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REGIONAL GROWTH AND INCOME DISTRIBUTION:

THE CHINESE EXPERIENCE

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REGIONAL GROWTH AND INCOME DISTRIBUTION:

THE CHINESE EXPERIENCE

I. Introduction

Until recently most development economists assumed that the economic benefits of sustained economic growth would be widely distributed among the population. Although there was some doubt about the rapidity of the process, it was generally believed that rapid aggregate GNP growth would lead to rising per capita personal income even among the poorer segments of the population. As a result, domestic development programs and international aid focused largely on the achievement of sustained and rapid economic growth. Much less attention was given to designing economic development programs specifically to alleviate the poverty of the lower income groups.

Now after more than a decade of rapid economic growth which in most less developed countries has apparently not alleviated mass poverty, this optimistic assessment is being increasingly challenged. It is now generally believed that rapid economic growth has frequently or even usually been accompanied by a substantial increase in the maldistribution of personal income. Although data on the size distribution of income in less developed countries are particularly weak, it now appears that the benefits of rapid economic growth have not been broadly distributed, but by and large have accrued to the upper forty percent of the population. Indeed, some studies have suggested that "development is accompanied by an absolute as well as relative decline in the average income of the very poor."¹ This pessimistic assessment is not altered by consideration of the distribution of public services. These have also tended to disproportionately benefit upper income groups.

In short, a growing body of empirical evidence increasingly supports the hypothesis first advanced by Professor Simon Kuznets twenty years ago--

that the early stages of national growth are characterized by a deterioration in the distribution of personal income.² Both the later work of Professor Kuznets³ and more recent studies⁴ suggest that the share of the upper deciles of the population increases significantly in the initial stages of economic growth. Although there is less consensus on intertemporal change in the share of the lowest deciles,⁵ recent cross section investigation suggests that the income share of the lowest 40 percent of the population declines quite markedly in the early stages of economic growth--up to per capita income levels of about \$300 U.S. (1971 prices). After a period of flattening out, the income share of the lowest 40 percent begins to rise only after per capita income has reached relatively high levels--about \$1,000 U.S.⁶ Thus there appears to be a U-shaped relationship between the level of economic development and the income share of the lowest 40 percent of the population.

In the post-war period only a few developing countries have been able to avoid this general pattern and simultaneously achieve sustained growth of per capita national income and an improvement in the size distribution of income. Because of the prevalence of this U-shaped relationship between level of development and the degree of income inequality, it is increasingly believed that in the absence of development programs which specifically assign a higher priority to improving the distribution of income, distribution in most developing countries will continue to become more unequal for a considerable time.

Although the regional distribution of income within countries has been less widely studied, empirical evidence suggests that it changes over time in a manner parallel to that of the size distribution of income. Jeffrey Williamson's investigation of the pattern of interregional income inequality, based both on cross section and time series data, confirmed his hypothesis that the early stages of economic growth are characterized by increasing interregional income disparity, while more mature stages of economic growth are marked by regional convergence.⁷ In particular, his analysis of a sample of 24 countries showed that low income countries exhibited relatively small but increasing disparities in interregional income levels. Middle income countries had the highest degree of interregional disparity, reflecting regional divergence in the earlier stages of economic growth. Middle income countries, however, were characterized by either regional stability or convergence. The highest income nations revealed considerably less interregional disparity and exhibited either regional stability or convergence. Williamson further confirmed his hypothesis by a time series study of interstate inequality within the United States from 1840 to 1960 which shows a

"classic pattern of regional inequality. . . during the early stages of growth, 1840-1880, regional inequality increased. . .; from 1880 to 1920, the degree of inequality stabilized and even revealed a significant decline; the 1920-1960 experience has been varied, to be sure, but generally the evidence suggests a secular decline in the North-South problem, the rate of which has accelerated from the mid-1930s to the present."⁸

Less complete long term data for Sweden, Italy, Brazil, and France also give strong support to the classic pattern of regional development. Subsequent intensive investigations of Canadian and Japanese regional growth

over long time periods which include the early stages of industrialization have also given support to the classic inverted U-shaped pattern.⁹

Clearly the observed increase in regional income inequality is closely related to the deterioration in the size distribution of income in the early stages of national economic growth. Comparatively rapid economic growth in some regions is primarily a reflection of a more rapid transfer of labor from low to high productivity sectors, principally from agriculture to industry.¹⁰ Since at low income levels, product per worker in industry is considerably higher than in agriculture, and since a relatively small share of the national labor force is initially employed in the industrial sector,¹¹ over time such as intersectoral transfer will lead to growing inequality in the size distribution of income. In effect, for given wage differences between sectors, initially increasing interregional income disparities which result from differentials in the regional rates of intersectoral labor transfer necessarily are accompanied by a lessening in the degree of equality in the personal distribution of income.

This deterioration in the size distribution of income in the early stages of economic growth will be further compounded if interregional wage differences in the same sector are correlated with the level of economic development. That is, just as international cross section studies suggest that substantial intrasectoral differentials in output per worker among countries are positively related to the level of national economic development,¹² within country studies suggest that interregional differentials in output per worker within the same sector are correlated with the level of regional development.¹³ Thus the difference in per capita output in more and less developed regions within countries is due to both the differing

sectoral allocation of labor and regional differences in per worker output within the same sector. As a result, to the extent the transfer of labor to the industrial sector is concentrated in more developed regions where product per industrial worker is relatively high, the effect of growing interregional income disparities will exacerbate the trend of greater inequality in the size distribution of income.

However, at higher levels of per capita national income, Williamson has shown interregional income differentials are gradually reduced. As a result of the spread effects of modern economic growth and perhaps deliberate government efforts to achieve a more balanced regional pattern of economic growth, the transfer of labor from agriculture to industry in less developed regions accelerates. This stage of economic development is generally associated with increasing equality in the size distribution of income. Accelerated intersectoral labor transfer in backward areas will reduce interregional disparities in level of development and, because a relatively small portion of the national labor force remains employed in the agricultural sector, will contribute to an increase in the income share of the lower deciles of the population as well. At the same time, the reduction in intersectoral wage differences which accompanies increasing per capita national income will contribute to an improvement in the size distribution of income and, to the extent there are remaining interregional differences in the sectoral distribution of the labor force, will contribute to regional convergence as well.

II. Distribution in China

In recent years much of the appeal of the Chinese model originates in the apparently egalitarian nature of the developmental process since 1949. The Chinese in the early-post Civil War period carried out a far-reaching program of income redistribution which raised the living standards of the lower deciles of the population considerably compared with the pre-1949 period. The most obvious elements of this program were land reform and the transformation of private enterprises to state ownership. These programs largely eliminated concentrated property ownership as a source of continued inequality of income distribution. Several other government policies have also had a direct bearing on the distribution of income. Extension of state control over the economy included central government determination of the structure of wages and salaries within the state sector. In industry, for example, the central government specified the structure of wages by industry, by skill level, and by geographic area. Through the relatively effective control of working capital funds by the State Bank, wages in the industrial sector were not, as in the Soviet First Five Year Plan, subject to rapid increases as a result of interenterprise labor competition.

In addition to controlling the structure of wages within the state sector, the central government has used its control of the level of industrial wages, farm purchase prices, and retail prices of industrial goods sold in rural areas to reduce the disparity between rural and urban incomes.

Available evidence suggests that real wages in the industrial sector have not risen perceptibly since 1957. In addition between 1950 and 1974 agricultural purchase prices have been raised almost 65 percent while the prices of industrial products sold in rural areas have been increased less than 15 percent.¹⁴

Rationing of important consumer goods, particularly foodgrains, pork, cotton cloth, and edible oils, which was introduced in the early to mid-1950s and has continued since, has also served to reduce interpersonal consumption differentials. Rationing of commodities whose purchases loom very large in consumer budgets, prevents higher income groups from bidding up prices thereby reducing the ability of low income groups to purchase these essential commodities.¹⁵ Because of the availability of these mechanisms for directly influencing the distribution of income the Chinese government like other socialist states has placed relatively little reliance on the structure of taxes or transfer programs commonly used to alter the distribution of earned income in Western countries.

Western visitors to China in the past few years have invariably been struck by the effectiveness of these policies in eliminating the extremes of wealth and poverty characteristic of most LDCs. Although the basic standard of living remains low, it is widely accepted that the Chinese government has succeeded in placing a floor under the incomes of all members of society.¹⁶ Indeed it has been argued that a fundamental characteristic of development policy in China has been its explicit rejection of capitalist "trickle down" theories of growth and distribution and adoption of the view that economic development is not likely to occur unless the living standard of all segments of society is raised simultaneously.¹⁷ This basic

philosophy motives Chinese efforts to limit income disparities between urban and rural areas and to minimize wage differentials in the state sector of the economy, particularly within industry.¹⁸

Evaluation of Chinese performance with regard to income distribution remains a largely impressionistic process. However, because of the interrelationship between size and regional distribution, a study of the latter may provide an additional perspective from which to evaluate Chinese performance in achieving broader distributional goals in the post-1949 period. This regional perspective will, however, provide only a very indirect measure of Chinese performance with regard to the size distribution of income. The central government, through its control of the regional structure of wages, insures that large differentials among regions in value added per industrial worker are reflected primarily in transfers to the central government treasury rather than in substantial interregional variations in real income of workers within the industrial sector. Despite this partial severing of the link between regional and size distribution, the Chinese regional experience may still be of interest for other less developed countries where interregional variations in output per worker are more directly reflected in interregional disparities in real personal incomes.

This paper attempts to examine empirically several aspects of interregional inequality in China. First, the degree of interregional income inequality in China is compared to other countries where disparities among regions are perceived as being particularly acute. Second, the pattern of intertemporal change in the degree of interregional inequality in China and other countries is compared. Finally the paper analyzes the nature of

Chinese regional development policy and the role of the planning and budgetary process in alleviating interregional disparities. This analysis includes comparisons with institutional arrangements for reducing disparities among regions in Brazil, Yugoslavia, and India.

