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THE COMPOSITION OF OUTPUT
AND
THE RATE OF GROWTH IN PAKISTAN

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This was written while I was Research Advisor at the Pakistan Institute for Development Economics in Karachi. It was significantly improved by comments from many of the members of the Institute and by Nurul Islam, Marvin Rozen, Philip Thomas, Stephen Lewis, Gustav Papanak, and Abdur Rab, all of whom read and commented specifically and usefully on all or part of the paper. For the computations and data collection, I am indebted to A. D. Bhatti. Both the theoretical study that is the basis for this paper [12] and its final revision were supported by the Williams Research Project for the Study of Import Substitution and Economic Development. This, in turn, is supported by the United States Agency for International Development. Of course, I retain entire responsibility for the substance of the paper.

In a recent issue of this journal, I described a formal model in which economic growth was constrained by an imbalance in the production of capital goods and I strongly implied that such a model was relevant to the growth of the Pakistan economy [12]. That paper examined the influence of an aggregate capital goods shortage -- relative to consumption goods availability -- by combining simple Harrod-Domar and Mahalanobis models in both closed and open economies. Briefly, the conclusions of that composite model were (a) that in a closed economy inadequate investment in the capital goods producing sector and more than adequate in consumption goods would slow down the rate of growth, regardless of ex ante savings propensities, and (b) that this harsh conclusion is relaxed somewhat in an open economy but new complications are introduced in requiring a consistent export and capital goods trade policy.

The most important aspect of the formal model -- and the substance of this paper -- is that relative availabilities of capital and consumption goods are critical since growth is reduced by making available too many consumption goods and, therefore, too little capital goods. The shortage of capital goods is always considered relative to the availability of

consumption goods. This is a very different matter, obviously, from the simple proposition that more capital goods are nice because they can increase growth.

These conclusions, of course, were derived and stated theoretically. The important question that thus remained was whether, in fact, a capital goods constraint had reduced the rate of economic growth in Pakistan. To that question this paper is addressed. Despite its considerable importance, this is a question that has been answered in the past on the basis of some surprisingly casual tests. In supporting their view that an import substitution-induced capital goods constraint had slowed Pakistan's growth, Power and Khan [8; 5] relied mainly on the fact that the domestic absorption of six particular consumption goods had grown faster than the income elasticity of their demand would have warranted. The shortcomings of this inference about a general growth phenomenon from so very limited a piece of evidence have been commented on in the earlier article [12] and the selection of a questionably representative base period from which to construct the "correct" time path of consumption has been criticized by Lewis and Soligo [8]. They, on the other hand, suggested that there had not, in fact, been a deficiency of capital goods in the Pakistan economy because it could be shown that capital goods output had grown at a much faster rate than had consumption goods between 1954-55 and 1963-64. But this begs the critical question of the size of the base

from which each sector's growth rate is measured -- it neglects the fact that the issue is one of adequate allocation of investment between the sectors, not of their growth. Capital goods might be growing at a very fast rate, indeed, yet still not be adequate in relation to requirements.

A. The Symptoms of a Capital Goods Constraint

Since the model of capital constrained growth showed that a capital goods constraint is not apparent as such, ex post, these contradictions are understandable, and it is not surprising that the presence or absence of such a constraint has been judged on such incomplete evidence. But the more detailed model now available provides the basis for a less haphazard examination of the evidence since it suggests that a number of related phenomena should emerge in an economy in which the rate of growth is being reduced by a shortage of capital goods -- by relatively too many consumption goods.

^{early}
~~A~~ ~~prior~~ disclaimer should be entered. In the safe abstractions of a theoretical discussion, I could (and did) talk quite precisely about the existence of a capital goods constraint -- it either did or did not inhibit growth [12, pp. 354-55]. In the present context, though, such precision is denied not only because the statistical evidence is, inevitably, murky but most important because we lack the standard of "correctness" in investment allocation that we have in a formal model. So only comparisons can be made --

one period or country can be said to suffer more or less capital constraint than another period or country. But it cannot be said that a capital goods constraint did or did not operate. It is possible, in the present case, that in all of Pakistan's history, capital goods shortages reduced growth. This we cannot hope to discover or refute. But we can set out to see if in some periods the capital constraint appears more severe than in others.

