Year	Average Daily Employment (000)	Employment Cost (000, Rs)	Value Added Current (Million Rs.)	Consumer Price Index (%)	Manufacturing Wholesale Price Index (%)	Nominal Exchange Rate (Rs.Vs.US\$)
1969-70	418	986062	4811	14.14	15.51	4.76
1970-71	432	1178496	5520	14.95	15.71	4.76
1971-72	446	1407130	6333	15.65	15.93	11
1972-73	461	1682189	7266	17.16	18.18	11.45
1973-74	476	2008720	8336	22.31	23.33	9.9
1974-75	492	2401452	9564	28.27	27.11	9.9
1975-76	507	2862015	10972	31.57	29.98	9.9
1976-77	457	3336557	14002	35.33	33.71	9.9
1977-78	459	3855141	17008	38.14	35.94	9.9
1978-79	451	4355758	18614	40.68	37.97	9.9
1979-80	452	5020364	24661	45.69	41.94	9.9
1980-81	452	5668080	28692	51.67	46.18	9.9
1981-82	474	6742176	34554	55.61	47.77	9.9
1982-83	465	7939410	37451	58.21	50.87	12.7063
1983-84	476	9162048	45021	62.45	57.49	13.4838
1984-85	493	10391947	51571	65.99	58.99	15.1512
1985-86	507	12120000	55298	68.86	61	16.1391
1986-87	532	14392000	67671	71.34	65.22	17.1793
1987-88	515	15892000	74310	75.83	70.09	17.5994
1988-89	525	18314000	77443	83.71	77.99	19.2154
1989-90	571	22049114	92718	88.76	84.97	21.4453
1990-91	622	26546000	111006	100	100	22.4228
1991-92	610	29042000	126408	110.6	108.2	24.8441
1992-93	598	31772000	143946	121.5	112.8	25.9598
1993-94	586	34760000	163918	135.1	131.5	30.1638
1994-95	574	38028000	186661	152.7	151.6	30.8517
1995-96	563	41603000	212559	169.2	164.9	33.5684
1996-97	587	45559260	236961	189.20	184.60	38.9936
1997-98	611	49891770	264165	204.00	189.20	43.1958
1998-99	637	54636270	294491	215.70	195.00	46.7904
1999-00	663	59831960	328299	223.40	203.90	51.7709
2000-01	691	65521650	365989	233.20	206.50	58.4378
2001-02	735	75421242	449570	241.46	210.36	61.4258
2002-03	782	86816552	552238	248.94	214.08	58.4995
2003-04	832	99933567	678352	260.32	230.93	57.5745
2004-05	885	115032416	833267	284.46	233.45	59.3576
2005-06	941	132412534	1023559	306.98	240.10	59.8566

Source: Economic Advisor's Wing (1998 and 2010) and Statistics Division (2002 and 2008)