Sectoral Growth Rates and Efficiency of Factor Use in Large-Scale Manufacturing Sector in West Pakistan

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The large-scale manufacturing sector of Pakistan has grown at an annual compound rate of 14.3 percent¹ over the period 1949-50 to 1969-70. However, one does not know the rates at which different sub-sectors of this sector have grown in the past. Similarly, earlier studies done for an analysis of this sector's efficiency were limited to calculations of effective protection rates [3,7,10] or of comparative cost ratios [2]. What has not been studied before is the magnitude of the change in the efficiency of factor use in Pakistan. The absence of such literature in Pakistan stems essentially from the non-availability of consistent and reliable time series data at a disaggregated level. Pakistan's censuses of manufacturing industries hereinafter referred to as CMI, carried out almost every year, do contain data at a disaggregated level, but those data suffer from a serious undercoverage. Since the magnitude of the undercoverage shows wide fluctuations, the data cannot be used for computing growth rates. In an earlier study [4]² an attempt was made to construct a consistent time series of data relating to the large-scale manufacturing sector. The data reported were at current prices, which need to be deflated for computation of growth rates at constant prices. The value of fixed assets as reported

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¹These growth rates are based on the data taken from [8].

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in the CMIs is the written down value, which does not reflect the productive capacity in the manufacturing sector, because (a) the prices of capital goods have increased over time, while the reported figures are not adjusted for the increase in the price of capital stock and (b) the reported value of fixed assets is arrived at by applying the depreciation rates allowed by the government rather than the actual depreciation rates which differ from the former rates. Therefore, the use of such data leads to erroneous capital-labour and capital-output ratios. Khan and MacEwan [6] estimated 'consistent' capital-output ratios for one year, i.e. 1962-63. In this study, an attempt is made to derive estimates of the 'replacement cost of capital' for the period 1959-60 to 1969-70, and to prepare a consistent data series for the same period at the constant prices of 1959-60.

In the first section, the methodology used for preparing estimates of the 'replacement cost of capital' is outlined. The section also reports various problems faced in the treatment of the data and the method used in the construction of price indices. The second section presents some indices of the efficiency of factor used in Pakistan. The third section contains estimates of the growth rates of various sectors at a two-digit level of disaggregation. A summary of the results and conclusions are presented in the final section. The time series data on various aspects of the manufacturing sector at constant prices of 1959-60 and the price indices for both output and capital goods are given in the Appendix.

I. Methodology and Data Problems

The value of capital stock as reported in the CMIs under-estimates the replacement cost of capital. As mentioned above, the written-down value of fixed assets does not take into account the increase in the price of capital since refixed assets were purchased, and is based on depreciation rates allowed by the government for tax purposes. There has been a rising trend in the prices of capital goods and the depreciation rates allowed by the government are higher than the "correct depreciation rates". Both factors have resulted in an underestimation of capital in the CMI reports.³ For estimating the 'correct replacement cost' of capital, one has to adjust the data for both the changes in the prices and the differences in the two depreciation rates.

The 'corrected replacement cost' of capital in any year t at constant prices of 1959-60 may be estimated by the following relation:

$$K_t = \sum_{i=0}^t \left[\prod_{j=1}^i (1 - d_j) \right] I_i \frac{P_{1959-60}}{P} \dots \dots \dots (I)$$

If we normalise prices by setting $P_{1959-60} = 1$, we get

$$K_t = \sum_{i=0}^t \left[\prod_{j=1}^i (1 - d_j) \right] I_i / P_i \dots \dots \dots (II)$$

³The relevant figure is the corrected written-down replacement cost and not the original costs less the depreciation allowed by the government.

where

- K_t = corrected replacement cost of capital in the year t ,
 d_j = correct depreciation rate for the j th year, and
 P_i = normalised price in the i th year.

Had data been available on investment in all years, equation (II) would have been sufficient to determine the 'corrected' replacement cost of capital. However, the investment data for the years prior to 1959-60 are not available. The corrected replacement cost of capital for the vintages of 1951-52 to 1959-60 was estimated by an indirect method. Correction factors which measure the deviation between the 'corrected replacement cost' and the written-down cost of capital were calculated⁴ and used to estimate the replacement cost of capital of these vintages.

The index of the written-down value of fixed assets as shown in the CMI's may be arrived at by using the following relation:

$$Kc'_t = \sum_{i=0}^t \left[\prod_{j=i}^t (1-d'_j) \right] I'_i \dots\dots\dots (III)$$

where

- Kc'_t = index of written-down value of fixed assets,
 d'_j = government-allowed depreciation rates for the j th year, and
 I'_i = investment index for the i th year.

The index of 'corrected' replacement cost (K') is arrived at through the following relation:

$$K'_t = \sum_{i=0}^t \left[\prod_{j=i}^t (1-d_j) \right] I_i/P_i \dots\dots\dots (IV)$$

The correction factor for the year t is K_t/K'_t . The product of these correction factors and their corresponding written-down values of fixed assets gives us the 'corrected' replacement cost of 1951-52 to 1958-59 vintages. The 'corrected' replacement cost of capital for the years 1959-60 to 1969-70 vintages is estimated by using equation II. Adding the two estimates, we obtain the series of corrected replacement cost of capital.

Rates of depreciation allowed by the government are taken from [5]. The 'correct' depreciation rates which measure the actual decline of productivity are difficult to estimate. Following Khan and MacEwan [6] it is assumed that the productive value of capital declines very slowly in the first half of the life of the plant. It is assumed that during this period 25 percent of the capital is depreciated. The depreciation is assumed to be evenly distributed over the first half of the life of the plants. In the second half, it is assumed that 65 percent of the capital is depreciated, again evenly distributed over the period. The remaining 10 percent of the capital is the scrap value. The length of the

⁴The method used is taken from [6].

life of plants, building and other items is taken from a report prepared by the Planning Commission [9].

The price indices for capital goods have obtained by constructing a weighted price index using wholesale price indices of machinery, transport equipment and buildings. The weights of the three components are taken from [9]. Since no price index for buildings was available, the same was constructed using the price indices of cement, steel and bricks. The weights were taken from a UNIDO study [11]. The price indices for the capital goods are given in the Appendix.

