Patterns of Industrial Growth in Pakistan

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Research on developing countries over the past two decades has produced an impressive body of evidence suggesting that there are important similarities in the process of development among all countries. Cultural, political and social factors make their imprint on the development of individual countries, but the work of Kuznets, Chenery and others shows rather convincingly that key economic variables in the economy—the shares of industry, saving and government revenue in national income, for example—move in fairly predictable ways during the process of growth. Chenery has shown through regression analysis that just two economic variables—per capita income and foreign capital inflow—and one demographic variable—population size—are sufficient to explain a very high proportion of the differences in these structural characteristics among developing countries. (See Chenery [2]).

The discovery of a common pattern of development is, of course, valuable because it permits economists to test theories about the development process and aids in the generation of new theories. But another and equally important use of these common patterns is as a backdrop in highlighting the nature of past development in individual countries and as a method for identifying alternative strategies for their development. By comparing where a particular country is in its development path with where it should be, according to the typical pattern, one can gain a much better understanding of the country's past development and its future prospects. The common patterns, of course, represent neither norms nor efficient patterns of development since they reflect the average tendencies of developing countries. But deviations in one country's experiences from the common pattern are a reflection of either basic economic factors such as comparative advantage or the effects of policies and development strategies followed in the past, and the "yardstick" of the typical developing country's performance offers a very useful basis for judging the relative influence of these forces.

There is a special need for such an analysis in Pakistan at present because within the past five years the country has undergone a series of momentous changes that redefined its political boundaries and gave new direction to its development goals.   The separation of East Pakistan has forced the West Pakistan economy to adapt itself to a domestic market about half of its previous size, and the sector most seriously affected by this severe curtailment of the home market was industry, which sold a higher share of its product in East Pakistan than any other sector.   The abrupt change in market size caused the expected levels of industry's share to shift sharply, and an analysis of the actual and expected shares of industry in West Pakistan, based on the post-1971 boundaries, can provide some useful clues to the type and rate of industrial expansion that will unfold in Pakistan over the next decade.   But, a comparison of the actual and expected shares for industry provides only one way of viewing the present structure and future prospects of Pakistan's industrial sector.   There is a need, as well, to examine the evolution of the industrial sector over the two decades prior to 1971, for the past, though seldom repeating itself, does condition the process of growth in the future.   Within the industrial sector, we focus our attention on large-scale manufacturing, not only because it is the largest of the three components of the industrial sector—small-scale manufacturing and construction being the other two—but also because reliable data for the other two sectors are not available.

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Pakistan's early history of industrialization is almost too well known to bear repeating.   Cut off at the time of partition from India, its traditional source of basic industrial commodities, Pakistan developed in a very short period of time a substantial industrial sector of its own, initially as the result of import substitution aided by a high wall of tariff and quantitative restrictions on imports but later through the growth of domestic and foreign demand.   The rates of growth in the manufacturing sector during the early phases of growth were astoundingly high, in part because of the arithmetic illusion arising from calculations made on a small base, but primarily because of the large vacuum that existed between consumer demands and available supplies. The efforts at "working off this disequilibrium", to use Stephen Lewis's apt phrase for the process of industrialization during this early phase, produced high rates of growth in all sectors, but the highest was in consumer goods where the gap between supply and demand was the most pronounced.   Pakistan's industrial 'deficit' and the "working off of the disequilibrium" can be clearly seen from Table 1 below.   The expected shares of industry (large-scale and small-scale industries plus construction) have been derived from a regression equation estimated from the cross-section data for more than 50 countries.[1]   A predicted level of industry's share has been estimated by inserting approximate values of Pakistan's per capita income and population for the appropriate years in the equation.

Industry's   share was atypically low in 1950, as is borne out by Table 1, but by 1960 the gap between the expected and actual shares of industry was

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[1]The regression equation is from Chenery and Taylor [4] Table 2: "Industry" (equation B.) Chenery and Taylor provide several alternative specifications of the determinants of sector shares.   The forms excluding the foreign aid term have only slightly less explanatory power than the forms including the foreign aid share (see Chenery & Taylor [4] Table 2a) and to avoid the knotty problems of allocating aid inflows between East and West Pakistan, the equations involving foreign aid have not been used in this study.

closed. Industry's share grew between 1960 and 1970 from 12 to 16 percent, but the expected shares for a typical country with similar income and population growth also rose—from 13 to 17 percent. Thus, during the second decade of industrialization, Pakistan was "tracking" quite closely to the average pattern. This was true for Pakistan as a whole, but not for West Pakistan as the data in column 4 of Table 1 reveal. In 1970, the actual share of industry in West Pakistan was substantially above the expected level for a typical country with West Pakistan's resources. West Pakistan was able to maintain this above-normal position, in part because it had a comparative advantage in certain industrial products sold in large quantities abroad—cotton yarn, for example—but also because a sizeable share of its output was sent to the Eastern Wing.

