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China Report

ECONOMIC AFFAIRS

STUDIES IN THE PROBLEMS OF CHINA'S ECONOMIC STRUCTURE

Ed by

Ma Hong and Sun Shangqing

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[Excerpts from ZHONGGUO JINGJI JIEGOU WENTI YANJIU [STUDIES IN THE PROBLEMS OF CHINA'S ECONOMIC STRUCTURE], Beijing, in Chinese, 1981 Vol II, edited by Ma Hong [7456 3163] and Sun Shangqing [1327 1424 3237]; portions within slantlines in boldface in original text]

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CHAPTER XIII

READJUST THE DIRECTION OF CAPITAL CONSTRUCTION INVESTMENTS TO MAKE THE NATIONAL ECONOMIC STRUCTURE MORE RATIONAL

By Liu Hui [0941 2264], Li Qun [0632 5028] and Qi Mingchen [2058 0682 3819];
original text pp 411-436; portions within slantlines in boldface in original text

[Text] The direction of capital construction investments represents the decisions on the amount of investment in the various sectors of the national economy and the selections of the key sectors for investment. Whether or not these decisions and selections are rational bear directly on the state of expanded reproduction. Consequently, the issue calls for careful study.

I. Top-heavy Investment in Heavy Industry Distorts the Proportionality of the National Economy.

Although what causes the distortion of the proportionality of the current national economy of China can be found in many different areas, misdirected and top-heavy investment in heavy industry all these years is one of the major causes. Table 1 shows the changes of the proportions of investment in the various sectors of the national economy as well as in productive and nonproductive investments in more than two decades prior to the current readjustment of the national economy.

According to Table 1, the investment in heavy industry has been over 50 percent except during the First 5-Year Plan period and the years of readjustment, 1963-65. What are the justifications for keeping the investment in the heavy industry over 50 percent? Let us compare this with the situation in the Soviet Union. In its economic construction, the Soviet Union did overemphasize heavy industry to the detriment of agriculture, light industry and the standard of living of the people. The proportion of investment in heavy industry during

its First 5-Year Plan period when the Soviet Union focused on developing heavy industry was not any more than 31.9 percent, while the proportions of agriculture and light industry were 15.6 percent and 6.3 percent, respectively. The ratio between light and heavy industry was 1:5.06. When the proportion of its investment in heavy industry reached the highest peak during the anti-Fascist war, it was still no more than 39.8 percent, and that of agriculture and light industry was 9.4 percent and 3.4 percent, respectively. The ratio between light and heavy industry was 1:11.7.[1] The fact that the proportion of China's investment in heavy industry topped that of the Soviet Union during the anti-Fascist war is unheard of anywhere in the world.

Table I: Proportion (percentage) of Investment in the Various Sectors During Different Historical Periods

	First 5-Year Plan	Second 5-Year Plan	1963-65	Third 5-Year Plan	Fourth 5-Year Plan	1976-78
Agriculture	7.8	12.3	18.8	11.8	11.3	12.1
Light industry	5.9	5.2	3.9	4.0	5.4	6.6
Heavy industry	46.5	56.1	49.8	57.4	54.8	54.7
Transportation, post and telecommunication	17.3	15.0	15.0	18.1	19.6	15.2
Commerce	3.6	2.7	2.2	2.5	3.1	3.3
Science, culture, education, health	5.6	2.6	3.2	1.9	2.3	2.8
Urban construction	2.5	2.0	2.4	1.5	1.4	2.5
Productive investments	71.7	86.8	83.0	89.4	86.6	83.6
Nonproductive investments	28.3	13.2	17.0	10.6	13.4	16.4
Including residential housing	9.1	4.1	6.9	4.0	5.7	6.9

The facts show the top-heavy economic structure of China is closely tied to the top-heavy investment in heavy industry, and the casual relations between the two are very obvious.

China's national economy developed quite satisfactorily during the First 5-Year Plan period. At that time, as China was striving to lay a foundation

1 "Sixty Years of the Soviet National Economy" pp 412.413.

for the mechanization of socialist industry, it invested quite heavily in heavy industry, even though proper attention was given to the investments for all the other sectors. Judging by the table above, the ratios of investments at that time for science, culture, education, health, urban construction, residential housing and that of all the nonproductive investments were the highest in history. During that period, China was able not only to build a number of industries which it had never had before, such new machine tools, airplane and automobile industries, but also to speed up the development of production and raise the true income and standard of living of both city and village people. We may say the national economy prospered as China registered success in expanded reproduction, simple reproduction and a better living standard for the people.

But the direction of investment during the First 5-Year Plan was not entirely flawless. Generally speaking, the proportion of investment in heavy industry was too high, while that of the investment in light industry, and in expecially agriculture, was a bit too low. "The investments for some nonproduction capital construction had been unjustifiably slashed" when the plan was carried out.[2] There was the problem of the supply of consumer goods, especially some agriculture produce, falling behind demand and the shortage of urban housing and communication services. In the final year of the First 5-Year Plan, i.e. 1957, investment in heavy industry rose from the 1956 level of 48.1 percent to 51.6 percent.

The proportion of heavy industry should have gone down when the Second 5-Year Plan began, but it actually continued to go up. The top-heavy investment in heavy investment for a period of 21 years, 1958-78, was responsible for the protracted irrational structure of the national economy.

The top-heavy investment in the heavy industry is attributable mainly to "gearing up primarily for steel" and the escalating investment in the metallurgical industry. The two adventurous advances in capital construction between the end of the 1950's and the beginning of the 1960's, on the one hand, and during the 1970's, on the other, followed practically the same pattern. This is shown in Table 2.

2 Zhou Enlai: "Report on the Recommendations Relating to the Second 5-Year Plan of the National Economic Development," "Documents of the 8th CPC National Congress" p 117.

Table 2: Comparison With the Investment of the Preceding Year

	Total capital construction investment		Industrial investment		Heavy industry investment		Metallurgical industry investment	
	Increases in 100 Million Yuan	Percentage Increases	Increases in 100 Million Yuan	Percentage Increases	Increases in 100 Million Yuan	Percentage Increases	Increases in 100 Million Yuan	Percentage Increases
1958	128.67	93	92.36	116	80.98	114	31.10	193
1970	109.34	58.9	75.38	65	71.05	65.4	20.42	100.7

Every time the metallurgical industry expands, the machine-building industry is expected to provide many times more equipment. Unable to accomplish the task by relying on its old plants, the machine-building industry was forced to set up new plants all over the country.[3] In 1958, when the proportion of investment in the metallurgical industry rose to 17.7 percent, up from the 11.6 percent of the preceding year, the proportion of the investment of the machine-building industry also rose from 7.2 percent to 9 percent, topped only by the former as compared with all the industrial sectors. The amount of investment of these two sectors accounts for nearly one-half of all heavy industry investment. The changes in the investment and production structure of agriculture, light and heavy industry are shown in Table 3 and Table 4.

Table 3: The Proportions (Percentages) of Agriculture, Light and Heavy Industry Investment in Total Capital Construction Investment

Year	Agriculture	Light industry	Heavy industry	Ratio between light and heavy industry
1957	9.2	5.9	51.6	1: 8.75
1958	10.5	7.3	57.0	1: 7.81
1959	10.5	5.2	56.7	1: 10.89
1960	13.0	4.0	55.3	1: 13.83

3 Details in "The Machine-Building Industry Should Expand Its Production During the Readjustment," RENMIN RIBAO 7 April 1980.

Table 4

Year	Proportion (percentage) in gross agricultural and industrial output value			Proportion (percentage) in gross industrial output value	
	Agriculture	Light industry	Heavy industry	Light industry	Heavy industry
1957	43.3	31.2	25.5	55.0	45.0
1958	34.3	30.5	35.2	46.5	53.5
1959	25.1	31.1	43.8	41.5	58.5
1960	21.8	26.1	52.1	33.4	66.6

In 1960, when the absolute amount of investment in heavy industry nearly quadrupled that of 1957, the heavy industry output value was more than quadrupled. Instead of making "everything move forward full speed," the steel industry which "took the lead" saw an allout shortage of the means of production and livelihood. When the readjustment of the national economy began in the early 1960's, it was necessary to apply firm measures to cut back investment, downgrade capital construction and terminate construction projects. At that time, about 1,300 large and medium projects, nearly one-half of the large and medium projects of the Second 5-Year Plan, were suspended and postponed, and tens of thousands of small projects were stopped. Heavy industry accounted for a considerable number of the suspended and postponed projects. The total amount of capital construction investment in 1961 and 1962 was cut back to 32.1 percent and 54.8 percent compared with that of the preceeding year, and there was a comparable improvement in the national economic structure. While light industry grew at a pace faster than that of heavy industry, agriculture also grew pretty fast. The proportions of agriculture and light industry in gross agricultural and industrial output value went up while that of heavy industry went down, and they were 37.3 percent, 32.3 percent and 30.4 percent, respectively, in 1965. The people's living standard had become much better than in the early 1960's. At this time, the proportion of heavy industry investment did not go down too much. The objective factor for the rapid growth of agriculture and light industry is that agricultural and light industry production in the early 1960's did not decline as much as that of heavy industry, and the reactivation of their development was much easier. If the proportion of heavy industry investment went down a little more and if the funds thus released were used to reinforce other sectors of the national economy, the result of the readjustment would be much better. Following the respite brought on by the readjustment, a sudden upsurge of the metallurgical and machine-building industries in the third-line regions dominated the Third 5-Year Plan, raising the proportion of heavy industry investment to an all-time high when the ratio between light and heavy industry became 1:14.05. The gap between the two was especially alarming when the proportion of heavy industry investment went up to more than 60 percent of total capital construction investment in 1970 and 1971 during the Fourth 5-Year Plan, namely up to 60.9 percent and

61.5 percent, respectively, putting the ratio between light and heavy industry at 1:15.31 and 1:16.84. The total investment in those 2 years in the metallurgical, machine-building and military industries was more than one-half of heavy industry investment. Although the proportion of the investment in the military and machine-building industries went down in the mid-1970's, that of the petrochemical industry rose. The top-heavy investment in heavy industry this time continued for more than a decade, and turned around the priority order of agriculture-light industry-heavy industry in the national economic structure of 1965 to one of heavy industry-light industry-agriculture. Moreover, the upsurge of heavy industry in the 1970's was noted for the importation of large items, mostly for the metallurgical and petrochemical industries. The focus of the top-heavy ratio of investment in heavy industry had shifted from the metallurgical and machine-building industries to metallurgical and petrochemical industries.

The proportions of investment within heavy industry itself are also irrational. Some industries, especially the coal industry, have been elbowed aside for a long time. Investment in the coal industry had dropped from 8 percent in the Second 5-Year Plan to 5.7 and 5.8 percent in the Third 5-Year Plan and the Fourth 5-Year Plan. Coal, China's major source of energy, requires huge investment and time to develop. The drop in the proportion of investment in the coal industry retards solutions to the shortage of energy supply. The building materials industry is another sector that has been elbowed aside for a long time within the heavy industry department. Its proportion of investment had been under 2 percent or even as low as 1 percent from 1961 through 1978. The rate of growth of cement and glass products has been below the average industrial growth of the country.[4] The falling of the supply of construction materials behind demand has been a tough problem confronting capital construction.

The top-heavy investment in China's heavy industry has been continuous and widespread, affecting practically all the provinces, municipalities and regions. In the First 5-Year Plan, even though the focus was on the construction of heavy industry, there was no rigid uniformity, and the different localities had their own different investment targets designed to capitalize on the local advantages. In 1958, when there was an all-out drive to produce steel, the big regions, provinces and autonomous regions were asked to set up their own independent industrial systems. The various provinces, autonomous regions, and most of the special regions and counties were asked to make their industrial output value outstrip that of agriculture. As a result, all the provinces, municipalities and regions raced ahead to build their industries, especially local heavy industries which they believed would speed up the development of local industries.[5] Some provinces and municipalities which built steel plants

4 In some countries, the proportion of investment in the building materials industry accounts generally for about 3 percent of total capital construction investment while its production grows generally at a faster pace than all other industries.

5 "Shaanxi Strives to Develop Local Heavy Industry to Resolve the Problem of Determining the Pace of Local Industrial Development," RENMIN RIBAO 4 May 1958.

and had neither iron mines not petroleum resources, encountered an impossible mission.

During the First 5-Year Plan, Guangdong Province "focused on agriculture" while its industrial development aimed expressly "at developing light industry."[6] That was the proper thing to do. Located in the tropical and subtropical zones, it has the exclusive natural advantages to develop diversified agricultural operations. It abounds in raw materials for its light industry which has built a firm technological foundation over many years. Agriculture and light industry are the superiorities of Guangdong. But the priority changed in 1958. Instead of capitalizing on the local advantages, it turned its focus to heavy industry. The proportion of its retarded agriculture in the industrial and agricultural output value dropped from the 1957 level of 52.3 percent down to 28.2 percent in 1978. It had grain for export before 1975, but it had to import grain after that. The growth rate of light industry was slow too, and it dropped from 15.5 percent during the Second 5-Year Plan down to 5 percent in 1979.[7] There were marked changes in the ratios of agriculture, light and heavy industry in the capital construction investment (Table 5).

Table 5: Changes in the Proportion (Percentage) of Investment in the Light and Heavy Industry of Guangdong Province

Period	Agriculture	Light industry	Heavy Industry	Ratio between light and heavy industry
First 5-Year Plan	29.42	16.32	15.78	1: 0.97
Second 5-Year Plan	22.06	8.47	44.36	1: 5.23
1963-65	38.37	6.67	25.93	1: 3.88
Third 5-Year Plan	24.44	5.21	42.14	1: 8.08
Fourth 5-Year Plan	21.99	5.01	45.78	1: 9.13
1976-78	22.38	4.00	40.70	1: 10.18

6 Tao Zhu: "Speech Delivered at the Eighth CPC National Congress," "Documents of the 8th CPC National Congress" p 338.

7 Having summed up the lesson of its historical experience, the Guangdong Province, resolved "to capitalize on our strong points and avoid our shortcoming," proposed "to assign priority to the development of its light industry, textile and handicraft industry" premised on rational readjustment of its agricultural structure and active development of its economic crops. See "Determined to Build a Light Economic Structure," NANFANG RIBAO 5 August 1980.