Regional Inequality in China: A Comparative View

Because the Chinese have released virtually no information on the geographic distribution of national income, it is difficult to compare the degree of regional inequality with other countries. Provincial statistical reports, which frequently provide a wealth of other economic data, only rarely report provincial national income.¹⁹ Indeed, it is possible that the Chinese did not even begin systematic compilation of provincial national income data internally until the 1960s.²⁰

However, data which have been published by provincial authorities on the gross value of industrial and agricultural output can be used as the basis for a preliminary investigation of the degree of interprovincial income inequality. According to estimates based on western national income concepts, in the mid-1950s about 70 percent of China's gross domestic product originated in industry and agriculture.²¹ Thus the sum of value added in these two sectors is a reasonable first approximation of provincial national income.

The first column of Table 1 shows the sum of per capita value added in industry and agriculture by province in 1957 expressed as a proportion of the national average. These data reveal substantial interregional inequality. Shanghai, the leading industrial center, is about five and one-half times as developed as the national average and almost 8 times as developed as Honan, the poorest province. The Northeastern Provinces (Liaoning, Kirin and Heilungkiang) and the municipalities of Peking and Tientsin are also considerably above the national average. Honan, Kwangsi, Kweichow, and Shantung, with per capita incomes of about three-fourths the national average, are the least developed regions of the country.

The pattern of interregional disparity is somewhat different if we look at industry and agriculture separately, as shown in columns 2 and 3 of Table 1. The most striking finding is the relatively even distribution of agricultural output. With the exception of the three municipalities of Shanghai, Tientsin, and Peking, whose suburban areas had only limited cultivated area prior to 1958, and the sparsely populated northwestern provinces of Tsinghai and Sinkiang, whose extensive pattern of agricultural development contrasts sharply with China proper, there is relatively little regional dispersion. By contrast, disparity in the industrial sector is considerably more noticeable. The concentration of industrial output in the urban coastal centers of Shanghai, Peking, and Tientsin is particularly obvious. The strategic significance of the Northeast as a center of industrial output is also quite marked.

The greater interprovincial disparity in the industrial sector is reflected in the greater coefficient of variation (standard deviation divided by the mean) of provincial per capita output in industry as compared

Table 1

Per Capita Provincial Income, 1957
(national average = 100)

	Industry and Agriculture	Industry	Agriculture
<u>Northeast</u>			
Liaoning	197	409	81
Kirin	125	160	106
Heilungkiang	187	222	166
<u>North</u>			
Hopeh	94	57	115
Shantung	75	63	82
Honan	72	30	95
Shansi	97	96	98
Inner Mongolia	116	64	143
Peking	169	482	21
Tientsin	391	1118	0
<u>East</u>			
Kiangsu	87	85	88
Anhui	81	38	106
Chekiang	93	75	103
Shanghai	559	1575	12
<u>Central</u>			
Hupeh	106	76	122
Hunan	81	41	103
Kiangsi	92	56	115
<u>South</u>			
Kwangtung	95	84	102
Kwangsi	75	34	97
Fukien	79	70	85
<u>Southwest</u>			
Szechuan	78	57	90
Kweichow	76	30	102
Yunnan	83	48	104
<u>Northwest</u>			
Shensi	108	59	136
Kansu	90	37	120
Tsinghai	143	44	190
Sinkiang	133	66	173
Coefficient of variation	.60	1.86	.26

Notes to Table 1

Calculated on the basis of officially reported provincial gross value data for industry and agriculture (appendix tables 1 and 2). Gross value data were converted to net values by use of national value added ratios in each sector. For agriculture the ratio used was .80 as given in Li Ch'eng-jui, Chung-hua jen-min kung-ho kuo nun-yeh shui shih-kao (Draft History of the Agricultural Tax in the People's Republic of China), Peking: Finance Publishing House, 1959, p. 193. For industry the ratio used was .34 as given by Ma Yin-ch'u, "Hsin jen-kou lun," (New Population Theory), Hsin hua pan-yueh-k'an (New China Semi-monthly), no. 15, 1957, p. 40. Population data are officially reported figures for 1957 given in State Statistical Bureau, Ten Great Years, Peking: Foreign Languages Press, 1960, p. 11.

with agriculture. As shown in the last line of Table 1, the population weighted coefficient of variation (V_w) in industry is 1.86 while in agriculture it is .26. Thus the degree of interregional disparity in industry is several times greater than in agriculture.

Measurement Biases

There are two potential sources of bias in our measure of the overall degree of income inequality among provinces. First, provincial value added data are estimated on the basis of national net output ratios for industry and agriculture. Because of wide interbranch differences within industry in rates of value added and considerable regional variation in the structure of industrial output this procedure may result in an underestimate of the degree of interprovincial inequality in the industrial sector. The rate of value added in the producer goods sector is about three-fourths greater than in the consumer goods sector.²² Because the structure of industrial output in more developed provinces, particularly in the Northeast, is more heavily weighted in the direction of producer goods than the national average, the use of the national value added ratio leads to an underestimation of the value added in industry in these provinces. Similarly, this procedure overestimates the value added in many less developed provinces where output is dominated by consumer goods. Consequently the population weighted coefficient of variation of provincial per capita value added in industry systematically underestimates the overall degree of interprovincial income inequality. This is not a significant problem in agriculture since there is less variation in the rates of value added in the components of the gross value of agricultural output.

On the other hand, the omission of the service sector, which in 1957 composed about 30 percent of gross domestic product, may introduce an upward bias in our measure of interregional inequality. The distribution of services was certainly more even than industry and probably more even than the combined net value of agriculture plus industry. However, a significant portion of services is probably correlated with the level of industrial output. This would be particularly true for transportation and finance and to a lesser extent for trade as well. Thus the inclusion of services, were data available, would probably reduce somewhat the degree of overall interregional inequality shown in the first column of Table 1.

However, these two biases at least are mutually offsetting in direction--and as a result our measure of inequality among provinces may provide at least a starting point for comparing the degree of regional inequality in China with other countries.

International Comparisons

The size of the coefficient of variation of provincial value added in industry and agriculture suggests that disparities in regional development in China are quite high by international standards. Table 2 shows the coefficient of variation of per capita regional income for selected countries. In the first column the dispersion of per capita regional income relative to the national average is weighted by the region's share of national population. Since the use of population weights minimizes the impact of the particular division of administrative units within countries, we use it in our discussion below.

TABLE 2

Interregional Income Inequality, Selected Countries, Selected Years

<u>Country</u>	<u>Years</u>	<u>Coefficient of Variation</u>	
		<u>Population</u> Weighted	Unweighted
Brazil ^b	1950-1959	.70	.65
China ^{a,c}	1957	.60	1.01
India ^b	1950/51, 1955/56	.28	.58
Italy ^b	1951, 55, 60	.36	.37
Soviet Union ^d	1960	.15	na
Yugoslavia ^b	1956, 59, 60	.34	.44

Notes: a) Based on industry and agriculture only.

Sources:

- b) Jeffrey G. Williamson, "Regional Inequality and the Process of National Development: A Description of the Patterns," Economic Development and Cultural Change 13, No. 4, part 2, (July 1965).
- c) Table 1.
- d) Hans-Jürgen Wagener, "Les récents modèles de développement dans les régions économiques soviétiques," Revue de l'Est 4, No. 2 (1973).

The degree of interregional income inequality in China substantially exceeds that found in several countries that are treated in the economic development literature as classic cases of North-South dualism. For example, the disparities in China exceed both those found in Italy, with its well known depressed Mezzogiorno and those found in Yugoslavia where inter-republican income disparities, exacerbated by differences in nationality and cultural heritage, have been an important element in post-war economic planning. India, a country that is more directly comparable with China because of its similar level of development and continental size, has interregional disparities which are substantially less than those observed in China. Only in Brazil, where the Northeast has long been a relatively depressed area, do interregional disparities appear to be more severe than those found in China.

III. The Dynamics of Regional Growth

Because very little data on the value of provincial agricultural output have been released since the late 1950s, it is impossible to trace the pattern of regional growth of value added in industry and agriculture combined. Furthermore, provincial data for industry which have been released in recent years are less complete than comparable data for the mid-1950s. That is, although all provinces have released data on their rate of industrial growth in recent years, the base year for such claims is usually 1965, the year prior to the beginning of the Third Five-Year Plan. Only 21 provinces have released data which compares the level of output in a recent year to a year in which absolute value data are known. Therefore it is not possible to assess precisely trends in the growth of provincial national income and the analysis presented below should be regarded as tentative.

There are, however, two reasons for believing that trends in regional industrial output alone are broadly representative of overall trends in regional national income. First, as was shown in Table 1, during the 1950s interregional variation in the level of industrial output far exceeded that in agriculture. Secondly, the annual rate the average of industrial growth for the country as a whole since 1957 has been about 10 percent while agricultural growth has been only marginally over 2 percent.²³ Since industry was the major initial source of interprovincial income inequality and has been by far the most rapidly growing sector, it is reasonable to assume that trends in regional income disparities have been largely determined by differences in provincial industrial growth.