The rise of industry's share in (West) Pakistan was largely the result of the extremely rapid growth of large-scale manufacturing. Province-wise data on industry were not compiled on a regular basis, but there are two sets of estimates for the 1950-65 period which do shed some light on the rates of expansion in the large-scale manufacturing sector. One source is Papanek's estimates of growth for the manufacturing sector (large-scale and small-scale) of West Pakistan [17] shown in row 5 of Table 2. A second set, shown in rows 1-4 of the same table, is drawn from the Lewis-Soligo study of the large-scale manufacturing sector [10] which does not provide a province-wise breakdown. However, since large-scale manufacturing in West Pakistan constituted between two-thirds and three-quarters of all large-scale manufacturing activity in the two wings combined, estimates provide a good approximation of the rate of expansion of West Pakistan's manufacturing sector with the additional benefit of breaking growth down at the subsector and industry level as well. The Lewis-Soligo data are at current prices, but as rates of price inflation in manufacturing were relatively

Table 1

Pattern of Industrialization in Pakistan, 1950-1970

Structural Characteristic	All Pakistan			West Pakistan
	1950	1960	1970	1970
Per Capita GNP ($ of 1960)	65	75	100	110
Population (Millions)	80	100	130	60
Share of Industry: Expected	.12	.13	.17	.16
Share of Industry: Actual	.07**	.12	.16	.21*

Source: Estimating equation from Chenery and Taylor [4] Data on actual shares of industry shares of industry from Papanek [17] (1950 and 1960) and Economic Survey 1974-1975-[11] (1970 West Pakistan only) and from CSO [15] 1970 all Pakistan. The values for per capita income and population are approximations of statistics for which no good data are available. The expected values are not extremely sensitive to the values selected.

*More than one standard deviation difference from the expected value.
**More than two standard deviations difference from the expected value.

Table 2
Annual Rates of Growth for Manufacturing and its
Principal Subsectors

Sector	Pakistan (West+East)			Pakistan (West only) 1963/64-1970/71	
	1951/52-1954/55	1954/55-1959/60 current prices	1959-60-1963/64	current prices	constant prices**
Consumer goods ..	43	15.6	12.9	14.5	11.0*
Intermediate goods ..	28	27	13.6	11.2	5.7
Investment goods ..	16	28	26.3	7.2	1.7
Total Large-scale Manufacturing	38	19.5	15.7	12.9	9.0
Manufacturing (Large+Small) (West Pakistan only)	34	12	16	—	—

Source: For rows 1-4-Lewis [7] and Appendix Table 1, and for row 5, Papanek [17, p. 20]
Papanek's periods are slightly different; 1949/50-1964/55; 1954/55-1959/60, 1959/
60-1964/65.

*10.2 excluding Miscellaneous Industries
**of 1963/64

low before 1965, the degree of overstatement of growth in real output is marginal.
The data for the period to 1963-64 to 1970-71 are for West Pakistan only and
have been drawn from the same basic data source as that used by Lewis-Soligo.
Growth rates have been calculated at constant prices of 1963-64 to make them
comparable with the earlier periods. (See Appendix on Data.)

The pattern of growth rates bears out a number of the familiar features of
Pakistan's early industrialization. Growth rates for the manufacturing sector
fell off sharply after 1955, remained more or less constant at a fairly high level
between 1955 and 1963 and then declined again after 1963. Consumer goods,
having the greatest disequilibrium to work off, grew in the initial period at a
rate in excess of 40 percent per annum, but decelerated rapidly after 1955.
Linkage effects began to have an impact in the second and third periods when
growth in the intermediate and capital goods sectors peaked, exceeding even
the rate of growth of consumer goods. After 1963, growth in both of these
sectors tailed off sharply. For reasons discussed in the Appendix, the data
on which these growth rates are based cannot bear a great deal of weight, but they
do reflect, broadly, the pattern of manufacturing growth in Pakistan during the
two decades prior to 1971.

Pakistan was able to generate such high rates of growth for several reasons.
One has been noted previously, namely that the large internal demand for
consumer goods was easily met by import substitution because of the simple
technologies and labour-using processes used in the sector. High protection
provided an assured market and lavish profits. Another was that towards the
middle of the period two important and related changes in economic policies
occurred that reduced the manufacturing sector's reliance on import substitution.
One change was the introduction in 1959 of the Export Bonus Scheme that
made foreign sales in many lines of manufacturing as attractive as domestic
sales. The other change was the general restructuring and rationalizing of

·domestic prices, of which the Export Bonus Scheme was an important part. In the early 1960's the internal terms of trade were shifted in agriculture's favour and as aggregate income began to rise, led by agricultural growth, so did the demand for manufactured goods. Import controls were also liberalized during this period, releasing needed imported inputs that had constrained industrial supply in the past.

These shifts in the nature of Pakistan's industrialization can be seen from the so-called 'sources' of growth. Following the approach developed by Chenery and refined subsequently by Lewis, Soligo and others, growth in any sector can be attributed to three sources: import substitution, export expansion and domestic demand.[2] The contributions of these three sources to manufacturing growth in Pakistan for four different sub-periods covering roughly the first two decads of Pakistan's industrialization are shown in Table 3[3]. The pattern of sources clearly shows the deflection of manufacturing from an almost exclusive strategy of import substitution towards a more balanced use of all three sources. Perhaps the most striking feature of these sources is that import substitution, which was practically the only source of growth in the initial period, accounted for no more than one quarter of the increases in manufacturing output as a whole and in its main subsectors in subsequent periods. It is interesting to note that even before the introduction of the Export Bonus Scheme, exports were an important source of manufacturing growth, largely due to the comparative cost advantage that jute and cotton textiles had even at a highly overvalued exchange rate.