To build "industrial provinces" was the fad before the readjustment of the national economy in 1979. If the major theme of the drive of the latter part of the 1950's to build local independent industrial systems was an indiscriminate campaign to produce steel, it became "more outrageous" in the 1970's. Every province strived to build automobile plants, tractor plants, while some provinces went to the extent of asking every country to build nitrogenous fertilizer plants, phosphate fertilizer plants.... Consequently, the ratio of local investment in heavy industry soared. For instance, the ratio of investment in heavy industry by Henan Province during the Fourth 5-Year Plan rose suddenly to more than 65 percent, while that of its investment in agriculture and light industry plummeted. Details in Table 6.

Table 6: Changes in the Proportions of Investment by Henan Province in Agriculture, Light and Heavy Industry.

	Percentage in the total capital construction investment of the province			
	Agriculture	Light industry	Heavy industry	Ratio between light and heavy industry
1963-65	22.71	6.35	51.94	1: 8.18
Third 5-Year Plan	16.59	5.50	52.11	1: 9.47
Fourth 5-Year Plan	12.10	4.00	65.44	1: 16.36
1976-78	16.77	3.38	56.77	1: 16.80

By 1978, all the 113 counties (towns) of Henan had built or were still building 132 small chemical fertilizer plants, 143 sets of ammonia water facilities, 25 small steel plants, 17 diesel engine plants and several tractor plants. Such an unrealistic and indiscriminate way of developing heavy industry cut into the construction funds of other departments, and the heavy industry plants and mines were unprofitable and uneconomical. In a period of 8 years, 1971-78, all the small chemical fertilizer plants of the province which cost 940 million yuan in investment sustained a loss of 340 million yuan (not including the price subsidies), and by 1978, the blast furnaces, each over 100 M^3 in capacity which cost 406 million yuan in investment registered a loss of 469 million yuan.[8] In "Das Kapital," Marx points out that "some enterprises may draw on the labor force, means of production and means of livelihood for a

8 After recurrent setbacks brought on by indiscriminate development of its heavy industry, Henan Province was so enthused over the 1979 program to shorten the line of capital construction that it has postponed a large number of projects and stopped all 50 small ammonia water factories still under construction. See "Henan Province Suspends a Batch of Projects Under Construction to Save the Key Industries," RENMIN RIBAO 16 November 1979.

it can afford to allocate to such enterprises without being hurt."[9] Heavy industry is that kind of enterprise which takes time to construct and requires more materials, equipment and funds. A top-heavy ratio of investment in heavy industry is bound to jeopardize the national economy. It elbows aside the production of other departments, cuts into the standard of living of the people and impedes successful expanded reproduction, and eventually affects its own development. The following is our assessment of the damaging effect of the top-heavy ratio of heavy industrial investment on capital constructions.

As was said before, the two waves of adventurous advances in capital construction were brought on by overemphasis on heavy industry, especially the escalating investment in the metallurgical industry. The top-heavy proportion of heavy industry investment, which extended once and again the line of capital construction far beyond the capacity of the country, has trapped it in an unrewarding war of attrition. In the First 5-Year Plan, construction equipment, materials and tasks were properly balanced because the investment direction and scope of construction were comparatively rational. The drive for steel production which called for the construction of tens of thousands of small blast furnaces all at once led to an acute shortage of equipment and materials, and it lasted for a long time except in the first half of the 1960's when many construction projects were suspended and postponed as the scope of construction was drastically cut back. When five people had to share what is only enough for three, nobody can have enough. Between 1971 and 1978 when the quotas of steel products, cement and lumber allotted for each 10,000 yuan of state investment went down, the shortage of the three, according to conservative estimates, was about 10 percent, 20 percent and 30 percent, respectively. In a period of 4 years, 1972-75, the amount of equipment and resources actually allotted by the state for complete sets of capital construction compared to the amount required were 62, 63, 83 and 73 percent respectively in each of those years. The gap is considerable. Due to shortages of one kind or another, many construction projects, unable to stay solvent, were forced to extend construction time and hike the cost of construction. The large and medium projects which could be built and put into production in 4-5 years during the First 5-Year Plan required an average of 10 years in the Fourth 5-Year Plan and the Fifth 5-Year Plan. The year-to-year programs to put capital construction projects into production and to increase production capacity were never completed on time in the 1970's except in some particular years. It cost 5 billion yuan in additional wage to extend the construction time of all the capital constructions in China for 1 year. If this were to include the additional management and maintenance costs, construction cost would naturally skyrocket. The average investment during the First 5-Year Plan was 1,342 yuan for productive capacity of one ton of steel, 56 yuan for producing 1 ton of coal and 570,000 yuan for building 1 km of railroad. These were raised to 2,452 yuan, 119 yuan and 1.93 million yuan respectively in the Fourth 5-Year Plan. The rising construction cost is due to many factors, including some which cannot be compared, but the extension of construction time is an important cause.

9 "Collected Works of Marx and Engels" Vol 24 pp 396,350.

In the First 5-Year Plan, construction time was short and the rate of fixed assets formation was comparatively high. The 54.996 billion yuan invested in a period of 5 years was turned into 46.026 billion yuan of additional new operative fixed assets, a formation rate of 83.7 percent, which went up as high as 93.4 percent in 1957. It dropped sharply thereafter (except during the period of readjustment, 1963-65, when it was at 87.1 percent) down to 59.5 percent and 61.4 percent, respectively, during the Third 5-Year Plan and the Fourth 5-Year Plan. The cumulative investment of 598.249 billion yuan between 1952 and 1978 turned in 409.531 billion yuan of fixed assets at a formation rate of 68.5 percent. The capital construction fixed assets formed in these 27 years was only one-sixth of the total investment of the period, or over 90 billion yuan less than what it should have been in terms of the fixed assets formation rate of the First 5-Year Plan. What a terrible waste it was!

That is not all. A considerable amount of the fixed assets made available for operations were worthless investments, and the money simply went down the drain. For instance, the cumulative losses of some small provincial steel plants actually exceeded the total investment. Due to lack of power, many completed projects were either unable to process their raw materials or could not attain their designed capabilities. The outstanding example of this is the 1.7m rolling mill of the Wuhan Iron and Steel Mill which swallowed an investment of 4 billion yuan for equipment with a very low utilization rate. Again, there are 28 completely built major petroleum pipelines, but only 5 of them have been operating at more than 80 percent of their designed capacity, another 5 at more than 50 percent of capacity, 14 at less than 50 percent of capacity, while the remaining 4 have been idle without carrying any petroleum.

According to estimates, although 400 billion yuan of fixed assets came out of a total of 600 billion yuan of investment between 1952 and 1978, only 250 billion yuan worth of fixed assets are serviceable. In other words, the serviceable fixed assets thus formed are only 41.7 percent of the 600 billion yuan of investment. That is to say, one-half of the 600 billion yuan of investment is wasted and inoperative. "It is a true decline of production when a part of the capital and labor invested by the people do not reproduce."[10] It is a noticeable example of inefficient capital construction investment when it takes more than 2 yuan to do what could be done with 1 yuan during the First 5-Year Plan.

Due to the top-heavy proportion of heavy industry investment, the effectiveness of the comprehensive capital construction investment has been unsatisfactory, and this is manifest in two areas. It slowed down the development of the national economy and prolonged the time required to recoup the capital invested.

Based on the data relating to the state-operated industries of 1978, heavy industry requires 3.5 times more fixed assets than the light industry to realize 100 yuan worth of output value. More investment in heavy industry breeds more heavy industrial projects and slows down the pace of industrial

10 "Collected Works of Marx and Engels" Vol 46 (Part I) pp 69-70.

growth. If the investment in the metallurgical industry were cut back 1 percent (from 10.6 down to 9.6 percent) in the Fourth 5-Year Plan, and the money thus made available were invested in light industries, the pace of China's industrial growth would have been about 1 percent faster in 1975. This shows why prolonged top-heavy investment in heavy industry has again and again retarded the pace of China's industrial growth.

Heavy industry, which requires more fixed assets and a longer production cycle, takes severalfold more time to recoup the investment in a project put into production than that required by the light industry which takes less investment, shorter construction time but earns more profit in faster turnovers. Due to top-heavy investment in heavy industry, light industry received only 32.043 billion yuan in a period of 27 years, 1952-78, out of a total industrial investment of more than 350 billion yuan, because over 90 percent of the fund went to heavy industry. Consequently, the time to recoup all the industrial investment, based on the pertinent data of the period in question, had to stretch over a period of about 10 years. It usually takes about 3 years to recoup industrial investment in Japan, America and the Soviet Union, although it runs over 5 years in the Soviet Union. In China it takes one to two-fold more time to recoup its industrial investment. The extension of time to recoup the investment is bound to lead to a shortage of fund for capital construction. Light industry is the major source to provide society with both accumulation and capital construction funds. Between 1952 and 1978, the ratio between state investment in light industry, on the one hand, and the profit and tax revenue remitted to the state by the light industry on the other was 1:13.08, while that of heavy industry was 1:1.69. But the profit and tax revenue provided by light industry had been less than those of heavy industry every year since 1963. As the ratio of light industry in industrial profit and tax revenue dropped from 52.39 percent in 1962 to 39.82 percent in 1978, its position as a "money tree" was tarnished, because it had too little investment and not enough backing. The way heavy industry was being developed actually made the growth of heavy industry difficult. At present, the lack of funds has arrested the development of certain heavy industries, such as energy, communication and transportation.

Capital construction is an important measure to expand reproduction. The effectiveness of capital construction investment depends, in the final analysis, on whether it can provide more and more plentiful means of livelihood to satisfy the mounting material and cultural needs of the people. The fact that the top-heavy proportion of investment in heavy industry cut into the investment for agriculture, light industry and nonproductive projects, such as urban construction and housing, has slowed down the growth of these enterprises. For a long time after the First 5-Year Plan, little improvement was made in people's basic means of livelihood, including food, shelter and clothing, and the consumption level of certain items of the means of livelihood even went down. The grain, edible oil and cloth ration enforced during the First 5-Year Plan is still in force. The per capita area of residential housing in the cities has been cut back. There are acute shortages of running water because urban construction is mostly behind schedule. The water supply of all the cities in China is about 8 million tons short per day, and the residents on the top flight of tall buildings often face shortages of water. For

30 years the Chinese people have lived frugally to save money for capital construction, but it has not achieved the economic effectiveness they expected, due to mismanagement. This has dampened the people's socialist enthusiasm.

Obviously, the way to increase the economic effectiveness of capital construction investment is to readjust the direction of investment rather than merely cutting back the scope of capital construction. The readjustment of the direction of capital construction investment which began over a year ago is starting to bear fruit. In 1979, 65 percent of the 295 large and medium projects which had been suspended or postponed were those in the metallurgical, machine-building and chemical industry areas. The ratio of investment in agriculture increased from 11.8 percent in 1978 to 12.5 percent in 1979. The investment in light industry for the same period increased from 5.7 percent to 6.1 percent, and the ratio continued to rise as the state had arranged a 2-billion-yuan bank loan earmarked exclusively for the development of light industry. The proportion of heavy industry investment went down from 55.6 percent in 1978 to 50.3 percent in 1979, the lowest since 1965. In 1979, the investment in nonproductive construction, science, education, culture and health, accounted for 27 percent of the total investment, the highest since 1955. The construction of residential housing for staff and workers has been especially fast since the downfall of the gang of four. A total of 3,752 M^2 was built in 1978, a 33 percent increase over that of the preceeding year. Another total of 6,256 M^2 were built in 1979, a 66.7 percent increase over that of 1978, a record year of residential housing construction. The ratio of investment in residential housing construction rose from 7.8 percent of the total capital construction investment in 1978 up to 14.8 percent, the highest ever. In a word, the investment structure is heading in the right direction of rectifying the top-heavy proportion of heavy industry investment. If we can carry out the four-point policy without relenting, the proportion of heavy industry investment will no doubt be readjusted to stay within rational limits. Of course we must give full credit to what had been accomplished in the last 30 years through the construction of heavy industry. In the semi-feudalist and semicolonial old China, fixed assets as a whole were worth only 12.8 billion yuan. Now they are worth 500 billion yuan, about 350 billion yuan of which are industrial fixed assets. The industrial system already built provides a better material foundation for the four modernizations. These represent the spectacular achievement of intensified development of heavy industry and a greater degree of self-sufficiency of equipment. When we say the proportion of heavy industry is top-heavy, we do not imply that a "heavy proportion" is unacceptable. The technological structure of heavy industry naturally requires more investment. But it must not be too heavy, especially top-heavy for a long time because that cuts into other sectors, especially agriculture and light industry, and distorts the proportions of the national economy so much that it can no longer develop according to programmed ratios.

II. The Causes of the Irrational Direction of Capital Construction Investment and the Directions of Readjustment

The causes of China's long-term top-heavy proportion of investment in heavy indstry are complicated. The two contributing factors are: copying the Soviet model of construction and overanxiety for quick results. When the new China turned its attention from the revolutionary war to economic construction, it realized it did not have the knowledgeable people to do the job. Forced to copy and learn from the Soviet Union, it indiscriminately subscribed to the principle that socialist industrialization "should begin with heavy industry" and priority development of the means of production. The fact that people consider it proper to raise the proportion of heavy industry investment to 46.5 percent in the First 5-Year Plan is by no means a testimonial of the viability of the principle that industrialization "should begin with heavy industry" and priority development of the means of production. It shows simply that it was the proper thing to do under the circumstances at that time.