Per capita industrial output by province in 1952, 1957, and 1971 expressed as a proportion of the national average is given in Table 3. Arrangement of the provinces in descending order of industrialization in 1952 facilitates the intertemporal analysis below. As can be seen from Table 3, there has been a general trend toward equalization of per capita provincial industrial output, particularly in the upper and lower thirds of the provinces. Provinces where industrial output was initially well above the national average, with the single exception of Peking, have consistently converged toward the national average. This tendency has been particularly marked in the highly industrialized north-eastern provinces of Liaoning, Heilungkiang, and Kirin. Shanghai and Tientsin have also grown comparatively slowly and as a result have tended to converge toward the national average. Only Peking, among the initially

Table 3

Relative Differentials in Per Capita Output,
Industry, 1952, 1957, and 1971

(national average = 100)

	1952	1957	1971
Shanghai	1813	1575	1363
Tientsin	1187	1118	392
Peking	458	482	732
Liaoning	393	409	310
Heilungkiang	272	222	
Kirin	162	160	155
Kiangsu	107	85	105
Chekiang	80	75	
Kwangtung	80	84	82
Shansi	77	96	
Shantung	72	63	66
Hopei	58	57	
Sinkiang	58	66	50
Kiangsi	58	56	49
Fukien	53	70	45
Hupei	58	76	71
Yunnan	43	48	31
Szechuan	42	57	43
Inner Mongolia	42	64	150
Shensi	40	59	95
Hunan	38	41	51
Tsinghai	38	44	62
Anhui	35	38	
Kwangsi	33	34	40
Kweichow	30	30	
Kansu	20	37	28
Honan	18	30	46

Note: Calculated on the basis of officially reported provincial gross value data for industry (Appendix Table 1) and on population data reported in or derived from official sources. For 1957 officially reported population data were used. For 1952 and 1971 estimates are based on extrapolation forward from 1957 and backward from the officially reported 1953 provincial population data. Extrapolations are based on the individual provincial growth rates during 1953-57, with the exception of Kwangtung where I have used the adjusted growth rate suggested by John S. Aird [Population Estimates for the Provinces of the People's Republic of China: 1953 to 1974, International Population Reports, Series P-95, no. 73 (Washington, D. C: Department of Commerce, 1974), pp. 12-13]. Adjustments were made for boundary changes of municipal governments in 1958 and 1959. I have assumed no growth in population of Peking, Shanghai, and Tientsin since the time of these boundary changes.

more industrialized areas, has enjoyed a consistently above average rate of industrial growth.

On the other hand, the performance of the initially poorest provinces has been generally above average. Very rapid rates of growth since 1952 are particularly apparent in Honan, Kansu, Tsinghai, Hunan, Shensi, and Inner Mongolia. The middle range of provinces, from Shansi to Szechuan, however, has shown mixed performance with marginal declines relative to the national average for most of the group.

The long term trend of slow but perceptible convergence is confirmed in Table 4. The population weighted coefficient of variation of per capita industrial output for 21 provinces declines from 1.99 in 1952 to 1.84 in 1957 and 1.63 in 1971.

It should be emphasized that because of the nature of the underlying data, that the summary findings presented in Table 4 can be regarded as only a tentative indicator of the direction of change of overall provincial income inequality during the twenty year period. There are three separate possible sources of error--the limited geographical and sectoral coverage; uncertainties with regard to interprovincial variation in the rates of value added; and the 1971 provincial population data.

Most obviously the data are limited in their coverage--only industry is included and for the years since 1957 data are available for only 21 of 27 provinces. The lack of data for six provinces appears to be of only minor significance. The comparable decline in V_w for both 27 and 21 provinces between 1952 and 1957 shown in Table 4 suggests that convergence since 1957 for the group of 21 provinces is broadly representative of per-

TABLE 4

Secular Changes in Coefficient of Variation, Per Capita
Provincial Industrial Output, Post-1949

	1952		1957		1971	
	V_w	V_u	V_w	V_u	V_w	V_u
27 provinces	2.02	4.07	1.86	3.61	na	na
21 provinces	1.99	4.60	1.84	4.08	1.63	3.20

formance for the nation as a whole.²⁴ The limited sectoral coverage is of perhaps more significance. Since the share of industry was only about 25 percent of gross domestic product in 1957 and because of the relatively faster growth of industry, it is clear that the use of provincial industrial output probably results in an overstatement of the rate of decline of aggregate income inequality. It may also give a somewhat biased picture of the particular regional pattern of reductions. The precise impact of the missing sectors is difficult to assess. The omission of services probably has relatively little effect on the direction of long term change in V_w . That is, while the exclusion of services probably results in an overstatement of the level of interregional disparity in 1957, the growth of transportation, trade, and finance, which compose about 70 percent of services, is probably highly correlated with industrial growth. On the other hand, little information is available on the regional pattern of agricultural growth since 1957.²⁵

Secondly, the implicit assumption of constant rates of net to gross output within each province since 1957 probably results in an under-

estimate of the rate of convergence. Since the composition of output in provinces where industry is growing more quickly appears to be changing rapidly in favor of producer goods, which are characterized by higher rates of value added, the gross value data which underlie the data in Table 4 underestimate the rate of regional convergence.²⁶

Finally, and perhaps most importantly, it should be noted that there is a considerable degree of uncertainty attached to the provincial population data used to calculate per capita output in 1971. Data used are based on an extrapolation from official 1957 provincial population figures using the growth rates individual provinces experienced during 1953-1957. This procedure makes no allowance for divergent provincial trends in natural rates of population increase or changes in internal migration patterns since 1957. Since there has been considerable migration between provinces since 1957, this procedure is far from satisfactory. However, there is no way to estimate the influence of either migration or divergent trends in natural growth rates. Of course, to the extent that migration since 1957 represents a continuation of the 1953-1957 pattern the accuracy of the projected 1971 provincial populations is enhanced. Since the 1953-1957 growth rates of the more remote regions, which may have been the primary recipients of interprovincial migration in more recent years, are already quite high, our projections may not be unreasonable. For example, the rates for Heilungkiang (5.1%), Kansu (2.8%), Tsinghai (4.6%) Inner Mongolia (5.1%), Shensi (3.0%), and Sinkiang (3.3%), are substantially above the national average rate of 2.3 percent.²⁷

In summary, it seems unlikely that the decline in V_w would be reversed if additional information to correct these biases became available. The

assumption of constant rates of value added contributes to an underestimate of the rate of convergence, and the population growth rates used to project 1971 populations contain an implicit built-in allowance for migration that is probably large enough to accommodate a substantial portion of post-1957 interprovincial migration. However, the limited sectoral coverage of our income measure results in an overstatement of the rate of convergence.

International Comparisons

Hirschman, Myrdal, Williamson, and others have argued that in the early stages of economic growth a variety of forces will tend to lead to increasing regional disparities. Because of locational advantages, historical accident, resource endowment, and other considerations, certain regions within a country may have an initial advantage when the process of modern economic growth begins. Hirschman hypothesized that when national growth accelerates the greater importance of "polarization effects" as opposed to "trickle down effects" would lead to more rapid growth in more developed areas and increasing interregional disparities.²⁸ Capital would be attracted from backward areas to the more rapidly growing region of the country and skilled labor would tend to migrate to advanced regions in response to greater employment opportunities. Government policies favoring maximal aggregate economic growth rather than balanced regional development might further compound growing regional disparities.

Only at substantially higher levels of per capita income, Hirschman suggested, would the trickle down effects of growth become increasingly important and neutralize the polarization effects. Combined with increasing costs of growth in advanced areas and deliberate government policy to insure more balanced regional growth, this would lead to a decline and eventually

a reversal of the differential rates of growth between backward and advanced areas. Thus the interaction of these forces gives rise to the inverted U-shaped pattern of economic growth.

Quantitative studies of Chinese economic growth suggest that the pattern of regional development conforms to this classic inverted U pattern. The record shows that although there was no sustained increase in per capita income for the country as a whole in the first half of the twentieth century, there was considerable growth in Manchuria and in a few coastal cities. As a result, the fifty years prior to the formation of the People's Republic were undoubtedly marked by growing interregional inequality. However, the reduction of interregional income variation in China appears to have begun at a substantially earlier stage of economic development than other countries for which historical time series data are available.

Regional convergence in Japan, Canada, and the United States did not begin until after three to six decades of sustained per capita GNP growth. By contrast the Chinese pattern of development after 1949 is one in which the reduction of interregional income inequality and sustained per capita GNP growth appear to have begun simultaneously. Furthermore, the levels of per capita income from which convergence began in Japan, Canada, and the United States were a several fold multiple of the Chinese level in 1949. In short, although the Chinese appear to conform to the inverted U-shaped pattern of regional development, the timing of the convergence phase appears to have been distinctly different from the historical experience of the currently developed countries.

The Chinese pattern also differs from Williamson's cross section sample of countries in the post-World War II period shown in Table 5.

TABLE 5

Secular Changes in Interregional Income Inequality, Postwar Period

Kuznets Income Class	V_w rising	V_w stable	V_w falling
I		Australia (1949/50, 1959/60) United Kingdom (1949/50- 1959/60)	Canada (1950-61) United States (1950-61) Sweden (1950, 1955, 1961)
II		France (1954, 1955/6, 1958)	Finland (1950, 1954, 1958) West Germany (1950-55, 1960) Netherlands (1951, 1955, 1958) Norway (1952, 1958-60)
III			
IV		Italy (1951, 1955, 1960)	Spain (1955, 1957) Brazil (1950- 1959)
V	Japan (1951-1959) Yugoslavia ^a (1952-1971)		
VI			
VII	India ^b (1950-1955, 1960-1968)		China ^c (1952-71)

Source: Jeffrey G. Williamson, "Regional Inequality and the Process of National Development: A Description of the Patterns," Economic Development and Cultural Change XII, no. 4, part II (July 1965), Table 2, for all countries except China.

Table 5 (cont'd.)

Secular Changes in Interregional Income Inequality, Postwar PeriodNotes:

a. Williamson's findings for Yugoslavia are based on data from the mid-1950s to 1960. More recent data show that the population weighted coefficient of variation rose continuously from 1952 through 1971. See Vinod Dubey, Yugoslavia: Development with Decentralization (Baltimore and London: The Johns Hopkins University Press, 1975), p. 194.

b. Williamson's findings for India are based on 1950/51-1955/56. More recent data for the period 1960/61-1967/68 confirm that V_w increased during the 1960s as well as during the 1950s. The data for the 1960s as are in appendix Table 3. Unfortunately, because of numerous changes in the number of states and frequent changes in individual state boundaries since 1956, it is not possible to directly compare our more recent results with Williamson's findings.

c. Tentative, based on V_w falling in the industrial sector only.

