AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523
BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY
Batch 80

1. SUBJECT CLASSIFICATION
A. PRIMARY
Development and Economics DA00-0000-0000
B. SECONDARY
General

2. TITLE AND SUBTITLE
Comparative development strategies, India and Pakistan

3. AUTHOR(S)
Papanek, G.F.

4. DOCUMENT DATE
1969

5. NUMBER OF PAGES
~~39p.~~ 40p.

6. ARC NUMBER
ARC

7. REFERENCE ORGANIZATION NAME AND ADDRESS
Harvard

8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publishers, Availability)
(In Economic development rpt.no.152)

9. ABSTRACT

10. CONTROL NUMBER
PN-AAF-336

11. PRICE OF DOCUMENT

12. DESCRIPTORS
Comparison
Development
India
Pakistan

13. PROJECT NUMBER

14. CONTRACT NUMBER
CSD-1543 Res.

15. TYPE OF DOCUMENT

AID 590-1 (4-74)

COMPARATIVE DEVELOPMENT STRATEGIES:

INDIA AND PAKISTAN

by

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Economic Development Report No. 152

December 1969

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Portions of this research were supported by the Development Advisory Service through funds provided by the Agency for International Development under Contract CSD-1543. However, the views expressed in this paper do not necessarily reflect those of AID.

DRAFT

Gustav F. Papanek

December 19, 1969

Comparative Development Strategies: India and Pakistan*

A comparison of India and Pakistan deals with countries that include nearly one-fifth of all humanity; over half as many people as in all the rest of the less developed world except for China. A comparison of their development strategies, therefore, has some quantitative significance. It is also especially useful because the two countries were one until 1947, and still have similar economies, institutions, and people. The effect of differences in development strategies and policies can, therefore, be seen more clearly than by comparisons of countries that have little in common.

Statistics and Pseudo-Statistics

All comparisons, especially of less developed countries, suffer from inadequate and not wholly comparable data. India and Pakistan have a better data base than most and their statistical series are often quite similar. However, comparisons nevertheless should take into account only gross differences, for two reasons.

First, some basic statistical series are not really comparable and which series are selected can greatly affect one's conclusions.

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*Some of the data for India are based on the massive work of Morton C. Grossman, which he was kind enough to make available. He is obviously not responsible for the subsequent adjustments to achieve reasonable comparability with Pakistan data. The statistical legerdemain was performed by Susan Cowan Jakubiak. I am grateful for the comments of Morton C. Grossman, Walter P. Falcon and Hanna Papanek.

This paper is, to a considerable extent, an updating of the comprehensive pioneering effort by E.S. Mason comparing the two countries. ("Economic Development in India and Pakistan", Occasional Papers in International Affairs, No. 13, September 1966, Center for International Affairs, Harvard University.

For instance, India's National Accounts before 1960 are on a net basis at 1948/49 prices, Pakistan's on a gross basis at 1959/60 prices. By comparing some Indian series one can see the effect of statistical definition.

Table 1

India's Growth Rates 1960/61 to 1964/65

1.) NNP at 1948/49 factor prices	3.3% per annum
2.) NDP at 1960/61 " "	4.7% " "
3.) GDP at 1960/61 " "	4.9% " "

Source: Based on CSO "Conventional" estimates for 1 and "Revised" estimates for 2 and 3.

Second, both countries suffer from the vagaries of weather and more so than nearly all large less developed countries. The weather affects not only agriculture, but the functioning of the whole economy since exports, industrial output and even investment are substantially influenced by agricultural output. Conclusions, therefore, are heavily influenced by decisions on such matters as the initial and terminal years chosen for comparison.

Table 2

India's Growth Rates Over Slightly Different Periods

(NNP at 1948/49 Factor Prices)

1949/50 - 1959/60	3.0% per annum
1949/50 - 1960/61	3.4% " "
1950/51 - 1960/61	3.7% " "

Source: Based on CSO "Conventional" series.

All quantitative comparisons which follow, therefore, have to be regarded, even more than is usual, as highly suspect unless the differences are of such magnitude that one can be reasonably sure that statistical artifact is not involved. To the extent possible, comparisons for identical years are used since there is some tendency for weather effects to be rather similar in both countries.

There is an additional factor which makes comparisons of the two countries analytically unsatisfactory -- they are so large and internally diverse that countrywide averages simply hide some of the more interesting developments. In Pakistan, the growth rate achieved in the 1960's in the Western province was very high indeed. Manufacturing grew at over 16% per annum from 1959/60 to 1964/65, while East Pakistan grew at 10%. Similarly, crop production in the West rose by nearly 8% per year (from 1959/60 to 1968/69) while it increased only 2.5% in the East. There were similar disparities in India between growth in such areas as the Punjab and Bengal, Madras and Orissa, Gujerat and Bihar. Each of the provinces of Pakistan, and some of States of India, had as much population and they varied in geography as much as major European nations. To present average rates of growth, or any other average data for India and Pakistan, is therefore like averaging the growth rates of Germany and Italy with those of the U.K. and France. Series for India and Pakistan as a whole ignore differences in the natural and human resource endowment of their regions. They also hide different responses to the same policies. In a brief paper these differences generally have to be ignored, though their analysis can sometimes provide more of an insight into the effect of different strategies than the comparison of the two countries.

Overall Growth and the Curious Effect of Weighting

Given these caveats it appears that overall growth was slightly higher in India in the 1950's and substantially higher in Pakistan in the 1960's.

Table 3

Growth Rates in India and Pakistan*

(Annual Rates of Growth - percent)

	1949/50 - 1959/60		1959/60 - 1968/69	
	India	Pakistan	India	Pakistan
Agriculture	2.4-2.6	1.4	1.8-2.3	3.9
Manufacturing**	5.1-5.4	20.0	6.1-6.4	11.7
Other	3.3-3.6	3.2	3.5-3.7	6.8
Total product	3.0-3.3	2.5	2.9-3.3	5.9
Population	2.0	2.3	2.4	2.6
Product per capita	1.0-1.3	0.3	0.5-0.8	3.1

*For sources and methods of calculation see Statistical Appendix

**"Large scale" only

But a significant part of the differences in overall growth rates during the 1950's was due to a statistical structural effect, of considerable importance in all comparisons of growth among countries. Obviously if two countries achieve identical growth rates in all sectors, but start with a different sectoral structure they will have different overall growth rates. A simple comparison of growth rates may, therefore, indicate very little about the extent and efficiency of the effort made by the two countries. Almost universally, less developed countries have found high rates of growth easier to achieve in industry than in agriculture. The country with a higher proportional contribution to its national produce from industry will then show a higher overall growth rate, even if all sectoral growth rates of two countries are identical.*

A significant part of the difference in India's higher GDP growth rate than Pakistan's in the 1950's should not be ascribed to differences in development strategy, but to a stock of capital at Independence which included a higher proportion of investment in manufacturing.