To put these sources into perspective, the levels of import substitution in Pakistan need to be compared with the levels observed in other countries. In Table 4, the percentage of manufacturing output resulting from import substitution is shown for eight countries including Pakistan. The measures of import substitution in Pakistan and the other countries are not strictly comparable because the time periods over which import substitution is measured differ as do the data on which they are based. Nevertheless, for broad orders of magnitude these comparisons are not inappropriate. It should be recognized that Pakistan has the lowest per capita income of all of these countries, and the poorest countries generally have the highest rates of import substitution because they have the highest import shares. In spite of this, Pakistan, after the initial period, shows remarkably low levels of import substitution. Chenery [2], in a study of a broad cross-section of developed and developing countries, found that import substitution typically accounted for about half of the growth of manufacturing output as per capita income grew from $100 to $600. Chenery measured the contribution of import substitution as a percentage of the deviation of actual growth from proportional growth, and thus his estimates are not directly comparable to the Lewis-Soligo measure of import substitution which uses the actual growth as its base. However, a rough adjustment of his results

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[2]A critical view of the conceptual problems underlying the sources of growth is contained in Sutcliffe [19]. A more technical critique of the methods by which sources are actually measured is provided by Fane [5]. Import substitution is defined as the amount of domestic output increase that can be "explained" by a change in import shares, holding total domestic supplies (production+imports) constant. Demand growth is the change in supplies, holding the import share constant. Demand can be divided into its domestic and foreign components, see equation (1) below and Lewis [7, pp. 37-39] for further explanation.

[3]Only the last sub-period sources relate to West Pakistan, but, as noted previously, the all Pakistan data provide fairly good approximations of trends in West Pakistan.

Table 3

Sources of Manufacturing Growth: Percentage of Increased Output

Sector	1951-54			All Pakistan 1954-59			1959-63			West Pakistan 1963-70		
	Domestic Demand	Export Expansion	Import Substitution	Domestic Demand	Export Expansion	Import Substitution	Domestic Demand	Export Expansion	Import Substitution	Domestic Demand	Export Expansion	Import Substitution
Consumer goods	3	1	96	56	16	28	110	−1	−9	59	26	15
Intermediate goods	7	5	87	34	58	8	48	22	30	77	23	0
Investment goods	−7	1	106	72	1	27	109	1	−10	71	3	26

Source: Lewis [7, p. 45] and Appendix Table 2.

Table 4

Contribution of Import Substitution to Manufacturing Output Expansion for Various Countries

Country	Time period	Share of growth attributed to Import Substitution %
Rhodesia and Nyasaland	.. 1951-58	60
Venezuela	.. 1951-58	28
Peru	.. 1951-58	33
Guatemala	.. 1951-58	−14
Philippines	.. 1951-58	36
United Arab Republic	.. 1951-58	25
Colombia	.. 1951-58	18
Pakistan (West+East)	.. 1951-54	97
Pakistan (West+East)	.. 1954-59	23
Pakistan (West+East)	.. 1959-63	−1
Pakistan (West only)	.. 1963-70	25

Source: Sutcliffe [19, p. 258] and Table 3.

suggests that with the Lewis-Soligo measure about one-quarter of growth can be attributed to import substitution. The evidence seems clear that Pakistan has not been dependent on import substitution for its growth and to an important extent has made the transition from "inward-looking" policies to "outward-looking" policies that promote exports. This is not to say that protection has not been high nor that the process of industrialization has been a model of efficiency but rather that Pakistan has not gotten bogged down with a manufacturing sector that is wholly uncompetitive internationally.

A further conclusion which can be drawn from the analysis of growth sources relates to relationships between East and West Pakistan. By far the greater concentration of manufacturing before 1971 was in West Pakistan and the rates of growth there were consistently higher than in East Pakistan [17, p. 20]. Trade between the two wings occurred in both agricultural and manufacturing products but principally in the latter, and it is therefore conceivable that some part of the growth of manufacturing in the Western wing was due to the expansion of exports to East Pakistan, or even to import substitution against the relatively small amount of manufactured goods coming from the Eastern Wing. This possibility can be checked by breaking the sources of growth down more finely, using the following formula:[4]

$$\triangle X = u \triangle D + u \triangle E_e + u \triangle E_r - \triangle m_e \cdot Z - \triangle m_r \cdot Z$$

where: X is value added

D is domestic demand (domestic production plus imports less exports),

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[4]The discrete approximation of this and all similar "sources" equations is valid only for infinitesimal changes. The biases involved in discrete approximations are discussed by Fane [5].