The Chinese case contrasts in particular with India, the other low income country in Table 5. At independence India was marked by considerable interregional income disparity, particularly between the former British provinces and the independent states. Although one of the goals of the federation has been to reduce these initial disparities, per capita state incomes have tended to diverge, in recent years both because of the extremely rapid agricultural growth in rich agricultural states such as Punjab, Haryana and Gujarat and because of considerable divergence in industrial growth rates as well.²⁹ Although some relatively developed states, such as West Bengal, have grown relatively slowly, overall disparities have still tended to increase slightly.

Interestingly, the Chinese pattern also is quite different from that of Yugoslavia and the Soviet Union, two countries in which the state could presumably avoid the classic pattern of regional growth through direct control of the interregional allocation of investment funds and skilled labor. Yugoslav economic growth over the last twenty five years however has been characterized by increasing regional disparities. Although the Communist Party in the late 1940s assigned a high priority to the rapid reduction of interregional income disparities and each Five Year Plan since 1947 has identified specific underdeveloped republics and provided special developmental assistance, the country has consistently failed to achieve the explicit plan goal of more rapid development in these backward regions. Average per capita national income in less developed regions has fallen from two-thirds that of developed regions in 1953 to about one-half in 1970.³⁰

Although long term data on the regional growth experience of the Soviet Union are limited, a number of recent studies have shown that there is no trend toward regional equalization, even at the relatively high per capita income level attained in the post World War II period.³¹ In fact, the rate of interregional income divergence appears to have accelerated since 1960.³² Particularly striking has been the long term decline of per capita output relative to the national average for several Southeastern Republics. Between 1950 and 1971 the relative positions of Kazakhstan, Uzbekistan, Kirghizia, Tadzhikistan, and Turkmenia have fallen dramatically --in some cases by fifty percent. Studies of Republican standards of living, as reflected in personal and communal consumption, show wide interregional differences and suggest that they increased during the decade of the 1960s.³³ Apparently the overriding commitment of the Soviet leadership to maximal aggregate growth has mitigated against investment allocations that would be sufficiently redistributive to ensure more rapid growth in less developed regions.

This result was anticipated by Williamson who hypothesized that,

"It seems highly unlikely that the Communist nations have sacrificed rapid national growth for the "secondary" Marxian goals of (1) introducing industrialization throughout the country in order to achieve the necessary conditions for socialism on a nationwide scale and (2) achieving idealistic equalitarianism implied by the socialist society."³⁴

The mechanisms by which the Chinese after 1949 were able to simultaneously initiate sustained per capita GNP growth and also reduce interregional inequality are the subject of the next section of this paper.

IV. Central Control and Redistribution

In 1949 the Chinese communists inherited not one but three largely independent economic systems. By far the most advanced was the Northeast. Modern economic growth had begun here in the 1930s, largely as a result of large scale Japanese capital investment. The advanced state of development, compared to the rest of China, was reflected in both the high level of per capita product and in the structure of gross domestic output.³¹ Industry and particularly services were far more important than in China as a whole and within industry producer goods were especially important. The major coastal cities, particularly Shanghai and Tientsin were also very advanced. Beneficiaries of decades of foreign investment, they produced primarily light industrial goods, largely for foreign markets. Finally, there was a vast countryside where industrialization, with very few exceptions, had not begun. Industrial output in many inland provinces was less than twenty yuan per capita and only 6-7 percent or less of their populations lived in urban areas. In short, by criteria such as the structure of output and employment, modern economic growth had not yet begun. In fact, the preconditions for modern growth were almost entirely lacking. Communications and transportation facilities were primitive or did not exist. China's limited railroad development was confined largely to the Northeast; large, populous provinces such as Szechuan were not linked with the rest of the country. Large areas of the interior lacked other types of infrastructure as well, particularly hospitals and educational institutions.

These marked regional disparities in the level of economic development had enormously important implications for the new Communist government

that was committed to improving the size distribution of income, to reducing regional inequality in income and in the provision of public goods and services, to creating a single integrated national economy, as well as to sharply accelerating the overall pace of economic development. Although Western writers have usually focused on the latter goal in their explanation of the profound institutional transformation carried out in post-1949 China, it seems clear that distributional goals have also been of prime concern to the leadership.

Clearly one of the most profound choices facing the leadership after 1949 was the degree to which industrialization should be based on further expansion of the existing industrial centers. These centers had considerable advantages due to their extensive infrastructure facilities, large numbers of highly skilled workers and experienced industrial managers, enormous economies of scale, etc. Continued concentration of investment resources in these areas clearly offered the prospect of much more rapid growth of aggregate industrial output. On the other hand this strategy had quite unfavorable implications from the point of view of equity. Because existing inter-regional links were very weak it was quite probable that such a strategy would have very few spillover effects and would lead to rapidly increasing interregional disparities. Thus the leaders faced a difficult trade-off between growth and regional equity

The theme of the following pages is that over the past twenty-five years the leadership has consciously chosen to sacrifice some economic growth in return for achieving improved regional economic balance. This choice has been reflected primarily in an investment policy that by and large has favored poorer regions at the expense of the advanced. Clearly equity

goals have not been the only consideration in determining the regional allocation of investment--defense consideration, material resource endowments, and other factors have clearly played an important role. Furthermore, the degree to which the Chinese have been willing to sacrifice growth in the pursuit of equity has not remained invariant over time. For example, in 1956 following a reappraisal of regional policy, the commitment to inland development was marginally reduced compared to the early years of the First Five-Year Plan. However, the pattern of regional growth and the nature of economic planning in China suggests that regional equity has been prominent in the collective preference function of the Chinese leadership, particularly when compared with other countries.

As was discussed earlier, in the first few years after coming to power the central government created a series of policy instruments that enabled them to exercise far reaching direct control over the distribution of income. These policies included land reform, elimination of the private industrial and commercial sectors, the minimization of wage differentials within the state sector, manipulation of the terms of trade between agriculture and industry, and rationing of the most important consumption goods.

In addition to these mechanisms for directly influencing the size distribution of income, the central government has also systematically redistributed income and wealth in favor of less developed regions. In short, the institutional mechanisms which allowed the central government to increase the rate of capital formation from 5 percent in the 1930s to about 25 percent in the 1950s and to control the sectoral allocation of these investment resources have also been used to carry out a significant interregional

transfer of income and wealth to less developed regions.

The most important of these mechanisms is the annual state economic plan. The basic means of determining the overall allocation of resources within the economy, it is a fully unified development program that incorporates the plans of each of the provincial level governments as well as the programs run directly by the central government ministries. In the process of determining the national plan, the State Planning Commission simultaneously determines the broad outlines of the development plan for each province. These provincial plans set forth targets for the level of output of major industrial and agricultural products, the level and sectoral allocation of investment funds, increase in the industrial labor force and the level of average wages in the state sector, increases in school enrollments, number of hospital beds, volume of freight transport, value of retail sales, etc. Within the framework of these centrally determined parameters, each province draws up a more detailed plan which includes the economic plans of local governments. As a result the national plan is a fully integrated program that includes the plans of all levels of government.

The national budget, which is worked out simultaneously with the state plan, provides the financing for all of the programs included in the economic plan. This includes not only funds for investment projects, but also for national defense, social programs, and government administration. The state budget is a fully unified fiscal plan which includes the revenues and expenditures of provincial and local governments as well as the central government. Thus provincial budgets are drawn up by the Ministry of Finance simultaneously with the elaboration of the national budget. These provincial budgets provide the financing for all of the programs included

in provincial development plans. Part of the provincial budget, in turn, is allocated among subordinate municipalities and counties to finance local development plans.

Revenue Sharing

The simultaneous determination of the national and provincial economic plans and national and provincial financial budgets provides the central government with considerable control over the geographic distribution of resources. Although the bulk of tax sources are nominally designated as local revenues and are collected locally,³⁶ in the process of drawing up the unified national budget each level of government is assigned and allowed to retain only those revenues necessary to finance the programs that are contained in the economic plan which has been approved by its superior administrative level. In effect, collection of revenues implies no freedom to determine expenditures. Excess revenues are remitted upward while shortfalls are financed from special subsidies. Because of the large existing interregional variations in fiscal capacity and the redistributive nature of the centrally directed economic planning process discussed above, revenue sharing rates at each level of government are generally highly differentiated.³⁷ For example, relatively industrialized areas such as Shanghai, Peking, Tientsin, and the Northeastern provinces annually remit to the central government from 50 to 90 percent of the revenues they collect. That is, centrally approved local development plans in these areas are so limited that they can be financed with a relatively small portion of locally generated resources and the excess revenues are transferred to the central government for redistribution to other areas. On the other hand, less developed regions of the country have substantially lower remission rates. The least developed provinces generally retain all

of their revenues and receive additional direct subsidies from the central government amounting to up to 50 to 80 percent of their own local expenditure.

Redistribution is not limited to the top two layers of government, but extends to the lowest levels of state administration. Provincial governments typically require their major municipalities to remit disproportionately high portions of their revenues allowing a reduction in the burden on the less developed counties within each province.³⁸ Counties, in turn, finally redistribute resources among individual communes by establishing higher remission rates in the richer agricultural areas within each county.³⁹

Because the coverage and specific rates for all important taxes are set nationally, provincial and local governments are severely limited in their ability to mobilize resources which are not subject to this system of revenue sharing and expenditure control.⁴⁰ Provincial and local governments can not adjust tax rates or initiate new taxes as a means of mobilizing resources independent of central government control. Furthermore, they are prohibited from utilizing deficit spending to increase their expenditures above centrally determined levels. Only a few revenue sources, mainly the local agricultural surtax, are administered by local governments outside of state budgetary channels. Similarly enterprises have very limited access to funds for self-financing of investment projects. Enterprises are required to remit almost all of their net income, including depreciation funds, to the state budget either in the form of industrial and commercial taxes or profit remissions. They rely on non-returnable budgetary grants for financing all fixed investment and for most of their working capital as well. Only a small portion of working capital is financed through bank loans and these are fully integrated into the state financial plan.