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*To quantify the importance of this structural factor requires some assumptions. So-called large scale manufacturing, (defined as units employing at least 20 workers and using power) was 6% of India's GDP at the beginning of the 1950's, only 1% of Pakistan's. The question then is: what would have been the likely rate of growth in Pakistan's GDP if it had started from an economic structure like India's. Clearly if Pakistan's manufacturing sector had been 6% of GDP like India's, that sector would have grown more slowly than it did in fact, given its miniscule base. One can assume that Pakistan's industrial growth in the 1950's from a 6% base would have been at the 12% rate which it in fact achieved in the 1960's, when manufacturing did reach 6% of the national product. Pakistan's GDP growth rate would then have been quite close to India's during the 1950's. In other words if Pakistan's growth rate in large scale manufacturing had been 12% instead of 20%, but the base had been 6% instead of 1% of GDP, its overall GDP growth rate would have increased from 2.5% to 3.0% a year; this without taking account of the impact of the higher contribution of industry to growth in such sectors as transport, commerce, and services. More than half of the difference in overall growth rates between India and Pakistan would be "explained" by the differences in structure in the base year.

Investment, Defense and Savings

While part of India's somewhat higher growth rate in the 1950's can be ascribed to a different economic structure from Pakistan at Independence, a substantial part of Pakistan's higher growth in the 1960's has been ascribed to more ample foreign aid. The contribution of aid will be discussed after considering investment and savings.

With respect to investment the similarities between the two countries are most striking. Both succeeded in doubling or tripling the rate of investment as a percentage of the domestic product in the fifteen years between Independence and 1964/65; both devoted a very large proportion of available resources to non-consumption uses in the 1960's (between one-fifth and one-quarter). After 1965 the effect of their war, of two years of bad harvests and of sharply reduced foreign aid are evident in a substantial reduction in investment as a percentage of domestic product.

Investment as a percentage of GDP seems to have been slightly higher in India in the 1950's and in Pakistan in the 1960's, but the differences are small in both cases and not much greater than the likely margin for error. Clearly Pakistan expanded its investment more rapidly than India, but the difference in investment rates is simply not significant enough to explain the higher growth rate in Pakistan in the 1960's.

Table 4

Investment, Defense, Savings and Aid**

(in percent of GDP at adjusted current prices)

	50/51	49/50	1954/55		1959/60		1964/65		1967/68	
	India	Pak.	India	Pak.	India	Pak.	India	Pak.	India	Pak.
1. Defense	1.6	4.0	1.8	3.8	2.1	3.8	3.7	3.1	3.1	4.0
2. Investment	7.5	5.3	12.1	10.1	16.1	13.9	18.9	22.0	15.0	17.0
3. Total non-consumption	9.1	9.3	13.9	13.9	18.2	17.7	22.6	25.1	18.1	21.0
4. Import surplus* (mostly aid)	-0.4	2.5	0.1	0.6	2.4	5.1	4.3	10.6	2.7	6.8
5. Savings (3 minus 4)	9.5	6.8	13.8	13.3	15.8	12.6	18.3	14.5	15.4	14.2
6. Savings (2 minus 4)	7.9	2.8	12.0	9.5	13.7	8.8	14.6	11.4	12.3	10.2

Source: See Statistical Appendix.

*In nearly all years the import surplus was almost wholly financed by aid. Foreign private investment made a minor contribution. In 1949/50 Pakistan financed its import surplus by drawing down sterling balances. India drew on its sterling balances in the 1955-58 period.

**These figures have a wide range of error. The probable error has been increased by adjusting various magnitudes to provide for comparable foreign exchange rates for both countries. (4.75 rupees per dollar through 1954/55 and 7.5 thereafter). The whole import surplus was calculated at the arbitrary rates; defense and investment were adjusted upward to take account of their import component. The absolute percentages above have little validity, but should be roughly comparable. However, only major differences are significant.

Defense expenditures should not be neglected in inter-country comparisons, though they almost always are. If the issue is the extent of a country's sacrifice of consumption, defense expenditures are relevant, since they involve forgoing consumption, as much as investment. On the other hand, if the issue is the respective development effort, defense, of course, represents simply a diversion of resources. Since the Indian economy was more than four times the size of Pakistan's, the latter's attempt to approach India's military strength meant a much larger relative defense burden.

Pakistan always devoted substantially more resources to defense than India, except for the period from 1963 to 1965 when the military regime of President Ayub Khan had kept defense expenditures down for some years and India had increased hers after the fighting with China. In other years India's defense expenditures have been twice or thrice those of Pakistan in absolute terms, but in relation to GDP, Pakistan averaged about twice India's. The strain on Pakistan resulting from defense expenditures can be seen by the fact that they often totaled one-quarter of the expenditure on investment or more.

These facts can be cited either as evidence that the figure for investment alone is inappropriate to indicate the burden borne by Pakistan's economy in order to support both growth and independence, or that Pakistan's investment was reduced more than India's by the demands of the former's international policies.

India achieved a higher rate of savings, substantially higher in some years if the traditional definition of savings, which ignores the non-consumption expenditure on defense, is used. More detailed analysis is required of the reasons, but three factors may have played a role: the structural differences, that is the higher proportion of industry in India, previously noted; the Indian Government's greater willingness and ability to collect revenues; and its restrictions on consumption in the 1960's.

The greater role of the modern manufacturing sector in India at Independence affected not only the overall growth rate but possibly also the rate of savings. A very rough guess for Pakistan, made elsewhere*, was that industrialists saved about two-thirds of their returns. If India's industrialists saved at the same rate as Pakistan's, their contribution to savings would explain a substantial part of the difference between total savings in the two countries, since the industrial sector in India was much larger than in Pakistan.

Second, and less important, government revenues in India rose from about 8% of GDP to 10% over the 1950's and to an average of about 14% by the mid-1960's. In Pakistan they rose from 6.5% to 9% over the 1950's and averaged nearly 12% in the mid-1960's. Largely as the result of greater revenue collections, government savings played a somewhat larger role in India than Pakistan.

