Are "Consistent Time Series Data Relating to Pakistan's Large-Scale Manufacturing Industries" Inconsistent? A Reply

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The importance of consistent and reliable data cannot be over emphasised. The main sources of data relating to Pakistan's large-scale manufacturing industries have been the periodical censuses of manufacturing industries (CMIs) which collect data on capital stock, value of output, value added, employment, etc. However, these data suffered from two major defects. First as the censuses failed to cover all the industrial establishments, the data suffered from considerable undercoverage. Second the written down values of capital stock as reported in the CMIs do not reflect actual productive capacities. Therefore an attempt was made earlier in [5, 6] to overcome the problems created by these defects.

Mr. Norbye has expressed doubts about and raised some objections to the methodology employed in the two studies mentioned above. He also presents some 'statistical evidence' which to him is sufficient to discredit the data reported in the two studies. However, as will be shown below, his doubts and objections in respect of the methodology are not well-founded and the 'statistical evidence' is not only unrepresentative and misleading but also erroneous in many cases. But before we analyse the objections and 'evidence', let us point out that Norbye has discussed only the problem of undercoverage; correction of capital stock data somehow fell outside the scope of his note.

Norbye's Objections

It may be useful to distinguish his objections regarding: investment data, depreciation rules, and price indices.

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Investment Data

Norbye's objections about investment data may be summarised as follows:

(*a*) Investment data based on the Central Statistical Office (CSO) Sample Survey are no better than the CMI data;

(*b*) The assumption that 70 percent of sanctioned investment is implemented may not be true[1]; and

(*c*) While for the period prior to 1963-1964, investment indices are used, for the later period investment data have been used and therefore the series is not internally consistent.

As regards (a) above, it should have been obvious that investment data based on a sample survey are better than the CMI data, for while in the survey there is no question of undercoverage as all the firms are accounted for in stratified random sampling, the CMI data, on the other hand, suffer from a serious undercoverage.

His second objection that over time and between industries the assumption that 70 percent of sanctioned investment was implemented is not necessarily true was also noted by us as a limitation of data [5, p. 39]. However, the objection, though correct, is not fatal. Let us analyse the margin of error because of the assumption. A violation of the assumption by 10 percent—investment in a particular year being 10 percent of the total capital stock and half of the total investment being in 'under construction'—would lead to an error of no more than one-half of one percent of the capital stock. These assumed values would incorporate most of the cases if not all. A comparison of the error with an undercoverage of 40 percent or so shows the relative unimportance of the error introduced by the 70-percent assumption. In my view, the errors in most of the cases would be even smaller.

Using investment indices for the period up to 1962-1963 and investment data for later period does not result in internally inconsistent capital stock data, because we have fully adjusted capital stock data for 1963-1964, and all we need for the earlier period are the weights of different capital vintages. The required weights can duly be obtained from investment indices.

In view of the discussion above, it is clear that Mr. Norbye's objections about investment data are not valid. His only valid point—that a 70-percent assumption is not necessarily true over time and across the industries—does not lead to an error exceeding one-half of one percent. Therefore it may safely be concluded that there is nothing wrong in using investment data for generating capital stock series.

[1]Norbye has wrongly attributed the assumption to me. The assumption was made by the working group which prepared the investment data [9]. The working group was in close contact with the investment sanctioning agencies.

Depreciation Rules

Mr. Norbye has expressed doubts regarding our assumptions of depreciation rates in [5]. Let it be pointed out that the assumptions made by us are not unprecedented: Khan and MacEwan made these same assumptions in an earlier study [7]. Since the assumptions are plausible we have simply followed Khan and MacEwan in using these assumptions. It appears improbable that a firm would refuse to avail itself of a tax-holiday; nor is it likely that a firm will not take advantage of depreciation allowances to save taxes. Mr. Norbye's doubts, referred to above, do not appear to be well-founded, therefore.

Price Indices

Mr. Norbye's third criticism relates to our use of deflators. We would tend to agree with him in principle that output price indices could be applied only to output at market prices and not to output at factor cost. Yet, the fact remains that in Pakistan's national accounts all factor cost data are deflated or inflated by output price indices. Therefore, deflating of factor cost data with output price indices is consistent with national accounts. However, deflation of output at factor cost does not seem to bother Mr. Norbye much. Perhaps rightly so, because the growth rates of output at factor cost and at constant market prices are not very dissimilar. What he seriously objects to is the use of output price data for deflating value added. This leads us straight into the controversy over the Double Deflation Method.