Although there have occasionally been leakages of these loan funds for non-plan purposes, by and large they do not serve as an independent source of finance for enterprises.

Investment and Structural Change

Both qualitative evidence for China and empirical evidence for other countries suggests that incremental capital output ratios in less developed regions are substantially above their respective national averages and that substantially higher than average ratios of investment to output are required to systematically reduce per capita output differentials. However, the experience of Italy, Yugoslavia, Brazil, and other countries suggests that interregional income transfers alone may not be sufficient to eliminate the development gap between North and South.⁴¹ In the long run structural shifts in the pattern of output in backward areas are required to reduce disparities in the level of development.

The Chinese system of unified economic planning and financial planning has been particularly effective both in carrying out the interregional income transfer and in assuring rapid structural transformation of backward areas. The implementation of this policy since 1949 has been particularly evident in the industrial and transportation sectors. Because of the pre-1949 concentration of the investment resources in Manchuria and a few major coastal cities, 77 percent of industrial output originated in coastal areas in 1949.⁴² For political as well as economic reasons, the new regime began systematically to build up industrial centers in inland areas.

Inland provinces, which in 1952 (the year prior to the beginning of the First Five-Year plan) were the source of only 27 percent of industrial output, received 55 percent of total national investment during the first

three years of the first plan.⁴³ However, this aggregate figure does not reflect the concentration of these resources in a few provinces which were selected by the center as special areas for intensive industrial development. For example, while the ratio of investment in 1953-1955 to initial output shares in inland provinces as a whole was about 2:1, Sinkiang, Inner Mongolia, Shensi, Tsinghai, Kansu, and Honan during the period 1953-1957 enjoyed ratios of from 3.4:1 up to 10.5:1.⁴⁴ It is, of course, precisely these provinces, all of which were relatively underdeveloped in 1952, which grew most rapidly during the First Five-Year Plan period.

During this period Peking singled out 18 "key-point" (chung-tien) cities as recipients of enormous infusions of funds for both infrastructure investment and for industrial development. As shown in Table 6, most of these cities were located in inland areas. During the First Five-Year Plan period, these cities, which in 1953 contained less than 20 percent of China's urban population, received almost 70 percent of all investment funds allocated for the construction of public utilities in municipal areas, primarily for water supply, sewer, and public transportation systems.⁴⁵ Furthermore, the two hundred complete plant projects supplied by the Soviet Union and Eastern European countries, which formed the core of the First Five Year Plan, were heavily concentrated in key-point cities. Of 188 plants whose location has been identified, 110 were located in key-point cities.⁴⁶ The breadth of these plants, including extractive industries such as oil and coal; basic industries such as cement, iron and steel, and chemicals; fabrication of final goods such as locomotives, trucks, aircraft, electronic equipment, and machine tools, suggests that the development of inland regions was a balanced program that combined important infrastructure investment, the development of natural resource based extractive industries, and industrial

complexes producing a broad range of finished goods.⁴⁷

Thus unlike Italy where state support for regional development has been largely confined to infrastructure investment or Brazil where regional development has focused on raw material based extractive industries, which have only limited local income generation and employment effects, the development of backward areas in China has included the creation of major industrial complexes producing a broad range of manufactured goods for a national market. This deliberate development of regional linkages has been an important element of post-1949 economic planning.

Investment in backward areas was financed by a long term outward transfer of income from more developed provinces. This is presented in its starkest form in Shanghai. During the period 1953-1957, for example, Shanghai produced almost 20 percent of industrial output but was allocated only about 2.5 percent of total national investment. This investment represented only about 7.25 percent of the revenues collected in the municipality. This outflow of resources has continued unabated since 1957. For the period 1949-1973 the ratio of investment to total budgetary revenue in Shanghai was only 6.7 percent, about one-fifth to one-sixth of the national rate.⁴⁸ Although comparable data for other provinces are not available, revenue sharing data indicates that other advanced regions have also experienced substantial long term outward flows of revenues. For example, Liaoning and Kiangsu, the second and third most industrialized provinces in the mid 1970's, remit about three-fourths of their revenues to the central government each year.

Table 6
Location of Key-Point Cities

REGION	INLAND	COASTAL
<u>Northeast</u>		
Liaoning		Anshan, Shenyang
Kirin	Kirin, Ch'angch'un	
Heilungkiang	Harbin, Ch'ich'ihaerh	
<u>North</u>		
Hopei		Shihchiachuang
Honan	Chengchou, Loyang	
Shansi	T'aiyuan, Tat'ung	
Inner Mongolia	Paot'ou	
Peking		Peking
<u>Central</u>		
Hupeh	Wuhan	
Hunan	Chuchou	
<u>Southwest</u>		
Szechuan	Chengtu	
<u>Northwest</u>		
Shensi	Sian	
Kansu	Lanchou	

Source: Chang Yen-hsing, "The arrangement at urban construction-work must be in accordance with the national policy of economy in construction." Chi-hua ching-chi (Planned Economy), no. 12, 1957, p. 4.

Parallel and complementary to this redistribution of financial resources is the systematic transfer of skilled labor and technical and managerial manpower from more developed regions, particularly Shanghai, to less developed areas. This program, like the redistribution of income, began as early as 1950. Between 1950 and 1956 the central government, through its direct control over labor allocation, transferred over 270,000 workers out of Shanghai. Of this number 28,000 were specifically identified as technicians and 170,000 as skilled workers.⁴⁹ This program, unlike later rustication campaigns whose objective was to send unemployed youths to the countryside, assigned skilled workers to specific industrial projects, usually in the key-point cities in less developed regions. This transfer of enormous human resources from Shanghai has continued since the 1950s. By the early 1970s Shanghai had supplied over half a million skilled workers to inland industry.⁵⁰

As a result of this wholesale transfer of investment resources and skilled labor, less developed regions as a group have been relatively rapidly growing and the differentials in per capita industrial output, shown in Table 3, have been slowly diminishing. Although this decline has not been uniform, on the whole these transfers have led to a reduction in interregional inequality since the early 1950s.

Social Services

The system of revenue sharing and central government control of the economic development plans of provincial governments has also been used to insure a more equitable regional distribution of social services. In effect, although the Chinese seem to have embarked on a program which

is gradually reducing interregional income disparities, they have moved much more rapidly to alleviate interregional disparities in the provision of public goods and services. This process was facilitated by the rapid expansion in the early 1950s in the scope of social programs financed by the state budget.

Prior to 1953 rural primary school education as well as rural cultural and health programs, were not financed by the state budget but were supported by revenues derived from the local agricultural surtax.⁵¹ As a result of considerable regional variation in the level of per capita agricultural output there were wide regional variations in the ability of local governments to provide social services. Because the state budget did not yet include village (hsiang) expenditures, the center had no means for systematically redistributing funds to improve the distribution of these locally provided services.

Beginning in 1953 county level (hsien) government budgets were incorporated into the unified state fiscal system and most village level revenues and expenditures were included in the county budget.⁵² County revenues were expanded to facilitate the financing of village expenditures. Following this expansion of the scope of the state budget, expenditures for local education and other social programs were no longer financed from revenues that were closely tied to the level of agricultural development in each village. Instead they were financed from the county budget and provinces began to redistribute revenues among counties to enable them, in turn, to redistribute revenues at the village level.⁵³

The expansion of the scope of the state budget led to a rapid reduction of regional differentials in the provision of some social services.⁵⁴

From 1949 to 1957 considerable progress was made toward reducing extreme inequality among provinces in the proportion of the population enrolled in primary schools. Nationally the proportion of the population enrolled in primary schools more than doubled but provinces that ranked low in 1949 were able to expand their enrollments relatively more rapidly. This pattern continued into the 1960s and 1970s, although disparities have not been eliminated and those provinces which performed least well in the 1950s still lag behind. Evidence on the regional distribution of hospital beds is less complete but seems to show no similar trend of marked reduction in interregional differentials at least in the 1950s. Data for more recent years have not been released.

The unified nature of planning and finance in China, which gives the central government control of the level and sectoral allocation of investment resources within each province and also allows the redistribution of revenues to finance local social programs, contrasts particularly with the federal systems of Yugoslavia and India.

In Yugoslavia the decentralization of economic planning since the mid-1950s has systematically undermined the ability of the central government to redistribute resources in favor of less developed areas. Although the center was able to redistribute a significant volume of funds to poor areas until the mid-1950s, the growth of these areas was comparatively slow. Richer republics increasingly objected to the redistributive dimension of central investment plans since they believed it had resulted in lower rates of national economic growth.⁵⁵ As decentralized decision making was introduced and the criteria of profitability increasingly determined the allocation of investment funds, the investment share of less developed areas fell dramatically--from about 34 percent in 1950-1955 to 24 percent in 1955-

1959.⁵⁶ After the mid-1950s when the role of republican governments and enterprises in determining the allocation of investment was expanded the portion of investment funds controlled by the national government declined precipitously.⁵⁷ Since 1965 the Fund for the Accelerated Development of Underdeveloped Regions has been the major mechanism for central redistribution of investment resources. However, the financial resources available to this fund are relatively limited and the investment share of backward areas remains substantially below that of the 1950-1955 period.⁵⁸ Although the Social Development Plan for 1971-1975 has again set the goal of more rapid development of backward areas, the relatively slow growth of these areas in the first two years of the plan indicates that the goal again will not be reached.

The sectoral allocation of investment within backward areas in Yugoslavia has also been unfavorable to rapid growth. Regional development in the 1950s in particular, tended to be focused on raw material based extractive industries with little investment in infrastructure and manufacturing. The high capital output ratios and limited employment generation of these projects and the lack of development of complementary manufacturing facilities resulted in relatively slow growth in spite of a centrally controlled redistributive investment policy. Decentralization of investment planning since the mid-1950s has not only reduced the investment shares of backward areas but has also given republican governments greater control of the sectoral allocation of the special development funds provided by the federal government. However,

this has allowed the development of autarkic investment programs with frequent wasteful duplication of existing production facilities.⁶⁰ Thus both because of the limited redistribution of investment funds and the unfavorable sectoral allocation of investment within backward areas, current prospects are that regional disparities will continue to grow for the foreseeable future.