Price indices for the output, at a two-digit level of classification, are available only for a few industries. For the missing industries, the price indices were calculated by using the 1959-60 weights and prices for industrial goods at the four-digit level of classification. Price indices for the outputs are also presented in the Appendix. Because of the non-availability of price indices for a large number of inputs, it was not possible to construct value-added deflators. The output price indices were, therefore, used for deflating the value added.

Capital-output, capital-value added, capital-labour, value added-labour and output-labour ratios at constant prices of 1959-60 are calculated by using deflated value added, deflated value of output and 'corrected' replacement cost of capital. Data on employment as well as on value added and output at current prices employment as well as on value added and output at current prices were taken from [4]⁵. Deflated data is again presented in the Appendix.

II. Trends in the Efficiency of Factor Use

Underutilisation of capital despite the scarcity of capital in Pakistan is quite well known. However, the rate of capacity utilisation in Pakistan has increased over time [5]. An increase in the capacity utilisation would tend to lower the capital-labour, capital-output and capital-value added ratios. On the other hand, the imported capital goods, which accounted for an overwhelming proportion of the installed capital in Pakistan during the sixties embody technology suited to the factor endowments of the developed countries. The technology imported by the developing countries is generally labour-saving. There is some indication that the technology imported by the developing countries has an increasing bias towards labour-saving techniques of production. If this effect is significant, it is expected that capital-labour ratios would rise over time. The capital-labour, capital-output, capital-value added, output-labour and value added-labour ratios for the period 1959-60 to 1969-70 are presented in Tables 1 to 5. The tables help determine which of the opposing tendencies has dominated in Pakistan.

It may be observed from Table 1 that capital-labour (K/L) ratios show different trends in the cases of different industries. These ratios have risen in some cases (e.g. in food manufacture, and chemicals), have gone down in the case of tobacco manufactures and paper and have remained constant in other

⁵In the cases of non-metallic mineral products and paper and paper-board, these ratios were adjusted by separating cement from other non-metallic mineral products and paper from other paper products.

cases. For the total large-scale manufacturing sector the K/L ratio does not show any definite trend. Aggregate capital-labour ratio rises from Rs. 10,349 in 1959-60 to Rs. 12,613 in 1962-63. The ratio declines and fluctuates around Rs. 11,000 for the remaining few years. For 1969-70, the ratio stands at Rs. 10,900. Since there are fluctuations in the K/L ratios over time, we have compared the average of the first three years with the average for the last three years. The comparison reveals that the K/L ratio in fact fell from Rs. 11,515 in the former period to 10,260 in the latter period. It was mentioned earlier that an increase in capacity utilisation would tend to lower the K/L ratio while the labour-saving technology, embodied in imported machinery, would raise that ratio. It may also be pointed out that the changes in the K/L ratio can also be brought about by a change in the industrial structure. Only in the case of food manufacturing industries both the K/L ratio and the growth rates are above the average for the overall sector. Therefore, changes in the industrial structure would not tend to raise the K/L ratio. When the 1959-60 weights are applied to the 1969-70 capital-labour ratios, the capital-labour ratio for the industrial sector as a whole rises to Rs. 12,880, implying a decline in the share of the industries which had higher K/L ratios in 1969-70 in the period 1959-60 to 1969-70. From this one may draw a tentative conclusion that the decline in the K/L ratio was brought about by changes in the industrial structure and increases in the level of capacity utilisation. The labour-saving technology embodied in imported goods had a counterbalancing effect in that it increased the K/L ratio just enough to keep that ratio at the level observed in the earlier years of Pakistan's industrialization.

Tables 2 and 3 present capital-output and capital-value added ratios. The capital-output ratio for the overall industrial sector declined from 0.73 in 1959-60 to 0.559 in 1969-70. Over the same period, capital-value added ratio declined from 3.15 to 1.90. Tables 4 and 5 show that both output and value added per labourer have increased over the period 1959-60 to 1969-70. As stated above, capacity utilisation had increased over the period of the study and the share of the industries having above-average K/L ratios had declined, but capital-labour ratio remained constant. This clearly implies that increasingly capital-intensive technology is being used in Pakistan. Since an increase in capital-intensity means that a labourer on average will have more capital to work with, the output and value added per labourer are expected to go up. Table 4 and Table 5 bear out the expected rising trend in the value added and output per worker. The value of output per worker has gone up from Rs. 14,015 in 1959-60 to Rs. 19,504 in 1969-70 while the value added per worker has risen from Rs. 3,282 to Rs. 5,743 during the same period.

Capital-value added ratios for the year 1962-63 were calculated by Khan and MacEwan [6]. Since they did not give estimates at the two-digit level, and our estimates of capital and value added are not for the constant factor cost for 1962-63, the two ratios are not strictly comparable. Still, the comparison may be of some interest. The capital-value added ratio reported by them is 2.68 as against our figure of 2.25 for 1964-65 and 3.15 for 1959-60. They found fertilizers, transport equipment and cotton textiles to be the most capital-intensive industries. These industries are the most capital-intensive industries in our study as well.