Mr. Norbye seems to be suggesting that if and only if the ratio of value added to output remains constant, one could use output price indices to deflate value added. The suggestion is quite strange, because constancy of value-added/output ratio is neither a necessary nor a sufficient condition for using output price indices to deflate value added. Let us discuss now the two methods of deflation: Double-Deflation Method and the method of deflating value added by output prices.

The 'Ideal Index of net output' as suggested by Geary [4] and Fabricant [3], also known as Double Deflation method, involves deflation of outputs and inputs separately by their respective price indices for obtaining real value added. However, the Double Deflation Method, when applied to data, yields such results as cast serious doubts on its usefulness. David [2] notes that the

> "Ideal Index of net output" suggested by Fabricant and Geary leads to an unfamiliar and rather harrowing index number problem—one which manifests itself in the appearance of negative real value added estimates. The index number problem in question will arise even in the absence of aggregation, because the relative product and material prices pertaining to a given industry at a specified date reflect a particular technological nexus (between the quantity of input and output) which need not be appropriate to the production conditions prevailing at some other date.

Because of these shortcomings of the Double Deflation Method, David suggests an alternative deflation approach which to him is "not only conceptually more appropriate in many contexts where real net output statistics find employment, but is also considerably simpler to implement". The alternative deflation

method suggested by David is no other than that of deflation of value added by output prices.

David's argument is summarised below; for full account the reader is referred to his article [2]. Let the production function be defined as:

$$Q = F(L, K, M) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

where Q, L, K, M are output, labour, capital and material inputs respectively.

In a perfectly competitive setting, the contribution of material inputs may be taken as equal to the volume used in production weighted by the input's marginal productivity. Value added (net output), v, thus may be written as:

$$v = Q - (\partial Q/\partial M)\, M \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

and the index of real net output as:

$$I^t = v^t/v^\circ \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Nothing that intermediate input's price is equal to its marginal product, it follows that:

$$I^t = \frac{P^tQ^t - P^t_mM^t}{P^\circ Q^\circ - P^\circ_m M^\circ} \quad \frac{P^\circ}{P^t} = \frac{VA^t}{VA^\circ} \Big/ \frac{P^t}{P^\circ} \quad \ldots\ldots\ldots\ldots (4)$$

where P and P^m are prices of output and material inputs respectively. Equation (4) suggests that by invoking the assumption of equality between prices and marginal value product, output deflators would correctly deflate value added.

Equality of marginal value product and prices necessitating a perfectly competitive economy is a sufficient condition for holding of equation (4). However, as shown by David later in his study [2], it is not a necessary condition. Even if the markets are imperfect, equation (4) holds provided the rate of factor exploitation remains constant. It may be pointed out that the necessary and/or sufficient conditions of holding equation 4 are not stringent because production functions and productivity ratios where the data are to be employed assume the equivalance of prices and marginal value productivity.

The discussion of the Double Deflation Method and of deflation by output prices shows the theoretical superiority of the latter over the former. Therefore Mr. Norby's suggestion that unless Double Deflation Method is used estimates of real value added cannot be obtained is obviously wrong. Not only is deflation by output prices theoretically correct, it is very commonly used as well. One could cite many studies wherein it is used, but it may suffice to point out that this deflation procedure is implicit in Arrow, Chenery, Minhas and Solow [1].

Although deflation by output prices is superior to the Double Deflation Method, it may be interesting to compare the values added obtained by the two sets of deflators. However, Double Deflation requires enormous data which

are not available for Pakistan, and I must say thet Mr. Norbye has been very naive in saying that 'for most industries it is no more difficult to construct some kind of price index for inputs than for outputs'.

In this section, we have shown that our methodology is consistent and essentially right, our assumptions are plausible, and the deflation procedures are correct. The plausibility or implausibility of assumptions made is reflected in the series prepared, and it will be shown in the next section that the statistical evidence brought forth supports our series.

Mr. Norbye claims that the time series prepared by us are inconsistent because: there are fluctuations in data over time; the absolute number of jobs created during the Sixties is far smaller than our series show; a comparison with data on physical production suggests that our figures are inflated; and a comparison of indirect taxes compiled from public accounts shows that our figures are higher.

We shall show below that the 'evidence' put forth by him is not only unrepresentative but also incorrect in many cases.