The prospects for reducing interregional income disparities in India are equally discouraging. Redistributive programs are carried out through a complex system of tax sharing, grants-in-aid, and special developments grants for financing projects included within state economic development plans. However, in striking contrast with Chinese coordination of central and local developmental and financial plans, in India there is little coordination either between federal and state development plans or between the plan grants administered by the Planning Commission and the tax sharing and grants-in-aid program administered by the Finance Commission.⁶¹ Funds administered by the latter are largely allocated on a per capita basis rather than on the basis of the level of state per capita income. Although the redistributive character of plan grants is potentially greater, they have not favored backward states. A recent study of all transfers including plan grants and fiscal transfers shows that they are at best neutral in their redistributive impact.⁶² This assessment must, however, be modified to reflect considerable interstate inequity in the mobilization of funds in India. Thomas Eapen's studies have shown that the large degree of tax authority given to state governments has allowed considerable regional disparity in tax effort with many of the wealthier states exercising very little tax effort. Again this is in sharp contrast to China where the unified tax system minimizes variations

in tax burden among provinces.

In view of the institutional arrangements it is not surprising that the pattern of growth in India has been one of regional divergence. Data from the 1950s and 1960s show interstate disparities in level of development have been increasing. A recent study suggests that these growing disparities have resulted in substantial interregional variation in the per capita availability of calories, proteins, and other important nutrients.⁶⁴

V. Assessment

In 1949 the Chinese Communists inherited an economy whose regional structure, particularly in industry, was quite imbalanced by international standards. The gap in per capita output, primarily between the developed Northeast and eastern coastal municipalities and the rest of the country, appears to have been substantially greater than the North-South income gap in Italy and Yugoslavia, as well as most other less developed countries. However, since 1950 Chinese economic policy instruments have been systematically structured to achieve a high degree of central control of resource allocation. A leadership that appears to have placed a considerable value on regional integration of the entire economy has, in turn, used these policy instruments to transfer resources to less developed regions to assure their comparatively rapid economic growth.

The most important of these policy instruments have been the system of revenue sharing, the unified tax and fiscal system, and the requirement that enterprises deposit virtually all of their profits in the state budget. These instruments have given the central government the ability to systematically determine both the intersectoral and interregional flows of resources

throughout the economy. By extending the scope of the unified state budget to the lowest level of government administration, the center gained the ability to redistribute resources for financing local social programs as well as for investment purposes. Most significantly, however, unlike other countries where limited redistributive programs have been grafted onto institutional arrangements which encourage basically diverging growth paths, in China interregional redistribution has been an inherent fundamental dimension of the planning process from 1950 to the present.

Although there has been considerable decentralization of economic management authority to lower levels of government since the period of the First Five Year Plan, the basic institutional mechanisms through which the center controls investment decisions as well as decisions which influence the size distribution of income have remained intact. There is, however, continuing dispute among Western economists concerning the willingness of the leadership to sacrifice economic growth in pursuit of improvements in social welfare. For example, the policy of local self sufficiency, which has been repeatedly asserted by the Chinese as a central tenet of development policy, is invariably interpreted in the West as an endorsement of growing regional disparity in the quest for more rapid growth. However, I would argue that the operative primacy of distributional goals is reflected in the relative stability of real wages in the industrial sector, the slow but continuous improvement in the terms of trade between agriculture and industry, as well as the gradual convergence of regional per capita output.

In spite of the success of the Chinese in reducing interregional inequality, both the absence of adequate redistributive mechanisms in most

other less developed countries and the comparatively high cost of the Chinese strategy suggest that it may not provide a model for other countries that are concerned about trends in the size distribution of income. Although a substantial portion of total investment resources in other countries is sometimes state controlled, the geographic mobility of these funds is frequently sharply curtailed either by decentralized decision making which places resource allocation decisions at subnational levels of government or by a central government investment policy that favors maximal aggregate growth rather than regional balance. The absence of adequate redistributive mechanisms in most other LDCs is symptomatic of the lack of an underlying political consensus in support of redistributive objectives. Although many aspects of Chinese development policy since 1949 have evolved in a quite cyclical fashion, there appears to have been a rather sustained commitment to redistributive goals.

Even if adequate redistributive mechanisms were available, the relatively high cost of the Chinese pattern of regional development would discourage many LDCs from pursuing the Chinese model. Although a precise assessment cannot be made with available data, the cost of rapid development of backward areas, in terms of national growth foregone, appears to have been quite high. Incremental capital output ratios in backward regions appear to have been substantially higher than in advanced regions. Achievement of rapid growth in less developed regions would appear to be justified primarily in terms of social welfare and national economic integration. Many other LDCs are likely to prefer other more direct and less costly means of improving social welfare.

Appendix Table 1
 Industrial Output by Province, 1952, 1957, 1971
 (Millions of Yuan)
 (1952 Constant Prices)

	1952	1957	1971
NATIONAL	34,330	78,390	294,420
<u>Northeast</u>			
Liaoning	4,761	11,751	37,528
Kirin	1,090	2,400	8,800
Heilungkiang	1,889	3,930	
<u>North</u>			
Hopeh	1,342	2,805	
Shantung	2,091	4,068	16,005
Honan	478	1,737	9,851
Shansi	643	1,832	
Inner Mongolia	178	703	7,828
Peking	715	2,307	17,577
Tientsin	1,850	4,300	15,750
<u>East</u>			
Kiangsu	2,584	4,553	20,765
Anhui	631	1,501	
Chekiang	1,099	2,274	
Shanghai	6,523	12,969	48,386
<u>Central</u>			
Hupei	956	2,803	9,816 ^a
Hunan	767	1,788	8,038 ^b
Kiangsi	575	1,249	4,088
<u>South</u>			
Kwangtung	1,745	3,812	14,138
Kwangsi	343	798	3,334 ^d
Fukien	414	1,224	3,030
<u>Southwest</u>			
Szechuan	1,647	4,873	13,620
Kweichow	269	605	
Yunnan	444	1,078	2,595
<u>Northwest</u>			
Shensi	545	1,263	8,254 ^c
Kansu	137	567	1,725
Tsinghai	36	108	689
Sinkiang	175	446	1,383

Appendix Table 1 (Continued)

Source: Robert Michael Field, Nicholas R. Lardy, and John Philip Emerson, A Reconstruction of the Gross Value of Industrial Output by Province in the People's Republic of China: 1949-1973, Foreign Economic Report No. 7 (Washington, D.C.: Department of Commerce, 1975), p. 9 except 1971 data for Hupeh, Hunan, Shensi, and Kwangsi.

a. Roland Berger, "Financial Aspects of Chinese Planning," Bulletin of Concerned Asian Scholars, 6, no. 2, p. 16, reports that 1970 industrial output was 7,500 million yuan. I assumed that this was in 1957 prices and converted it to 1952 prices using an index based on data in State Statistical Bureau Ten Great Years (Peking: Foreign Languages Press, 1960), p. 14. The value of output in 1971 was calculated from the rate of industrial growth in 1971 as given in Field, Lardy, and Emerson, p. 11.

b. 1974 output was reported to be equal to 29 times that of 1949 (Foreign Broadcast Information Service (FBIS), Daily Report PRC, Feb. 3, 1975, p. H3). The absolute value of output in 1971 was calculated from data on output in 1949 and the rate of growth of output during 1971-1973 as given in Field, Lardy, and Emerson, pp. 9 and 11, and the assumption that the rate of growth in 1974 was equal to the national rate of 5 percent estimated by Robert Michael Field, "Civilian Industrial Production in the People's Republic of China: 1949-1974," in China: A Reassessment of the Economy, p. 170.

c. 1970 output was reported to be 24 times that of 1949 in Ross Terrill, "The 800,000,000: Report from China," The Atlantic Monthly, November, 1971, p. 110. (Citation provided by T. Rawski). The absolute value of output in 1971 was calculated from data on output in 1949 and the rate of growth of output in 1971 as given in Field, Lardy, and Emerson, p. 9 and p. 11.

d. 1974 output was reported to be equal to 21.5 times that of 1950 and 3.48 times that of 1965. (BBC, Summary of World Broadcasts, FE/W845/A/2). The absolute value of output in 1971 was calculated from data on output in 1950 and the rate of growth of output during 1965-1971 as given in Field, Lardy, and Emerson, pp. 21 and 11.

Appendix Table 2
Gross Value of Agricultural Output by Province, 1957

Millions of Yuan

<u>Northeast</u>	
Liaoning ²	1,817
Kirin ³	1,240
Heilungkiang ⁴	2,300
<u>North</u>	
Hopeh ⁵	4,450
Shantung ⁶	4,125
Honan ⁷	4,299
Shansi ⁸	1,455 ¹
Inner Mongolia ⁹	1,225 ¹
Peking ¹⁰	80
Tientsin ¹¹	0
<u>East</u>	
Kiangsu ¹²	3,716
Anhui ¹³	3,028 ¹
Chekiang ¹⁴	2,424
Shanghai ¹⁵	76
<u>Central</u>	
Hupeh ¹⁶	3,500 ¹
Hunan ¹⁷	3,481
Kiangsi ¹⁸	1,937
<u>South</u>	
Kwangtung ¹⁹	3,620
Kwangsi ²⁰	1,754
Fukien ²¹	1,160
<u>Southwest</u>	
Szechuan ²²	6,040
Kweichow ²³	1,608
Yunnan ²⁴	1,842
<u>Northwest</u>	
Shensi ²⁵	2,282
Kansu ²⁶	1,423
Tsinghai ²⁷	372 ¹
Sinkiang ²⁸	901

Notes: All values in constant 1952 prices except as noted.