Table 1
Capital-Labour Ratios*

Name of the Industry	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Food Manufactures	9,416	12,058	11,505	10,835	13,573	13,357	16,247	20,334	17,278	18,036	19,536
Tobacco Manufactures	21,531	19,717	18,324	15,934	12,033	8,433	10,175	10,372	8,866	7,585	6,529
Manufacture of Textile	9,457	9,588	10,092	10,641	11,659	11,304	11,734	10,917	8,025	8,456	9,197
Manufacture of Footwear and other Wearing Apparel	3,429	3,406	3,799	4,931	5,293	4,622	5,619	4,494	3,489	3,378	3,195
Manufacture of Paper and Paper Products	34,901	28,614	24,453	21,629	21,729	27,865	34,619	30,506	26,930	26,677	24,748
Printing, Publishing and Allied Products	5,418	5,629	5,658	6,366	6,007	7,200	7,771	8,597	7,095	6,768	6,872
Leather and Leather Products	5,999	5,588	4,872	4,452	4,342	4,310	3,543	4,278	3,762	3,887	4,403
Rubber Products except Rubber Footwear	7,497	7,756	8,754	8,457	7,005	12,012	13,997	12,499	14,040	10,872	9,012
Manufacture of Chemicals and Chemical Products	22,972	38,608	37,428	36,157	29,443	27,281	30,974	41,545	35,743	31,334	33,164
Manufacture of Non-Metallic Mineral Products	16,057	16,601	15,987	15,148	23,350	15,105	17,198	15,730	17,089	17,252	18,186
Basic Metal Industries	9,622	10,310	9,230	9,237	9,652	7,770	12,522	10,916	8,259	9,478	10,729
Manufacture of Metal Products	3,874	3,898	5,310	5,117	4,629	4,261	4,250	5,006	4,375	4,581	4,714
Machinery except Electrical Machinery	5,295	5,920	6,448	7,087	6,363	5,379	5,226	5,628	5,051	4,856	4,860
Electrical Machinery	9,070	6,173	4,777	3,600	5,105	6,956	6,980	6,548	6,155	7,041	8,811
Manufacture of Transport equipment	11,261	11,528	12,658	13,411	13,826	13,641	9,674	11,657	9,458	8,842	8,570
Miscellaneous Industries	11,506	13,659	17,502	24,199	11,753	13,192	16,112	13,929	10,151	10,943	12,368
Total Large-scale Manufacturing sector	10,349	11,828	12,311	12,613	11,843	11,25	11,932	12,034	9,840	10,081	10,900

Source: = Based on Appendix Table 1a to 1p.

*Capital-labour ratio = Corrected replacement cost ÷ Number of labourer.

Table 2

Capital-Output Ratios*

Name of the Industry	1959-60	64-65	65-66	66-67	67-68	68-69	69-70
Food Manufactures	0.397	0.342	0.417	0.515	0.567	0.447	0.392
Tobacco Manufactures	0.568	0.483	0.392	0.363	0.224	0.228	0.210
Manufacture of Textile	1.111	1.153	1.243	1.169	0.783	0.762	0.747
Manufacture of Footwear and other Wearing Apparel	0.285	0.285	0.379	0.361	0.226	0.222	0.213
Manufacture of Paper and Paper Products	2.186	1.246	1.582	1.430	1.207	1.246	1.153
Printing, Publishing and Allied Products	0.971	0.660	0.692	0.695	0.539	0.512	0.515
Leather and Leather Products	0.416	0.175	0.121	0.145	0.111	0.108	0.113
Rubber Products except Rubber Footwear	0.889	0.705	0.833	0.829	0.665	0.568	0.472
Manufacture of Chemicals and Chemical Products	1.537	0.837	0.942	1.414	1.194	1.194	1.061
Manufacture of Non-Metallic Mineral Products	1.383	1.405	1.600	1.690	1.744	1.659	1.854
Basic Metal Industries	1.109	0.444	0.602	0.587	0.337	0.394	0.469
Manufacture of Metal Products	0.610	0.524	0.587	0.574	0.444	0.433	0.414
Machinery except Electrical Machinery	0.782	0.689	0.595	0.617	0.523	0.458	0.409
Electrical Machinery	0.971	0.533	0.530	0.510	0.432	0.493	0.597
Manufacture of Transport Equipment	1.324	0.870	1.063	0.891	0.746	0.742	0.752
Miscellaneous Industries	0.422	0.337	0.332	0.320	0.303	0.273	0.240
Total Large-scale Manufacturing sector	0.738	0.619	0.663	0.693	0.593	0.559	0.559

Source: Based on Appendix Tables 1a to 1p.

*Capital-output ratio = Gross output at constant factor cost ÷ corrected replacement cost.

Table 3
Capital-Value Added Ratios*

Name of the Industry	1959-60	64-65	65-66	66-67	67-68	68-69	69-70
Food Manufactures	2.45	2.28	2.24	2.82	2.82	2.43	1.96
Tobacco Manufactures	1.28	0.98	0.82	1.18	0.83	0.65	0.64
Manufacture of Textile	3.48	3.26	3.38	3.60	2.35	2.08	1.93
Manufactures of Footwear and other wearing Apparel	0.76	0.72	1.23	1.40	1.30	0.68	0.47
Manufacture of Paper and Paper Products	4.83	3.37	6.12	6.11	6.14	6.49	6.13
Printing, Publishing and Allied Products	1.76	1.31	1.35	1.39	1.00	0.93	0.92
Leather and Leather Products	2.43	0.64	0.35	0.54	0.57	0.46	0.42
Rubber Products except Rubber Footwear	2.81	1.39	2.61	1.81	1.75	1.50	1.34
Manufacture of Chemicals and Chemical Products	3.36	2.18	2.84	3.64	3.78	4.10	3.63
Manufacture of Non-Metallic Mineral Products	2.85	3.14	3.87	3.56	4.12	4.40	4.73
Basic Metal Industries	2.90	1.68	2.01	1.96	1.28	1.54	2.02
Manufacture of Metal Products	1.67	1.56	1.54	1.59	1.34	1.49	1.60
Machinery except Electrical Machinery	1.92	1.73	1.47	1.58	1.39	1.43	1.48
Electrical Machinery	2.53	1.60	1.48	1.32	1.11	1.37	2.00
Manufacture of Transport Equipment	3.96	2.87	2.49	2.86	1.91	2.35	3.40
Miscellaneous Industries	3.94	2.22	1.56	2.57	1.83	1.66	1.48
Total Large-scale Manufacturing sector	3.15	2.28	2.24	2.64	2.13	2.00	1.90

Source: Based on Appendix Tables 1a to 1p.

*Capital-Value added ratios = Gross Value added at constant factor cost ÷ corrected replacement cost.