First, the foundation of heavy industry in old China was extremely weak, even though light industry fared a bit better because it had not sustained that much destruction during the war. In 1949, light industry accounted for 73.6 percent in China's gross industrial output value.

Second, even though the output of consumer goods was quite limited at that time, many medium- and high-grade commodities, including such daily necessities as soap, were still unmarketable. In the early 1950's the commerce departments had to introduce a buy-on-credit method to encourage people to buy high-grade commodities, such as woolen fabrics and radios.

Third, due to inadequate supplies of raw and processed materials, some of China's light industry facilities remained idle at that time. In 1954, for example, China's facilities for manufacturing cigarettes and matches operated only at one-third of capacity, those for fats and flour at about 50 percent of capacity and those for leather at about 60 percent of capacity.[11]

Fourth, with the need of the masses for clothing and food taken care of, people no longer lived in hunger and cold as they did in the old society. The standard of living, though still quite low, had improved considerably, and the people felt grateful to the Chinese Communist Party and the People's Government.

Fifth, the Soviet aid at that time which provided the funds, equipment and technology which China needed badly was an important factor responsible for priority development of heavy industry.

Toward the end of the First 5-Year Plan period, Comrade Mao Zedong, alerted by the lesson of undue emphasis on heavy industry by the Soviet Union and the

11 Jia Tuofu: "Speech Delivered at the Second Session of the First National People's Congress," "Collected Reports of the Second Session, the First National People's Congress of the People's Republic of China" p 528.

East European countries, recommended again and again to increase the proportion of investment in agriculture and light industry to speed up their development; that we must not copy indiscriminately the experience of the foreign countries in economic construction which we were studying; and that the relationship between heavy industry, light industry and agriculture should be correctly handled to agree with China's own path to industrialization.[12] He also recommended in the late 1950's the restructuring of the national economy to accommodate a new order of priority: agriculture-light industry-heavy industry. Why did investment in heavy industry grow out of proportion? The fact is that in spite of the proclaimed order of priority, heavy industry-light industry-agriculture was still the order of priority for action. The crux of the matter is that we had never questioned or dared to do anything to the principle that socialist industrialization "should begin with heavy industry" and priority development of the means of production.

The core of the Soviet model is to regard priority development of heavy industry as a rule of socialist economic development and that "sustained development of the national economy is unattainable unless top priority is given to the development of the means of production." the fact that the proposal at the end of the First 5-Year Plan to increase investment in agriculture and light industry to speed up their development was premised on priority development of the heavy industry and our failure to provide an in-depth solution to the problem actually made such an increase very difficult, if not impossible.

When the arrogance bred by the successful completion of the First 5-Year Plan and the socialist transformation began to prevail, China's own path to industrialization implied a mission to achieve a new world record of economic development on the strength of bleak poverty. The craving for quick and gradiose results generated a drive to accomplish a historic mission to catch up and overtake the developed capitalist countries within a short time. That was contrary to the objective law of economics.

The situation in China between 1958 and 1960 was that agriculture and light industry had to yield repeatedly to heavy industry. In those 3 years, the accumulation rates were 33.9 percent, 43.8 percent and 39.6 percent respectively, and the corresponding proportions of investment in heavy industry were 57 percent, 56.7 percent and 55.3 percent; for the light industry they were 7.3 percent, 5.2 percent and 4 percent respectively. The ratio between light and heavy industry became 1:7.81, 1:10.89 and 1:13.82. The accumulation rates and the proportion of investment in heavy industry were quite high.

The proposal of the late 1950's to restructure the national economy by ranking agriculture and light industry ahead of heavy industry was actually an attempt to formulate an economic plan based on end products. But the order of priority was arbitrarily laid down and not based on the amount of investment and the pace of development (the amount of investment and the pace of development should be flexible enough to accommodate changing conditions, and

12 "Selected Works of Mao Zedong" Vol 5 pp 268, 269, 400.

cannot be contained in a rigid formula). Even if it were possible to rank agriculture, light industry and heavy industry in such an order of priority, the influence of the Soviet model which puts emphasis on heavy industry would still prevail, and that was what people believed at that time. The proclamation to rank agriculture, light industry and heavy industry in a new order of priority was simply to soft-pedal the priority development of heavy industry. Consequently, when things had just improved a little after the hard times of the 1960's, there was another drive to put steel production ahead of everything else. There were two separate projects to be incorporated in the Third 5-Year Plan which was being drafted at that time. The first project called for the production of 18 million tons of steel by 1970 with a corresponding rate of accumulation of about 25 percent. The second project called the production of 20 million tons of steel with a corresponding rate of accumulation of about 30 percent. The second project was adopted, but the actual amount of steel produced by 1970 was less than 18 million tons and the 5-year average rate of accumulation was 26.3 percent, still higher than the 24.2 percent rate of the First 5-Year Plan. The fact people did not face the kind of commodity shortage they experienced in the late 1950's and early 1960's was that they had tapped the reserves accumulated between 1963 and 1965. The Fourth 5-Year Plan contained a project to make the steel output of 1975 double the 17.79 million tons produced in 1970 in order to reach the 35-40 millionton target. Such a high quota naturally did not materialize, and the actual steel output of 1975 was 23.9 million tons, only 68.3 percent of the minimum and 59.8 percent of the maximum (due primarily to the disruption by Lin Biao and the gang of four. To get ready to double the steel output, the steel industry set out to expand its capital constructions by hiking investment in heavy industry, especially the metallurgical industry. As a result, the 5-year accumulation rate went up again to 33 percent.

Continued priority development of heavy industry is bound to make the proportion of heavy industry in agricultural and industrial output value grow bigger and bigger and let heavy industry enjoy a bigger and bigger portion of industrial investment. Suppose the proportion of heavy industry in gross industrial output value reached 70 percent while that of light industry stayed at 30 percent and suppose both grow, for instance, at an annual rate of 6 percent, the result may be illustrated by the following formula:

$$\frac{30(1+0.06)}{70(1+0.06)} = \frac{30+1.8}{70+4.2}$$

The ratio between the value of China's industrial fixed assets and gross industrial output value is generally 1:1, but the difference between the light and heavy industry is very big. According to the 1978 statistics on the industries owned by all the people, to produce an industrial product of equal value, the amount of fixed assets required by light industry is only $\frac{1}{3.58}$ of what the heavy industry requires. The rate of the formulation of light industrial fixed assets is generally higher than that of heavy industry. Suppose that the fixed assets formulation rate of both light and heavy industry were equal, they each would add 1 percent to gross output value. But light industry requires only one unit of investment while heavy industry requires 3.58 units (this shows that if the absolute amount of capital construction investment did not increase in the coming years, gross industrial output

value would still increase at a given pace if the direction of investment were changed to reduce the proportion of heavy industry investment and increase light industry investment). So, the $\frac{1.8}{4.2}$ increase included in $\frac{30+1.8}{70+4.2}$ would require/corresponding investments as follows:

$$\frac{1.8x1}{4.2x3.58} = \frac{1.8}{15.03} = \frac{1}{8.35} = 1:8.35$$

If heavy industry developed faster than light industry, the ratio of heavy industry investment would increase, and the ratio between light and heavy industry would be greater than 1:8.35. If the ratio of heavy industry in gross industrial output value increased to 75 percent, 80 percent..., the ratio between light and heavy industry investment should be greater than 1:10.7, 1:14.3...to ensure priority development of heavy industry.

Once the ratio between light industry and heavy industry investment reached 1:10.7, it would mean that the proportions of the national economy had been distorted for a long time. This can be seen quite clearly in the proportions of light and heavy industry in China during the different periods.

The current readjustment of the national economy designed to rectify the direction of investment and cut back step by step the proportion of investment in heavy industry reflects the demand of objective reality rather than the whims of man. In Japan, which enjoyed record economic development after World War II, the peak amount of this fixed capital investment in industry (boty light and heavy industry) at its "take off" time between the late 1950's and early 1960's was 46.4 percent of total fixed capital investment. Between 1962 and 1974, a decade of sustained record economic development, its investment in industry dipped below 40 percent and even as low as 30 percent in most of those years.[13] Even in the Soviet Union which always emphasizes heavy industry, the average heavy industry investment between 1918 and 1976 was 31.1 percent.[14]

It must be pointed out the above-mentioned Japanese and Soviet ratios of investment in industry and heavy industry were the ratios of the productive investments of those sectors in relation to their total capital construction investment or the total fixed capital investment. For purposes of comparison and analysis, let us delete the nonproductive investments of those sectors in China before the inception of the current readjustment of the national economy in 1978. The investment ratios thus derived are as follows: heavy industry, 49.1 percent; agriculture, 10.8 percent; light industry, 5 percent; transportation and telecommunications, 13.3 percent; commerce, 2.2 percent; science, culture, education and health, 0.4 percent; urban construction, 0.8 percent; others, 1 percent. The total is 82.6 percent. Nonproductive investments, such as housing, accounts for only 17.4 percent. Measured by identical gauge, China's investment in the heavy industry far exceeds that of Japan and the Soviet Union. Viewed in the light of the conditions in Japan

13 "Foreign Economic Statistics (1949-1976)" p 351.
14 "Sixty Years of the Soviet National Economy" pp 412-413.

and the Soviet Union, it is entirely necessary for China to cut back its ratio of heavy industry investment in order to readjust the ratios in its national economy and the industrial sector.

The proportion of the nonproductive investment was readjusted in 1978 up to 27 percent and then again up to 29 percent in 1980.[15] Since many nonproductive facilities, such as housing, had been overdue, the investment in this area should not fall below the 1980 level for quite some time to come. Otherwise, more items both old and new will become overdue. When the proportion of the nonproductive investment is raised to 29 percent or even higher, that of productive investment would come down and remain below the 70 percent level. Figured out from the 1978 proportion of the nonproductive investments which we deleted, the proportions of these depredated sectors, such as agriculture, light industry, commerce, science, culture, education, health and urban construction, is 33.5 percent. the proportion of investment in these sectors should increase instead of decreasing, and an additional 5 percent increase would not be excessive at all. Suppose the proportion of nonproductive investments were to reach 29 percent and not increase any more while that of investment in the other sectors stays at 1 percent, then the ratio of heavy industry investment should be as follows:

$$\frac{100-38.5-1-29}{100} = 31.5 \text{ percent}$$

Putting back the deleted nonproductive investments made by heavy industry (the 1978 nonproductive investments made by heavy industry accounts for 6.6 percent of the total capital construction investment of the whole country) to apply the gauge of investment ratio used in this article: "The said sector's productive investment + nonproductive investment" divided by the total capital construction investment of the whole country," the proportion of heavy industry investment should be no more than approximately 38 percent.

In conclusion, the proportion of khina's heavy industry investment probably should stay below 40 percent. Of course, the exact proportion of heavy industry investment for any particular period cannot be arbitrarily set without careful scientific projections based on conditions of that period.

III. Measures for Readjusting the Direction of Capital Construction Investments

The topheavy ratio of China's investment in heavy industry build up over a long period of time, has always been regarded as justified. It is not a simple matter to readjust the direction of capital construction investment and to rectify the distorted proportions of the national economy in the current drive to readjust the national economy. The work already done is more than 1

15 "Yao Yilin: Report on the National Economic Planning for 1980, 1981," RENMIN RIBAO 12 September 1980.

year to check up on the capital construction projects still in progress and to cut back the scope of capital construction demonstrates there still is a lot of painstaking work to be done to implement the four-point policy of "readjusting, restructuring, consolidating and improving" at the capital construction front. The problems in the fo-lowing areas are worth special attention.

/1. Uproot the Leftist Ideology and Modify the National Economic Structure Which Leans on Heavy Industry./

Capital construction is a part of the national economy. The direction of capital construction investment should agree with the requirements for the development of the national economy in any particular period. The craving for priority development of heavy industry in the last 30 years has superimposed on the investment structure a top-heavy ratio of investment in heavy industry. To implement the policy of "readjusting, restructuring, consolidating and inproving" and modify the investment structure which overemphasizes heavy industry, it is necessary to keep emancipating the mind and rise above the formula of priority development of heavy industry in order to show that it is in keeping with the reality in China, entirely correct and not at all unorthodox to emphasize, for a period of time to come, the development of agriculture and light industry, speed up the development of such primary industries as energy, communication and construction materials, and increase nonproductive investments. That would make the job much easier. We must check on and reassess those slogans which used to circulate at the capital construction front. Comrade Mao Zedong was right when he said: "There is only one truth, and it takes objective practice rather than subjective exaggerations to discover that truth. The real yardstick of the truth is the revolutionary practice of millions of people."[16] Those slogans proven wrong and unscientific by practice should no longer be upheld as the principle of the capital construction, nor allowed to restrain the people's mind and action, no matter who sponsored them.

/2. Work Out a Deliberate, Comprehensively Balanced and Comparatively Stable Long-term Program of National Economic Development to Ensure the Continuity of Capital Construction Investment Priorities Based on Explicit Strategic Objectives./

The trend and requirements of the development of the national economy in a given period should be incorporated in a long-term program without which there would be no authoritative and widely observed rules to control the order of priority of investment. This is especially true with those large and medium projects which simply cannot be built within 1 year and must draw continually over a number of years from society's capital and materials. It would lead to adventurous lack of discrimination if a comprehensive balance were based on solely the capabilities of the country in a single year. If there were no long-term programs, it would let loos "the wishes of top officials" to decree more projects. Lenin pointed out long ago: "It would be impossible to do any

16 "Selected Works of Mao Zedong" Vol 2 p 655-656.

work if there were no long-term plans designed to score extensive achievements."[17] Now China is engaged in drawing up a skeleton program to develop the national economy from 1981 to 1990 and the Sixth 5-Year Plan, 1981 to 1985. The drafting of a long-term program should be guided by certain principles, such as acting in accordance with the objective law of socialist society, doing only what is within one's capacity, striving to improve the standard of living of the people, and so on. These are no doubt the rules governing the programming of the capital construction investments and projects. Moreover, capital construction planning should be changed from the current practice of year to year projection to 5-year projection. That is to say, to program construction projects, especially large and medium projects, and the funding and material resources required, once every 5 years is more likely to preserve continuity, eliminate indiscriminate adventures involved in year to year programming and prevent certain projects of one year from being elbowed aside the following year. What the annual capital construction planning should do is to implement the specifics laid down in the 5-year program, make necessary readjustments in the light of the actual conditions during the progress of the implementation and introduce additional small projects which can be constructed within the year.