Thus warned, the list of clues that indicate a binding capital goods (Mahalonobis) constraint is, in part, a recapitulation of the earlier theoretical conclusions. But despite the considerable sophistication of the later sections of that article, the empirical tests must rest largely on the simplest statement of the model. If a capital constraint limits an economy's growth:

1. The rate of growth of income will be relatively low
2. Its marginal domestic savings will be relatively low
3. The structure of production will show relatively little production of capital goods compared with consumption goods -- though, because of the gestation period, current production relationships inevitably describe previous investment relationships
4. Excess capacity will be greater in consumption goods than in capital goods
5. Inventories will be higher in consumption goods than in capital goods

6. The relative price of consumption goods will be low or falling
7. Income tax and indirect tax collections on consumption goods will be relatively low.

In case of the forced-draft or "Soviet" pattern of too much capital goods investment -- or during the correction of a period of too much previous consumption investment -- each of these would be reversed.

These symptoms are of three sorts -- and should be accorded different degrees of seriousness in testing the existence of a capital constraint. Clearly the first three -- low growth rate, low savings and distorted industrial structure -- are critical to any hypotheses about capital constrained growth and therefore it is reasonable to insist that all three support any assertions that capital shortage has in fact limited growth. The next three -- relative prices, excess capacity and inventories -- ~~obviously~~ constitute a set of alternatives, since a supply shift, given demand, could be absorbed by any or all of them and to the extent that one has appeared -- say a change in relative prices -- the others need not. So for these, we should expect mixed evidence even if we were certain (somehow) of the existence of a capital constraint. Finally, a decrease in taxes to offset deficient demand would be a plausible policy response to capital constraint -- one that has been previously suggested for Pakistan [8] -- but there is no a priori reason that this response

must appear with capital limited growth.

In addition to this much more systematic set of symptoms of a capital constraint, the importance of time in the earlier formal analysis stresses the need for treating different periods in Pakistan's development differently. If we insisted on dealing with its history as one single period since 1950, the fact is that, despite the expanded set of clues, there really is no clear evidence one way or the other of a capital constraint that has affected the Pakistan economy. But treating three separate stages, it appears -- to anticipate the results -- that there was a reduction in growth due to capital availability in the period of the first plan but that constraint did not limit growth either in the pre-plan period between 1950 and 1954 or during the second Plan of 1960-65. So we shall test the hypothesis that there were three stages in Pakistan's growth, each quite different with respect to the imbalance of production that produces a capital constraint to growth. This means, interestingly, that the Power-Khan assertion may be correct -- that capital goods shortage did constrain growth, but only in the first plan period that they described, while the Lewis-Soligo allegation of adequate capital goods availability may also be correct but for the second plan period with which they were primarily concerned. Finally, treatment of separate periods separately gives significance to the otherwise vague relative descriptions of capital constraint evidence listed

above -- a "relatively low" income tax, for instance, is judged against the other periods, not against some arbitrary standard of correctness, since there is none.

B. The Basic Evidence

The "three-stage" hypothesis is strongly supported by what I have called the basic tests. The patterns of Pakistan's rate of growth of income, gross saving and industrial structure all suggest that growth during the First Plan period was slowed down by the availability of too little capital goods and too much consumption goods capacity.

1. The Rates of growth and saving

First, rates of growth of national product are markedly different for the three periods, falling to very low levels in the first plan period. Using CSO data [3, pp. 1344-45] on GNP at constant factor costs, the annual rate of growth fell from its 1949-50 to 1954-55 (pre-plan) level of 1.67% down to 0.19% during 1954-55 to 1959-60 (first plan), then rose in 1959-60 to 1964-65 (second plan) to 2.34%. Second, gross domestic savings, too, behaves as would be expected if capital shortage constrained growth in the first plan period. Taking yearly figures, average saving rose during the pre-plan period from 4.6% in 1949-50 to 6.8% in 1954-55, then fell during the first plan period to 5.9% in 1959-60 and finally, rose through the second plan period to 9.5% in 1964-65.