Table 4
Output per Labourer**

Name of the Industry	1959-60	64-65	65-66	66-67	67-68	68-69	69-70
Food Manufactures	23,581	39,112	38,994	39,512	30,482	40,313	49,817
Tobacco Manufactures	37,927	17,453	25,961	28,602	39,601	33,208	31,065
Manufacture of Textile	8,513	9,807	9,436	9,337	10,243	11,101	12,317
Manufacture of Footwear and other Wearing Apparel	12,035	16,208	12,974	12,436	15,425	15,221	14,969
Manufacture of Paper and Paper Products	15,969	22,355	21,880	21,336	22,310	21,403	21,467
Printing, Publishing and Allied Products	5,579	10,908	11,227	12,374	13,158	13,320	13,304
Leather and Leather Products	14,421	24,574	29,240	29,554	33,992	36,154	38,876
Rubber Products except Rubber Footwear	8,431	12,012	16,799	15,082	21,102	19,153	19,052
Manufacture of Chemicals and Chemical Products	14,890	32,587	32,889	29,372	29,944	26,244	31,258
Manufacture of Non-Metallic Mineral Products	11,608	10,750	10,752	9,308	9,801	10,400	9,807
Basic Metal Industries	8,679	17,505	20,816	18,605	24,479	24,061	22,879
Manufacture of Metal Products	6,359	8,131	7,243	8,718	9,843	10,592	11,400
Machinery except Electrical Machinery	6,772	7,803	8,778	9,117	9,653	10,596	11,886
Electrical Machinery	9,344	13,040	13,170	12,833	14,254	14,294	16,931
Manufacture of Transport Equipment	8,504	15,679	9,100	13,085	12,684	11,913	11,392
Miscellaneous Industries	27,261	39,137	48,556	44,675	33,530	40,152	51,541
Total Large-scale Manufacturing sector	14,015	17,973	17,987	17,362	16,566	18,045	19,504

Source: Based on Appendix Tables 1a to 1p.

*Output per Labourer = Gross value of production at factor cost ÷ Number of labourers.

Table 5
Value-added per Labourer*

Name of the Industry	1959-60	64-65	65-66	66-67	67-68	68-69	69-70
Food Manufactures	3,838	5,849	7,263	7,209	6,126	7,416	9,962
Tobacco Manufactures	16,807	8,566	1,2385	8,777	10,746	11,643	12,404
Manufacture of Textile	2,718	3,465	3,458	3,033	3,411	4,071	4,771
Manufacture of Footwear and other Wearing Apparel	4,518	6,449	4,576	3,212	2,693	4,974	6,826
Manufacture of Paper and Paper Products	7,243	8,274	5,658	4,994	4,383	4,108	4,040
Printing and Publishing	3,083	5,478	5,765	6,198	7,084	7,244	7,441
Leather and Leather Products	2,472	6,744	10,068	7,925	6,589	8,517	10,520
Rubber Products except Rubber Footwear	2,669	8,612	5,364	6,908	8,013	7,246	6,711
Manufacture of Chemicals and Chemical Products	6,841	12,491	10,897	11,405	9,462	7,646	9,142
Manufacture of Non-Metallic Mineral Products	5,637	4,432	4,443	4,420	4,150	3,924	3,847
Basic Metal Industries	3,314	4,633	6,227	5,556	6,434	6,164	5,301
Manufacture of Metal Products	2,313	2,728	2,764	3,149	3,260	3,079	2,944
Machinery Except Electrical Machinery	2,762	3,110	3,552	3,570	3,639	3,386	3,276
Electrical Machinery	3,580	4,358	4,701	4,968	5,569	5,121	4,412
Manufacture of Transport Equipment	2,880	4,750	3,879	4,083	4,941	3,763	2,517
Miscellaneous Industries	2,922	5,952	10,299	5,425	5,549	6,599	8,354
Total Large-scale Manufacturing sector	3,282	4,889	5,335	4,559	4,618	5,050	5,743

Source: Based on Appendix Tables 1a to 1p.

*Value-added per Labourer = Gross value added at constant factor cost ÷ Number of labourers.

Table 7
Sectoral Growth Rates

Name of the Industry	Growth Rates of Gross Value Added at Constant Prices of 1959-60 over the periods		Growth Rates of Gross Value Added at Constant Factor Cost of 1959-60 over the Periods		Growth Rates reported by Guisinger
	1959-60 to 1969-70 using Formula	1963-64 to 1969-70 using Formula	1959-60 to 1969-70 using Formula	1963-64 to 1970-71 using Formula	
	$Y_t = Y_0(1+g)^t$ $L_n Y_t = \alpha + \beta t$		$Y_t = Y_0(1+g)^t$ $L_n Y_t = \alpha + \beta t$		$Y_t = Y_0(1+g)^t$
Food Manufacturing except Beverages	21.60	17.14	13.87	15.75	13.4
Tobacco Manufactures	24.70	22.34	24.08	14.87	14.0
Manufacture of Textiles	14.70	14.20	18.46	11.67	8.4 to 9.6
Manufacture of Footwear and other Wearing Apparel	22.22	20.93	23.23	16.14	8.2
Manufacture of Paper and Paper Products	14.26	11.83	11.48	11.35	9.3
Printing, Publishing and Allied Products	24.75	21.54	16.31	22.84	6.0
Leather and Leather Products	28.47	18.67	17.95	25.46	1.0
Rubber Products except Rubber Footwear	27.77	30.09	25.75	18.95	3.6
Chemicals and Chemical Products	17.44	08.71	5.20	11.49	2.7 to 10.2
Manufacture of Non-Metallic Mineral Products	11.18	15.48	11.79	6.26	9.2
Basic Metals	15.67	14.86	8.77	11.72	-1.6
Manufacture of Metal Products	11.13	15.93	7.00	14.75	-2.6
Machinery except Electrical Machinery	21.31	23.84	24.13	20.42	2.2
Electrical Machinery	19.38	21.60	15.39	16.81	5.9
Transport Equipment	6.67	11.08	2.77	10.03	-8.1
Miscellaneous	7.72	9.72	00.02	7.86	31.0
Total Large-scale Manufacturing sector	15.71	15.32	12.70	12.43	9.0

Source: Appendix Tables 1a to 1p and [1]

Table 7 shows that the manufacturing sector has grown at a rate of 12.43 percent per year. The table also shows that the growth performance of different industries varies considerably. Leather, machinery, printing, footwear and food manufacturing show exceptionally high growth rates. Paper, textiles, chemicals and base metals have grown at a rate of between 11 and 12 percent per annum. Non-metallic minerals have grown at a rate of about 6 percent per year.