/3. Underscore the Law and Discipline To Uphold the Inviolability of Plans and Hold Any Sectors and Individuals Economically and Legally Liable for Economic Losses Incurred by Their Indiscriminate Approval and Introduction of Projects in Violation of Regulations./

The long-term programs and 5-year plans for the development of the national economy should be legally binding once they are deliberated and passed by the legislative organ. The annual capital construction plans shall also be binding everywhere once they are approved by the state. No project, no matter what it is or who sponsored it, shall be pushed into the capital construction plans if it does not agree with the specifications of the long-term program and 5-year plan. No individual shall act independent of the departments in charge of capital constructions to approve any project not certified by a reasiblity study by the appropriate departments and localities. Nobody shall sign a contract with a foreign country on any construction project involving imported items unless it has been carefully deliberated and approved by the appropriate authorities.

To put an end to the practice of irresponsible authorization of projects is a crucial step to readjust the direction of capital construction investments and contain the scope of capital construction. Otherwise, the direction of investment laid down in the long-term program, no matter how accurate, would become a scrap of paper. Henceforth, anyone who causes economic losses by indiscriminately introducing or approving any project in dereliction of duty shall be held economically and even legally liable according to the seriousness of his case. After the October Revolution, Lenin favored prosecuting and trying people for dereliction of duty in economic work.[18] We should

17 "Selected Works of Lenin" Vol 4 p 394.

18 Lenin had written a lot on this subject. See "Lenin's Manuscripts" Vol 9, pp 761, 762, 763.

observe Lenin's teachings in our economic work, especially the most vital capital construction projects, "strengthen the rule of law" and "weed out the popular misconception that those who neglect their duties should not be punished."[19] We must come to grips with capital construction legislation, make everybody equal before the law and prosecute those who violate it.

/4. Understand Thoroughly the Functions of Capital Construction and Make Amends for Shortages in the National Economy./

Capital construction is an important measure to expand reproduction, but the extent to which the production process can expand is determined by technological possibility instead of by a passing whim. Consequently, capital construction is also a vehicle of adjustment. It works to balance the surpluses and shortages in the national economy but cutting back the surplus and replenishing shortages in order to reach a new balance from the inevitable recurrent imbalances in the national economy. How effectively capital construction plays its role of readjustment is an important indicator of how sound the direction of investment is.

What are short in supply in China's national economy?

Neglected agricultural and light industrial products are no doubt short in supply because there is not enough grain and other agricultural produce as well as many light industrial products to satisfy the daily needs of nearly 1 billion people. This is a problem which we cannot afford to overlook.

The basic elements of the national economy, such as energy, transportation, post and telecommunication, especially energy, are so short in supply that they pose a serious economic problem. According to estimates, China's annual electricity shortage of about 10.5 percent has idled about one-fifth of its industrial capacity. If a satisfactory solution to the energy problem is not forthcoming, industry and even the entire national economy will suffer serious consequences.

Urban construction and building materials are also short in supply.

Urban construction projects include dormitories for staff and workers, municipal public utilities, commercial service networks and centers, and science, education, culture and health facilities. In the past, these projects had a hard time getting ahead due to the impact of the slogan "produce first, live later." As many projects are past due, there are loads of problems awaiting solutions. The problem of housing has become glaringly notorious. An early redemption of these past due obligations would help improve the living conditions of the people, speed up the training of qualified personnel and enhance political stability and solidarity. Speedy development of various construction projects, however, will generate demand for more building materials. The building materials industry, a depredated sector of heavy industry,

19 "Collected Works of Lenin" Vol 36 pp 576,581.

receives less than 2 percent of the investment, and the rate of growth of such major products as cement and glass has fallen below the average of industrial growth in China. In 1979, when the building materials industry was upgraded to the position of a primary industry, its ratio of investment went from 1.8 percent up to 2.4 percent, a 39 percent increase over that of 1978, the highest annual ratio since 1949. But building materials are still acutely short in supply. Today, the supply of cement is short by about 15 percent and that of plate glass is short by about 60 percent. Many buildings, though completed, cannot be released for use due to lack of glass. The shortage would be even greater if the materials needed for village housing construction were included.

These shortages should be replenished by all possible means, and the key to replenishing the shortages is to spend the limited funds on most urgently needed items.

/5. Do the Utmost To Exploit New Sources of Capital and Arouse the Enthusiasm of All Sectors To Ensure Minimum Funding for Those Sectors Entitled to Priority Investment./

State investment alone is not enough either to beef up energy resources, communication and urban construction or to develop agriculture and light industry. Take the construction of residential houses for example. According to estimates of the departments concerned, if the per capita area of housing were to reach 4.5 M^2 in 1985, as was the case in the early 1950's, the state would have to invest 11.3 billion yuan every year for 5 consecutive years. This is nearly 30 percent of all the state investments of 1979. The state just does not have that kind of money to invest in residential housing. Consequently, we have to explore new sources of funding, and the conditions are very favorable. As China's finance is administered separately by the general government, on the one hand, and the localities (provinces, municiaplities and regions), on the other, local revenue will increase day by day. Having won a greater degree of decisionmaking authority, many enterprises will have more funds to invest in capital construction. It is really good to have more sources of capital to supplement the inadequacy of state funding. This can be illustrated by the 1979 residential housing construction investment arrangement which includes proportionate quadripartite contributions by the state, the localities, the engerprises and private individuals (who may either build or buy houses) of 37.1, 12.5, 45 and 5.4 percent, respectively.

Prior to this, the state had to bear about 50 percent of the investment. The crucial point is to guide the various sources of capital to invest in those sectors which are short of development funding and control the scope and direction of investment in order to prevent risky adventures. Encourage the localities to place their productive investments in the energy industry and agriculture. Any locality poor in energy resources may negotiate with another locality rich in energy resources to run jointly operated factories and mines and share the products according to pre-agreed proportions. Regional, business and individual enthusiasm should be marshaled to promote the construction of residential housing. Preferential terms may be offered to encourage private individuals to buy houses, the ownership of which should be guaranteed by

appropriate legislation. The investments thus recouped shall be reinvested in residential housing construction. All foreign capital should be used primarily for developing energy resources and communication. The departments concerned have worked out various procedures, including loans and joint explorations, to make up the shortages in investment. According to an agreement between the Chinese and the Japanese governments in April, 1980, the loan extended by the Japanese Government from its "Overseas Assistance Fund" is to be used exclusively for communication and energy development projects. China, rich in coal and waterpower, may work with those developed countries which lack energy resources to develop its energy resources for mutual benefit. This is becoming a more and more promising area.

/6. Select the Best for Investment To Maximize the Benefit and Avoid Losses, and Strive To Achieve Maximum Economic Results With Minimum Investment No Matter Where a Project Is Constructed./

In "Das Capital," Marx points out that when the people of a society founded on public ownership expand that society's productive force to satisfy their every-increasing needs, they should "spend a minimum aount of force" to attain "the material alternation between themselves and nature."[20] We must make full use of the law of value and the economic leverage of price, taxation, profit and interest to control the flow of investments and guide them to those investment-efficient secotrs and regions. Banking solely on building projects to turn out products without considering the labor, the cost and the returns is contrary to Marx's teachings. No matter whether the investment goes to a key sector or a secondary sector, the investment must be selective both to ensure investment efficiency and lower cost of production when the project goes into operation, and to increase the use value and reproduction value for society.

From a macroeconomic viewpoint, selective construction means to capitalize on China's strong points.

Take the development of the energy resources for example. Since China abounds in coal and waterpower, the investments should go primarily to the construction of coal mines and hydroelectric power generation. Besides, China's handicraft products which are well known and highly competitive in the international market should receive priority consideration for sharing the investments in light industry.

The distribution of construction projects should be based on selecting those localities best fit to yield maximum economic returns to the whole country. More and more projects and investments should go to the most advanced regions which have all the advantages. Although this may widen the gap between the advanced and the backward regions for the time being, it is still the way to narrow the gap in the long run. The advanced regions represent the superiority of the whole country. To invest more first in those regions to bring their superiority into full play would speed up the development of the

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20 "Collected Works of Marx and Engels" Vol 25 pp 927, 926.

economy of the state and build enough force to assist and step up the exploitation and development of the backward regions. The distribution of investments based on the natural conditions and resources of the different regions should be observed even after all the regions are fully constructed. The rule of equal treatment without discrimination cannot and should not apply in this particular area.

From a microeconomic viewpoint, selective construction means careful selection of specific projects.

Weighing new construction against the renewal, thorough utilization, improvement or expansion of the existing enterprises, the choice should be the latter. According to the findings of a sampling study, the latter costs one-third less and takes less time than the former to construct one unit of production facilities. Unfortunately, the ratio of capital construction investment for improvements and expansions had dropped from the t2.3 percent level of the First 5-Year Plan period down to 37.3 percent in the Fourth 5-Year Plan period. This trend should be corrected. China has over 300,000 enterprises serving as the beachhead of the four modernizations. If these existing structures could be fully utilized, renewed, transformed or expanded to increase the productive force, there is no need to build new ones.

Weighing advanced modern technology against intermediate technology, the choice should be the latter. Advanced modern technology saves labor and is highly efficient but costs too much. China is short of capital but abounds in manpower. Consequently, it should develop more labor-intensive industries and apply any technology which saves raw and processed materials. Weighing big enterprises against medium and small enterprises, the choice should be the latter. Although mass production helps a big enterprise cut down its per unit investment and cost, it takes more initial investment and longer construction time, and cannot yield fast returns. As China is short of capital, it should not run too many big enterprises, especially superenterprises. However, we must neither let the big ones push the small ones aside, nor allow the small ones to push the big ones aside.

/7. Respect Science and Democracy, Organize and Trust the Technological and Economic Evaluation of Construction Projects by Experts and Do Not Approve Any Project Unless It Has Been Evaluated./

Good intentions and political enthusiasm are not enough to implement the party's policy of selective construction. If we want to succeed in selective construction and do the job satisfactorily, we should understand and respect science, and act in accordance with the law of nature and economics.

Since capital construction harnesses and controls the forces of nature to serve mankind, ignorant and impractical directions and orders are dangerous and pregnant with disasters for the country and the people. We have had too much of that in the past, and the situation was very much like what Lenin had said about the economic construction of the Soviet Union: "What are we short of? We have plenty of political power," "We have both political power and all the economic and other resources, but we do not have the know-how"

because "the Communist Party members in charge of management did not have enough education."[21] Lenin not only taught the people "to respect science and weed out the 'communist arrogance' of the laymen and the bureaucrats,"[22] but also set an example by his own revolutionary experience of his respect for science, for the experts and the masses. Lenin always sought the opinions of the experts and asked them to come up with technological and economic evaluations before he acted on any important economic issues, such as large construction projects and massive importation of equipment.

Toward the end of 1921 when Lenin was anxious to build an electric power station, he asked the Soviet Russian State Planning Commission to invite the departments concerned and the experts to discuss the project and work out the 1922 capital construction program for the electric power station. Both the experts and the departments concerned concluded that they did not have the resources for the construction and that without adequate materials to build the station, there would not be enough fuel supply even if the station were built. When the evaluation report reached Lenin, he postponed the project which was not built until 1926 after he had died.[23] Our leaders at all levels should learn from Lenin and make it a point to ask the engineering experts and economists to investigate, calculate, debate, and compare all the alternatives, and work out a feasibility study on any large or medium project before it is finally approved. If it were rated feasible, a selective construction program should be submitted to the appropriate state authorities for deliberation and decision in accordance with established procedure. A similar feasibility study should also be required of any locally administered small project before it is submitted to the appropriate local department for approval. In fact, there should be a rule that no department shall approve any project unless it has been studied and evaluated by the experts.

/8. Integrate the Readjustment of the Directions of Investment and the Reduction of Scope of Investment With the Restructuring of the Capital Construction Administration./

The system and methods of the existing capital construction administration, copied from the Soviet Union in the early 1950's, are showing more and more drawbacks and becoming unfit for modern construction. For isntance, all capital construction investments have invariably been gratis financial grants. If proved useful in the early 1950's as China had to revitalize its financial strength and develop the national economy. However, when the scope of capital construction expands with the growth of the national economy, gratis financial grants have become the cause of wrangling over investment projects. "It's stupid not to get it," as the saying goes. It also encourages indiscriminate spending, "major projects breed major waste."

21 "Selected Works of Lenin" Vol 4 pp 636, 626.
22 "Selected Works of Lenin" Vol 4 p 473.
23 "Lenin's Manuscripts" Vol 9 pp 681,904.

The gratis grants were changed last year to interest-bearing loans which must be paid with interest when due. This means economic responsibility instead of unrestrained "freeloading." The success of the experiment has led people to figure out how to make selective construction investment-efficient and how to cut down construction cost. This illustrates the impact of the restructuring of the capital construction administration on successful readjustment of the directions of investment, the reduction of the scope of investment and the consolidation of the fruit of the readjustment.

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Chapter XV

The Structure of Export and Import Commodities

By Li Shangzhi [2621 1424 3112]; original text pp 467-481; portions in slantlines in boldface in original text

[Text] Foreign trade is part of the national economy. Exports and imports of foreign trade must both serve to promote the development of our nation's socialist construction, be coordinated with diplomatic activities and carry out foreign policy. Since the founding of the nation, our foreign trade has developed greatly as our nation's industrial and agricultural production developed and foreign relations developed under the joint efforts of each region and each sector. In 1979, our nation's total import and export trade amounted to $29.342 billion, an increase of 24.9 times over the $1.135 billion in 1950, and an average annual increase of 11.8 percent. After deducting price increases (including devaluation of foreign currency), the annual average increase was 8.6 percent.