Marginal rates put this more dramatically with 22.7% during the pre-plan period; -1.4% in the first plan period; and 21.8% in the second plan period [4, Table 2]. The third "basic" evidence of capital constraint -- a change in the structure of production -- requires a good deal more discussion.

2. The Structure of industrial output

Probably the most significant basic evidence in support of the hypothesis comes from the pattern of growth of industrial output. Lewis and Soligo, as mentioned above, found in these data basis for questioning the existence of a capital constraint because the capital goods sector had grown at a faster rate than the consumption goods sector over the 1954-55 to 1963-64 period and over both the first and second plan periods considered separately. Lewis and Soligo's conclusions were based on the implicit assumption that all sectors should have grown at something like the same rate since they saw higher absolute growth rates for capital and intermediate goods as indicating that their growth was not inadequate and even that these sectors were, in fact, "performing quite remarkably" [8, p. 103].

But this implicit criterion fails to use a good deal of what we know about the way industry structure should change with growth. It appears quite consistently from studies like Ohenery's "Patterns...." [2] that increases in population

and per capita income, like those that occurred in Pakistan over the three periods, would quite naturally bring a shift in the composition of industrial output in favor of capital and intermediate goods at the (relative) expense of consumption goods. In other words, the relative growth rates Lewis and Soligo found are those necessary to bring about the change in industrial pattern that is entirely to be expected during growth. It sheds no light on whether capital goods production grew "too fast" or "not fast enough." This question, as it has been posed here, cannot be judged in simple terms of rates of growth compared with each other.

So what standard can be used to judge adequate or inadequate relative growth of the capital goods sector? Recognizing the danger of making too much of it, it would seem most sensible to use as a bench mark those empirically determined patterns of structural change that have been found to go with growth -- if growth of income and population bring a normal shift from production of consumption goods to production of intermediate and capital goods, and we know the magnitude and rate of that shift, then it would make sense to use deviations from that pattern to judge whether capital goods production has growth "fast enough." Specifically, we can compare the actual growth of consumption, intermediate and capital goods sectors in Pakistan against those relative rates of growth that would appear if this were a country entirely typical of Chenery's international study. Chenery

TABLE 1
INDUSTRIAL STRUCTURE
"STANDARD" (AND ACTUAL) GROWTH OF INDUSTRIAL OUTPUT FOR PAKISTAN

Period	Sectoral Growth			Relative Rates of Growth	
	Consumption	Intermediate	Capital	$\frac{\text{Capital}}{\text{Consumption}}$	$\frac{\text{Intermediate}}{\text{Consumption}}$
A. 1954-5 to 1959-60					
Growth Contribution					
from: Income ^a	44%	57%	74%		
Population ^b	1%	6%	3%		
Total	45% (130%)	63% (176%)	77% (199%)	1.71 (1.53)	1.40 (1.35)
B. 1959-60 to 1963-4					
Growth Contribution					
from: Income	25%	33%	43%		
Population	1%	6%	3%		
Total	26% (62%)	39% (80%)	46% (131%)	1.77 (2.11)	1.50 (1.29)
C. 1954-5 to 1963-4					
Growth Contribution					
from: Income	77%	100%	130%		
Population	2%	13%	7%		
Total	79% (274%)	113% (398%)	137% (591%)	1.73 (2.16)	1.43 (1.45)

Sources: (a) Chenery's per capita-income elasticities are 1.32, 1.72 and 2.24 for consumption, intermediate and capital goods respectively [2, Table 6, p. 642]. These were multiplied by the growth figures of Table 3 to derive those entries.
 (b) Size elasticities are simple averages of the industry size elasticities in Chenery's Table 5 [2, p. 638].
 (c) Actual rates of growth computed as in Winston/MacEwan [14]. Current Prices.

reports the elasticity of output with respect to per capita income (a "growth elasticity") for consumption, investment and intermediate sectors as well as an elasticity of production with respect to population (a "size elasticity").¹ These

1. Chenery's Table 5 reports size elasticities by industry but not by use category [2]. We used simple averages of these for each category

were computed as constant elasticities so they can be used with the actual growth of per capita income and population in Pakistan to give an estimate of the rate of which each sector would have grown if Pakistan industry were entirely typical of Chenery's sample. The results are given in Table 1 for the dates of the Lewis and Soligo data.