Fluctuations Over time[2].—Mr. Norbye seems to have suggested that (a) there cannot be increases of more than 40 percent in employment, output, etc., in an industry from year to year except in a few cases, and (b) there cannot be falls in output, employment, etc. Because our time series do show sharp increases in many cases and falls in a few others, the data seem unreliable to Mr. Norbye. We shall show that his contention that output (or employment) cannot increase by more than 40 percent in a year except in a few cases and, more importantly, that there cannot be drastic falls is not borne out by the production data which are presented in Table 1. Moreover, if one agrees with Mr. Norbye that fluctuations in data over time mean inconsistency, then one will have to throw away all the data collected on the manufacturing sector in Pakistan.

In Table 1, output indices prepared on the basis of physical production data are reported. The table clearly shows that Mr. Norbye is wrong in assuming that output cannot increase by more than 40 percent except in a few cases. Similarly, the data also show drastic falls in the output. Let us discuss a few cases; for the rest the reader may consult the table. In the case of sugar manufacturing, output fell by 34 percent in 1960-1961 followed by increases of 123 percent and 63 percent in the next two years. Sugar production again fell by 26 percent in 1963-1964. In 1965-1966, the increase was by 138 percent and was followed by a decline in production by 15 percent and 22 percent in the next two years. Finally, in 1968-1969 and 1969-1970 the increases in production were 62 percent and 49 percent respectively. One might say that sugar production is not a very good example as it is heavily dependent on the availability of sugarcane, the supply of which is uncertain. However, sugar production is not

[2]The difference in some figures reported in [5] compared to those in [6] is because (a) interpolated data for the years when census was not taken were scrutinised and where anomalies were found other interpolation techniques were used and (b) in a few cases, especially in non-metallic minerals and paper and paper products, it was found that a subsector was fully reported in certain years, so these ratios were adjusted by separating these activities from other activities in that sector. It may be noted that the latter was duly documented in footnote 5 on page 352 in [6].

an odd case out. Consider Silk and Artsilk cloth. Production showed an increase of 91 percent in 1963-1964 and declined by 9 percent the next year. Production increased by 59 percent and 23 percent in 1967-1968 and 1968-1969 respectively, and fell by more than 10 percent in 1969-1970. The production of tyres and tubes showed an increase of 43 percent in 1963-1964, and fell by 29 percent in 1965-1966. Similarly, the production of safety matches increased by 56 percent in 1962-1963 and by 50 percent in 1963-1964. It then fell by 39 percent during 1966-1967, grew by 114 percent in 1968-1969 and declined by 50 percent in the next year. The production of fertilizers (nitrogeneous) increased by 193 percent in 1962-1963 and by 66 percent in 1969-1970. The production of phosphoric fertilizers increased by 1300 percent in 1960-1961 and fell by 50 percent in 1966-1967. Similar trends are observed in other industries, especially in Fans, Steel mild products, Chipboard, Soda Ash and Caustic Soda. It must be clear by now that if Mr. Norbye's criterion of reliability and consistency, *viz.* absence of fluctuation over time, is applied, then we ought to discard the data on physical production. However, fortunately, we don't have to do this because his criterion is not correct as the fluctuations in output, and, consequently, in employment are a characteristic feature of industrial production. It may also be pointed out that the fluctuations in data reported in [6] are far less than those observed in Table 1 above because in aggregated data the fluctuations are damped to some extent. It might then safely be concluded that the presence of fluctuations does not necessarily imply inconsistency or unreliability.

Absolute Levels of Employment.—By comparing the unadjusted CMI data with those presented in [6], Mr. Norbye concludes that the generation of 400,000 jobs over the period 1959-1960 to 1969-1970 is too high a figure compared to the 110,000 new jobs in unadjusted data. The comparison of the two employment data sets can only be described as ludicrous. Value added at current factor cost from the national accounts exceeds by more than 66 percent the value added at factor cost obtained from the 1969-1970 CMI. If the unadjusted employment figures are adjusted by this ratio, then there were 696,240 employed labourers in the manufacturing sector during 1969-1970, which means that 385,000 new jobs were created during the decade and not 110,000 new jobs as suggested by Mr. Norbye. It may be noted that the figure comes very close to the 400,000 new jobs shown in the series prepared by us. Therefore the data on the number of jobs created during the Sixties support our series instead of contradicting it.