Since the founding of the nation, the development of foreign trade did not follow a straight but a crooked path. It was influenced by the domestic economic situation of each period, the political movements, the level of industrial and agricultural production, and the guiding ideology in developing foreign trade as well as by changes in the international political and market situation. The structure of export and import commodities of each period is one factor influencing the increase and decrease in the value of foreign trade imports and exports. It has also directly reflected changes in the innate values of foreign trade imports and exports.

I. Changes in the Structure of Exports Over the Past 30 Years

Our nation is a developing socialist nation. The level of industrial and agricultural production is not high. In particular, at the beginning period of establishing the nation, our nation's industrial foundation was very weak. Therefore, the structure of exports necessarily reflected this characteristic of our nation's economy. This meant that for a relatively long period, exports

were mainly agricultural products, sideline products, native products, handicraft products and their processed products. As our nation's economic buildup developed, exports of industrial products gradually increased, and the structure of exports also underwent corresponding changes.

The change in the structure of our nation's exports can be generally divided into several stages:

1. The years 1953-1959. The total value of exports in 1953 was $1.022 billion, including $569 million worth of agricultural and sideline products which constituted 55.7 percent of the total. They consisted mainly of rice, soybeans, edible vegetable oils and seeds, tung oil and flue-cured tobacco. Light industry products and textiles amounted to $275 million, constituting 26.9 percent of the total. They included mainly factory-produced silk, silks and satins, wool fabric, shoes, rugs and soap. Heavy industry products included mainly tungsten ore, antimony, tin, pig iron, coal, caustic soda and sodium carbonate.

As the First 5-Year Plan was completed, industrial and agricultural production developed greatly. Our nation's export trade value also increased greatly. By 1959, the total value of exports reached $2.261 billion, an increase of 1.2 times over 1953. Among the exports were: agricultural and sideline products which amounted to $850 million, an increase of 49.4 percent over 1953; light industry products and textile products amounted to $947 million, an increase of 2.4 times over 1953; heavy industry products amounted to $464 million, an increase of 1.6 times over 1953. The absolute figures show that exports of the three major categories of products, agricultural, light industry and heavy industry products, all increased from 1953 but the growth rates were different. Agricultural and sideline products grew the slowest, light industry and textile products grew the fastest, followed by heavy industry products. The structure of our nation's exports began to develop toward a transition from agricultural and sideline products to industrial products.

2. From 1960 to 1962, during the 3 years of continuous natural disasters, the serious imbalance in the national economy caused by the high goals, and the wave of boastfulness and blind command during the period of the great leap forward, the value of export trade in 1962 dropped from $2.261 billion in 1959 to $1.49 billion, the 1955 level. Because the drop in agricultural production was reflected in the structure of exports, exports of agricultural and sideline products in 1962 amounted to only $289 million, constituting only 19.4 percent of the total value of exports. This was the year with the least amount of exports of agricultural and sideline products. For example: the export of rice dropped from 1.77 million tons in 1959 to 460,000 tons; cotton exports dropped from 120,000 tons to 27,000 tons; flue-cured tobacco exports dropped from 48,000 tons to 3,000 tons. Because of the drop in agricultural production, there was a shortage of raw materials for light industry and textiles, and the state began to implement measures to use imports to support exports. Cotton and chemical fibers were imported from abroad and processed into finished products and exported. This enabled the export of light industrial products and textile products to remain at $795 million while domestic raw material supplies dropped drastically, and although this was a

drop of $152 million from 1959, their value as a percentage of the total value of exports rose 53.3 percent. In that year, exports of heavy industry products amounted to $406 million, also showing a drop in export value, but as a percentage of total export value, it rose 27.3 percent.

3. From 1963 to 1966, the national economy implemented the four-point policy of readjusting, restructuring, consolidating and improving. The national economy began to revive and develop, and the economic situation became better. In 1966, the export trade value was $2.366 billion, an increase of 58 percent over the $1.49 billion in 1962. It surpassed the value of exports in 1959. This was the highest level ever reached during the 17 years since the founding of the nation. In that year, exports of agricultural and sideline products amounted to $850 million, constituting 35.9 percent of the total value of exports. The export value of light industry products and textiles was $967 million, constituting 40.9 percent of the total value of exports. Exports of heavy industry products amounted to $549 million, constituting 23.2 percent of the total value of exports.

4. From 1967 to 1976, the 10 years of upheaval dragged the national economy to the verge of collapse. Due to the interference and sabotage by the counterrevolutionary clique of Lin Biao and the gang of four, foreign trade followed a crooked path. In view of the structure of export commodities, light industry products and textiles always maintained the lead among all exports. Because of the addition of petroleum exports, the portion of heavy industry products as a percentage of the total value of exports visibly increased while the percentage of agricultural and sideline products correspondingly dropped. Compared to 1966, light industry products and textiles rose from 40.9 percent to 44.4 percent in 1976, heavy industry products rose from 23.2 percent to 27.2 percent, and agricultural and sideline products dropped from 35.9 percent to 28.4 percent.

5. After crushing the gang of four, and especially after the Third Plenum of the 11th Party Central Committee proposed to shift the emphasis of work to economic construction, export trade grew rapidly. In 1979, the export trade value reached $13.66 billion, an increase of 40.1 percent over 1978. The percentages of various types of products during this period were as follows: light industry products and textiles constituted 45.0 percent, heavy industry products constituted 31.9 percent, agricultural and sideline products constituted 23.1 percent. Two important situations can be seen among the main commodities exported: one was the use of the method of "using imports to support exports," i.e., to import raw materials and to utilize surplus domestic productive capability and labor to process them into finished commercial products for export. There was relatively great development, for example, importing cotton for processing into cotton cloth for export; importing polyester cotton and manmade cotton to process into cotton polyester cloth and manmade cotton cloth for export. The portion of products produced by using imports to support exports increased year after year as a percentage of the total value of the source of merchandise for export. A rough estimate showed they constituted 24.3 percent in 1977, 27.5 percent in 1978, and 39.4 percent in 1979. The second was that petroleum exports experienced a relatively fast growth. In 1979, 13.43 million tons of crude oil and 3.034 million tons of

finished oil products were exported, therefore, the portion of heavy industry products as a percentage of total export commodities increased further.

A general view of the change in the structure of our nation's exports showed that generally in the 1950's, the major exports were agricultural and sideline products. In the 1960's, light industry products and textiles produced by "using imports to support exports" were added. During the latter part of the 1970's, exports of petroleum and its finished products were added. The change in the portion of various types of products as a percentage of total export value was also great. A comparison between 1979 and 1953 showed that exported agricultural and sideline products constituted 23.1 percent of the total value in 1979 while in 1953 they constituted 55.7 percent. In 1979, exported light industry products and textiles constituted 45 percent of the total export value while in 1953 they constituted 26.9 percent. In 1979, heavy industry products constituted 31.9 percent of the total export value while in 1953 they constituted only 17.4 percent. This change in the structure of export commodities has concretely reflected the achievement of our nation's socialist construction in foreign trade.

The classifications and combinations in the structure of export commodities described above are methods based on our nation's actual situation since the founding of the nation. They are different from the methods of classification used by foreign nations. If we change the method of classifying our nation's export commodities as agricultural, light industry and heavy industry products to a classification into two major categories of elementary products and industrially manufactured goods according to the "standard classifications for international trade," the basic situation would be as follows: Among the export commodities of our nation, elementary products have always constituted a large proportion, and although the percentage of industrially manufactured goods has gradually increased over the years, it is still lower than the percentage of elementary products.

Elementary products constituted 79.4 percent of the total export value in 1953, 63.6 percent in 1957, and by 1979, their percentage dropped but it still constituted 53.6 percent of total export value.

Industrially manufactured goods constituted 20.6 percent of the total export value in 1953, 36.4 percent in 1957, and rose to 46.4 percent in 1979. Among the exports of industrially manufactured goods, the export value of heavy industry products and products of the chemical industry increased year after year, but their percentage was still very small, constituting only about 10 percent of the total export value. But the percentage of light industry products and textiles rose from 12.3 percent in 1953 to 35.5 percent in 1979. This shows that industrial manufactured products, especially heavy and chemical industry products still have not reached a superior position in our nation's exports and foreign trade. The change in the proportion of elementary products and industrially manufactured goods as a percentage of the total export value is illustrated in the chart on the following page.

In summary, the present structure of our nation's export commodities has the following problems:

Monetary unit: $100 million

Year	Total		(I) Elementary products		(II) Industrially manufactured products							
					Total		A Heavy and chemical		Machinery and transportation equipment		B Light and textile industry products	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
1953	10.22	100	8.11	79.4	2.11	20.6	0.85	8.3			1.26	12.3
1957	15.98	100	10.16	63.6	5.82	36.4	1.61	10.1	0.01	0.11	4.21	26.3
1966	23.66	100	14.27	60.3	9.39	39.7	2.78	11.7	0.73	3.1	6.61	28.0
1976	68.55	100	37.44	54.6	31.11	45.4	8.08	11.8	2.38	3.5	23.03	33.6
1977	75.90	100	40.65	53.6	35.25	46.4	8.51	11.2	2.96	3.9	26.74	35.2
1978	97.45	100	52.16	53.5	45.29	46.5	10.10	10.4	3.32	3.4	35.19	36.1
1979	136.58	100	73.15	53.6	63.43	46.4	14.97	10.9	4.64	3.4	48.46	35.5

(1) More elementary products are exported, few industrially manufactured goods are exported. Among the industrially manufactured products, there are more light industry products and textiles and few heavy industry and chemical products. Among electrical machinery products, there are even fewer "sophisticated, pioneering and precision" products. Therefore our nation's export trade is at a disadvantage in international business competition.

(2) The structure of our nation's export commodities consists mainly of agricultural and sideline products and light industry products and textiles, constituting slightly more than three-fifths of total export value. Because these types of commodities are daily necessities mostly related closely to food, clothing and daily use, therefore conflicts between domestic sale and exports are more pronounced.

(3) The potential for exporting minerals, especially coal and other nonmetallic minerals is quite large, but these products require large investments to develop, the time is long, traffic and transportation are unsuitable, and in recent years, their exports have increased but within the near future, there are still definite difficulties in greatly increasing their exports.

(4) Machinery and electrical products constitute too small a percentage of exports. Production of our nation's machinery industry has for a long time served mainly the domestic market. It has given little consideration to foreign markets, therefore, product quality, the supply of spare parts and accessories and technical services cannot suit the needs of the international market for machinery and electrical products.

To expand exports and enable the structure of our nation's export commodities to suit the needs of the international market, we must begin by readjusting the product structure, change the irrational situation in the structure of our nation's export commodities at present, greatly develop the exports of manufactured products, and we must especially open up roads for expanding the exports of machinery and electrical products and chemical products. This is the direction of development of our nation's export trade in the future.

II. Changes in the Structure of Imports Over the Past 30 Years

The structure of our nation's imports has undergone different changes in different periods mainly according to the needs of the different periods of domestic economic buildup and the need to implement foreign policy.

For the past 30 years, the structure of imports and its changes can be described mainly by the following situations:

1. At the beginning of the founding of the nation, we criticized the semicolonial economy that was dependent upon imperialism in old China. In foreign trade imports, the policy of giving priority to the importation of

productive materials was always implemented, and the importation of subsistence goods was strictly controlled. During the 11 years from 1950 to 1960, productive materials constituted 91.9 percent of our nation's total imports, and imports of subsistence goods constituted only 7.45 [as published] percent. Imports of productive materials reached a high of 95.7 percent in 1959 while imports of subsistence goods constituted only 4.3 percent. Starting in 1961, massive amounts of food grains and sugar and such materials were imported to solve the difficulties of the severe shortage of daily necessities of the people caused by the massive drop in agricultural output, and the percentage of imports of subsistence goods rose drastically. Between 1961 and 1965, the percentage of imports of subsistence goods rose to 40.2 percent and the percentage of imports of productive materials dropped to 59.8 percent. In 1964, productive materials constituted only 55.5 percent of imports and subsistence goods constituted 44.5 percent. After 1966, the percentage of imports of subsistence goods generally remained at about 20 percent and it was higher in some years and lower in other years. The average over the 30 years showed that productive materials constituted 80.7 percent of total imports and subsistence goods constituted 19.3 percent. In 1979, productive materials constituted 81.3 percent of imports and subsistence goods constituted 18.7 percent.

2. Imported productive materials mainly included two categories. One category consisted of equipment and machinery products, including new technologies, complete sets of equipment, various types of machine tools, vehicles, ships, airplanes and electrical products and instruments. The other category consisted of various types of industrial raw materials such as steel materials, copper, aluminum, zinc, nickel, petroleum and manufactured products, rubber, chemical raw materials and materials for agricultural production, such as chemical fertilizers and farm chemicals. The overall averages of imported productive materials over the past 30 years showed that productive raw materials constituted 67.4 percent of the total imports of productive materials. Imports of complete sets of equipment and machinery and electrical instruments constituted 32.6 percent of the total amount of imported productive materials. But in each period, the percentage of imports of raw materials and equipment also changed. For example, during the First 5-Year Plan, imported machinery and electrical products and instruments and complete sets of equipment constituted 60.7 percent of the imports of productive materials, and raw materials for industrial and agricultural production constituted only 39.3 percent of the imports of productive materials. After 1961, the percentage of imported machinery and electrical products and instruments and complete sets of equipment gradually dropped, and by 1965, they constituted only 17.7 percent, and in particular, complete sets of equipment were hardly imported anymore.