E_e and E_r represent exports to East Pakistan and the rest of the world, respectively,

Z is total domestic supply (domestic production plus imports),

m_e, m_r represent the shares of imports in domestic supply coming from East Pakistan and the rest of the world, and

$$u = \frac{X}{Z}; \quad u + m_r + m_e = 1$$

The sources of growth estimated from equation 1 are shown in Table 5. It can be seen that the share of manufactured imports coming from East Pakistan, both overall and for the major subsectors of manufacturing, did not change during the period, implying that substitution of imports from East Pakistan did not occur although substitution against other imports was a significant contributor to overall growth. Moreover, the increase in manufactured exports to East Pakistan accounted for only a minuscule fraction of the total growth of the manufacturing sector. In short, changes in trade relations with East Pakistan were not an important determinant of West Pakistan's manufacturing growth during the 1963-70 period though it is possible that they may have been a factor in an earlier period.

The Structure of Industry: 1970

The cumulative effects of Pakistan's particular pattern of industrialization can be seen in the data on sector and trade shares contained in Table 6. In 1970, consumer goods accounted for four-fifths of manufacturing value added, an increase in this sector's share since 1963 because of the higher rate of growth in this sector relative to the intermediate and investment goods sectors. Since Pakistan's premier manufacturing industry—textiles—is included in this study as a part of consumer goods, whereas Chenery [2] considered it an intermediate product, it is perhaps not surprising that this sector commands such a high percentage in Table 6. As will be argued subsequently, however, this preponderance of consumer goods has very important implications for the future rate and patterns of growth in the manufacturing sector. The other interesting pattern evident in Table 6 is the differential impact which past import substitution has had on the shares of imports in the total supplies of the three sectors. Import substitution is almost exhausted in consumer goods, where only 6 percent of the total supplies of these goods are obtained from abroad. In the intermediate and investment goods sectors, imports account for 58 and 63 percent of the goods supplied and thus in a technical sense ample opportunities for import substitution remain, though the scope for economically sound import replacement in these sectors cannot be determined from these data. On the export side, the consumer goods sector, led by textiles, has the highest export share, 29 percent, with the intermediate goods and investment goods sectors substantially below the level with 15 and 4 percent, respectively.

Does this structure of production conform to the typical pattern? Again, by comparing actual with expected values—this time at the level of manufacturing industries—a number of important structural characteristics of Pakistan's manufacturing sector can be clarified. Chenery and Taylor [4] have derived normal

Table 5

West Pakistan's Large-Scale Manufacturing Sector: Sources of Growth,
1963-70

Sector	Domestic Demand	Export Expansion: E. Pak	Export Expansion: Rest of	Import Substitution: E. Pak. World	Import Substitution: Rest of World
Consumer goods	59	3	23	0	15
Intermediate goods	77	4	19	0	0
Investment goods	71	1	2	0	26

Source: Appendix Table 2.

Table 6

Structure of West Pakistan's Manufacturing Sector: 1970

Sector	Share in Value Added %	Imports as shares of total supplies: M/Z %	Exports as Share of total supplies: E/Z %
Consumer goods	80	6	29
Intermediate goods	7	58	15
Investment goods	13	63	4

Source: Appendix Tables 1 & 2.

patterns for per capita value added in twelve manufacturing industries, and the expected values for the per capita output of these industries based on the income, population and certain characteristics of export structure for West Pakistan in 1970 are shown in column 1 of Table 7 along with the actual levels and the shares of imports and exports in total supplies. The relative position of each industry is shown by a plus or minus sign in column 4 indicating whether the actual level of output exceeds or falls short of the expected level, with asterisks marking the statistical significance of these deviations.

With only one exception, each of the twelve subsectors appears to fall rather clearly in one of three categories; 'surplus' industries (the actual value exceeding the expected value by more than two standard deviations); 'deficit' industries (the actual value falling short of the expected value by two standard deviations); and 'balanced' industries (the actual and expected values not differing significantly). 'Surplus' and 'deficit' do not necessarily connote disequilibrium for, as

Table 7

Actual and Expected Levels of Output for Twelve Industries in West Pakistan: 1970-71

Industry	SIC	Per Capita Value Added		Relative Position	Import Share in Supply (M/Z)	Export Share in Supply (E/Z)
		expected	actual			
Food, Beverages & Tobacco	20-22	$3.13	$4.09	≡	.05	.06
Textiles	23	.37	3.73	+**	0	.57
Clothing and Footwear	24	.08	1.05	+**	.12	.19
Wood Products	25-26	1.11	.04	–**	.51	.01
Paper & Paper Products	27	.45	.24	–*	.30	.10
Printing & Publishing	28	.03	.23	+**	.07	.07
Leather Products	29	.12	.13	≡	.09	.88
Rubber Products	30	.04	.06	≡	.57	.14
Chemical & Petroleum	31-32	2.45	1.85	≡	n.a.	n.a.
Non-Metallic Minerals	33	.14	.54	+**	.13	.19
Basic Metals	34	.37	.23	≡	.65	0
Metal Products (including machinery and transport equipment)	35-36	4.22	.09	–**	.82	.03