It appears, not surprisingly, that all sectors of Pakistan's industry have grown at rates far in excess of these "typical" rates. The important measure, however, is again not the absolute growth rate of any sector -- even compared to Chenery's standards -- but its growth rate relative to other sectors. Therefore, standard growth rates computed with Chenery's elasticities and Pakistan's income and population growth can be reduced to standard relative rates of growth. We find that for a country with Pakistan's income and population, the capital goods sector "should" have grown 1.7 to 1.8 times as fast as the consumption goods sector while intermediate goods should have grown 1.4 to 1.5 times

as fast as consumption goods. These "standard" relative growth rates are given for each period in Table 1.

What has actually happened in Pakistan? Against the standard by which capital goods "should" grow -- 1.7 to 1.8 times as fast as consumption goods -- Pakistan's capital goods sector has grown more than twice as fast as consumption goods over the entire fifteen years. But in the two separate sub-periods for which we have data, a very different picture emerges. In the first plan period the rate of growth of capital goods was much below standard -- only 1.5 times the rate of growth of consumption goods -- or, the other way around, consumption goods grew at distinctly too fast a rate in the 1954-59 period. The rates of growth on which Lewis and Soligo based their judgment do show that capital goods grew at a faster rate than consumption goods in this period; but, to put it awkwardly, that rate is not as much faster as it should have been.

In sharp contrast, during the second plan period from 1959-60 to 1963-64 there is a very high relative rate of growth of the capital goods sector in Pakistan. Against a standard of 1.77 times the consumption sector growth rate, the capital goods sector grew 2.1 times as fast.

As for intermediate goods in Pakistan, they have consistently grown at a slower rate relative to consumption goods than would be expected from the standard, though only in the second plan period does this deficiency appear to be

significant. Such a difference, however, re-enforces our conclusion that there was too much incremental consumption goods output in the first plan period.

The important fact that is revealed by this comparison of growth rates and industrial structure is that the rate of growth of the capital goods sector appears clearly to be deficient by reasonable standards during the first plan period and, equally clearly, it is quite high during the second plan period. So the pattern of industrial output lends strong and essential support to the hypothesis that Pakistan ran against a capital constraint to growth in the first plan period that was subsequently removed by substantially increased domestic production of capital goods in the second plan period.

This conclusion, of course, refers only to production and therefore says nothing about total availability of capital goods inclusive of imports. It would be better by far to know how these conclusions would hold up if we considered domestic absorption, rather than domestic production. But Chenery's patterns were patterns of domestic production, and they don't describe what should have happened to domestic absorption. And I know of no alternative standard that does.

So the basic tests clearly support the hypothesis that a capital goods constraint reduced Pakistan's first plan growth.

C. Alternative Market Responses to a Capital Goods Constraint

If these are the basic clues to capital goods shortage, another set of characteristics would appear as market responses to the existence of "too many" consumption goods. So under the hypothesis, during the first plan period, relative to capital goods there would be more excess capacity in consumption goods; consumption goods inventories would rise and their relative prices fall. In the second plan period, a recovery from excessive consumption goods investment should have reversed each of these. These three symptoms should be considered together since they are substitutes.

1. Excess capacity

A rough but useful indication of the structure of excess capacity can be had from a private industrial survey in which data relating to the industrial distribution of capacity utilization were collected. From sixty-two firms, estimates of the percent utilization of existing one shift capacity were collected for four periods between June-December 1963 and June-December 1965. The primary fact that these data convey is that there was a sharp increase in capacity utilization in general during this period. But what is most interesting for the question of an operative capital goods constraint is that within this general trend of increasing utilization of industrial capacity (most persuasively attributed to import

liberalization [10]), there is a systematic pattern in the distribution of excess capacity -- capital goods capacity is at no time as fully utilized as is consumption goods capacity.²

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2. In a study of excess capacity per se, it appears that the higher utilization rates in consumption goods is spurious [13]. This does not affect the change in relative utilization rates described in the text.
-

Since the data pertain only to the third of our three stages -- to the second plan period (and only to part of that) -- in which we have hypothesized a relatively free availability of capital goods and the absence of a capital goods constraint, this distribution of excess capacity is compatible with the hypothesis. Having overcome the capital capacity shortage of the first plan period, the capital goods industry suffers relatively the greatest excess capacity in the second plan period.