1. 1957 prices

Appendix - Table 2

Sources:

- ²Liaoning shih-nien (Ten Years of Liaoning), Shenyang: Liaoning People's Publishing House, 1960).
- ³Kirin Daily, 18 March 1959
- ⁴Heilungkiang Daily, 19 September 1958
- ⁵Hopei Daily, 10 January 1958
- ⁶Tsingtao Daily, 5 October 1959
- ⁷Honan Daily, 1 January 1959
- ⁸Shansi Daily, 10 October 1959
- ⁹Inner Mongolia Statistical Bureau, Statistics on the economic and cultural achievements of the Inner Mongolia Autonomous Region, p. 39.
- ¹⁰Peking Daily, 9 August 1956 gives the value of agricultural output in 1955 as 73.6 million yuan. I assumed that the total growth between 1955 and 1957 was ten percent.
- ¹¹Since the geographic area of Tientsin was only about two percent of Peking prior to 1958, I assume that the value of agricultural output produced within the city was negligible.
- ¹²Hsin-hua Daily, 10 January 1958
- ¹³Anhui Daily, 12 February 1959
- ¹⁴Chekiang Workers Daily, 3 January 1958
- ¹⁵Liberation Daily, 30 August 1957, 20 January 1958
- ¹⁶Yangtse River Daily, 11 March 1958
- ¹⁷New Hunan Daily, 4 May 1958
- ¹⁸Kiangsi Daily, 3 July 1958
- ¹⁹New China Semi-Monthly, No. 5, 1958
- ²⁰Kwangsi Daily, 5 October 1955, 27 January 1960
- ²¹Fukien Daily, 30 September 1959
- ²²Impartial Daily, 21 August 1957
- ²³Kweichow Daily, 8 April 1960
- ²⁴Yunnan Daily, 3 January 1958

Appendix Table 3

State Per Capita Income in India, 1960/61-1967/68
(in 1960-61 prices [RS])

State	1960/61		1967/68	
	income	population share (%)	income	population share (%)
Andhra Pradesh	289.1	8.4	337.4	8.2
Assam	328.4	2.8	819.2	3.1
Bihar	222	10.1	231.7	10.8
Gujarat	402.8	4.8	483.5	4.7
Kerala	326.2	4.0	335.3	4.0
Madhya Pradesh	293.4	7.6	305.9	7.6
Maharashtra	479.4	9.2	474.5	9.4
Mysore	313.2	5.5	372.4	5.5
Orissa	267.9	4.1	294.8	4.1
Punjab ^a	441.3	4.7	620.1	4.6
Rajasthan	272.0	4.7	313.9	4.9
Tamil Nader	343.8	7.8	390.8	7.6
Uttar Pradesh	291.7	17.3	290.7	17.1
West Bengal	461.9	8.2	450.2	8.3
Coefficient of Variation	.23		.26	

Notes: ^aIncludes Haryana

Source: All data from "The Course of State Incomes: 1960-1968," Quarterly Economic Report XV, no. 4 (April 1969), p. 22. Coefficient of variation calculated by author.

¹Irma Adelman and Cynthia Taft Morris, Economic Growth and Social Equity in Developing Countries (Stanford: Stanford University Press, 1973), p. 189.

²Simon Kuznets, "Economic Growth and Income Inequality," American Economic Review, Vol. XLV, No. 1, (March, 1955) pp. 1-28.

³Simon Kuznets, "Quantitative Aspects of the Economic Growth of Nations: Distribution of Income by Size," Economic Development and Cultural Change, XI (January 1963), Part II.

⁴Montek S. Ahluwalia, "Income Inequality: Some Dimensions of the Problem," in Redistribution with Growth, ed. Hollis Chenery et al. (London: Oxford University Press, 1974), pp. 3-37.

⁵Kuznets (1963) had originally hypothesized that the deterioration in the size distribution of income as economic growth began was due to the rising share of the middle income groups. He found that the share of the lowest income groups in less developed countries was not significantly less than in developed countries. Ahluwalia's study, cited above, based on a larger sample suggests the income share of the poorest deciles in less developed countries is considerably below that of more developed countries.

⁶Ahluwalia, "Income Inequality," pp. 16-17.

⁷Jeffrey G. Williamson, "Regional Inequality and the Process of National Development: A Description of the Patterns," Economic Development and Cultural Change, XIII (July 1965), Part II.

⁸Williamson, p. 23.

⁹Alan A. Green, "Regional Inequality, Structural Change, and Economic Growth in Canada 1890-1956," Economic Development and Cultural Change, Vol. XVII, No. 4 (July 1960), pp. 567-583. Thomas W. Cleaver, "Regional Income Differentials in Japanese Economic Growth," (unpublished Ph.D. Dissertation, Harvard University, 1971).

¹⁰Williamson (p. 32) found for all countries for which data were available, a highly significant inverse correlation within countries between regional per capita income and the regional share of agriculture employment in the labor force.

¹¹Simon Kuznets, Economic Growth of Nations: Total Output and Production Structure (Cambridge: Harvard University Press, 1971), pp. 199-211.

¹²Simon Kuznets, Economic Growth of Nations. pp. 236-238.

¹³In Yugoslavia within the modern sector per capita output in backward region is only about 3/4 that of the developed regions. Vinod Dubey, Yugoslavia: Development and Decentralization (Baltimore: The Johns Hopkins University Press, 1975), pp. 195-196.

¹⁴ Dwight Perkins, "Growth and Changing Structure of China's Twentieth Century Economy" in China's Modern Economy in Historical Perspective, ed., Dwight H. Perkins (Stanford: Stanford University Press, 1975), p. 153. Peking Review No. 31, 1975 (October 10, 1975), p. 9.

¹⁵ Dwight H. Perkins, Market Control and Planning in Communist China (Cambridge: Harvard University Press, 1966), pp. 192-193.

¹⁶ Alexander Eckstein, China's Economic Development: The Interplay of Scarcity and Ideology (Ann Arbor: The University of Michigan Press, 1975), pp. 346-347. Lloyd G. Reynolds, "China as a Less Developed Economy," American Economic Review, Vol. LXV, No. 3 (June 1975), p. 426. A. Doak Barnett, Uncertain Passage: China's Transition to the Post-Mao Era (Washington, D. C.: The Brookings Institution, 1974), p. 131.

¹⁷ The most explicit statement of this view is contained in John G. Gurley, "Capitalist and Maoist Economic Development," in America's Asia: Dissenting Essays on Asian-American Relations, ed. Edward Friedman and Mark Selden (New York: Vintage Books, 1971), pp. 324-356.

¹⁸ On wage differentials in the industrial sector see Carl Riskin, "Workers Incentives in Chinese Industry," in China: A Reassessment of the Economy, Joint Economic Committee, 94th Congress, First Session (Washington, D.C.: Government Printing Office, 1975), pp. 199-224.

¹⁹ In the course of looking at hundreds of provincial economic reports I have seen data on provincial national income only for Heilungkiang. See Heilungkiang Daily, September 19, 1958.

²⁰ Fang Ping-chu, "Shih-lun ti-ch'ü kuo-min shou-ju t'ung-chi ti tso-yung ho ti-ch'ü tsung-ho p'ing-heng ti i-hsieh wen-t'i" (On the role of regional national income statistics and some problems in regional comprehensive balances), Ching-chi yen-chiu (Economic Research), 1963, no. 4 (17 April 1963) pp. 1-15.

²¹ Dwight H. Perkins, "Growth and Changing Structure, pp. 117, 161.

²² Nationally the rate of value added in the producer goods sector is about three-fourths greater than in the consumer goods sector. [Shigeru Ishikawa, National Income and Capital Formation in Mainland China: An Examination of Official Statistics (Tokyo: The Institute of Asian Economic Affairs, 1965), p. 66].

²³ Industrial growth rate based on official data in Robert Michael Field, Nicholas R. Lardy, and John Philip Emerson, A Reconstruction of the Gross Value of Industrial Output by Province in the People's Republic of China: 1949-1973, Foreign Economic Report No. 7, (Washington, D.C.: Department of Commerce, 1975), p. 19. Agricultural growth rate based on official data in Perkins, "Growth and Changing Structure," p. 117.

²⁴ Examination of the growth of per capita industrial output in the six missing provinces also supports this view. (See table, page 53)

	1957	1971	1957-71
TOTAL			
millions of yuan	78,390	294,420	
index	100	376	
av. annual growth (%)			9.9
21 PROVINCES			
millions of yuan	64,817	253,200	
index	100	391	
av. annual growth (%)			10.2
6 MISSING PROVINCES			
millions of yuan	13,573	41,220	
index	100	304	
av. annual growth (%)			8.3

The average annual growth rate of the missing provinces is about two percent below the national average. Since the rate of population growth of these provinces, with the exception of Anhui, was above the national average, the per capita income relative for the group as a whole declined between 1957 and 1971. However, the missing provinces were not preponderantly poor in 1957. They ranked 5th, 7th, 11th, 23rd, and 27th in per capita industrial output. Thus it is quite probable that if data for all 27 provinces were available, the downward trend in V_w would continue after 1957.

²⁵ In research that is still underway Tom Weins has estimated the rate of growth of foodgrain output since 1957 in 15 provinces. This sample appears to have a strong upward bias. For 11 provinces the estimated rate of growth of grain output is above the national average. The 15 as a whole account for almost all of the growth of grain output in the country since 1957, giving rise to the possibility that in the remaining provinces growth has been very low or even negative in some cases. Thus it is possible that, contrary to the pattern of convergence in industry, there has been a pattern of divergence in agricultural growth. However, these estimates of the growth of grain output are very preliminary and may be substantially revised as more information is released. Furthermore, since grain output is only about one-half of the value of agricultural output as a whole, it may be only a partial guide to agricultural growth.