Source: Col. 2; Chenery & Taylor [4].
Cols. 3-6 Appendix Tables 1 and 2

*More than one standard deviation difference from the expected value.
**More than two standard deviations difference from the expected value.

previously noted, one would expect departures from the normal pattern in accordance with each country's comparative advantage, arising either from the country's factor proportions or from its natural resource base. Indeed, the pattern of deviations revealed by these three groups lends support to the view that Pakistan's industrialization has been along lines of comparative advantage. In the surplus group, three of the four industrial sectors—textiles, clothing and footwear, and printing and publishing—are intensive in Pakistan's most abundant factor—labour. The fourth industry in this group—non-metallic minerals—requires raw materials that are common in Pakistan but not in all countries. All four industries have passed through the import substitution phase and, with the exception of printing and publishing the products of which are basically non-tradeables, have exported substantial amounts of their production.

The greatest difficulty arises in explaining why some industries fall so far below the expected level. In wood and paper products, the deficit is most probably due to Pakistan's limited forest reserves. Adequacy of timber resources is a difficult characteristic to measure, but it is commonly believed that Pakistan has 'inadequate' reserves and if this is so, then a negative deviation is not surprising. The metal products group is a more difficult case to explain because it spans such a varied range of activities. At first glance, it would appear that as some of the manufacturing activities covered under this rubric are capital-intensive and Pakistan is labour-abundant, the negative deviation can be explain-ed by a mis-match between factor proportions and factor prices. Yet, the 'normal' equations have already taken this factor into account: the expected value shown in Table 7 for metal products is based on what the typical country with Pakistan's per capita income and with the relative factor prices normally associated with that per capita income level would produce.[5] .

A more plausible explanation for the deficit position of metal products is that trade and industrial policies have made them relatively unprofitable. John Power [18] in the early 1960's advanced the argument, later given empirical support in a study of the trade policy system by Lewis and Guisinger [9], that the structure of tariff protection discriminated against the investment and inter-mediate goods sectors. The danger which Power saw in such differential protection was that industrialization would not move much beyond import substitution in consumer goods; industrial growth would wind down, slipping into, as he put it, a "frustrated take-off". The evidence on protection does support Power's argument. In 1963-64, consumer goods enjoyed a level of protection that was, on the average, some 50 percent higher than the protection received by the metal products group [9, p. 1178]. No fundamental reforms in trade policy were introduced in the 1963-70 period and the discrimination against metal products in particular, and investment goods in general, probably persisted throughout the period. More evidence would have to be collected, especially on the profitability of investments in the capital and intermediate goods sectors, before the differential protection argument could be substantiated, but there is at least a *prima facie* case that economic policies rather than fundamental economic conditions were the principal cause of the shortfall in the actual level of output of the metal products group from its expected level.

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[5]See Chenery [2 p. 644] for a discussion of the relation between factor prices and per capita income levels.

Future Growth Industries

Had the intermediate and capital goods sectors continued to grow during the 1963-70 period at their 1959-63 growth rates, the aggregate rate of manufacturing growth would have been closer to 15 percent than to the observed rate of 9 percent. It is clearly implausible, however, for investment goods to continue to expand at a rate that implies a doubling every three years, but this hypothetical comparison brings out an obvious but basic point: unless the rate of growth of consumer goods can be maintained, an acceleration in the rates of expansion of intermediate and investment goods is essential for maintaining growth of large-scale manufacturing. It is appropriate to ask, then, what the growth potentials of the industries in these three sectors are given the past patterns of growth. Using cross-section data, Chenery and Taylor derived normal growth patterns for a number of industries, which throw some interesting light on this question. They found that the twelve industries shown in Table 7 fell into one of three groups—early, middle, or late developers—according to their tendency to grow most rapidly in either the low, middle or high income stages of economic development. The early developers, i.e. those industries that make their greatest contribution between per capita income levels of $100 and $200, include the food-beverages-tobacco triad, leather and textiles, industries that have relatively low levels of income elasticities of demand and use up their import substitution opportunities at the very lowest levels of income. Chenery and Taylor concluded that the export potential of these industries was limited, and while this may be true in general, it may not be true for Pakistan, a point to which we shall return. In any event the first two characteristics do apply to Pakistan —the import shares in total supplies of these products are low as are their demand elasticities. One recent study by Iqbal [6] concluded that textiles in Pakistan might not even have a positive income elasticity—an improbable finding even though based on official and seemingly reliable data, but a finding which certainly makes it hard to argue for an elasticity much above unity. Similarly, the findings of Bussink [1] also tend to bear out the low income elasticities for products in this group. In short, Pakistan has already passed through the stage when the early developers register their highest rates of growth from domestic sources of demand.