But it would be easy to make too much of this evidence for two reasons: (a) we know nothing as yet about how this structure of excess capacity compares to either of the earlier periods, and (b) relevant to this, during the period for which we have data, the utilization of capital sector capacity increased faster than that of consumption sector -- which is not what our hypothesis would suggest.

2. Inventory accumulation

If the three stage hypothesis is correct, inventories of consumer goods should have been high relative to capital goods inventories when capital goods were scarce in the first plan period and declined, relatively, in the second. Or, less precisely, since consumer goods looms large in total production, total inventories should rise from first stage to second and then decline in the third. Data on which to test assertions about inventory movements are, of course, notoriously bad. However, from both of the sources for which we have inventory data in some meaningful form, the pattern of the three stage hypothesis is reasonably supported.

The study of corporate saving in Pakistan [1] based on analysis of the balance sheets of publicly listed corporations was only peripherally concerned with inventories; however, it gives some indication of the behavior of inventories within this important group of industries and, with a crude grouping of the reported industries by their product using sector, a suggestion of the pattern of change in relative inventories between consumption, intermediate and capital goods. Unfortunately, these data cover only the five year period 1959 through 1963 so they cannot indicate whether there was an increase in relative consumption goods inventories between pre-plan and first plan, but only whether there was a decrease between first and second plan periods.

The data summarized in Table 2 indicate clearly that consumer goods inventories decreased quite significantly between 1959 and 1963 while capital goods inventories increased and intermediate goods inventories remained relatively constant. All figures in Table 2 are averages of inventories as a percent of Gross Fixed Assets -- in other words, the percentage inventory figures have been weighted by the sizes of the companies included in each category.³

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3. It should be noted that whether textiles are included in consumption or intermediate goods does not change this pattern though it does, of course, make the decline in consumption goods inventories less dramatic.
-

The important fact in Table 2 is the direction of movement -- that capital goods inventories have increased while consumption goods inventories have diminished -- and not a comparison between their levels which would be most difficult given the very different nature of their manufacture and distribution.

Table 2

	<u>1959</u>	<u>1963</u>
Consumption Goods	84.6	44.4
Intermediate Goods	28.9	28.4
Capital Goods	42.1	54.9

Source: Baqai, M. [1], Tables, pp. 25-35.

The second and much weaker kind of inventory evidence is that aggregate stock changes show a pronounced increase from Rs. 30 million in 1945-50 to Rs. 430 million in 1959-60 which is then reversed with a fall to Rs. 250 million in 1964-65 [4, Table 4, p. 4]. Despite their serious shortcomings, since consumption goods loom so large in the total economy, these figures appear quite consistent with the three stage hypothesis.

3. Relative prices

The third alternative adjustment to excessive consumer goods capacity may be a fall in relative prices of consumption goods. The three stage hypothesis suggests that consumer goods prices in Pakistan should have (a) fallen relative to capital goods prices between the pre-plan period and the first plan period, and then (b) risen relative to capital goods prices between first and second plan periods as the overproduction of consumption goods was corrected.

Lewis' figures [6] provide price data from which a set of sectoral relative prices can be generated for 1951-52 to 1963-64. The three year moving averages of Table 3 show the behavior of relative prices over the period for East and for West Pakistan separately. The movements are similar in both wings -- though more pronounced in the East. They lend both support and doubt to the three stage hypothesis.