Third, it is also plausible (as argued elsewhere)* that savings rates are substantially influenced by the availability of the consumer goods desired by the higher income groups. In the mid-1950's Pakistan almost eliminated the imports of most luxury and semi-luxury consumer goods and had practically no production of such goods. Her savings rate

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*Papanek, G. F. Pakistan's Development - Social Goals and Private Incentives, Harvard University Press, 1967.

increased very sharply and was about equal to India's. In India, consumer goods were more readily available during this period. By the mid-1960's both import and production of consumer goods were more ample in Pakistan, but such goods were quite scarce in India. It was then that the disparity in savings between the two countries, with India having the higher rate, was greatest.

The savings comparison between the two countries suggests, even more strongly than the growth rate comparison, that simple quantitative indices of "self-help", or dedication to development, can be quite misleading. Savings are not the only non-consumption use of resources. Defense may need to be taken into account if sacrifice is to be measured. More important, all countries with a largely subsistenc peasant agriculture have found it difficult to mobilize agricultural savings. Those with a larger manufacturing sector - or profitable exports - therefore find it easier to achieve a high savings rate.

<u>The Role of Aid</u>

It is clear from Table 4 that Pakistan's import surplus consistently was twice or more India's as a percent of GDP. For both countries, that surplus was almost wholly financed by foreign aid. In the late 1950's and early 1960's yearly aid to Pakistan was running at about $250 million. It rose subsequently to a maximum of $650 million in 1964/65, but declined after the 1965 war. The Indian aid figures over this period were quite roughly double those of Pakistan in absolute amounts. Given an Indian GDP which was 4-5 times that of Pakistan, aid made a much greater contribution to Pakistan's resources than to India's. There were three reasons why Pakistan's aid was higher beginning in the late 1950's: (i) the large country effect. Aid donors have simply not been willing to provide the huge sums which would be involved if really large countries received the same amount per capita as smaller countries; (ii) the closer political relations between Pakistan and the U.S., the principal aid donor for both countries; (iii) Pakistan's better economic performance (i.e.: higher growth rate) in the eyes of the Western aid Consortium. The large country effect was applicable throughout. The political factor, however, changed in the 1960's as U.S. relations deteriorated with Pakistan and improved with India (especially after the 1962 fighting with China). The great increase in aid to Pakistan came between 1959 and 1965 dsspite this deterioration. It is, therefore, quite reasonable to ascribe much of the increase in aid to Pakistan during this period to its economic performance, its improved economic policies and program. There was a beneficent cycle - increased aid was a consequence of improved economic performance, and in turn encouraged and permitted steps that led to further improvement.

The question remains: to what extent can differences in growth between India and Pakistan in the 1960's be explained by differences in aid on the one hand and differences in development strategy on the other.

Aid magnitudes affected the rate of investment, the severity of the foreign exchange constraint on current imports, and the policies adopted by the two countries. These effects will be examined in turn.

The contribution of aid to investment needs to be measured in local currency. However, translating aid dollars (or pounds) into rupees creates some problems since the exchange rates of the two countries have differed more than the purchasing power of the respective rupee. To translate aid dollars into rupees at 4.75 to the dollar for Pakistan and 7.5 for India to reflect official exchange rates would understate the aid contribution to the former. By using the higher India exchange rates for both, one gets more comparable data and at the same time reflects, somewhat imperfectly, the accounting price which would be reasonably appropriate for both countries. The result is a synthetic estimate, but one that provides for a more accurate comparison. Such a synthetic estimate, shown in Table 4, indicates that the contribution of aid to investment was at least twice as great for Pakistan as for India.

It is certainly plausible that if India had received, proportionally to GDP, as much aid as did Pakistan, its rate of investment and growth would have been higher, and vice versa if the aid to Pakistan had been at India's level. In that sense a substantial part of Pakistan's higher growth rate in the 1960's was possible only because of the higher aid receipts.* But it is more accurate to say that greater aid for Pakistan enabled that country to reach a rate of investment comparable to India's with a lower rate of savings. With similar rates of investment, Pakistan achieved a higher rate of growth. The different investment/value added ratio between the two countries is not explained by the effect of differences in aid receipts on the rate of investment.

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*The Indian ratio of investment to output during the 1960's seems to have been around 5 or 6 to 1, if the foreign exchange component of investment is valued at an accounting price of 7.5 rupees to the dollar. At that investment/output ratio a more than twofold increase in aid would have increased the growth rate by about 1% per annum. More sophisticated calculations would undoubtedly show a different, and probably higher, return from additional aid.

But aid also allowed Pakistan to operate industrial investment at higher capacity, by financing additional imports of raw materials and intermediate products. Obviously, in the absence of aid Pakistan's industrial output would have been substantially less than it in fact was. But whether the magnitude of this maintenance aid explains Pakistan's higher growth rate compared to India is another question. More disaggregated analysis is required for a reasonably conclusive answer, but a superficial look at the data suggests that the effect of aid on maintenance imports does little to explain the relative growth rates of the two countries. Despite aid, the lack of maintenance imports seems to have been at least as much a constraint on Pakistan as on India. Between 1950/51 and 1964/65 India's maintenance imports (consumer goods, raw materials and intermediates, except for those going primarily to investment) increased nearly 30% in dollar terms, while between 1949/50 and 1964/65 Pakistan's decreased by 15%. To be sure, the explanation could lie in differences in the growth of import substituting industries, differences in restrictions on consumer goods imports or in the different initial year*, but these data certainly do not support the suggestion that, as a result of aid, Pakistan suffered from a less serious foreign exchange constraint on output than did India.

The third effect of more ample aid flows to Pakistan was on government policies. The groups within the Pakistan government who argued that government intervention in the economy should take the form of indirect measures, taxes and subsidies, rather than direct controls (licenses, permits, prohibitions) undoubtedly found their hand strengthened by the availability of program aid designed precisely to

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*Total Indian imports in 1949/50 were not, however, much different from 1950/51.

support such a shift. Comparable groups in India could not count on the same relative support. If, as argued elsewhere*, government intervention was more efficiently accomplished by using the market mechanism instead of direct controls, Pakistan was helped to make the policy shift by the availability of relatively more aid than was available to India.

In short, the widespread contention that Pakistan's growth rate in the 1960's, roughly double India's, is largely explained by its higher aid receipts, seems to have little basis as far as one can tell from these data. Clearly aid permitted Pakistan to have a higher growth rate than Pakistan would have had with less aid. At lower aid levels Pakistan would have faced the choice of stepping up its savings rate or accepting a lower rate of investment (and defense) and less adequate operation of installed capacity. It is also likely that with less aid Pakistan would not have improved its policy package to the extent it did. But in comparison with India, Pakistan despite higher aid flows had neither a clearly higher rate of investment nor a clearly less serious foreign exchange constraint on operation of existing capital. Therefore, a large part of the explanation for a higher growth rate in Pakistan than in India in the 1960's will have to be found outside the provision of more aid.