The burden of maintaining Pakistan's high rate of growth thus shifts to the middle group: non-metallic minerals, rubber, wood and chemicals, including petroleum products. Demand elasticities are generally higher for this group than for the early developers and both import substitution and domestic demand expansion can be counted on to push growth rates up in these industries. In all but chemicals, however, there are cautionary signs that these industries may have a lower rate of growth than would be expected in the present phase of Pakistan's development. The non-metallic minerals industry was really an early developer in Pakistan, having already exhausted its import-substitution possibilities by 1970. Apart from the contribution of exports, growth in this industry will have to depend on an increase in aggregate income and a fairly low demand elasticity. Rubber is a small industry and its growth, even under optimistic assumptions, would have little effect on the aggregate growth of manufacturing. As already noted, the wood products industry is a major question mark, given the sparse resource base. Moreover, growth in the large-scale branch of this industry may merely displace activity in the small-scale branch, thereby limiting its contribution to the overall growth of the industrial sector. Thus, among the middle developers the burden

really falls on chemicals, and since it already accounts for 20 percent of industrial activity, growth in this industry will undoubtedly be a major factor in the overall growth of the manufacturing sector.

This analysis certainly does not imply that the industrial sector will cease to grow. There are certain industries—vegetable ghee and sugar, for example—where capacity will have to expand to meet growing domestic demand. Furthermore considerable growth will also take place in a number of 'late' developers, particularly in the investment goods sector where a number of projects in the public sector either under construction or planned will come on stream. Finally, and perhaps most importantly, exports may raise the growth rate in all sectors of manufacturing. What this study has brought out most clearly is the pivotal role of exports in maintaining a high rate of growth in manufacturing. Without export growth it would appear improbable, from the findings of this paper, that Pakistan could continue to maintain the same rate of growth of manufacturing as in the past.

Conclusions and Policy Implications

Pakistan's achievement in raising its share of industry from well below to well above the expected level in the space of two decades does not, of course, imply that industrialization has been successful in economic terms or that a high rate of industrial growth should be pursued in the future. Indeed, within Pakistan there exists a strong sentiment that past industrialization, particularly in the large-scale sector, has been misguided and a drain on social welfare because of its capital and foreign exchange using bias, its tendency to channel large profits into the hands of a few families and its "golden key" aura that diverted the attention of planners away from the important task of raising income and employment in the rural areas. This study has not attempted to draw a 'balance sheet' on Pakistan's industrialization, an undertaking that would necessarily deal with a range of issues exceeding the scope of a single paper. Our study does, however, throw some new light on the performance of the manufacturing sector in West Pakistan during the 1963-70 period and has identified certain potential weaknesses in the present structure of this sector which may affect its performance in the future. On the positive side, our study does lend support to the view that manufacturing growth has been broadly along lines of comparative advantage. Those manufacturing industries intensive in the inputs which Pakistan has in relative abundance—labour and agricultural raw materials—have developed faster than other manufacturing industries and have expanded well beyond the level that would be predicted for a country of Pakistan's size and resources. This alone does not mean that industrialization has been efficient because it is possible that the expansion of these industries has reached a point, obscured by protection policies, where diminishing economic returns have set in. The empirical studies of Lewis and Guisinger and others have, in fact, shown that Pakistan probably had much smaller comparative cost advantage in its raw material processing industries than Pakistan's past export performance in these products would lead one to believe.

The appropriate conclusion to draw from this analysis is not that Pakistan's industrialization has been a resounding success but that it has avoided the worst pitfalls into which so many other developing countries have plunged, namely premature import substitution, especially in the capital goods sector.

Since 1955, import substitution has been an important but never a major source of manufacturing growth. In the 1963-70 period, export expansion was almost as important a source of growth in manufacturing as import substitution and both were overshadowed by increases in domestic demand. In the early 1960's Pakistan took an important step in the transition from 'inward-looking' policies oriented towards import substitution to 'outward-looking' policies that brought the rewards from exporting in line with those from producing for the home market.

It is well worth asking, following the findings of this study, whether Pakistan's present trade and industrial policies are equal to the task of maintaining a high rate of manufacturing growth in the future. Is the protection received by the intermediate and capital goods sectors equivalent to that received by producers of consumer goods? The significance of discriminatory protection has perhaps been lessened by the post-1971 reforms which have brought many private firms in the investment goods sector into the public sector. But, if public sector firms are expected to finance a substantial portion of their expansion out of retained earnings, then the issue of protection is still very relevant. No studies have yet been completed on the structure of protection following the 1972 devaluation, but if sectoral discrimination against intermediate and investment goods still exists, then a very strong case can be made for uniformity in protection across sectors.

Export policies also need to be reviewed. The elimination of the Export Bonus Scheme had the salutary effect of removing unnecessary differentials in export incentives among manufactured commodities. However, to a certain extent, the restoration of a unified exchange rate for manufactured exports may have shifted relative incentives in some lines of manufacturing towards production for the home market and away from production for the foreign market. Moreover, the effective devaluation of exports has been substantially eroded by internal inflation and it is possible the exporters of many manufactured goods are now no better off than they were before the 1972 devaluation. A review of the structure of both import and export policies, thus, should be accorded the highest priority to determine whether these policies are consistent with the industrial growth targets now being envisaged in the annual and five-year development plans.