Table 3

Consumption and Capital Goods Prices
 Consumption Good, Price Index as %
 Capital Goods Price
 (3 year moving averages base 1954-60)

	<u>West Pakistan</u>	<u>East Pakistan</u>
1951-2	.821	---
1952-3	.977	1.162
1953-4	1.196	1.482
1954-5	1.074	1.487
<u>Average</u>	<u>1.017</u>	<u>1.377</u>
1955-6	.964	1.027
1956-7	.925	.957
1957-8	.976	1.004
1958-9	1.002	.966
1959-60	1.000	1.000
<u>Average</u>	<u>.973</u>	<u>.989</u>
1960-61	1.019	.894
1961-62	.989	.858
1962-63	.907	.909
1963-64	.894	.877
<u>Average</u>	<u>.952</u>	<u>.884</u>

Source: Lewis, Appendix C [6].

The movement of prices between the pre-plan and first plan periods is clearly in the direction implied by our hypothesis -- the prices of consumption goods fell significantly between

the pre-plan period and the first plan period. But the movement between first and second plan periods does not support the hypothesis since there was a continued downward drift in consumption goods prices where there should have been -- if the hypothesis were to be consistently supported -- a rise in consumption goods prices at this time. Whether this inconsistency means that we have reason to doubt the three-stage hypothesis or whether it simply suggests that either inventory accumulation or the level of excess capacity maintained in the capital goods sector during the second plan period was enough to prevent the expected rise in consumer goods prices is a question we cannot answer.

D. Policy Responses through Taxation

It is well to remember that, as evidence of a capital constraint, taxes differ from the other symptoms discussed above in that their behavior is not necessarily connected with a shortage of capital goods. Instead, tax changes have been suggested as a policy response that might be induced by a capital goods constraint but need not be.

If taxes in Pakistan have responded to the capital goods constraint, we should under the three stage hypothesis expect that both income taxes and indirect taxes on consumption goods would fall during the first plan period -- in response to the excess capacity in consumption goods -- and rise during the second plan period -- as this capacity imbalance was

corrected. This pattern would appear in income taxes, in indirect taxes on consumption goods, or in both. Income taxes would be judged high or low relative to other periods of time; indirect taxes on consumption goods would be judged high or low relative to such taxes on investment goods.

1. Income taxation

A study of Pakistan income taxation since Partition by Abdur Rab [9] provides some basis for judging the behavior of these taxes in the three periods. While collections from income taxes have grown in absolute value during the three periods, there has been an apparent decrease in income taxes relative to total income. This decrease within a progressive rate structure has been the result of changes of the rate structure itself and changes in the definition of taxable income. Combined, these were sufficient to offset the combined rise in prices and real incomes during the period. As a rough estimate of the influence of these sources of decline in relative income tax collection -- and more particularly as a way to judge the pattern of exploitation of income tax potential over time -- we have compared actual tax collections with "potential" collections for the years 1952-53, 1954-55, 1956-57, and 1959-60 (the last year for which the data can be had). "Potential" income tax collection was calculated simply as that tax which would have been generated by the rates effective in 1949-50 had the total income earned

Table 4

Income Taxes
Actual and "Potential" Collections
(Base 1949-50)

	<u>1949-50</u>	<u>1952-3</u>	<u>1954-5</u>	<u>1956-7</u>	<u>1959-60</u>
Actual Collections as % of "Potential"	100%	78%	58%	61%	70%

Source: Tax rates and taxable incomes from A. Rab unpublished work sheets. "Potential" tax collections were computed by applying 1949-50 tax rate to that income which would have been generated in each bracket had income expanded since at 1949-50 at just the rate of manufacturing income.

in each income bracket increased at the same rate as did manufacturing income.⁴ The results are shown in Table 4.

4. This estimate of "potential" tax assumes that income and exemption allowances of tax payers in each income bracket maintained the same relationship while total income earned within the bracket increased -- at its simplest, with unchanged set of exemptions and rates, the income of each bracket would expand by multiplication of identical taxpayers in that group and not by increase in the incomes of the taxpayers. This is wrong, of course, but it makes a simple computation possible -- without the need to adjust for movements between tax brackets, hence between effective marginal tax rates. The results are deemed highly suggestive despite this shortcoming.