It is of interest to compare the growth rates reported by Guisinger [1] with those reported in Table 7. However, one should remember that Guisinger's growth rates are for the period 1963-64 to 1970-71, while ours are for 1963-64 to 1969-70. The growth rate for the industrial sector as a whole is 9 percent in Guisinger's study compared to the 13.53 percent arrived at in this study. The growth rate calculated on the basis of the data reported in the Economic Survey [8] is 13.31 percent over the period 1959-60 to 1969-70 as against our 13.38. This shows that the growth rate as calculated in the present study is very close to the one implied in the national accounts. There could be two reasons for the differences in the growth rates reported in this study and in the one by Guisinger. First, 1970-71 was not a good year for the manufacturing sector; there was no growth in value added over 1969-70. Secondly, there has been a 30-40 percent undercoverage, and the growth rates reported by Guisinger are based on data unadjusted for the non-responses, whereas our growth rates are based on data which were adjusted for non-responses. Guisinger himself regards 'data for some industrial categories' as almost certain to be incorrect [1, p. 22]. He lists chemicals, leather and transport equipment among the group of industries for which the data are poor.

Conclusions

This study had three major objectives, viz. an estimation of the 'corrected' replacement cost of capital, determination of trends in efficiency of factor use and estimation of sectoral growth rates. The analysis suggests that the 'corrected' replacement cost of capital in the industries is substantially higher than the value of fixed assets reported in the CMIs. Capital-labour, capital-output and capital-value added ratios calculated on the basis of the CMI data are consequently underestimated. Using the 'corrected' replacement cost of capital, these ratios were calculated. The analysis of these ratios suggests that the output and value added per unit of capital have shown an increase over the period of the study. Similarly, the value added and output per worker have also increased over the period of the study. It is, thus, concluded that the production factors, viz. capital and labour, were being used more efficiently in 1969-70 than in 1959-60. Since capital-labour ratio has remained almost constant, it is also clear that an increase in the capacity utilisation and the use of capital-intensive technology must be the characteristic features of industrialisation in Pakistan. Sectoral growth rates are much higher than the similar rates calculated by Guisinger on the basis of unadjusted CMI data. The use of the CMI data for measuring growth may, therefore, be avoided.

Appendix

Table-1a

Consistent Time Series Data at the Constant prices of 1959-60: Food Manufacturing Industries Except Beverages

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	217,219	212,005	23,069	559,247	547,325	100,463	88,541
1960-61	302,845	295,685	25,115	718,328	—	150,271	—
1961-62	312,487	304,954	27,161	873,252	—	211,008	—
1962-63	316,468	308,676	29,207	1,030,832	—	272,250	—
1963-64	342,417	333,851	25,228	1,024,744	—	249,713	—
1964-65	515,798	502,588	38,617	1,661,160	1,510,380	376,632	225,852
1965-66	699,858	682,056	43,076	1,847,642	1,679,711	480,801	312,870
1966-67	765,701	745,136	37,657	1,642,393	1,487,907	425,972	271,486
1967-68	814,920	791,155	47,164	1,577,132	1,437,656	428,425	288,949
1968-69	871,791	844,767	48,335	2,170,108	1,948,549	580,020	358,461
1969-70	967,151	915,818	49,505	2,683,186	2,466,184	710,194	493,192

(Value in '000' Rs.)

Table-1b
Consistent Time Series Data at the Constant Prices of 1959-60: Tobacco Manufactures

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	78,826	73,924	3,661	141,905	138,851	64,586	61,532
1960-61	89,712	84,421	4,550	182,147	—	89,490	—
1961-62	98,240	91,785	5,360	213,373	—	117,098	—
1962-63	109,706	101,999	6,885	227,197	—	137,297	—
1963-64	123,564	114,475	10,269	253,133	—	151,060	—
1964-65	133,677	128,763	15,848	334,553	276,597	193,709	135,753
1965-66	153,568	147,065	15,092	463,006	391,803	258,114	186,911
1966-67	163,085	155,319	15,723 *	612,975	449,711	301,268	138,004
1967-68	159,949	150,804	18,041	1,007,379	714,450	486,795	193,866
1968-69	157,803	146,861	20,804	1,015,981	690,852	535,439	242,214
1969-70	155,017	143,315	23,743	1,030,393	737,572	587,326	294,505

(Value in '000' Rs.)

Table 1c

Consistent Time Series Data at the Constant prices of 1959-60: Manufacture of Textiles

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production* workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	1,577,603	1,520,766	166,821	1,445,755	1,420,230	478,958	453,433
1960-61	1,635,161	1,576,526	170,546	1,487,072	—	460,078	—
1961-62	1,758,707	1,668,319	174,272	1,516,103	—	426,801	—
1962-63	1,894,149	1,783,519	177,998	1,608,076	—	687,512	—
1963-64	2,068,037	1,934,517	177,372	1,713,822	—	687,100	—
1964-65	2,095,500	1,960,859	185,372	2,006,571	1,817,990	830,866	642,285
1965-66	2,250,733	2,098,983	191,819	2,021,056	1,810,043	874,253	663,240
1966-67	2,429,585	2,262,183	222,560	2,407,918	2,078,087	1,004,854	675,023
1967-68	2,574,335	2,390,669	320,799	3,769,652	3,286,093	1,577,964	1,094,405
1968-69	2,657,007	2,457,849	314,232	4,010,378	3,488,388	1,801,266	1,279,276
1969-70	2,715,978	2,527,109	295,311	4,115,690	3,637,378	1,887,255	1,408,943

(Value in '000' Rs.)

Table-1d

Consistent Time Series Data at the Constant Prices of 1959-60: Manufacture of Footwear, other Wearing Apparel and Made-up Textile Goods

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non-production workers (in numbers)	Gross value of product at constant prices of 1959-60	Gross value of product at constant factor cost of 1959-60	Gross value added at constant prices of 1959-60	Gross value added at constant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	21,090	20,456	6,150	75,733	74,018	29,499	27,784
1960-61	21,627	20,978	6,349	80,025	—	28,386	—
1961-62	24,878	24,119	6,548	82,999	—	28,447	—
1962-63	33,268	32,199	6,747	86,245	—	29,015	—
1963-64	37,269	35,883	7,041	97,781	—	38,698	—
1964-65	60,696	58,471	13,133	227,333	212,863	99,159	84,689
1965-66	69,360	66,678	12,344	172,792	160,146	69,132	56,486
1966-67	74,528	71,741	16,585	224,416	206,259	71,420	53,263
1967-68	83,771	80,485	24,007	392,918	370,309	97,260	64,651
1968-69	87,450	83,744	25,890	425,253	394,075	159,968	128,780
1969-70	88,735	81,639	27,773	441,324	415,735	219,428	189,565

Table-1e

Consistent Time Series Data at the Constant Prices of 1959-60: *Manufacture of Paper and Paper Products*
(Value in '000' Rs.)