Appendix on Data

Production Data

The basic source for data on output and value added is the *Census of Manufacturing Industries (CMI)*. For 1963/64 both the original census [13] and a revised version [16] were used to develop production estimates for the initial year of the period. The revised version is superior to the original census in terms of coverage but contains several anomalies. For some industries, the value of production in the original census exceeds the values in the revised version, a clearly inconsistent result since the revised census only extended the results of the original census by adding data for some of the non-responding firms. The most probable explanation for this anomaly is that the data for the non-responding firms were lumped together and included in Miscellaneous Industries, which shows a four-fold increase between the original and revised censuses. For each industry, we have selected data from either the revised or the

original census based on our rough judgement about which estimates seemed to be more representative, taking into consideration past trends, production indices and other such information.

For 1970-71, the preliminary data from the CMI for this year was supplemented by an informal non-response survey for the Punjab. A list of non-responding firms was compiled and information on their output, value added and employment was obtained from their responses to earlier and subsequent census questionnaires and in some cases from personal visits.

Data for some industrial categories appear almost certain to be incorrect. The industrial chemicals industry, for example, shows a rate of expansion in current prices well below the quantum increase in the production of fertilizers, caustic soda and other related chemicals. Similarly, the rate of growth in leather goods and transportation equipment seems at variance with what most observers familiar with those industries would presume the rate of expansion to have been. No attempt has been made to adjust these data arbitrarily. These estimates also differ from those prepared by A.R. Kemal and reported in this issue of the Review. Kemal's approach, which relies on reported investment data rather than reported output data, yields both a higher rate of growth of manufacturing during the 1963-69 period and a different pattern of sectoral growth rates from those contained in this paper.

Prices

The price indices were compiled from data collected by the CSO [15]. Representative products were selected for each two-digit industrial category. Where more than one product was selected for a particular category, price indices were weighted by the production levels for each product derived from the 1969-70 CMI.

Imports and Exports

Trade data were drawn from the CSO's *Foreign Trade Statistics* [12] and competing imports were assigned to industrial categories on the basis of a cross-classification between Pakistan Standard Industrial Classification and the Pakistan Standard Trade Classification. This cross-classification is available on request from the author.

Appendix Table A-1

Rates of Growth in Value Added: West Pakistan Large-Scale Manufacturing Sector

Industry	Current Prices			Constant Prices		
	Value Added		Annual Compound growth rate: 1963-71	Price Index 1963/64 =100	Value Added 1970/71 at constant prices of 1963/64	Annual Compound growth rate: 1963/64 to 1970/71
	1963/64	1970/71				
	(1)	(2)	(3)	(4)	(5)	(6)
	Rs. 000	Rs. 000	%	%	Rs. 000	(%)
Consumer Goods						
Food	278677	878700	17.8	130.57	672972	13.4
Beverages	18600	36831	10.3	131.48[1]	28051	6.1
Tobacco	186150	634473	19.2	136.03	466421	14.0
Cotton Textiles	606311	1291282	11.4	121.14[2]	1065942	8.4
Other Textiles	124553	269080	11.7	113.75	236554	9.6
Footwear	36072	63825	8.5	102.12	62500	8.2
Wood & Furniture	5668	19265	19.1	182.85	10536	9.3
Drugs, Pharmaceuticals and other non-industrial chemicals	139317	315486	12.4	114.80	78414	10.2
Printing & publishing	49585	80085	9.1	122.50[3]	65374	6.0
Miscellaneous Manufacturing	21777	188466	36.0	131.48[1]	143342	31.0

—*Continued*

Appendix Table A-1—*Continued*

Industry	Current Prices			Constant Prices		
	Value Added		Annual Compound growth rate: 1963-71	Price Index 1963/64 =100	Value Added 1970/71 at constant prices of 1963/64	Annual Compound growth rate: 1963/64 to 1970/71
	1963/64	1970/71				
	(1)	(2)	(3)	(4)	(5)	(6)
Intermediate Goods						
Jute Textiles ::	—	40000	—	114.00	35000	—
Paper ::	36932	85641	12.8	124.78	68634	9.3
Leather ::	34772	59900	8.1	161.20	37159	1.0
Rubber ::	14274	22534	7.0	123.43	18256	3.6
Industrial Chemicals ::	110501	204106	9.2	154.16	132399	2.7
Investment Goods						
Non-Metallic Minerals ::	84106	209962	14.0	134.85	155700	9.2
Basic Metals ::	73838	121400	7.4	187.34	64802	−1.6
Metal Products ::	44375	87376	8.5	214.65	70706	−2.6
Machinery Except Electric ::	39415	51617	3.9	112.51	45878	2.2
Electrical Machinery ::	76555	146697	9.7	127.92	114679	5.9
Transport Equipment ::	101508	73191	−4.8	131.48	55667	−8.1
All Industries ::	2081986	4879967	12.9	128.71	3800386	9.0
Consumer goods ::	1460710	3777543	14.5	124.81	3026506	11.0
Intermediate goods ::	196479	412181	11.2	141.42	291448	5.7
Investment goods ::	424797	690243	7.2	144.57	477432	1.7

"Total Manufacturing" index has been used.
Average of Silk, Rayon Manufacturing and Woollen Manufacturing.
1969/70 Index.