Three activities need to be prominent in any analysis of the lower investment/output ratio in Pakistan than in India: agriculture, manufacturing and exports.

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*Papanek, <u>op. cit.</u>

Agriculture

It is clear that the major cause of differences in overall growth was the somewhat higher growth rate of Indian agriculture during the 1950's, and the substantially higher growth rate of that sector in Pakistan during the 1960's. Statistical problems are, of course, particularly serious with respect to comparisons of agricultural output, but that these differences existed does not seem to be in doubt. A number of factors played a role.

After Independence neither country used its best administrators and technicians to deal with agriculture. Pakistan was particularly cavalier about agriculture and particularly insistent on industrial development since the areas that became Pakistan had been major agricultural centers with little industry. (In pro-Pakistan publications they were elegantly called "Hewers of wood and drawers of water.") In addition, the disruption of Partition was more severe for Pakistan's agriculture since a higher proportion of its cultivators, irrigation officials, processors, and so on were refugees who had to adapt to new circumstances and, in many cases, new technology.

For both reasons, agriculture in Pakistan lagged even more than in India. A change in attitudes began earlier in Pakistan (by the mid-1950's), not because of greater wisdom but because of greater crisis. It came as a real shock to Pakistanis, with the image that their country was the breadbasket of the subcontinent, to find that they faced a severe shortage. India on the other hand was lulled by relatively satisfactory agricultural progress and was, therefore, less willing to try new policies. During India's Second Five Year Plan public expenditure on agriculture, irrigation and related activities was about 15% of the total development program. In Pakistan the corresponding figure was about 30%.

Though attitudes had begun to change earlier, far-reaching changes in policy began in Pakistan only in 1959. In the 1950's Pakistan's agricultural policy package and programs were less effective than India's, in the 1960's the reverse was true. However, part of Pakistan's better relative performance was due to inherited advantages, not better management, and the high agricultural growth rate was limited to West Pakistan. Six factors largely explain what happened in the two countries:

(a) In Pakistan, relative prices for some major agricultural products were more stable and were higher than in India after 1959. The government abolished restrictions on foodgrain shipments from surplus to deficit zones, which had kept prices low in the former and had led to more extensive price fluctuations; established a buffer-stock and price stabilization program for wheat and rice; and reduced and eventually eliminated export duties on agricultural products. India actually imposed a more rigorous zoning system in 1965, did not guarantee foodgrain prices and persisted with export duties longer than Pakistan.

(b) Pakistan provided heavy subsidies for some agricultural inputs. For fertilizer the subsidy ranged around 50% for long periods while there was no such subsidy in India over much of this time. As a result the price ratio in Pakistan between such crops as wheat and fertilizer was among the most favorable in the world, among the least favorable in India.* There is evidence that cultivators will readily accept the risks of a new practice only if the difference between cost and expected benefit is quite large. This was clearly much more the case in Pakistan than in India.

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*Falcon, W.P. and Gotsch, C.H., "Agricultural Policy and Performance in the Punjab: A Comparative Study of India and Pakistan", Asian Review, July 1968.

(c) The <u>internal distribution</u> system in West Pakistan was substantially improved, by abandoning the notion that the handling of fertilizer and sinking of wells should be largely reserved to government or the cooperatives. Neither institution had proved terribly effective in handling the necessarily highly decentralized job involved in both operations. In the 1960's private investment in tubewells was freely permitted, imported components became readily available and the cost benefit ratio was improved by higher output prices. In India by contrast, restriction on private tubewells continued to be effective until the mid-1960's. As a result, while in the Indian Punjab tubewells increased from over 3,000 cusec capacity to some 23,000 cusecs from 1956/57 to 1965/66, in the comparable Pakistani Punjab they increased from less than 2,000 cusecs capacity to about 40,000 cusecs.* Tubewells, especially private ones, had the added benefit of providing an assured water supply. With public surface water from the major irrigation projects there was always the risk that administrative difficulties, incompetence or venality would deprive a particular cultivator of water just when he most needed it.

Fertilizer distribution was improved in Pakistan in the early 1960's by permitting small shopkeepers and other private firms to handle it. Again, this development plus the excellent cost/benefit ratio led to a sharp increase in fertilizer use in West Pakistan. In East Pakistan, poor procurement policies, inadequate credit institutions and high risk resulted in very unsatisfactory progress. While Pakistan adopted policies that spurred demand and had an effective distribution system, it did not provide enough fertilizer to take full advantage of these assets. In India the cooperative movement and government had

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*<u>Ibid</u>.

always been a bit more effective in distribution so a change in the system was less imperative. However, in the mid-1960's India did a better job than Pakistan of obtaining the fertilizer necessary to meet demand, though neither country provided an adequate amount, despite fertilizer's high payoff.

(d) The development of public irrigation projects was strongly pushed in India. As a result surface water supplies increased more rapidly in that country than in Pakistan. Between 1955 and 1960 India added about 25% to its irrigated acreage, Pakistan about 6%. Both countries discovered that many large scale public irrigation projects were high cost, had a long gestation period and took an even longer time to come into effective use. The payoff on India's heavy investment in such projects will come over time.

(e) The Rural Works Programme, an imaginative effort to use underemployed labor for development of the rural infrastructure by relying on highly decentralized management, was successful only in East Pakistan. It was the one bright spot in an otherwise quite dismal picture of development. It provided a basis, beginning in the mid-1960's for a rapid expansion of cooperatively owned irrigation pumps.* The corresponding effort in India, the Intensive Agricultural Districts Program was much more highly centralized and relied more on traditional extension methods -- demonstration and farm planning. It seems to have had little success.**

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*Cf. Thomas, John W., "Rural Public Works and East Pakistan's Development", in Development Policy II - The Pakistan Experience, G.F. Papanek and W.P. Falcon, (eds.), Harvard University Press, Cambridge, Mass. 1970 (Forthcoming).

**Brown, Dorris, Agricultural Development in India's Districts - The Intensive Agricultural Districts Programme, Harvard University Press, 1970, (Forthcoming).

(f) Beginning in the mid-1960's technological change, and particularly the availability of new seed varieties, had a startling effect on output in some areas of both countries. But the new technology had significant impact on some crops only, most notably wheat and some types of rice, and in areas with suitable environmental factors, particularly a reasonably assured water supply. West Pakistan with an agriculture based largely on irrigation, and with half of its output of major crops by value contributed by wheat and rice, was in an excellent position to benefit from recent technological change, but large areas of India (as well as East Pakistan) were simply not in as favorable a position. This is yet another example of the danger of mistaking overall growth rates for conclusive evidence on development effort or sensible development policies: countries or areas that are fortunate enough to benefit from massive technological advances may look good through no particular merit of their own.