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	89,241	86,420	2,557	41,299	40,832	18,988	18,521
1960-61	92,050	89,151	3,217	63,550	—	28,356	—
1961-62	94,828	91,777	3,878	75,998	—	33,826	—
1962-63	98,154	94,885	4,538	94,700	—	42,090	—
1963-64	101,581	97,931	4,675	93,273	—	38,434	—
1964-65	133,864	126,661	4,804	109,333	107,392	41,688	39,747
1965-66	239,530	228,850	6,919	157,981	151,391	45,737	39,147
1966-67	275,595	263,019	9,034	208,118	192,751	60,487	45,120
1967-68	300,239	286,377	11,149	263,928	248,739	64,051	48,862
1968-69	353,865	377,403	13,265	297,916	283,911	68,498	54,494
1969-70	353,701	323,496	14,292	321,118	306,813	72,038	57,737

Table-1f

Consistent Time Series Data at the Constant Prices of 1959-60: Printing, Publishing and Allied Products

(Value in '000' Rs.)

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	49,414	47,675	9,120	50,906	50,876	28,144	28,114
1960-61	62,491	60,344	11,102	77,145	—	44,465	—
1961-62	74,026	70,986	13,083	101,332	—	60,524	—
1962-63	95,902	91,825	15,065	151,204	—	93,480	—
1963-64	119,255	114,031	19,854	197,538	—	101,952	—
1964-65	161,101	155,322	22,374	244,135	244,050	122,696	122,566
1965-66	216,060	207,749	27,805	312,315	312,160	160,464	160,309
1966-67	239,378	229,628	27,844	345,331	344,555	173,363	172,587
1967-68	234,909	224,202	33,107	435,778	435,638	234,669	234,529
1968-69	232,217	220,548	34,311	453,635	453,578	248,601	248,544
1969-70	235,998	207,576	34,343	458,331	456,886	256,997	255,552

Table-1g

Consistent Time Series Data at the Constant Prices of 1959-60: Manufacture of Leather and Leather Products

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	20,162	18,527	3,361	49,741	48,468	9,881	8,308
1960-61	20,300	18,659	3,633	68,448	—	21,227	—
1961-62	22,580	20,768	4,635	97,333	—	39,707	—
1962-63	21,164	19,245	4,754	114,673	—	54,972	—
1963-64	19,301	17,276	4,445	120,236	—	42,031	—
1964-65	21,983	19,539	5,101	126,049	125,353	35,099	34,403
1965-66	24,401	21,315	6,888	201,988	201,408	69,926	69,346
1966-67	29,149	26,065	6,814	201,598	201,387	54,215	54,004
1967-68	36,238	35,091	9,632	328,694	327,411	64,746	63,463
1968-69	42,752	39,079	11,000	400,498	397,689	96,500	93,691
1969-70	45,375	41,177	10,306	409,604	400,654	117,366	108,416

(Value in '000' Rs.)

Table-1h

Consistent Time Series Data at the Constant Prices of 1959-60: Rubber Products Except Rubber Footwear

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	14,942	14,014	1,993	16,803	16,803	5,319	5,319
1960-61	15,179	14,242	1,957	16,327	—	4,932	—
1961-62	14,681	13,601	1,677	14,579	—	4,194	—
1962-63	15,790	14,515	1,867	16,222	—	4,353	—
1963-64	14,598	13,205	2,084	23,816	—	12,656	—
1964-65	26,763	25,890	2,228	37,497	37,497	19,187	19,187
1965-66	33,186	31,749	2,371	51,162	39,827	24,052	12,717
1966-67	38,247	36,626	3,060	58,230	46,150	33,220	21,140
1967-68	46,050	43,447	3,280	84,551	69,215	41,630	26,284
1968-69	45,609	42,785	4,195	99,865	80,345	49,917	30,397
1969-70	49,007	44,939	5,438	128,930	103,768	61,657	36,495

Table-II

Consistent Time Series Data at the Constant Prices of 1959-60: Manufacture of Chemicals and Chemical Products

(Value in '000' Rs.)

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	324,114	303,953	14,109	218,318	210,884	103,956	96,522
1960-61	837,366	801,167	21,689	690,353	—	272,915	—
1961-62	867,871	826,839	23,188	746,356	—	296,382	—
1962-63	881,005	835,755	24,366	755,308	—	295,271	—
1963-64	862,119	813,537	29,281	900,219	—	385,675	—
1964-65	833,178	804,124	30,541	1,044,730	995,239	430,983	381,492
1965-66	861,331	828,031	27,808	959,275	914,585	347,714	303,024
1966-67	1,020,127	998,766	24,555	760,663	721,241	319,478	280,056
1967-68	979,580	938,278	27,406	866,584	820,652	305,244	259,312
1968-69	1,195,258	1,109,398	38,146	1,097,057	1,001,118	387,597	291,658
1969-70	1,418,204	1,356,603	42,764	1,464,373	1,336,731	518,597	390,955

Table-1j

Consistent Time Series Data at the Constant Prices of 1959-60: Manufacture of Non-Metallic Mineral Products

(Value in '000' Rs.)

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	202,787	190,172	12,629	146,625	146,592	71,227	71,194
1960-61	210,654	197,793	12,689	146,590	—	69,773	—
1961-62	203,836	189,063	12,750	156,925	—	72,852	—
1962-63	194,049	177,548	12,810	157,924	—	71,441	—
1963-64	299,180	277,304	12,813	187,214	—	89,508	—
1964-65	415,701	402,075	27,520	347,292	295,844	173,249	121,981
1965-66	495,574	477,193	28,816	354,888	309,828	199,029	128,031
1966-67	543,149	520,017	34,530	408,821	321,398	240,061	152,638
1967-68	591,083	564,293	34,589	462,104	339,017	254,202	143,560
1968-69	593,462	564,816	34,400	452,071	357,745	229,313	135,000
1969-70	581,215	533,062	31,959	396,059	313,413	205,595	122,957

Table-1k

Consistent Time Series Data at the Constant Prices of 1959-60: Basic Metal Industries

Consistent Time Series Data at the Constant Prices of 1959-60

(Value in '000' Rs.)