In 1973, a number of complete sets of equipment and single machinery units were imported from capitalist nations. The proportion of imports of machinery and electrical products and instruments and complete sets of equipment among imported productive materials began to rise gradually again. They constituted 20.8 percent in 1974, 32.1 percent in 1975, and 30.9 percent in 1976. After crushing the gang of four, the Central Committee proposed in 1978 the policy of firmly holding onto independence and sovereignty and self-reliance, expanding

exports, utilizing foreign capital and introducing advanced technology. Among the productive materials imported in 1979, the percentage of imports of machinery and electrical products and instruments and complete sets of equipment was 25.2 percent.

Of the imported productive raw materials, the major imports were raw and processed materials for industrial production, and there were less materials for agricultural production. In the 30-year total of imported productive raw materials, industrial raw materials constituted 88 percent and materials for agricultural production constituted 12 percent.

3. Imported new technology and complete sets of equipment developed an active promotional function in hastening our nation's industrialization and strengthening the ability of self-reliance. From 1952 to 1979, our nation imported more than 840 new technologies and complete sets of equipment. The monetary value constituted about 14 percent of the total value of imports during the same period. In 1979, imported new technologies and complete sets of equipment constituted 7.6 percent of the total value of imports that year.

During the past 30 years, the importation of new technology and complete sets of equipment can generally be divided into three stages:

The first stage at the beginning period of the founding the nation, complete sets of equipment were imported mainly from the Soviet Union and Eastern European nations. From 1952 to 1960, the complete sets of equipment imported from the Soviet Union and Eastern European nations mainly included metallurgical equipment, machinery, vehicles, coal, petroleum, electric power, telecommunications equipment and chemical equipment. But by the beginning of the 1960's, some imported projects were terminated because the Khrushchev clique betrayed its trust, tore up the contracts and withdrew the experts.

The second stage was during the 1960's from 1962 to 1968. First, two complete sets of equipment to manufacture vinylon from Japan were imported. Later, new technologies and complete sets of equipment were imported from 10 countries including Japan and Western European nations. They included mainly equipment for refining petroleum, equipment for the chemical industry, metallurgical equipment, mining equipment, electronics equipment and precision machinery and equipment.

The third stage was in the 1970's from 1972 to 1979. First, new technologies and complete sets of equipment were imported from a dozen or so nations including Japan, West Germany, England, France, the Netherlands, and the United States. They included mainly large chemical fertilizer manufacturing equipment, large chemical fiber manufacturing equipment, petrochemical installations, data processing equipment, 1.7-meter rolling mills, comprehensive mechanized coal face mining equipment, coal-washing plant equipment, power station equipment, oxygen manufacturing equipment, bearings manufacturing equipment, refining furnace equipment, British Spey generators, turbine compressors, the industrial steam turbine manufacturing patent and key equipment, color television tubes and integrated-circuit production facilities and color television assembly lines, the blast furnace, rotary furnace, coking

furnace, seamless steel pipe roller of the Shanghai Baoshan Steel Mill and accompanying power transmission equipment and technology, etc. Some of these have already been installed and have joined in production but most of them are still being installed.

The imported new technology and complete sets of equipment described above will serve importantly to elevate our nation's level of technology, strengthen our nation's ability of self-reliance, hasten the construction of the four modernizations after they are completed and join in production.

Import achievements have not been small, but there have also been many problems. Especially during the recent decade, import problems have been more prominent. First, subjective blindness and the desire to rush ahead have occurred in importation. The importation of certain items resulted from the desire for bigness and for foreign objects, deviating from the practical situation of our nation's present economic development. Especially in 1978, the large numbers of agreements signed with foreign nations and the amount of money involved were unprecedented. The number of contracts signed in 1 year constituted about 48 percent of the complete deals for importation over the past 30 years. This surpassed the present financial and material strength and practical possibilities of energy supply of the nation. Second, imported items, especially some large imported items, were not conscientiously considered comprehensively before a decision was made, and thus problems of raw materials, processed materials and energy supply and such accessory projects for imported projects occurred and markets for the products could not be found. After completion of some projects, conditions for fuel, power, raw and processed materials and transportation were not present and the productive capabilities could not be fully developed. Third, more complete sets of equipment for heavy industry were imported, and few for light industry were imported. More articles of imported equipment were used for building new projects and fewer were used in old plants to develop their potential, to renovate them and to improve them. Among the foreign agreements signed in 1978, those related to metallurgy, the chemical industry, coal and heavy industry constituted about 88.3 percent of the total number of completed deals in 1978 while agreements related to light industry and textile industry constituted only 11.3 [as published] percent. Heavy industry projects and new construction projects generally require more investment, the construction period is long, the results are slow, and they cannot provide products in the short term. State investment cannot produce benefits. Fourth, domestic conditions for construction and supporting conditions were not mature, and this affected the progress of construction. The construction period of some imported projects had to be prolonged again and again and they could not begin production in time because the quality of construction was poor, a lot of poorly done work had to be done over again, boilers, power supply equipment, water supply equipment and transportation equipment supplied domestically could not be delivered in time. Because of the above problems, equipment which the state spent large amounts of foreign exchange to import could not be completed in time and could not begin production. Some projects had to be terminated or postponed. This created severe economic loss and waste and unfavorable effects abroad. This experience and these lessons must be conscientiously summarized and learned.

4. Over the past 30 years, large quantities of materials which were urgently needed domestically and which were deficient and in shortage in our nation were imported. They have forcefully supported our nation's industrial and agricultural production and vitalized the domestic market.

To explain this situation, the quantity of imports of productive raw materials as a percentage of the quantity produced domestically is listed below:

Steel products: A total of 64,482,000 tons was imported over the 30 years, constituting 23.6 percent of the amount of steel products produced domestically during the same period. In 1979, 8,473,000 tons were imported, constituting 33.9 percent of the amount produced domestically that year.

Copper: A total of 2,093,000 tons was imported, constituting 52 percent of the amount produced domestically during the same period. In 1979, 134,000 tons were imported, constituting 27 percent of the amount produced domestically that year.

Aluminum: A total of 1,953,000 tons was imported, constituting 47.9 percent of the amount produced domestically during the same period. In 1979, 146,000 tons were imported, constituting 41 percent of the amount produced domestically that year.

Rubber: A total of 4,916,000 tons was imported, 3.1 times the amount produced domestically during the same period. In 1979, 263,000 tons were imported, 1.15 times the amount produced domestically that year.

Chemical fertilizers: A total of 100,490,000 tons was imported, constituting 40.3 percent of the amount produced domestically during the same period. In 1979, 8,395,000 tons were imported, constituting 21 percent of the amount produced domestically that year.

Sugar: A total of 14,808,000 tons was imported, constituting 39.8 percent of the amount produced domestically during the same period. In 1979, 1,096,000 tons were imported, constituting 43.8 percent of the amount produced domestically that year.

Cotton: A total of 4,555,000 tons was imported, constituting 10 percent of the amount procured domestically during the same period. In 1979, 549,000 tons were imported, constituting 26.5 percent of the amount produced domestically that year.

Food grains: A total of 114,256,000 tons was imported. Deducting the amount of exports during the same period, the net quantity imported was 45,469,000 tons, equivalent to 90,938,000,000 jin.

For a long time, China's imported materials were basically categorized as heavy industry materials, light industry materials and agricultural materials. This made the structure of our nation's imported commodities proportionally very uneven. This is mainly manifested by more imports of productive materials and

less imports of subsistence goods. Among the imports of productive materials, more raw materials have been used in capital construction and heavy industry production, and less raw materials have been used in light industry production. Therefore, with the readjustment of our nation's national economy, we should readjust the structure of imported commodities according to plan and step by step in view of the needs of promoting the development of domestic production and in elevating the people's material life. First, we must depend on our own efforts to build up production of staple materials that have long depended upon imports and gradually reduce the amount of imports. Imports of those materials that are urgently needed domestically but are uneconomical to produce by ourselves must be increased. Second, we should appropriately increase the importation of material means of livelihood to ease the shortage in the domestic market.

III. The Relationship Between the Structure of Imports and Exports

Practice over 30 years has proven that the change in the structure of imported and exported commodities exerts a definite influence on the national economy. The structure of imported and exported commodities actually influence the balance between domestic accumulation and consumption. In the 1950's, our nation's exports were mainly agricultural and sideline products and processed agricultural and sideline products while imports were mostly productive materials. This means, we used domestic subsistence materials in exchange for equipment and materials for an industrial buildup. This is actually reducing consumption and expanding accumulation. The structure of imported and exported commodities itself reflected the problem in the proportional relationship between accumulation and consumption. In view of the needs in our nation's economic buildup at the time, this was entirely necessary. Without doing this, we could not have established our nation's industrial foundation. But for many years, the structure of exported and imported commodities was not linked tightly enough, and this gave people an illusion, that is, if a shortage in the supply of a certain material were to occur in the domestic market, somebody would believe that this was the result of exporting too much, but in fact, this was not absolutely so. This is because whether the development of foreign trade will affect domestic market supply depends on the structure of imported and exported commodities. For example, we exported many materials of livelihood but also imported a lot of materials of livelihood. This by nature is an exchange of varieties and will not create a shortage in the domestic market. Of course, when more of one commodity is exported, it is possible to affect the supply of that commodity in the domestic market. But at the same time, we have imported another kind of commodity and it can solve the domestic supply problem of this commodity. This is also a way to adjust the surplus or shortage of a commodity. If exports are mainly machinery equipment and such productive materials, and if imports are mostly subsistence goods, the domestic market will not have any shortages, and it will even seem to have a surplus. Therefore, when the state arranges foreign trade plans, it must not only consider the needs of industrial and agricultural production, it must also consider the comprehensive balance between the structure of imported and exported commodities and the national economy (including market supply). In

our nation's exported commodities at present, agricultural and sideline products and light industry products and textiles still constitute a relatively large proportion. It is very necessary to arrange for the importation of a definite proportion of subsistence goods to adjust the domestic market. Of course, this should be done under ordinary conditions. But this does not eliminate the possibility of arranging more imports of productive materials based on the needs of national economic development in a certain year in the future, or arranging more imports of subsistence goods. The state, in arranging imports and exports, must insist on balancing revenue and expenditure, and insist on the principle of measuring imports by exports. Concretely speaking, when the state utilizes foreign capital to balance imports according to plan, it should mainly use the foreign capital to introduce new technology that can increase and improve productive capability and to import complete sets of equipment. It should not use the foreign capital for importing raw and processed materials and subsistence goods. This will enable our nation to establish a stable and reliable foundation for the development of foreign trade.

IV. A Look at the Future of Change in the Structure of Exports and Imports

In the future, how can our nation's export commodities realize a relatively great development, what kind of change in its structure is more rational, this is to say, in what direction should the change occur so that export trade can have a relatively large growth? This is a question worth studying. According to the practice of the past 30 years and the development of our nation's industrial and agricultural production in the coming period, we preliminarily believe:

1. Exports of agricultural and sideline products should still enjoy continued development, but the proportion they occupy among all exports will drop correspondingly. Agricultural and sideline products are our nation's traditional export commodities. They have a definite reputation in international trade, and they also possess a stronger competitive ability, for example, soybeans of the northeast, famous rice, famous miscellaneous beans, manufactured silk, tea, Chinese herbs, dried pepper, sausage casing, feathers, goat skin, prawns, eels, live fish, live pigs, live cows, and frozen pork. As the policies for our nation's agricultural economy are implemented and as agricultural production develops, the domestic sources of these commodities, generally speaking, will increase. Therefore, in the coming period, and especially in the next few years, it is feasible and necessary to continue to concentrate on these commodities as our nation's key export commodities, actively implement some effective economic measures to support them and to promote the development of production so that the export quantities of these commodities can continue to increase.

2. The exports of light industry and textiles include the exports of handicrafts. They still occupy a very important position in our nation's export commodities at present. In 1979, exports of these commodities already constituted 45 percent of total exports (categorized as manufactured and

finished products, they constitute 35.5 percent). At present, the main problem with light industry products and textiles exported by our nation is that the quality standard is low, patterns and varieties are few, packaging and decorations are poor, and they lack competitive ability. But developing the export of light industry products and textiles requires less investment, the results are quick, and some products are labor intensive and this favors widespread employment. Therefore, greatly expanding exports of such products requires placing emphasis on improving quality, increasing patterns and varieties, improving packaging and decorations, and improving the quality of delivery service while increasing quantity. Only in this way can our nation's exported light industry products and textiles adapt to the needs of the international market, increase their competitive ability, expand sales, and utilize the same quantity of commodities to earn more foreign exchange.

3. In the long-term view, exports of machinery and electrical products have a future for development. In the next few years, they are the most important key products to develop our nation's foreign trade. Many countries and regions in the world regard the expansion of the exports of machinery and electrical products as an important means to improve the structure of export commodities and to enlarge the export trade. In 1979, the world exported $440.4 billion worth of machinery and electrical products, constituting 33.8 percent of the total value of $1.363 trillion of exports of the world that year and ranking first among all export items. In the same year, our nation's exports of machinery and electrical products amounted to only $261 million, constituting 2.7 percent of our nation's total value of exports and only 0.06 percent of the world's total value of exports of such products. At present, our nation's exports of machinery and electrical products consist mainly of some general purpose machinery and tools and they are mostly sold to third world nations. Compared to the products of industrially advanced nations in the international market, the machinery and electrical products exported by our nation at present have many shortcomings and problems, such as a backward design, unstable quality, products are not in series, models do not change for many years, there is a shortage of supply of spare parts and accessories, maintenance service cannot catch up, and packaging and decorations are poor. Take the Hong Kong market as an example: Hong Kong imports $1-2 billion worth of machinery and electrical products a year. Machinery and electrical products exported to Hong Kong by our nation each year is only worth $30-40 million, and they are mainly ordinary machine tools and small quantities of tools. Some machinery and electrical products, such as elevators which are needed in large quantities in Hong Kong, have been marketed by our nation for many years but because the quality is poor, sales have never increased. Automobiles of Western nations constitute a relatively large percentage of export trade, but our nation still does not export automobiles.