²⁶ Scattered quantitative evidence suggests that structural transformation has been particularly rapid in comparatively fast growing provinces. For example, in Kwangsi, a relatively rapidly growing province, the portion of producer goods in total industrial output rose from .1 percent in 1950 to almost 23 percent in 1974. The comparable increase for the nation as a whole was from 29.6 percent to 61.7 percent. On the other hand, in Kwangtung, where the growth rate has been roughly equal to the national average rate over the period from 1949 to 1973, the rate of structural change has been slightly below the national average. The output of consumer goods grew 15 fold between 1949 and 1974 compared to 13 fold growth for the nation as a whole. New China News Agency (NCNA), 24 March 1975 in Survey of

the Peoples Republic of China Press (SPRCP), 31 March - 4 April 1975. NCNA, 11 May 1975 in SPRCP May 19-23, 1975. State Statistical Bureau, Ten Great Years (Peking: Foreign Languages Press, 1960) p. 87. Robert Michael Field, "Civilian Industrial Production in the People's Republic of China: 1949-1974," in China : A Reassement of the Economy, p. 170.

²⁷ Aird, Population Estimates for the Provinces of the People's Republic of China: 1953-1974, International Population Reports, Series 95, No. 73 (Washington, D. C.: Department of Commerce, 1974), p. 95.

²⁸ Albert O. Hirschman, The Strategy of Economic Development (New Haven: Yale University Press, 1958), pp. 187-190.

²⁹ Indian Institute of Public Opinion, "The Course of State Incomes: 1960-1968, Unequal Growth in India's States," Quarterly Economic Report, Vol. XV, no. 4, (April 1969), pp. 15-28.

³⁰ Vinod Dubey, Yugoslavia: Development with Decentralization, p. 72.

³¹ Abram Bergson estimates 1955 per capita gross domestic product in the Soviet Union to be about \$920. Abram Bergson, "The Comparison of National Income of the USSR and the United States," in International Comparisons of Prices and Output edited by D.J. Daly (New York: National Bureau of Economic Research, 1972), p. 149. This would place the Soviet Union roughly in category IV in Table 5.

³² Hans-Jürgen Wagener, "Les récents modèles de développement dans les régions économiques soviétiques," Revue de l'Est, Vol. 4, no. 2 (1973).

³³ Gertrude E. Schroeder, "Regional Differences in Incomes and Levels of Living in the USSR," in The Soviet Economy in Regional Perspective, ed. V.N. Bandera and Z.L. Melynk (New York: Praeger, 1973), p. 190.

³⁴ Williamson, p. 31.

³⁵ Alexander Eckstein, Kang Chao, and John Chang, "The Economic Development of Manchuria: The Rise of a Frontier Economy," The Journal of Economic History, Vol. XXXIV, no. 1 (March 1974), pp. 239-264.

³⁶ During the First Five-Year Plan period provincial and local governments collected about 60 percent of total national revenues. Li Hsien-nien, "Report on the State's 1955 final account and the State's 1956 budget," Hsin-hua pan-yüeh-k'an (New China Semi-Monthly), no. 14, 1956, p. 8. Since 1957 provincial and

local governments have collected about 80 percent of total government revenues. Ko Ling, "Leap Forward, Leap Forward Again--Study Vice-Premier Li Hsien-nien's Report on the State's 1958 Final Accounts and the 1959 Draft State Budget," Ts'ai-cheng (Finance), no. 9, 1959 and Joan Robinson, Economic Management in China (London: Anglo-Chinese Educational Institute, 1975), p. 29.

³⁷ Central-Provincial revenue sharing is examined in some detail in Nicholas R. Lardy, "Economic Planning in the People's Republic of China: Central Provincial Fiscal Relations," in China: A Reassessment of the Economy, pp. 94-115.

³⁸ For example, during 1955-1957 Canton municipality annually remitted 74 to 79 percent of its revenues to Kwangtung Province. Provincial remissions to the central government ranged from 66 to 56 percent of total provincial revenues inclusive of the revenues of subordinate levels of government. The revenues remitted by the municipality actually supplied the province with from 24 to 40 percent of its total remissions. Kuang-chou jih-pao (Canton Daily), 23 November 1956, 26 April 1957; Nan-fang jih-pao (Southern Daily), 5 August 1956, 27 July 1957.

³⁹ Ch'en Ch'i, "Financial Administration Following the Establishment of People's Communes in Honan," Ts'ai-cheng, no. 11, 1958, p. 9. Wang Sheng-min, "Several Problems in Carrying Out the Contract System in People's Communes," Ts'ai-cheng (Finance), no. 14, 1958, p. 14.

⁴⁰ The unified nature of the tax system was first promulgated in January 1950. Government Administrative Council, "Regulations on the Administration of National Taxation," in Compendium of Laws and Regulations on Financial and Economic Policies of the Central Government, Volume I, pp. 181-184 (Peking: New China Book Store, 1950). The provisions of this regulation have been reiterated repeatedly since that time. See for example, Wei Min, "China's Tax Policy," Peking Review no. 37, 1975 (12 September), pp. 23-25.

⁴¹ Hollis B. Chenery, "Development Policies for Southern Italy," The Quarterly Journal of Economics LXXVI, no. 4 (November 1962), p. 539. Vinod Dubey, Yugoslavia: Development with Decentralization, pp. 205-207. Werner Baer, "Regional Inequality and Economic Growth in Brazil," Economic Development and Cultural Change, XII, no. 3 (April 1964).

⁴² Liu Tsai-hsing and Chang Hsüeh-ch'in, "The Great Change in China's Industrial Map for the Past Decade," Ti-li chih-shih, (Geographical Knowledge), no. 11, 1959 translated in Extracts from China Mainland Magazines (ECMM), 64, p. 10.

⁴³Liu Tsai-hsing and Chang Hsüeh-ch'in, p. 11. "Several Problems in the Socialist Industrialization of Our Country," T'ung-chi kung-tso t'ung-hsün (Statistical Work Bulletin), no. 21, 1956, translated in ECMM, 69, p. 6.

⁴⁴Calculated on investment data in Nicholas R. Lardy, "Centralization and Decentralization in China's Fiscal Management," The China Quarterly, no. 61 (March 1975), p. 40 and industrial output data in appendix table 1.

⁴⁵Municipal population data are from Morris B. Ullman, Cities of Mainland China: 1953 and 1958, International Population Reports, Series P-95, no. 59 (Washington, D.C.: Department of Commerce, 1961), pp. 35-36. Share of investment in public utilities from Chang Yen-hsing, "The Arrangement of Urban Construction Work Must be According to the National Policy of Economy in Construction," Chi-hua ching-chi (Planned Economy), no. 12, 1957, p. 4.

⁴⁶Robert F. Dernberger, "The Transfer of Technology to the PRC," unpublished manuscript (May 1975) Appendix Table 3.

⁴⁷In terms of the Chenery-Taylor analysis of the large country development pattern the industries developed in backward regions include early, middle, and late industries but tend to be concentrated in the latter two categories. This is particularly favorable for continued convergence since these two categories typically account for a very substantial portion of the increase in the industrial share of GNP once growth proceeds beyond the relatively low levels of per capita national income already achieved by the Chinese. Hollis B. Chenery and Lance Taylor, "Development Patterns: Among Countries and Over Time," The Review of Economics and Statistics Vol. L, no. 4 (November 1968), pp. 409-412.

⁴⁸Investment data for 1953-57 from Lardy, "Centralization and Decentralization," p. 40. Industrial output data in Appendix Table 1. The ratio of investment to accumulation for the period 1949-1973 was reported by New China News Agency, 28 September 1974, SPRCP, October 7-11, 1974, p. 266.

⁴⁹Liu Chih-ch'ung, "On the situation in Shanghai's industry and several problems," Ts'ai-ching yen-chiu (Financial and Economic Research), no. 1, 1958, p. 61.

⁵⁰Alexander Eckstein, China's Economic Development, p. 364.

⁵¹Government Administrative Council, "Decision on Unified Management of 1950 financial Revenue and Expenditure," in Shih-nien lai ts'ai-cheng tzu-liao hui-pien (Collection of Materials on Finance During the Last Ten Years), (TCTLHP), (Peking: Finance Publishing House, 1959), volume 2, pp. 35-40.

⁵²Government Administrative Council, "Directive on the Method of Compiling Each Level's 1953 Draft Budget," TCTLHP, Volume 2, pp. 47-52.

⁵³The regulation cited above (note 52) specifies explicitly that provincial authorities were expected to redistribute revenues among counties to enable them, in turn, to carry out redistribution.

⁵⁴David Michael Lampton, "The Performance of the Chinese Political System in Delivering Education and Health," unpublished manuscript, (August 1975).

⁵⁵Deborah D. Milenkovitch, Plan and Market in Yugoslav Economic Thought (New Haven: Yale University Press, 1971), pp. 178-186. Nicholas R. Lange, "The Dialectics of Decentralization: Economic Reform and Regional Inequality in Yugoslavia," World Politics, Vol. XXV, no. 3 (April 1975).

⁵⁶Vinod Dubey, p. 206.

⁵⁷The share of fixed assets financed by the central government declined from 97 percent in 1953 to less than 20 percent in 1964. Vinod Dubey, p. 35.

⁵⁸The share of investment of backward republics in the 1960s, 27 percent remains substantially below that of the 1950-1955 period. Vinod Dubey, p. 206.

⁵⁹Vinod Dubey, p. 13.

⁶⁰Lange, p. 315.

⁶¹A. T. Eapen, "Center-State Fiscal Relations in India," (unpublished manuscript), p. 4.

⁶²John M. Echols, "Politics, Budgets and Regional Equality in Communist and Capitalist Systems," forthcoming, 1975.

⁶³A. T. Eapen, "Federal-State Fiscal Arrangements in India," in Revenue Sharing and Its Alternatives: What Future for Fiscal Federalism?, Joint Economic Committee, 90th Congress, 1st Session (Washington, D.C.: Government Printing Office, 1967), pp. 469-472.

⁶⁴Indian Institute of Public Opinion, "Regional Inequality in Nutrition: A Comparative Study by States and Income Groups," Quarterly Economic Report, XVI, no. 3 (January 1970), pp. 9-18.