The pattern of income taxation ~~in Table 2~~ is compatible with the hypothesis that the government encouraged consumption expenditures during the first plan period by reducing tax collections relative to the 1949-50 base. The decline from

100% in 1949-50 to about 60% in 1954-55 and 1956-57 certainly bears this out. Further, the subsequent increase in relative taxation that shows up in the 1959-60 period, at the beginning of the second plan is quite compatible with a redress of the consumption goods imbalance that allowed an increased exploitation of the income tax potential. So these figures might suggest a government response through income taxes to excessive consumption investment (and its correction).

However, these figures are also in keeping with the simpler and more likely hypothesis that a gradual and consistent erosion of income taxes was stopped by the political revolution of 1958 and that these figures simply reflect the seriousness with which the new administration pursued an objective of economic growth with its concomitant demands on all sources of taxation.⁵

5. This has been widely noted [11].

2. Indirect taxation

An even less clear picture emerges from the data on indirect taxation of industrial output by use. Starting from the Lewis and Quereshi data on excise and sales tax collections on domestic output [7], reclassified by use,⁶ the

6. Again using [14].

levels of indirect taxation for consumption, intermediate and capital goods manufacturers were calculated for 1954-55, 1959-60 and 1962-63. To give these absolute quantities meaning, they have further been reduced to annual rates of growth and, in Table 5, compared to the corresponding annual rates of growth of output for (almost) the same periods.

It is certainly borne out by these comparisons that indirect taxes over both periods grew less rapidly than did output (with one very important exception) as noted by Lewis and Quereshi [7, p. 500]. But this is not the most important fact for present purposes, since ours is a question of the pattern of taxation of consumption goods relative to capital goods. We should expect with the three stage hypothesis, taxes on consumption goods to fall during the first plan period and rise during the second plan period. But they didn't. While all taxes grew slower than output in the first period taxes collected on capital goods increased very much faster than did capital goods output during the second plan period. This is the important exception to the Lewis and Quereshi generalization that output outran tax collections. If we can trust the figures, this implies that either the rate and coverage of indirect taxes on capital goods production were sharply increased during the second plan period or less plausibly that the structure of production within the capital goods sector swung radically toward highly taxed commodities. Either way, there is little here to support the

Table 5

Sectoral Distribution of Indirect Taxes
(Excise and Sales Taxes on Domestic
Production)

	<u>1954-55</u>	<u>1959-60</u>	<u>1962-63</u>
A. Indirect Tax Collections: (a)			
Consumption Goods	219,579	437,545	571,017
Intermediate Goods	31,565	54,481	77,554
Capital Goods	6,598	15,413	60,944
Total	257,742	507,439	709,515
B. Annual Rates of Growth of Taxes (and of output): (b)			
Consumption Goods	14.8 (18.1)	9.4 (12.8)	
Intermediate Goods	11.6 (22.3)	12.4 (16.2)	
Capital Goods	18.5 (24.8)	158.1 (23.2)	
C. Percentage Shares of Total Taxes (and of output): (c)			
Consumption Goods	85.2 (79.8)	86.2 (76.0)	80.5 (71.6)
Intermediate Goods	12.2 (11.4)	10.7 (13.0)	10.9 (13.4)
Capital Goods	2.6 (8.9)	3.0 (11.0)	8.9 (14.8)

Source: (a) Lewis and Quereshi [7, p. 514]
classified by [14].

contention that consumption goods were relatively lightly taxed during the first plan period or that capital goods were relatively lightly taxed during the second plan. Neither appears to be the case. Part C of Table 5 explains, if it doesn't rationalize, this sharp increase in indirect taxation of capital goods manufacture in the second plan as a step to force the capital goods sector to share more equally in indirect taxes. Though their favored treatment is still

evident in 1962-63 -- where, with 14.8% of output, they paid only 8.9% of the tax -- it is far less than in the earlier periods.

Too, the question of relative taxation is answered another way in Part E. If the government had offered tax concessions to induce utilization of excessive consumption goods capacity, it should have reduced relative taxation of consumption goods. Instead it was increased, and in the second plan the consumption goods sector provided 76% of industrial output while paying 86% of these indirect taxes; the capital goods sector produced 11% of the output and paid 3% of these taxes.