After 30 years of continuous efforts in our nation, the machinery manufacturing industry has acquired a fairly large scale and foundation. The potential for exporting machinery and electrical products is very great. Therefore, in view of the needs of the international market and domestic productive capabilities, greatly expanding the export of machinery and electrical products should become an important aspect of changing the structure of export commodities. For this, we must: (1) conscientiously improve the quality of machinery and electrical

products and add new varieties; (2) supply spare parts and accessories for products abundantly and in time; (3) improve maintenance services; (4) supply explanatory literature about the properties, use and characteristics of products in both Chinese and foreign languages; (5) establish sales networks in key places abroad. In general, investigation and study of the international market must be strengthened, and efforts must be exerted to combine production and marketing to adopt to the needs of foreign markets. According to the export trade volume of the world's machinery and electrical products at present, if our nation's exports of machinery and electrical products can take up 1 percent, our annual export value can increase from the present several hundred million dollars to $4-5 billion.

4. The question of exporting petroleum, coal, nonferrous metals and chemical products. In the long-term view, petroleum, coal, nonferrous metals and chemicals should all become the backbone commodities of our nation's exports. Our nation has abundant resources of petroleum, coal and nonferrous metals. The present problem is that development cannot catch up with demand, the transportation capacity is insufficient, harbors lack deep-water wharfs, and in the short term, there is a definite difficulty in greatly increasing exports. But in the long-term view, the potential in this aspect is very great. Therefore, implementing such methods as joint production with foreign nations, jointly prospecting and developing these resources, expanding exports, developing the superiority of our nation's resources are important steps to develop our nation's export trade and to change the structure of our nation's export commodities.

5. Expanding the "use of imports to support exports" is an effective measure to increase the sources for export commodities. As described above, the business activity of using "imports to support exports" had developed by 1979 to the point where such products constituted 39.4 percent of the sources of export commodities. In the future, while the growth of the sources of export commodities in the nation will be limited, expanding the "use of imports to support exports" should still be a measure to be implemented.

The "use of imports to support exports" includes the export of finished products processed from imported raw materials, the importation of food grains and chemical fertilizers to support domestic production and increase the sources of export commodities, importing low-priced commodities and exporting high-priced commodities, and appropriating a portion of foreign exchange to the regions and units to let them arrange production by themselves and to increase the production of more sources of export commodities. Especially in expanding the export of light industry products and textiles, the investment is less, results are fast, varieties are many, there are many ways, the scope of using raw and processed materials is broad and a large labor force can be employed.

The business potential of the "use of imports to support exports" is great. Especially in utilizing the capabilities of idle equipment in the nation, the resource of the rich labor force and the various types of economic systems, there is still a great potential in carrying out productive activities "using imports to support exports." For example, the idle capabilities of the equipment of the domestic military industry, the large numbers of unemployed

youths, the various types of economic systems, such as urban neighborhood industrial enterprises, and commune and brigade processing enterprises, are far from being utilized.

"Importing raw materials for processing" is actually buying raw materials and processed materials for processing into manufactured goods and then exporting them. Present operations can be categorized into four types: One is "purely importing raw materials for processing," such as importing steel products for processing into nails, wire, metal tools for export. This type of processing creates a high rate of foreign exchange. The second is "limited importation of raw materials for processing," such as importing cotton and chemical fibers for processing into textiles for export. This type of processing is limited by domestic production and the needs of the domestic market. It requires making overall plans and taking all factors into consideration and appropriate arrangement. The third is "importing one-half of raw materials or supplementary materials and using some domestic raw materials or supplementary materials for processing and production. There are many things belonging to this type of processing and production. The processed products, generally speaking, can create foreign exchange, and although the revenue is not high, it provides a greater contribution to domestic public revenue and profits and tax revenues of productive enterprises. The fourth is "auxiliary type importation of raw materials for processing", i.e., importing a part of the supplementary materials to make up for the shortage of supplementary materials supplied domestically for export products. Supplementary materials must be supplied for this type of processing, but the effect of creating foreign exchange is not easy to calculate.

In general, the business activity of "using imports to support exports" has realized greater results in foreign exports and a definite experience has been obtained. Its development has a great future. It should be further expanded so that in the coming period it can constitute a greater percentage in our nation's export commodities.

In what direction should the structure of our nation's import commodities develop? Regarding this question we believe the general guiding ideology at the present stage should be to serve the technical reform of industry and agriculture, to serve national economic readjustment, and to serve the regulation of supplies in the domestic market. After completing the task of national economic readjustment, the emphasis should be on serving the realization of the four modernizations and elevating the people's living standard. Because our nation's economy is still in the period of readjustment at present, the structure of import commodities in the next 3 to 5 years will not undergo an overly great change. This is because the imported new technology and complete sets of equipment imported during the period of economic readjustment are still limited by the domestic investment in capital construction. Raw materials and processed materials needed in industrial and agricultural production, such as steel products, copper, aluminum, rubber, chemical fertilizers and farm chemicals, will not satisfy the need of domestic production in a relatively long period in the future, and we must continue to

import them. Imports of a definite quantity of food grains and such subsistence goods must also be maintained for a time in the future to regulate domestic production.

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Chapter XVI

READJUST POPULATION STRUCTURE, PROMOTE ECONOMIC DEVELOPMENT

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original text pp 482-525; portions in slantlines in boldface in original text.

[Text] The population problem is broad in scope and complex. It includes biological problems and also social and economic problems. According to the viewpoint of historical materialism, without social and economic relations, there will be no human society, and there will be no so-called population problems. Therefore, the population problem by nature is an economic problem.

If we put aside the properties of the population problem determined by production relations and examine the problem in light of productive forces, we can say the population problem is the proportional relationship between population growth and economic growth. Solving the population problem is to cause the population growth to suit the development of the national economy. Marxism believes population growth is not the decisive force in social development, but the number of people, the rate of growth and the quality all exert a definite effect upon social development. Population growth can promote or delay the progress of social development. Therefore, controlling the growth of our nation's population according to plan has a very important strategic significance in promoting the development of our nation's national economy and hastening the realization of the four modernizations.

This article begins by analyzing the basic situation in the development of the population over the past 30 years in our nation, emphasizes the study of the relationship of mutual limitations and mutual influence between economic development and population development and its structural change. Finally, it proposes some views on the goals of our nation's population development in the future.

I. The Basic Situation in the Development of Our Nation's Population Since Founding of the Nation

/1. Changes in the Population over the Past 30 Years/

According to related data and statistics, during the more than 100 years from 1840 at the time of the Opium War to 1949 when new China was established, our nation's population increased from 420 million to 540 million. The annual average natural growth rate was only 0.26 percent. The population growth was very slow. According to records, in 1930 in old China, the birth rate was 3.8 percent, the death rate was 2.8 percent (the death rate among infants reached a high of 20 percent), and the natural growth rate of the population was only 1 percent. Old China's population

reproduction had two basic characteristics, a high birth rate, a high death rate and a low natural growth rate, i.e., the type of population reproduction of "two highs and one low."

After new China was founded, the socioeconomic system fundamentally changed, and our nation's population reproduction process also underwent visible change. Although the birth rate was still high, the death rate rapidly dropped, and the natural growth rate of the population visibly rose. (See Table 1)

Table 1. Changes in the Reproduction of Our Nation's Population (%)

	1950	1952	1957	1962	1965	1970	1975	1978	1979
Birth rate	3.7	3.7	3.403	3.722	3.806	3.36	2.313	1.834	1.79
Death rate	1.8	1.7	1.08	1.008	.955	.76	.736	.629	.624
Natural growth rate	1.9	2.0	2.323	2.714	2.851	2.6	1.577	1.205	1.166

It can be seen from Table 1 that before the 1970's, there was insufficient understanding of the seriousness of the population problem. The growth of our nation's population was in anarchy, the birth rate continued to remain at the high level before Liberation, but the death rate dropped year by year, and therefore the natural growth rate of the population rapidly rose from 1.9 percent in 1950 to 2.851 percent in 1965. After the 1970's, as the work of family planning was launched in a big way, the natural growth rate of the population began to drop year by year to 1.166 percent in 1979. For 30 years, the average annual natural growth rate of our nation's population was around 2 percent.

The history of our nation's population growth based on the trend of change of the birth rate and the death rate since Liberation can be divided into the following four stages:

The first stage: 1950-1957. As our nation's national economy revived and developed, as the people's living standards rose, as sanitation and health improved, and as we blindly learned from the Soviet Union and encouraged people to have babies, the population began to grow rapidly after 1953. In those 8 years (1950-1957), 100 million people were added. During the latter 4 years from 1954 to 1957, more than 58 million people were added, and an average of 21 million people were born each year and the net increase in population a year reached 14.6 million, an increase of 21.2 percent over the previous 4 years. This was the first peak of population development after our nation's Liberation.

The second stage: 1958-1961. After 1958, our nation's national economy encountered severe setbacks, the living standards of the people dropped drastically, the birth rate of the population dropped visibly, the death rate increased greatly and the natural growth rate decreased sharply.

During the 4 years from 1958 to 1961, the average annual number of births was less than 15 million, a drop of 30 percent from the annual average number during the peak period described above. The number of people born in 1961 was only half that in 1954. This was the low point of population growth in our nation after Liberation.

The third stage: 1962-1975. Following the 3 years of adjustment of the national economy and the implementation of the various economic policies, production revived and developed, and the people's life showed improvements. Starting in 1962, compensatory growth occurred among the population. In this year, more than 24 million were born, an increase of over onefold compared to 1961. In 1963, the population grew suddenly again by 29 million, and the birth rate reached over 4.3 percent, the year with the highest birth rate since the founding of the nation. With the visible drop in the death rate, the natural growth rate of the population rose by a large scale. From this time on, family planning began to be advocated but the results were not visible, and up to 1967, the annual number of births remained at over 25 million. Afterward, the birth rate rose once again until 1976 when it dropped to 2 percent and the annual number of births dropped to below 20 million. If we take 20 million births as the boundary, then the period from 1962 to 1975 was the second peak of population growth in our nation.

The fourth stage: 1976-1980. After crushing the gang of four, we focused on family planning, and the natural growth rate of the population began to drop gradually. The number of births in 1976 dropped from 20.88 million in 1975 to 18.39 million, and the natural growth rate dropped from 1.577 percent to 1.266 percent. By 1979, the number of births dropped to 17.15 million, and the natural growth rate of the population dropped to 1.166 percent. Such a fast drop in the population growth rate in such a short time is rarely seen in the world's history of population development. But, we should clearly see that to truly make our nation's population growth suit economic development and realize the long-term (the year 2000) goal of controlling our nation's population growth, the task is still very diffcult. We must continue to carry out family planning well and we must not be careless.

/2. The Cause of the Rapid Growth of the Population/

The history of the development of our nation's population after Liberation shows that before the 1970's, population growth was completely out of control. It was in a state of anarchy and blind high-speed growth. What are the causes of such a situation?

First, mistakes in population theory hastened the blind growth of the population.

For a long time, our nation's theoretical circles and propaganda departments always unilaterally emphasized that "it is a good thing to have many people," "the more people there are, the more production there will be, the more accumulation there will be." The propaganda viewpoint advocating that the

more people the better, without analysis, was detached from our nation's concrete economic conditions and was very harmful. In a nation with a small population and a shortage of labor force, having more people is, of course, a good thing and it is favorable to economic development. But in a nation like ours, which already has an overly large population, little cultivated land, very backward economy and technology, a shortage of capital and very low productivity, having more people is not a good thing, and it will bring about many difficulties in economic development and in raising the living standards of the people.

Because our nation has a large population, its growth is fast, and it is not suited to economic development, during the mid-1950's, Ma Yinchu [7456 1377 04332] proposed the correct idea of controlling the population and improving the quality of the population. It was a pity that this correct idea was not accepted but was regarded as heresy and was attacked and criticized. From then on, the question of population theory was a "forbidden area," and "the more people the better" became the most fashionable dogma, creating serious consequences.

Second, a low level of productivity and inappropriate economic policies were economic reasons stimulating the rapid growth of our nation's population.

After Liberation, our nation's social productivity developed rather greatly, but because the original foundation was poor and the foundation was weak, the level of productivity was still very low compared to some developed nations and the economy was still backward. Therefore, on the one hand, the state could not appropriate money to provide overall social security for old people who had lost thier ability to work and to solve their livelihood problems in their old age, and thus, "raising sons to prepare for old age" became a practical problem, and on the other hand, work in the rural areas was still mainly manual labor, and the development of production, to a large degree, still relied on the increase in the number of workers. The newly added labor force thus became the most important condition to improve the family economic situation.

The trend of egalitarianism in the policy of distribution was also a factor influencing population growth. The supply system implemented at the beginning of the Liberation guaranteed work for cadres of the state and their dependents, and subsidies were given to mothers who had many children and who gave birth to more than one baby at once. The criteria of distribution and evaluation to assist urban workers facing difficulties in housing and life were based entirely on the number of family members. Basic food grains rations in rural areas and distribution of private plots were based entirely on the number of people without differentiation between adults and children, etc. All of these inappropriate economic policies objectively served to encourage population growth.

Third, the influence of feudal and traditional concepts has always been an ideological hindrance to controlling population growth in our nation. The feudal ideas of "determinism," "hopes of giving birth to sons early in life, and the more sons the more fortunate one is," "of the three main

offenses against filial piety, not having offspring is the most serious," "females are inferior to males," "to continue the family line by producing a male heir," in some people's minds, especially in our nation's rural areas, still have a large influence even today.

Fourth, the rapid growth of our nation's population is also determined by the laws of population development.