Physical Production Data.—Mr. Norbye has given physical production data on a limited number of manufactured goods and even for these, unfortunately, he misrepresents the data. In the case of the Textiles industry, the time series prepared by us show an increase of 156 percent, while physical production of cotton textiles is reported to have increased by 58 percent. Because apparently the difference is so large, Mr. Norbye doubts the reliability of the series. However, the apparent gap between the two estimates is due to his failure to take into account the following two factors. Firstly, there are other textile industries, for which data were available, but are not reported by Mr. Norbye; production of Silk and Artsilk industry increased by 457 percent over the same period. Secondly, he does not take into account changes in the mix of the cotton textiles. The share of coarse cloth in total production declined from 48.7 percent in 1959-1960 to only 30.1 percent in 1969-1970. Over the same period the production of

Table 1

Output Indices of Some Manufactured Products

Year	Sugar	Vegetable ghee	Cotton yarn	Cotton fabrics	Silk and Artsilk cloth	Tyres and Tubes	Safety matches	Salt	Cigarettes
1959-1960	100	100	100	100	100	100	100	100	100
1960-1961	66	132	102	113	106	112	91	108	116
1961-1962	147	179	104	117	105	160	81	111	129
1962-1963	240	239	109	124	131	168	126	96	133
1963-1964	187	300	124	127	250	220	189	94	157
1964-1965	188	321	128	131	228	224	217	106	176
1965-1966	447	357	121	120	250	160	263	94	206
1966-1967	382	304	129	126	316	203	161	102	232
1967-1968	299	329	140	131	504	191	211	102	245
1968-1969	483	350	149	131	621	215	452	155	253
1969-1970	722	443	170	133	557	219	226	120	274

Year	Cement	Nitog. Fertiliser	Phasp. Fertiliser	Soda Ash	Sulphuric acid	Caustic soda	Bicycles	Sewing Machines
1959-1960	100	100	100	100	100	100	—	—
1960-1961	109	110	1400	97	125	93	—	—
1961-1962	126	153	1300	95	134	82	—	—
1962-1963	139	449	1100	121	128	77	—	—
1963-1964	143	492	1200	109	152	120	—	—
1964-1965	168	524	1400	127	158	198	100	100
1965-1966	166	517	1400	118	182	182	105	73
1966-1967	199	571	700	118	167	323	141	82
1967-1968	220	558	2800	215	207	438	159	119
1968-1969	259	876	2600	232	198	493	174	168
1969-1970	269	1453	4200	251	258	636	165	184

Continued—

Table 1—*Contd.*

Year	Pedestal Fans	Ceiling Fans	Table Fans	Paper-board	Chip-board	Paints and Varnishes	Mild steel products
1959-1960	—	—	—	100	100	—	—
1960-1961	—	—	—	131	150	100	—
1961-1962	—	—	—	136	143	97	—
1962-1963	—	—	—	132	157	113	—
1963-1964	—	—	—	165	157	168	—
1964-1965	—	—	—	201	221	217	100
1965-1966	100	100	100	185	321	224	81
1966-1967	107	110	121	213	329	216	86
1967-1968	127	106	135	217	257	255	78
1968-1969	123	83	99	290	514	275	99
1969-1970	122	81	94	323	764	286	78

Source: Based on Table 14 in Economic Survey 1975-1976 [8].

medium cloth increased its share from 44.6 percent to 58.3 percent and that of fine cloth from 7.1 percent to 11.7 percent. As the shares of medium and fine cloths in total production increased significantly over this time period, one expects the value of production to increase at significantly higher rate than the production in physical quantity. When shortly we shall compare the growth rates obtained from physical production with those based on the data obtained from the time series, the importance of the second factor will be obvious.

The Pulp, Paper and Paper Products industries show an increase of 651 percent in the times series data [6]. Mr. Norbye doubts the growth rate because Paperboard shows an increase of 223 percent.[3] However, he does not take into account the growth of other manufacturing activities included in the sector which contribute no less than 70 percent of production. The production of chipboard increased by 664 percent over the same period. The production of paper products might have increased even more.[4]

In the tobacco sector, Mr. Norbye claims that our figures are inflated because they show an increase of 431 percent while the production of cigarettes (in numbers) has increased by 174 percent. Unfortunately, neither he gives any importance to the changes in the quality of cigarettes nor he takes into account the other tobacco industries. It may be noted that the share of other tobacco industries is no less than one-third of the production of the tobacco sector. The production of other tobacco industries increased from Rs. 23.3 million to Rs. 206.7 over the period 1959-1960 to 1967-1968.[5] After deflating the production, one finds that production grew by 695 percent over eight years. Taking into consideration the undercoverage and growth over the last two years, the growth rate of other tobacco industries given above is an underestimate. Similarly Mr. Norbye seems to assume that all the other industries in the non-metallic manufacturing sector except cement cannot affect the growth rate. This is obviously wrong as the other industries have a significant share in production.