So it appears that the government did not take the easy way, responding to excess consumption goods capacity by favorable taxation of domestic consumption goods manufacture. In fact, the opposite case could be made -- that it (wisely) continued to induce capital sector investment by very favorable tax treatment in that sector and, what's more, made these concessions most attractive during the first plan period when overexpansion of consumption goods was (by our hypothesis) a most serious problem. The government began to eliminate these tax incentives as the imbalance was corrected. This may be too sophisticated a reading of the government's motives and understanding, but the tax pattern that appears certainly was the correct one for an appropriate investment allocation.

E. Capital Constraint and Foreign Aid

The major shortcoming of this analysis has been, of course, that imported capital goods have been ignored while they clearly had significant influence on Pakistan's growth. There are two implications of capital imports and both have been suggested as valid factually: (1) that if there was any impact of capital goods on growth in the second plan period it was not, as I have suggested, due to domestic production but to massive injections of capital goods from abroad; and (2) derived from this, that with so simple an explanation, there is no need to search further for why and how Pakistan turned a capital shortage into an adequacy of capital -- they did it by accepting massive imports.

On the first issue, there is mixed evidence, but the conclusion is that the increase in capital goods availability in the second plan period definitely was not the result ~~simply~~ of capital goods imports. Three sources of data describe something about capital goods imports and allow computation of capital goods imports as a percentage of total imports (note). Not surprisingly, capital goods formed a larger part of total imports as the period progressed. Lewis and Soligo's figures show an increase from 50.0% in 1954-55 to 60.1% in 1959-60 to 67.6% in 1963-64 [8]. Thomas' yearly figures for 1957-58 to 1962-63 are quite a bit lower (starting at 35.0% and ending up at 49.8%), but show the same sort of

upward trend [10]. Finally, the Third Plan figures that describe only the 1960-64 period show about the same level as Thomas and a slight drift upward [4]. These are, in the terminology of the theoretical model [12], the empirical estimates of α , the proportion of capital goods in total imports, and their rise indicates a positive policy response to capital goods shortage throughout the period.⁷

7. Re-enforcing the point made by Papenak that the shortage may easily have persisted since I measure variations only.

But the importance of α of the formal model was derived on the assumption of a trade balance while Pakistan's foreign aid was considerable. So the proportion of capital goodsⁱⁿ imports is not so important as the proportion of capital goods imports in total capital goods supply -- the change in the proportion of imported capital goods in total domestic absorption. Were the large injections of aid "responsible" in the second plan for releasing a capital goods constraint, then certainly the proportion of total capital goods coming from imports should have increased significantly. But it didn't. In Lewis and Soligo's figures, the proportion of domestic absorption of capital goods that comes from abroad falls in the three periods from 69.4% to 62.6% to 61.6%. If aid financed capital goods were responsible for removing the first plan's capital goods constraint, the proportion of

imports in total availability of capital goods would certainly have to be increased.

So the second issue dissolves to be replaced by a more difficult one. If aid financed capital goods imports don't explain Pakistan's escape from (or release of) a capital goods constraint, then something else does.

F. Conclusions

In the earlier paper, I showed that the composition of output could, in theory, limit a country's growth. In this paper the question has been whether, in fact, such a limit appears in Pakistan. And the answer is that that growth appears to have been so limited at least during the first plan period. There is every indication that an imbalance in the composition of production, like that described by the Harrod-Domar/Mahalanobis model of the earlier paper, is a serious threat to growth and one that should not be neglected in the planning of economic development.

While this conclusion is important in itself, it raises the further and perhaps more important questions of why and how Pakistan was able to correct a serious deficiency in relative capital and consumption goods production between the first and second plan periods. It does not appear to have been simple injections of foreign aid as many have assumed; it may have been a happy combination of market responses and tax policies. But it is clear that present evidence can tell

us neither what the cause of correction was nor whether that correction has gone far enough to redress the balance between consumption and capital goods production.

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