In comparing growth in the two countries one has to remember that a smaller proportion of India's agriculture was able to benefit from the new seeds than Pakistan's. A small part of any difference in their agricultural growth rates since about 1965 is due to the fact that over 10% of the value of Pakistan's total agricultural output is contributed by West Pakistan's wheat and rice, the primary beneficiaries of the new technology.

But the importance of regional differences goes beyond technology. The Punjab, the agricultural center of West Pakistan, has traditionally been peopled by able farmers, more open to new influences than other areas of the subcontinent. The land-tenure pattern and other institutional aspects are also relatively favorable to growth. There were other areas of the subcontinent with a favorable human and institutional environment for agricultural development, but Pakistan has probably inherited more of them than has India. An examination of the two comparable areas in the two countries -- East and West Punjab and East and West Bengal -- provides some indication of the importance of this inheritance factor as against the effect of differences in policy or strategy.

The two parts of the former province of Bengal showed quite similar fluctuations in rice production during the 1950's, due to weather. No significant upward trend was noticeable. However, between 1961 and 1966 rice output in East Pakistan (or East Bengal) increased over 30%; in West (Indian) Bengal only 15%.* However, agricultural data in East Pakistan are notoriously unreliable. In West Bengal they have reportedly become less reliable in the last few years, as this food deficit state, governed by the opposition to the central government, tried to improve its claim for food from surplus areas. The differences in growth must therefore be treated with some reserve, though they are quite striking, when charted, between common stagnation until about 1958-59 and more rapid growth in East Pakistan thereafter.

Total crop output in the West (Pakistan) Punjab grew at about half the rate of the East (Indian) Punjab from 1953-54 to the end of the decade. However, in the 1960's the growth rate in the Pakistani Punjab shot up sharply. The year 1965-66 was a poor one for both areas, 1967-68 an excellent one. Over the period 1959-60 through 1967-68, both areas had a growth rate of about 4.5% per year.* This represented a modest increase for India, a doubling for Pakistan compared to the 1950's.

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* Thomas, John W., "Rural Public Works and East Pakistan's Development," (Ph.D. thesis), Harvard University, 1968, pp. 173-5.

** Regressions: West (Pakistan) - 4.3% (Corr. R^2 = 0.72)
East (India) - 4.5% (Corr. R^2 = 0.54)

In short, the growth in agricultural output in Pakistan was below India's in the 1950's, in part because of the greater effects of Partition; in part because of greater neglect; in part because such inefficient policies as government restrictions on distribution of inputs and outputs, and depressed output prices were carried further than in India and were even less appropriate in Pakistan with its weaker governmental and cooperative machinery.

In the 1960's, agricultural growth in Pakistan was significantly higher than in India. In part this was due to Pakistan's better inheritance, in the form of larger land areas than in India, where the new, seed-based technology was appropriate. This became a factor in the mid-1960's when the new seeds became available. In part, however, the higher growth rate was due to Pakistan's more effective policy package -- a better relationship between the prices of outputs and inputs, including stabilization of output prices; a more effective distribution system for some inputs and investment as the result of permitting private, as well as public, initiative; and the development of infrastructure in East Pakista through the Rural Public Works Programme. On the other hand, India was more effective in making fertilizer available in the mid-1960's and invested more in surface water development. Indian strategy placed heavy reliance on government distribution, on centralized decisions, on the educational and inspirational effort of community development and extension services, and on large scale irrigation projects. The benefits of extension services and major irrigation, however, were often not commensurate with their costs, at least over the short run.

Manufacturing

Strategy in manufacturing was partly dictated by the base from which both countries started, and was partly a matter of conscious choice. India had an extensive consumer goods industry, Pakistan had no industry to speak of. As a result, India had experienced industrialists, some accustomed to operate on a large scale, Pakistan practically none. India had both iron ore and coking coal, Pakistan had neither. India had a market some $4\frac{1}{2}$ times that of Pakistan and could therefore establish plants of an adequate scale in many more industries than Pakistan, which was limited to a greater extent to mass consumption goods. The Indian tendency towards self-sufficiency was reinforced because its exports were a smaller proportion of GDP than in Pakistan and, after the late 1950's, by the government's inability and reluctance to rely as heavily on aid as did Pakistan.

As a result of these factors, any Indian government would have placed less emphasis on consumer goods and more emphasis on capital goods than any Pakistani government. But the Indian government was also influenced, especially in the 1950's, by two dominant and related themes espoused by some parts of the development fraternity: belief in the importance of so-called heavy industry, mainly steel production and steel processing (e.g., machine tools) and belief in the difficulties of expanding export earnings, due to secularly declining terms of trade. Both notions also had their advocates in Pakistan, but never became firm government policy, as they did in the second Indian Plan. This difference was partly due to Pakistan's different objective circumstances, in part perhaps to a more pragmatic attitude, and also to the greater influence of some professional economists. As a result, Pakistan delayed substantial investment in steel and machine tool production to the mid-1960's and experimented earlier than India with a successful program to expand exports of manufacturers.

In addition to its greater emphasis on heavy industry and industrial self-sufficiency, the Indian government also gave higher priority to public investment. (In 1965/66 investment in public sector enterprises in India was nearly 400 crores; the comparable figure for Pakistan in 1964/65 was 60 crores, though India's GDP is only 4-5 times that of Pakistan.) India also had a less favorable climate for its private investors than Pakistan, at least until 1968. Both countries were strong on government controls, but Pakistan began to substitute taxes and subsidies for licenses and prohibitions. For instance, beginning in 1959, the Pakistani industrialist could always obtain the odd spare part he needed or take a trip to visit his customers under the export bonus scheme if he was prepared to pay a legal premium of 100-200%. In India he could not. During a brief period before the 1965 war additional resources were made available to Pakistan by some aid donors to permit a further reduction in import controls. For a while it appeared that a considerable increase in output would result from existing investment, as greater supplies of imports and import competition both forced and facilitated capacity operation and improved efficiency.

As a result of all these factors, Pakistan saw the hothouse growth of private consumer goods industries, with a short gestation period, high profits and high savings rates. When production exceeded domestic demand and the government effectively devalued the currency (see below), substantial proportions of some manufactures were exported. India, on the other hand, found that it took a long time to achieve reasonably efficient operation of the complex capital goods industries it had favored. Both countries had low profits, or losses on their public enterprise, but this was more serious for India with its larger public sector.* Since a higher proportion of India's manufacturing output was in lines where quality is important, it took longer to develop demand for exports, especially since India lagged in subsidizing them.