In what follows we present a comparison of the growth rates computed on the basis of our time series data and the growth rates computed on the basis of physical production data and the Central Board of Revenue (CBR) returns. The CBR returns have been used to compute the growth rates of cotton textiles and cigarettes. However, before we present the growth rates, let us make it clear that such a comparison is going to be very rough and only suggestive, because in each sector for a large number of products no data on physical production are available.

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[3]According to Norbye, the production of paperboard increased by 173 percent, but [8] shows it to be 223 percent.

[4]No firm data are available to compute the growth of the Paper Products industry, though a rough guess may be had from the following figures. The production of paper products in 1959-1960 was Rs. 18.4 million. In the 1969-1970 CMI in which about half the firms reported the data, production is valued at Rs. 93.7 million.

[5]The 1969-1970 CMI suffers from a serious undercoverage problem. The 1967-1968 figures in themselves may be underestimated because of undercoverage. Relatively speaking, the 1967-1968 CMI has less severe under coverage problem in other toabcco industries as more firms responded in 1967-1968 than in 1969-1970.

Table 2

Growth Rates of Some Manufactured Products[a]

Name of the industry	Rates of Growth: Based on physical production data	Rates of Growth: Based on data taken from [6] on output at constant factor cost	Name of the industry
1	2	3	4
Sugar	19.7		
Vegetable ghee	14.9	15.0	Food manufacturing
Salt	1.9		
Cigarettes	14.0		
Tobacco stemming and redrying.	20.7	16.5	Tobacco manufacturing
Cotton Textiles	8.5		
Silk and Artsilk textiles.	17.2	9.4	Textiles
Cement	9.9	7.7	Non-metallic mineral products
Paper board	11.7		
Chipboard	20.3	20.2	Paperboard, Paper and paper Products
Paper products	(expected to be higher than 20.3)		
Nitrogenous Fertilizers	26.8		
Phasphoric Fertilizers	37.4		
Soda Ash	9.2	18.2	Chemicals and chemical products
Caustic Soda	18.5		
Matches	16.2		

Source: [8] and CBR returns.

[a]Computed by using the formula $Y = Y_0 e^{gt}$, *i.e.* $g = [\text{Log}_e (Y_t/Y_0)]/t$

It may be seen from Table 2 that the growth rates based on the time series data reported in [6] are not dissimilar to those obtained on the basis of physical production. In each sector, the growth rates of some products exceed that of the sector while those of some proudcts fall short of the growth rate of the sector, implying that the weighted growth rate obtained from physical production data comes close to those obtained from the data reported in [6]. Therefore, it is obvious that physical production data lend support to our times series data and in no way contradict it.

Indirect Taxes Data[6].—Mr. Norbye claims that indirect taxes data as reported in [5] are inflated, because public accounts show lower tax returns. Before we discuss the possible reasons giving rise to the differences in indirect taxes obtained from the tow sources, let us note that the figures reported by Mr. Norbye from the public accounts data compiled by Mr. Javed Iqbal are incorreect. Mr. Norbye states that public accounts show indirect taxes to be 1197.8 million rupees in 1969-1970. The data compiled by Mr. Iqbal in fact show indirect taxes equalling Rs. 1323.1 million (*i.e.* excise taxes of 1889.5 million minus Rs. 7360 million of the POL group plus sales tax (Rs. 61.7 million) on the products also subject to excise duty and sales tax (Rs. 107.9 million) on products not subject to excise duties). It may further be noted that the CMI includes certain other indirect taxes besides excise and sales taxes. These taxes are a little over 11 percent of excise and sales taxes. If excise and sales taxes obtained from public accounts are adjusted for these taxes, the estimated indirect taxes amount to 1469.7 million rupees. We have to compare this figure and not that of Rs. 1197.8 million with the figure of Rs. 1702.4 million reported in [5]. Of course the difference is large and we discuss it below.