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non-production workers (in numbers)	Gross value of product at constant prices of 1959-60	Gross value of product at constant factor cost of 1959-60	Gross value added at constant prices of 1959-60	Gross value added at constant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	103,462	100,790	10,752	94,502	93,315	36,825	35,638
1960-61	104,069	101,383	10,094	88,167	—	30,208	—
1961-62	122,364	119,216	13,257	125,149	—	38,178	—
1962-63	131,471	128,023	14,233	148,700	—	39,981	—
1963-64	135,675	132,053	14,057	249,053	—	72,783	—
1964-65	133,785	130,547	17,219	311,375	301,413	89,744	79,782
1965-66	133,043	128,942	10,625	227,123	221,171	72,109	66,157
1966-67	147,787	142,573	13,539	258,737	251,893	82,066	75,222
1967-68	169,298	161,605	20,499	516,305	501,804	146,397	131,896
1968-69	178,273	171,777	18,809	459,321	452,572	122,680	115,931
1969-70	197,754	185,267	18,432	429,805	421,703	105,812	97,710

Table-II

Consistent Time Series Data at the Constant Prices of 1959-60: Manufacture of Metal Products
(Value in '000' Rs.)

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	75,482	72,017	19,485	125,898	123,813	47,155	45,070
1960-61	94,656	90,500	24,282	163,863	—	58,037	—
1961-62	153,872	146,918	28,979	234,029	—	82,995	—
1962-63	172,597	164,338	33,729	290,690	—	102,260	—
1963-64	178,086	169,078	38,473	372,961	—	130,506	—
1964-65	252,710	235,309	59,312	497,331	482,283	176,878	161,830
1965-66	273,982	259,965	64,459	482,103	466,899	193,395	178,191
1966-67	291,833	276,892	58,302	525,058	508,260	200,368	183,570
1967-68	299,545	278,775	68,400	691,575	673,273	241,268	222,966
1968-69	295,261	269,547	64,448	702,980	682,662	218,767	198,449
1969-70	291,031	253,519	61,734	724,309	703,823	202,251	181,765

Table-1m

Consistent Time Series Data at the Constant prices of 1959-60: Machinery Except Electrical Machinery
(Value in '000' Rs.)

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	55,743	52,277	10,527	71,292	71,292	29,071	29,071
1960-61	62,247	58,375	10,514	80,507	—	32,566	—
1961-62	67,703	63,471	10,500	90,720	—	37,029	—
1962-63	74,326	69,117	10,487	99,757	—	40,281	—
1963-64	83,934	77,834	13,191	108,261	—	39,089	—
1964-65	155,475	150,271	28,906	226,459	225,540	90,809	89,890
1965-66	222,137	214,640	42,510	376,229	373,134	154,078	150,983
1966-67	261,944	251,517	46,547	426,091	424,384	167,867	166,160
1967-68	275,257	261,075	54,492	527,142	526,002	199,338	198,298
1968-69	285,577	270,912	58,806	625,225	623,103	201,228	199,106
1969-70	287,809	243,347	59,223	710,562	703,932	200,665	194,035

Table-1n

Consistent Time Series Data at the Constant Prices of 1959-60: Electrical Machinery

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non-production workers (in numbers)	Gross value of product at constant prices of 1959-60	Gross value of product at constant factor cost of 1959-60	Gross value added at constant prices of 1959-60	Gross value added at constant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	78,186	73,323	8,620	82,541	80,541	32,861	30,861
1960-61	87,995	82,836	14,255	114,159	—	43,764	—
1961-62	95,665	89,422	20,025	142,873	—	56,206	—
1962-63	104,343	97,034	28,988	179,066	—	71,933	—
1963-64	117,692	109,131	23,054	172,315	—	70,473	—
1964-65	201,350	194,507	28,946	405,730	377,442	154,446	126,158
1965-66	222,402	213,971	31,861	462,153	419,613	192,007	149,767
1966-67	228,283	224,490	34,863	489,225	447,400	215,037	173,212
1967-68	242,566	230,969	39,412	639,971	561,771	289,687	219,487
1968-69	249,363	234,425	35,414	563,777	506,238	238,906	181,367
1969-70	257,815	221,007	29,262	495,445	431,375	193,186	129,116

Table-10

Consistent Time Series Data at the Constant Prices of 1959-60: Manufacture of Transport Equipment
(Value in '000' Rs.)

Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60	Gross value added at con- stant factor cost of 1959-60
	Including depreciation during the year	Excluding depreciation during the year					
1959-60	153,758	144,193	13,654	118,715	116,115	41,917	39,317
1960-61	166,839	156,947	14,473	125,205	—	48,582	—
1961-62	174,052	162,431	13,750	100,515	—	46,103	—
1962-63	182,326	169,009	13,595	81,855	—	47,726	—
1963-64	196,539	181,341	14,215	214,495	—	89,131	—
1964-65	202,384	195,618	14,836	249,140	232,621	86,983	70,464
1965-66	205,125	196,685	21,204	209,577	192,959	98,867	82,249
1966-67	229,194	219,501	19,661	279,804	257,263	102,808	80,267
1967-68	280,696	267,746	29,677	393,016	376,430	163,230	146,644
1968-69	273,681	259,492	30,951	369,801	368,719	117,549	116,467
1969-70	267,572	245,707	31,223	357,007	355,683	79,919	78,595

Table 4

Percent Distribution of Entrepreneurs by Selected Characteristics and Type of Industry: Western Nigeria, 1971