In the future, Pakistan will face the more difficult problem of industrial strategy. India has by far the better resource base and has now suffered through a decade of learning how to operate sizeable steel, steel-using and other complex industries. It has established export markets for the output of some of these industries. An intelligent policy to take advantage of these assets would enable India to grow with lower aid levels. Such a policy would have to include steps to increase the efficiency of industry -- public and private -- by reducing centralized controls, and centralized management and by providing incentives and the pressure of competition. Pakistan, by comparison, now has to find the narrow path on which it can maintain growth by expanding the exports of its less complex industries on the one hand and stepping up the development of more complex import-substituting industries on the other. A complete shift to a "heavy" industry or "steel" strategy could be as costly in terms of output foregone as it was to India.

In short, once again the pattern of development in industry was dictated in part by resource endowment and in part by India's more highly developed consumer goods industries at the time of Independence. But ideological factors also played a major role in the great emphasis which India placed on "heavy" (generally capital goods) industries, on public enterprice and on import substitution. The result was that returns were delayed and were less per unit of investment than from Pakistan's consumer goods industries. Industrial exports also grew much more rapidly in Pakistan.

*India's public enterprises had profits of 10 crores in 1965/66 and losses of 33 crores in 1967/68. (M. Grossman citing data from the Bureau of Public Enterprise for 1965/66 and from the "Economic Times" March 4, 1969, for 1967-68.) Pakistan's Industrial Development Corporation showed a gross rate of return for 1960-63 of only 6% in West Pakistan (Papanek, op. cit.)

Exports

Differences between the two countries were greatest with respect to the growth of exports. While Pakistan had one of the highest growth rates in exports, especially in the 1960's, India was among countries with a low growth rate.

Table 5
Export Earnings
(annual compound rate of growth -- percentages)

	India 1950/51 to 1960/61	Pakistan 1949/50 to 1959/60	India 1960/61 to 1968/69	Pakistan 1959/60 to 1968/69
Primary products	2.7	- 0.2	1.5	2.6
Manufactures	- 1.1	infinite*	4.0	13.2
Total commodities	1.0	3.4	2.9	6.8
Invisibles		11.5		12.3
Total earnings		4.3		7.8

* started from zero

As in other instances, India followed slightly more effective policies in the 1950's. A devaluation of 44% was carried through at the time the U.S. took the same step in 1949. In fact, Pakistan's failure to follow suit made some sense in the short term, since Pakistan exported only standard raw materials quoted in pound sterling, and with a rather inelastic supply. But even over the course of a few years Pakistan's overvalued exchange rate encouraged the use of jute substitutes and the growing of jute in other countries, especially India. And, of course, exports of manufactures tended to grow rather slowly unti Pakistan devalued in 1955.

Both countries gradually developed a whole arsenal of devices which involved some de facto subsidy or devaluation: tax rebates, import duty rebates, and entitlement to imports for the production of exports. In addition both countries experimented with export quota, exhortation, government export promotion offices and so on. The effects were modest, for four reasons. First, the subsidy or de facto devaluation was generally modest, not enough to induce industrialists who usually had a comfortable, protected home market, to venture into the risky and difficult business of exporting. Second, there was a great deal of red tape involved in obtaining many of the subsidies. Third, the subsidies were quite uncertain, since the government could, and often did, change them from one month to the next. Finally, for some primary commodities the governments never made up their minds that the encouragement of exports really had priority over the revenues collected from export duties or the needs of the domestic consumer, who would suffer if, say, much of the tea was exported.

In 1959 India began to change the effective exchange rate more rapidly, using the devices previously mentioned. Over the next seven years the effective devaluation seems to have raised the rate for many exports from the official 4.7 rupees to the dollar, to 6-7 rupees to the dollar.

Over the same period Pakistan introduced its export bonus scheme, an effective devaluation for covered exports of 30-40% initially, which reached a maximum of nearly 80% eventually. As a result of the bonus scheme alone about one quarter of exports by value, had an effective exchange rate of 8.5 rupees to the dollar by the mid-1960's. Other incentive programs raised the effective rate further. The export bonus scheme involved no red tape, no need for bribes or wasted time: the exporter received a bonus voucher together with his export proceeds and could freely sell it on the stock exchange. The scheme was also guaranteed for one or more years. The premium on the vouchers fluctuated with supply and demand and permitted continued effective devaluation over time. It was therefore far superior to the indirect measures used earlier.

The major impact of the effective devaluation was on the export of manufactured goods with well established and easily measured quality standards, goods that required a minimal sales effort and with a highly price elastic demand (e.g.: cotton yarn, gray cloth, and jute manufactures). This is as one might expect. But there were two other interesting developments. First, invisible earnings showed as high a growth rate as manufactures. With a high effective exchange rate legal remittances from Pakistanis abroad increased sharply as did such items as shipping and other services. Second, the introduction of the export bonus scheme was such a dramatic step that businessmen and industrialists became very export conscious. Their response, like that of cultivators, seems not to have been in the form of an altogether continuous function. At low rates of subsidy some did not bother to explore the possibility of unconventional exports, but they reacted once the profitability of exporting became quite obvious. All sorts of minor exports were the result: pharmaceuticals, paper products, soap, carpets, cement, machinery, fans, clothing and shoes. Exporters of these goods, which totaled about 15% of manufactured exports in 1965/66 to 1968/69, had to break into foreign markets, but once established will find it easier to export in the future.

Another factor entered the export picture in both countries after 1965. Both suffered recessions. As in some developed countries, when domestic demand declined, some manufacturers were pushed into exports, often selling near their marginal cost. Between 1965/66 and 1966/67 the value of Pakistan's manufactured exports other than jute goods increased by 25% as such exports as leather, cotton fabrics, machinery, clothing and shoes increased substantially. The process in the India took somewhat longer, both because devaluation did not come until 1966, and because the potential for expanded exports was more in large capital items (e.g.: electric transmission towers, rails and machinery) which require time-consuming market penetration and, in some cases, manufacture to order. By 1968 Indian export of these items was increasing.

In short, exports in both economies proved highly responsive to economic incentives. Pakistan moved earlier and more radically in effective devaluation of its currency and achieved an 8% per year increase in total foreign exchange earnings in the 1960's, with manufactured exports and invisible earnings increasing at 13% per year. India increased the effective rate for exporters more slowly and its export earnings grew at less than half Pakistan's rate. With the 1966 recession both countries' exports increased more rapidly as some producers operated capacity excess to domestic demand as long as their return exceeded marginal costs.