If the public accounts data compiled by Mr. Javed Iqbal are to be used as a criterion to test an alternative time series, then it must be true that the indirect taxes and/or sales taxes reported in unadjusted CMI data do not exceed those obtained from public accounts. At least in three industries it was found that excise taxes reported in unadjusted 1969-1970 CMI exceed the excise taxes obtained from public accounts—in the case of Beverages, Rs. 10.0 million in CMI and Rs. 5.0 million from public accounts; in the case of Leather, Rs. 3.1 million in CMI and 0 in public accounts, in the case of Footwear, Rs. 1.5 million in CMI and nothing in public accounts. Similarly, in the public accounts data, the sales taxes collected from those industries whose products are also subject to excise taxes are only Rs. 61.7 million. Although the proudction of such products is very much under-reported, as shown by a comparison of excise tax data in the CMI with those of public accounts, the sales tax on these products as given in the CMI exceed 61.7 million rupees. Moreover, there are certain products which are subject to excise taxes and the CMI does report excise taxes in the case of these products, but they are not even mentioned in the public accounts. These products relate to the following industries: Dyeing and Bleaching of Textiles, Threadball Making, Carpets and Rugs, Acids and Alkalies, Pharmaceuticals and Medicinal Products, Engines and Turbines, Motors and Generators etc. It may be pointed out that these proudcts cannot be accounted for by the category of Miscellaneous Industries because exise duties given against Miscellaneous Industries fall short of the excise taxes reported in unadjusted CMI, *i.e.*, more than 33 million rupees in the CMI as against 9.8 million rupees for Miscellaneous Industries in public accounts. What all this shows is that either there are serious gaps in the compiled data or

[6]Mr. Norbye has correctly pointed out an error in the 1959-1960 figures of output and value added at market prices, and I am grateful to him for pointing that out. The figures at market prices for 1959-1960 should have been published as 'not available' as was the case in [5], but somehow the figures got mixed up which is deeply regretted by the author. However, since the analysis was carried out on the basis of value added at constant factor cost and not at constant prices, the conclusions reported in [6] are unaffected. The estimates of indirect taxes for 1959-1960 are prepared by taking into consideration the changes in tax rates and the indirect taxes and value of output for the later year. The value added and value of output at market prices and the value of production at constant factor cost of 1959-1960 are reported in the Appendix to this note.

there is a difference in recording indirect tax data in public accounts on the one hand and reporting of indirect taxes in the CMI on the other, or both. Whatever it may be, one thing is perfectly clear that the public accounts data as compiled by Mr. Iqbal cannot be made a basis for rejecting or accepting an alternative set of data.

CONCLUSIONS

A thorough examination of Mr. Norbye's objections, doubts and statistical evidence has clearly revealed that his doubts and objections are not well-founded and the 'statistical evidence presented by him is not only unrepresentative and misleading but also faulty and incorrect. We have shown that if the 'statistical evidence' is correctly perceived, it, instead of contradicting our time series data as reported in [6], actually supports them. They are supported by the number of new jobs generated during the Sixties, and by the physical production data. Therefore, one can safely say that Mr. Norbye's verdict 'to totally reject the data' is totally unwarranted. Let us add that we do not pretend that each and every figure reported in the two articles is free from all errors. There may still be some anomalies in the data. However, it can be safely concluded that the expected error is quite small and that the data can be confidently used to study the historical development of Pakistan's manufacturing sector during the Sixties. The re-examination of the methodology and tests against different data sets has actually enhanced our confidence in these figures.

Appendix

Value Added and Value of Production at Market Prices and Value of Production at Factor Cost for the Year 1959-1960

(000 Rs.)

Name of the Industry	Value of Production at 1959-1960 Market Prices	Value of Production at 1959-1960 Factor Cost	Value Added at 1959-1960 Market Prices
Food Manufacturing	587,348	559,247	116,642
Tobacco Manufacturing	171,638	141,905	91,265
Manufacturing of Textiles	1,595,724	1,445,755	603,402
Footwear and other Wearing Apparel	75,733	75,733	27,784
Paper and Paper Products	41,299	41,299	18,521
Printing and Publishing	50,906	50,906	28,114
Leather and Leather Products	49,741	49,741	8,308
Rubber and Rubber Products	21,595	16,803	10,101
Chemicals and Chemical Products	229,174	218,318	107,378
Non-metallic Mineral Products	172,106	146,625	96,675
Basic Metal Industries	94,502	94,502	35,638
Manufacturing of Metal Products	125,898	125,898	45,070
Non-electrical Machinery	71,292	71,292	29,071
Electrical Machinery	82,541	82,541	30,061
Transport Equipment	118,715	118,715	39,317
Miscellaneous	2,603,123	2,603,123	278,145

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