Entrepreneurial Characteristics	Textiles	Crafts	Wood-works	Construction	Repairs and services	Food processing	Tailoring	Electric and printing	All establishments
A. Age									
Less than 30 years	26	31	41	57	47	17	63	58	52
30-39 years	26	32	41	19	34	50	23	25	28
40 and more years	38	34	14	22	15	25	11	10	16
Unknown	10	4	4	3	3	8	3	7	4
Total	100	100	100	100	100	100	100	100	100
Average age (years)	38	36	31	31	30	34	28	29	30
B. Male	77	98	99	100	93	92	61	100	78
C. Migrant	47	45	36	24	35	47	39	59	40
D. Education of status									
No education	74	58	40	46	41	47	31	5	37
Primary	9	30	41	32	48	33	50	40	43
Modern or higher	11	5	10	5	10	3	15	53	14
Unknown	6	7	9	16	6	17	3	2	5
Total	100	100	100	100	100	100	100	100	100
E. Non-formal training	98	99	97	100	99	96	99	93	98
F. Previous work experience									
None	66	83	59	62	83	72	79	72	76
In present field	21	11	30	22	10	11	13	20	15
In other field	—	2	3	—	2	8	2	—	2
Unknown	13	13	8	16	5	8	7	8	7
Total	100	100	100	100	100	100	100	100	100

—Continued.

Table-1p

Consistent Time Series Data at the Constant Prices of 1959-60: Miscellaneous Industries (Value in '000' Rs.)						
Year	Corrected written Down Replacement cost of Fixed Assets		Employment = Production workers + Non- production workers (in numbers)	Gross value of product at con- stant prices of 1959-60	Gross value of product at con- stant factor cost of 1959-60	Gross value added at con- stant prices of 1959-60
	Including depreciation during the year	Excluding depreciation during the year				Gross value- added at con- stant factor cost of 1959-60
1959-60	1,095,381	1,027,244	95,202	2,603,123	2,595,322	278,145
1960-61	1,139,663	1,070,296	83,439	2,362,165	—	—
1961-62	1,128,798	1,048,524	64,495	1,909,429	—	—
1962-63	1,116,561	1,025,862	46,141	1,452,182	—	—
1963-64	1,120,116	1,018,313	95,307	4,502,925	—	—
1964-65	1,028,219	985,339	77,940	3,065,670	3,050,350	463,891
1965-66	1,029,321	975,689	63,887	3,129,529	3,102,086	657,984
1966-67	1,009,728	940,174	72,491	3,253,354	3,238,504	393,278
1967-68	956,175	899,039	94,196	3,167,197	3,158,417	522,699
1968-69	910,129	837,809	83,173	3,350,408	3,339,546	548,843
1969-70	870,237	765,333	70,363	3,640,226	3,626,554	587,794

Appendix

Table 2

Price Indices for Capital Goods

Name of Industry	1956-57	57-58	58-59	59-60	60-61	61-62	62-63
Food Manufacturing except Beverages	98.86	99.86	98.21	100	100.06	99.74	99.98
Tobacco Manufactures	97.37	98.64	97.38	100	100.00	99.57	100.59
Textiles	99.73	100.59	98.71	100	100.02	99.31	99.59
Footwear and other Wearing Apparel	97.54	98.41	96.96	100	99.97	100.32	100.42
Paper and Paper Products	99.28	99.60	97.62	100	99.84	99.45	99.57
Printing and Publishing	98.29	97.49	95.32	100	99.46	99.74	99.50
Leather and Leather Products	97.47	98.38	96.96	100	99.98	100.35	100.48
Rubber and Rubber Products	99.03	91.87	97.60	100	100.12	99.58	99.71
Chemicals and Chemical Products	99.90	100.24	98.17	100	99.87	99.16	99.34
Non-Metallic Mineral Products	99.06	100.01	98.29	100	100.03	99.63	99.87
Basic Metals	98.71	99.74	98.10	100	100.05	99.81	100.03
Metal Products	97.91	98.97	97.52	100	100.04	100.17	100.35
Machinery except Electrical	98.29	99.14	97.54	100	99.90	99.97	100.13
Electrical Machinery	98.97	99.69	97.91	100	99.96	99.63	99.83
Transport Equipment	98.93	99.66	97.89	100	99.96	99.65	99.85
Miscellaneous Industries	98.96	99.76	98.09	100	100.99	99.65	99.86

—Continued

Appendix

Table 3

Price Indices for Output

Name of Industry	1959-60	60-61	61-62	62-63	63-64	64-65	65-66	66-67	67-68	68-69	69-70
Food Manufacturing except Beverages	100	99.86	100.36	100.45	103.77	116.65	121.49	127.82	132.19	128.99	130.95
Tobacco Manufacturing	100	100.2	101.6	118.5	128.1	131.9	140.6	141.1	141.0	141.0	141.1
Textiles	100	99.54	100.57	96.95	96.94	98.36	100.06	103.49	104.51	103.54	103.29
Footwear and other Wearing Apparel	100	98.97	99.0	99.0	99.0	99.0	103.9	114.10	107.99	104.0	95.9
Paper and Paper Products	100	100	112.9	114.1	116.6	119.5	123.9	125.0	123.1	130.7	135.4
Printing and Publishing	100	100.24	100.13	100.19	100.89	101.25	101.79	102.45	102.95	102.65	103.95
Leather and Leather Products	100	90.6	93.5	89.4	88.4	89.9	99.3	113.9	126.0	130.6	142.5
Rubber and Rubber Products	100	99.7	97.7	96.3	99.0	103.9	106.2	110.6	119.7	120.8	121.9
Chemicals and Chemical Products	100	92.7	91.7	95.25	96.05	97.50	107.99	118.09	114.45	121.70	122.41
Non-Metallic Mineral Products	100	101.86	96.99	98.08	95.25	116.55	119.47	132.47	134.91	137.11	146.14
Metal Products	100	105.9	104.0	103.5	96.2	118.3	134.1	117.4	119.7		
Machinery except Electrical	100	100.0	98.9	99.2	199.9	103.6	105.8	107.7	108.4	111.3	112.4
Electrical Machinery	100	97.24	96.91	97.90	104.35	105.95	110.01	112.19	116.27	122.49	126.74
Transport Equipment	100	93.2	102.6	108.6	108.4	113.5	116.3	118.3	121.6	124.9	125.3
Miscellaneous	100	99.2	101.03	105.61	107.65	107.19	112.70	117.02	121.68	129.75	134.27

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