Inefficiency and Inequity

The high rate of growth in Pakistan had clear costs in terms of inefficiency in the industrial sector and inequity in income distribution in the economy as a whole. The strategy followed by India reduced some of these specific costs.

A number of studies have clearly shown that some industries in Pakistan's newly developed manufacturing sector were very inefficient in economic terms.* They were able to develop only because of high protective tariffs and to export only with high subsidies. This, of course, is what one might expect to result from hothouse forcing of industrial growth in a country which had essentially no industrial background. Management and labor were inexperienced, the infrastructure was inadequate and high profits were required to bring forth the necessary entrepreneurship. The consumer paid for the high rate of industrial growth in prices that were often way above the

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* E.g.: 1) R. Soligo and J.J.Stern, "Tariff Protection, Import Substitution and Investment Efficiency," Pakistan Development Review, Summer, 1965.
2) S.R. Lewis, Jr. and Stephen Guisinger, "Measuring Protection in a Developing Country: The Case of Pakistan," The Journal of Political Economy, Nov/Dec 1968.
3) G.C.Hufbauer, "West Pakistan Exports: Effective Taxation, Policy Promotion and Sectoral Discrimination," in Development Policy II - The Pakistan Experience, W.P.Falcon and G.F.Papanek (eds.) Harvard University Press, 1970 (forthcoming).

prices of comparable imports. If a greater proportion of industry had been in government hands, much lower profits would have been feasible with desirable effects on income distribution, but efficiency would probably have suffered further. The public industrial sectors in both India and Pakistan were not notorious for great efficiency.

Comparable data on the efficiency of India's industry is more limited. Studies of the effective rates of protection indicate that some Indian industries also receive prices way above those prevailing in the international market. But it would not be surprising if India's well-established industry, growing much more slowly than Pakistan's, proved to be more efficient. Such evidence as exists from the production of jute goods and cotton yarn suggests that within a given industry this was indeec the case, but that Pakistan's industrial efficiency had increased very rapidly and was catching up with India. Again this is what one would expec

There were two compensating factors that made for inefficiency in Indian industry: the composition of investment and the nature of government intervention. Mention has already been made of the Indian emphasis on complex, capital-intensive industries and the difficulties experienced in running them efficiently. The greater Indian commitment to direct controls has also been mentioned. There is good evidence from both countries that the extensive system of permits and regulations, highly centralized, highly bureaucratic and extremely detailed, made for errors, corruption and waste.

Data are simply inadequate for any judgment on whether Pakistan would have been better off with a slower rate of industrial growth. It is not clear whether less rapid growth would have improved industrial efficiency.

It is clear that both countries made some serious economic mistakes in encouraging or carrying out investments in some industries when the same resources would have given a higher rate of return in other industries and in some agricultural activities. (The expansion of sugar production and processing, and of cotton yarn exports in Pakistan were examples. If the same resources had been used to expand fertilizer imports or cotton production they would have given greater returns). Again it is not clear whether either country made fewer mistakes than the other. It is quite probable that both countries have made fewer mistakes in resource allocation than most other less developed countries.

The effect on income distribution and equity of the strategies and policies pursued by the two countries was somewhat clearer than the effect on efficiency. In the nature of the case the industrial structure in both countries showed a high degree of concentration. Again statistics on concentration of control are highly suspect, but the data that do exist suggest that the 7 largest family houses in Pakistan controlled 20% of total industrial assets and the 6 largest family houses in India controlled 20% of assets in the corporate industrial sector,* but the differences between the two countries are greater than these data would suggest. Government enterprises control roughly one-third of total assets of India's industry and nine out of the ten largest companies by asset size are government firms. These companies provide a price yardstick in many of the capital goods industries where large units are the rule. In addition the Indian government exercised more control over its industrialists and Indian industrialists exercised less control over the government than was true in Pakistan. As a result,

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* Papanek; op.cit. p. 68 and Grossman, M.C. (unpublished manuscript).

the few dominant business families had less influence on investment, price and similar decisions in India than in Pakistan.

On income distribution per se data are again poor, but it is clear that India trade unions have been more powerful than in Pakistan, in part because strikes in the latter were prohibited for long periods of time; that social welfare programs have been more extensive in India where political pressure for them has been more effective; and that the strategy of agricultural development has been more favorable to smaller units in India.

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Private tubewells in West Pakistan were developed primarily by cultivators with medium-sized or larger holdings, who had access to capital and enough land to warrant a well. The large-scale surface irrigation projects emphasized in India provided more equitable access to water for cultivators regardless of size of holdings. Similarly, private distribution of fertilizer in Pakistan meant that those with smaller holdings, and therefore poorer access to credit, were disadvantaged, while distribution through cooperatives in India helped solve the credit problem. Pakistan's monetary incentives were of little benefit to small-holders who sold almost nothing in the market. They were less likely to have information about the new technology than in India, with its greater effort in agricultural extension and community development.

There were some offsetting effects on income distribution in Pakistan. The higher rate of industrial growth meant that a larger number of the poorest group in the population -- landless laborers, casual urban workers and unemployed -- were able to take the most important step up in the income ladder, from long periods of unemployment to a regular industrial job.

Rapid industrial growth in Pakistan also meant increasing competition among producers of mass consumption goods, and lower prices for cloth, vegetable oils and so on.

The effect of reduced industrial prices on the lower income groups as consumers was reinforced by the more rapid rate of growth in agriculture, which meant lower food prices in West Pakistan. It was precisely the goods which make up the bulk of the purchases of the lower income groups -- foodgrains and clothing --, and which are of small significance in the budgets of the rich, whose prices dropped greatly, especially in West Pakistan.

It is difficult to draw a balance sheet for equity. It is plausible, but no more than that, to suggest that India did better on the score of relative income distribution, Pakistan with respect to the absolute consumption levels of lower income groups. Even if this could be demonstrated no good answer could be given, at least by an economist, on relative performance with respect to equity -- the question of whether it is more equitable to raise the absolute or relative level of the lower income groups is ancient and without obvious solution.

Some Conclusions

An economic comparison of India and Pakistan can stress either the similarities or the differences. Over the past 20 years the annual rate of growth of India averaged somewhere around 3.5% per annum, that for Pakistan slightly above 4%. On a per capita basis the difference becomes even smaller since Indian statistics claim a lower rate of population increase than in Pakistan: since Independence India's per capita growth rate is slightly above one percent per annum, while Pakistan's is about 1.5%, barely higher than India's given some allowance for the margin of error. Both countries started with a low rate of investment, just above 5% of GDP and both were able to step up this rate to reach the very respectable levels of about 20% of a much larger GDP. Absorptive capacity was not a serious problem in either country as a whole.