Appendix Table 2a

Components of Domestic Supply: West Pakistan, 1963/64   (Values in Thousand Rupees)

Industry	X Domestic Production	M₁ Imports from E. Pak.	M₂ Imports from ROW	T Imports duties	M'₂ = M₂+T	E₁ Exports to E. Pak.	E₂ Exports to ROW	M₁+M'₂ = M	E₁+E₂ = E	X+M=Z Domestic supply
Consumer Goods										
Food	1028870	0	155192	6556	161748	4969	45501	161768	50470	1190618
Beverages	29786	0	4955	10739	15694	0	115	15694	115	45480
Tobacco	316102	380	551	12736	13287	24318	89	13667	24407	329769
Cotton Textiles	1352947	1047	4063	2562	6625	253739	260563	7672	514302	1360619
Other Textiles	368473	13921	31516	67298	98814	7303	2064	112735	9367	481208
Footwear	78960	0	715	0	715	5060	17584	715	22644	79675
Wood & Furniture	12259	6107	36162	0	36162	0	420	42269	420	54528
Drugs, Pharmaceuticals and other Non-industrial Chemicals	259107	32989	101058	22032	123090	36084	18983	156079	55067	415186
Printing and Publishing	81451	0	10211	0	10211	3795	1176	10211	4971	91662
Misc. Manufacturing	38730	0	57116	4367	61483	0	58697	61483	58697	100221
Others	—	4400	—	—	—	25000	—	—	—	—
Intermediate Goods										
Jute Textiles	0	114000	0	0	0	0	0	114000	0	114000
Paper & Paper Products	71298	57995	23404	13867	37271	3560	763	95266	4323	166564
Leather & Leather Products	94082	22142	1201	1107	2308	961	45891	4452	46852	118534
Rubber & Rubber Products	24574	0	44334	23656	67990	4845	4392	67990	9237	92564
Industrial Chemicals	277131	528	196678	128880	325558	1069	10063	326086	11132	603217
Others	0	17600				2000				
Investment Goods										
Non-Metallic Mineral Products	165763	0	48913	17516	64429	5523	998	66429	6521	232192
Basic Metals	231054	0	381787	88211	469998	0	422	469998	422	701052
Metal Products	129190	1862	98070	10065	108135	12974	12247	110017	25221	239207
Machinery Except Electrical	95509	0	614369	101621	715990	25900	5978	715990	31878	811499
Electrical Machinery	173400	0	187686	57839	245525	14521	7047	245525	21568	418925
Transport Equipment	244404	0	353591	131181	484772	0	16018	484772	16018	729176
Others	0	0				6000				

Appendix Table 2b

Components of Domestic Supply: West Pakistan, 1970/71

(Value in Thousand Rupees)

Industry	X Domestic Production	M₁ Imports from E. Pak.	M₂ Imports from ROW	T Import duties	M'₂= M₂+T	E₁ Exports to E. Pak.	E₂ Exports to ROW	M₁+M'₂ = M	E₁+E₂ = E	X+M−Z Domestic Supply
Consumer Goods										
Food	2896905	1790	180773	31940	212713	43083	614140	214503	207223	3111408
Beverages	61179	0	4194	4462	3656	393	1262	8656	1655	69835
Tobacco	995131	1342	558	2491	3049	52301	4588	4391	56889	999522
Cotton Textiles	2514166	1445	647	1310	1957	292579	1134252	3402	1426831	2517568
Other Textiles	709124	17000	33039	85560	13599	94675	31672	118599	126347	827723
Footwear	139394	6	31	281	306	3272	54327	312	57599	139705
Wood & Furniture	38005	9006	27792	0	27792	0	1086	36798	1086	74803
Drugs, Pharmaceuticals and other Non-industrial Chemicals	709006	24197	71959	41737	113696	47234	28632	137893	75866	846899
Printing & Publishing	161792	0	11532	0	11532	8550	4436	11532	12986	173324
Misc. Manufacturing	230538	0	48552	2698	51250	0	174446	51250	174446	281788
Intermediate Goods										
Jute Textiles	80000	176000	0	0	0	0	0	176000	0	256000
Leather & Leather Products	207105	40300	1869	300	2169	895	217821	21076	218716	249574
Paper & Paper Products	177098	17210	38577	19090	57667	23733	1584	74877	25317	251975
Rubber & Rubber Products	73230	0	61441	35718	97159	15233	8125	97159	23358	170389
Industrial Chemicals	407033	0	374275	186694	560969	13329	10698	560969	24027	968002
Investment Goods										
Non-Metallic Mineral Products	425622	0	38660	23615	62275	48835	42276	62275	91111	487897
Basic Metals	408730	0	453795	296023	749818	0	577	749818	577	1158548
Metal Products	244590	70	160675	41557	202232	6457	16443	202302	22900	446892
Machinery excpt. Elec.	132253	0	676210	301107	977317	25786	13450	977317	39236	1109570
Electrical Machinery	310797	0	262229	122865	385094	16317	15344	385094	31661	695891
Transport Equipment	251669	0	485679	146004	631683	0	2930	631683	2930	883352

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