These similarities are the result of three factors. First, both are among the really poor countries in the world. They are not in the category of many countries in Latin America, and some elsewhere in the less developed world, which have an annual per capita income of $200-400. Rather they started well below $100 per capita at Independence. Second, both are large countries and are therefore not among recipients of a large inflow of outside resources when calculated as a percentage of their GDP or investment. Official aid to India was $2.5 and for Pakistan $4.2 per head in 1964-66. By contrast, in Africa it averaged over $6 per capita; in the Americas the figure would be well above $5, without Brazil and Mexico, which suffered also from the large country effect (and in the case of Mexico from being on the borderline for aid recipients because of its high per capita income). Third, both had governments relatively highly concerned with growth, a civil service that could implement government decisions and a political, institutional and social environment which was reasonably favorable to development, when compared with other countries. Their governments, again compared to other countries in the less developed world, were not dominated by an oligarchy determined to prevent change, nor at the mercy of contending groups whose demands had to be met. Both had indigenous businessmen and competent civil servants, a functioning educational system and a relatively adequate transport network.

The similarity in their overall long term growth rates simply demonstrates again that given a halfway satisfactory political and social environment and some outside financial resources, even very poor countries can achieve a noticeable increase in per capita income. However, it also suggests that despite considerable competence and concern with development, really poor countries with below average outside resource flows find it very difficult to maintain a long-term rate of growth above 5% per annum. Both economies also proved highly vulnerable to unfavorable exogenous developments. Both experienced a considerable setback after 1965 when their economies had to absorb the cost of the 1965 war, a drop in aid and drought. Economies at the low level of income and of diversification which was the lot of India and Pakistan simply cannot readily adjust to such strains.

Both countries also were rightly charged with inadequate attention to equity. Pakistan was probably more vulnerable to this charge, since its policies made for an increase in income disparities in some sectors. India on the other hand, probably did less well in terms of providing employment and reduced prices for mass consumption goods.

Planning had widely been regarded as a panacea for all economic ills in both countries. When growth proved slow, equity deficient and the economy ill-suited to dealing with exogenous shocks, planning came into disrepute, though much of the blame should have been assigned to the basic economic problems of really poor countries. In India the deterioration in the status and effectiveness of the planning agencies was gradual. In Pakistan it came quickly after the 1965 war, when there was a general deterioration in the economic situation and in the political standing of the Ayub Khan regime.

In the 1950's there were also many similarities in the policies and strategy followed by both countries. However, Pakistan carried the process even further than India in terms of government intervention and centralization. The need for government intervention was greater in Pakistan to deal with the more extensive refugee problem and the sharper reduction in foreign exchange availability. Besides, Pakistan had the smaller and relatively less experienced civil service and therefore tended to leave less discretion for judgment to lower echelons. There was a similar emphasis in both countries on large irrigation works, but not on the capital goods industry. Pakistan's growth lagged in the 1950's since it was less well endowed and followed policies which put too great a burden on a badly over-strained government.

India's policy and strategy gradually changed in some fields. Pakistan's underwent a major and rapid change between 1959 and 1965. (Under the shocks of 1965 it returned in part to some of the policies of the 1950's.) Pakistan also received much more aid in the 1960's. The combination of a better policy framework and greater resources meant that instead of lagging behind India, Pakistan grew more rapidly. More rapid growth was not just the result of more aid, it also resulted from a better management of resources. It is precisely the differences in management -- in strategy and policies -- which it is most interesting to examine.

India relied less on foreign aid partly out of preference and partly out of necessity. It also relied less on market incentives and more on government ownership and direct controls, because it had a stronger, more competent civil service and because of ideological predilections. Ideology and India's inheritance at Independence, both of natural resources and capital stock, led to a greater emphasis than in Pakistan on investment that was technologically complex, capital intensive and in large units: large scale irrigation works and capital goods industries as against tubewells, pumps and consumer goods industries. Ideology and confidence in government also contributed to India's emphasis on the extension service, traditional cooperatives and community development in the effort to modernize rural society. Pakistan stressed economic incentives, the effect of agricultural growth on rural social change rather than vice versa and, in East Pakistan, unconventional ways of combining government assistance and local organization.

The comparison of the two countries shows the danger of simply equating growth rates, whether of GDP or of savings, with "self help," or commitment to development. The increase in both GDP and savings depends not only on the actions of governments but also on natural resource endowment, the structure of the capital stock in the base period and the extent to which new technology benefits a particular economy. A substantial proportion of the differences between India and Pakistan in both 1950's and 1960's can be explained by factors over which neither country had any control.

In the future it is quite possible that there will again be a reversal of roles between India and Pakistan. Such a reversal may have already begun since 1965. Less reliant on aid in the past, India is also less vulnerable to its likely decline in the future. Pakistan is just beginning a major development of its capital goods industry and may have to accelerate the process if aid continues to decline. Much of the learning process in operating a large capital goods sector, now partly behind India, is still ahead of Pakistan. In agriculture, Pakistan still has several years of rapid growth ahead, if it adapts its policies to exploit the unrealized potential of existing technology. But it will have to develop more research capacity, new institutions and a better machinery to transmit research results to cultivators if it is to introduce the more complex changes in technology that will be required in the future. (E.g., to deal with insect and disease attacks on the new crop varieties; to provide credit so that farmers with small holdings can also use fertilizer; to manage water more efficiently as the limits of the supply are reached.) Finally, Pakistan must now deal more effectively with questions of equity in general and income distribution in particular, which it has largely ignored in the drive for growth. Without a good deal of further research, and perhaps not even then, it is unclear which of the two countries has done better for its lower income groups both in absolute and relative terms. But it is clear that both will need to devote more resources to social objectives in the future. It is difficult to predict how this will affect growth in both countries.

Despite these problems, a historical comparison between India and Pakistan leads to some encouraging conclusions for development. For their economies as a whole and in particular sectors or aspects it is clear that in these two mixed economies the desired results followed from reasonably sensible and really quite conventional economic policies and programs: exports increased when returns were increased (and domestic demand weakened); a highly favorable cost-benefit ratio led to the adoption of new agricultural technologies; governments called "soft" by Myrdal managed to quadruple investment over 20 years while improving its efficiency; in short, political, social, cultural and institutional obstacles did not prove insurmountable in countries which pessimists sometimes regard with much discouragement, given a modest inflow of resources and reasonably effective economic policies.