The history of the change in population reproduction in some economically developed nations shows that in the transfer from the type of population reproduction with a high birth rate, a high death rate and a low growth rate toward the type with a low birth rate, a low death rate and a low growth rate, they generally undergo a transitional stage of a high birth rate, a low death rate and a high growth rate. This transitional stage lasted for about half a century in Britain. In Japan, this transitional stage lasted for about 80 years. Similarly, after our national Liberation, it is not possible to lower the high birth rate formed over several thousand years in old China within a short period. This means, the history of our nation's population development cannot bypass this transitional stage described above. After our national Liberation, a low death rate and a high birth rate existed simultaneously. This was the concrete manifestation of the law of population development.

Because of the various reasons described above, the natural growth rate of the population after our national Liberation not only was much higher than that before Liberation, it was also higher than that in the first world countries and second world countries. Thus the serious population problem of the present time was formed.

II. The Population Structure and Its Influence On the National Economy

The population structure, like the economic structure, consists of many factors. The age structure of the population is determined as a result of natural changes, such as birth and death of population groups. The vocational structure of the population was formed by the development of productivity and the need for division of labor in each link (production, exchange, distribution and consumption) of material reproduction. The urban and suburban structure of the population was determined by the need to locate certain production sectors and economic enterprises in the cities or countryside. The regional structure of the population was formed by the difference in natural condition and in the geographic distribution of natural resources, etc.

The various aspects of the population structure are mutually linked and mutually limiting. The change in the age structure of the population, to a certain degree, affects the vocational structure of the population. The change in the vocational structure of a population, in turn, often greatly influences the urban and suburban structure and regional structure of the population.

Gradually establishing a rational population structure is an important aspect of our nation's population policy. It is also an important condition for us to realize the four modernizations.

A rational population structure must suit and promote the rapid development of the national economy. In view of our nation's actual situation, a rational population structure must possess the following two characteristics: First, it must be able to fully develop our nation's manpower superiority and use higher labor poductivity to stimulate a rapid development of each sector, each region and the entire national economy. Second, it must be able to rationally utilize and fully develop our nation's rich natural resources and guarantee that the national economy develops steadily and continuously. The two points above will finally be manifested in the rapid growth of the national income and the per capita average national income and in the rapid rise in the people's living standards.

The development of the national economy is not onoy influenced by various economic factors, it is also influenced by the various factors of the population structure. In the following, we will start out from the relationship between the population and the economy to briefly analyze our nation's population structure (age, vocational, urban and suburban, and regional structure), and propose preliminary views on changing our nation's population structure.

/1. Age Structure of the Population/

The age structure of population groups can be generally divided into three categories. If the population of young people (0 to 15 years old) in a population group constitutes over 40 percent of the total population, and the population of the aged (over 65 years old) is below 5 percent and the index of support[1] is about 1, it is generally called a young population. If the population of young people is below 30 percent and the population of old people is over 10 percent with the index of support at about 0.6 it is generally called a population of old people. The type between the two is called an adult population.

At present in some developed nations in Europe and America, the populations are mostly populations of old people. The populations of our nation and most developing nations are mostly young populations. The population problems faced by countries with a population of old people involve caring for the aged, supporting the aged, medical care and a shortage of labor force. The problems faced by countries with a young population involve the training of the young population, health care, housing and work and employment.

During the 30 years since founding of the nation, our nation's population has grown rapidly and the age structure of the population has developed into a young one (See Table 2)

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1. Index of support = $\frac{\text{young and old population}}{\text{working age population (16-64 years old)}}$

Table 2. Change in the Age Structure of Our Nation's Population (%)

Year	Total population	Age structure 0-15	16-64	over 65	Index of support
1953	100	36	60	4	0.67
1964	100	40.4	56.9	2.7	0.75
1978	100	38.6	56.4	4.8	0.77[2]

It can be seen from the above table that after 1953, the rapid growth of the population (620 million people were born, constituting 63.9 percent of the total population) increased the percentage of the young population from 36 percent in 1953 to 40.4 percent in 1964. After entering the 1970's, the percentage of the young population began to drop following the advent of family planning. According to sampling surveys, the young population still constituted 38.6 percent of the total population in 1978 (while in developed nations, it constituted generally only about 25 percent). Correspondingly, the index of support of the working age population rose from 0.67 in 1953 to 0.77 in 1978.

The influence of the rise in the percentage of the young population upon national economic development is manifested mostly in the following two aspects:

First, the percentage of the young population was overly large, the age structure was irrational, and they affected the rapid growth of the national income and the per capita national income. Generally speaking, when other conditions remain the same, the national income and the per capita national income change proportionally with labor productivity. This is a commonly known fact. But the effect of the change in the age structure of the population group upon the national income and the per capita national income is frequently neglected by people and it has not attracted people's attention. In the following, we will use the change in the age structure of our nation's population from 1953 to 1964 and the actual increase in the national income and the per capita national income during the same period as an example to explain this problem.

If we divide the change in labor productivity in 1964 into three situations: I. equal to labor productivity in 1953; II. a rise of 5 percent; III. a rise of 46 percent (actual increase), then the effect of the change in the age structure upon the national income and the per capita national income can be illustrated in Table 3.

2. Among the demographers in our nation, it is generally believed that the index of support of our nation's working age population is about 0.92, this is because only women 16-59 years old have been included in the working age population.

Table 3. Effect of Age Structure on the Major Indicators of Economic Development

Year	Total population (100 million)	Age Structure 0-15 Number (100 million)	%	16-64 Number (100 million)	%	Over 65 Number (100 million)	%	Index of support Labor	Production rate (yuan)*			National income (100 million)			Per capita national income (yuan)		
1953	5.9	2.12	36	3.54	60	0.24	4	0.67	200			709**			120		
1964	7.0	2.80	40	4.00	57	0.20	3	0.75	I	II	III	I	II	III	I	II	III
									200	210	292	800	840	1,166	114	120	165

(In the table, the computational values of the national income and the per capita national income of the III situation should respectively be 116.8 billion yuan and 167 yuan, the difference between the computational value and the actual figures is due to the approximation of the population).

* Labor productivity = $\frac{\text{National income}}{\text{working age population}}$, here we assume that the whole work age population is employed, and is employed in material production.

** The figure 70.9 billion yuan is the actual figure of our nation's gross national income in 1953.

(Labor productivity, national income, per capita national income for 1964 in situation c are actual figures)

It can be seen from Table 3 that as a result of the trend of our nation's population toward a young one (the percentage of the young population increased, the index of support rose), in the first situation (the labor production rate did not change, 200 yuan), the national income in 1964 rose to 80 billion yuan, but the per capita national income dropped to 114 yuan; in the second situation (labor production rate rose 5 percent, reaching 210 yuan), the national income rose to 84 billion yuan but the per capita national income reached only 120 yuan, which was the level in 1953; and in the third situation, the national income reached 116.6 billion yuan and the per capita national income rose to 165 yuan because our nation's labor productivity rose by a larger scale (46 percent).

The above facts show that if the age structure of a population group shows an irrational development trend, then when labor productivity does not change or grows slowly, the per capita national income may drop.[3] This means, under the above conditions, the per capita national income is mainly determined by the change in the age structure of the population group.

In the following, let us study the relationship between the age structure and the national income and the per capita national income from another angle.

If in 1964 the age structure of our nation's population is still the same as in 1953, and the labor production rate still changes as described in the three situations above, then the hypothetical values and the actual values of the national income and the per capita national income in 1964 can be contrasted as follows (See Table 4).

[Table 4, next page]

3. In the working age population, if the percentage of the people employed in material production rapidly increases, the national income and the per capita national income may also rise even though labor productivity does not change or even decreases. This involves the question of whether the job structure is rational or not, which will be discussed later.

Table 4.

Year	Total population (100 million)	Age Structure 0-15 Number (100 million)	%	16-64 Number (100 million)	%	Over 65 Number (100 million)	%	Index of support
1953	5.9	2.12	36	3.54	60	0.24	4	0.67
1964*	7.0	2.52	36	4.20	60	0.28	4	0.67
1964**	7.0	2.80	40	4.00	57	0.20	3	0.75

Year	Labor Productivity (yuan)			National income (100 million yuan)			Per Capital National Income (yuan)		
1953	200			709			120		
1964*	I	II	III	I	II	III	I	II	III
	200	210	292	840	882	1,266.4	120	126	175.2
1964**	292			1,196			165		

* hypothetical
** actual

It can be seen from Table 4 that when the age structure of the 1964 population does not change, the national income and the per capita national income increase proportionally as the labor production rate increases. If labor productivity did not change (200), the national income would increase to 84 billion yuan, and the per capita national income would be equal to that of 1953. If labor productivity rose 5 percent, the national income would reach 88.2 billion yuan, and the per capita national income would reach 126 yuan (5 percent higher than that of 1953). If labor productivity rose 46 percent, the national income would reach 122.64 billion yuan and the per capita national income would reach 172.5 yuan (46 percent higher than in 1953).

An important question concerning the relationship between the population and the economy was illustrated here: When the age structure of a population group remains stable and unchanged,[4] the amount of the national income and the amount of the per capita national income, the speed of growth are mainly determined by labor productivity, and they are not related to the increase or decrease in the total population.

It can be seen from Table 4 that if the age structure of our nation's population from 1953 to 1964 did not change, the national income in 1964 would have increased by 6.04 billion yuan over the actual total (122.64 - 116.6), and the per capita national income would have increased 10.2 yuan (175.2 - 165). It can be clearly seen that the effect of the trend of the age structure toward a young population is very visible on the national income and the per capita national income.

In addition, many population problems exist in our nation at present, such as, population growth and capital accumulation are not suited to each other, the growth of the labor force and the growth of productive materials are not matched, the caliber of the population and the needs of the four modernizations are not matched, etc. In a certain sense, these were caused by the overly large young population in our nation and the irrational age structure.

To further explain the effect of the age structure of the population and the change in labor productivity upon the per capita national income, we will compare the economically developed European and American countries (defined as B) and developing countries (defined as A). If the populations are equal, the effect of the change in labor productivity due to different age structures and differences in the indices of support upon the per capita national income would be as follows: (See Table 5)

[Table 5, next page]

4. This situation exists. For example, in Sweden, the total population grew slowly over the past several decades but the age structure basically remained unchanged.

Table 5.

	Total population	Age Structure: 0-15 Number (100 million)	0-15 %	16-64 Number (100 million)	16-64 %	Over 65 Number (100 million)	Over 65 %	Index of Support
A	100	45	45	50	50	5	5	1
B	100	22.5	22.5	62.5	62.5	15	15	0.6

	Total population	Labor productivity I	II	III	Gross national income I	II	III	Per capital national income I	II	III
A	100	90	100	100	4,500	5,000	5,500	45	50	55
B	100				5,625	6,250	6,875	56.25	62.5	68.75

The above table shows that because the age structure of the B population group is superior to that of the A population group, the index of support of B is lower than that of A, and when labor productivity is equal (if they are both 100), the per capita national income of B is higher than that of A (62.5 - 50) by 12.5. When the labor productivity of A and B rise at the same rate (for example, when they rise to 110 in the table), the differences in the per capita national income will become greater (the difference in the table is 68.75 - 55 = 13.75). Even when the labor productivity of B is lower than that of A, the per capita national income of B is still higher than that of A. The actual situation is that labor productivity in the European and American countries with the B type age structure is far higher than in developing countries with the A type age structure, therefore the difference between the per capita national income of the two population groups described above is even more far apart.

In summary, in order for population growth and economic development to be matched, in order for the national income and the per capita national income to sustain a high rate of growth, there must be a high rate of growth in labor porductivity and also a rational age structure (i.e., a relatively low index of support). These are two important indicators to measure the mutual suitability of the population and the economy.

Second, the population problems brought about by the large population of young people and the irrational age structure not only affect the present but also the future reproduction of the population and the development of the national economy.

The scale and rate of population reproduction is not only influenced by the present rate of giving birth by women, it is also influenced by the age of the present population. As described above, because the population of our nation's youth at present has reached about 40 percent, the percentage of the population group capable of giving birth will surely be large. The corresponding birth rate and natural growth rate will also be necessarily high. For example, the two peak baby booms since the founding of the nation not only have caused a drastic increase in population, they will also bring about difficulties in controlling population growth in the future. The population born during the first peak baby boom (1954-1957) entered the age for marriage and bearing babies starting from 1976. This population group is expected to produce an annual average of more than 20 million people. If forceful measures are not implemented to reduce the birth rate, the annual birth rate calculated on the basis of simple reproduction (i.e., each couple gives birth to two children) will reach 20 million, and the annual average population growth rate will be over 1.2 percent. The second peak baby boom (1962-1975) not only was high but it also lasted for a long time. Beginning from 1985, an average of over 22 million people from this group will enter marrying age and childbearing age. If we calculate on the basis of each couple giving birth to two children, the annual average natural growth rate of the population will reach more than 1.4 percent. The seriousness of this problem should attract our appropriate attention.

The above analysis is sufficient to show that the socioeconomic problems brought about by the overly large percentage of the population of youths and children in our nation and the irrational age structure are very serious. To solve the irrational age structure of our nation's population, the only effective way is to reduce the birth rate of the population and gradually decrease the percentage of youths and children and control the growth of the population according to plan.

/2. Job Structure of the Population/

The job structure of the population is a very important question in the population structure. Whether the job structure of a population is rational directly affects the elevation of the people's living standards and the development of the national economy. The progress of modernization of the world's developed nations shows that the job structure of the population has undergone major changes. Take Japan as an example, from 1960 to 1976, the number of people employed in the first industrial sector as a percentage of the total number of employed dropped from 26.9 to 12.2 percent. Those employed in the second industrial sector increased from 28 to 35.2 percent. Those employed in the third industrial sector increased from 45.1 to 52.6 percent. During the same period, the percentage employed in the first industrial sector of the United States dropped from 8.6 to 3.8 percent, those employed in the second industrial sector dropped from 30.6 to 26.7 percent, and those employed by the third industrial sector rose from 60.8 to 69.6 percent. This change in the job structure of the population is a developmental process that follows definite patterns, and it is an important indicator of the progress and change in the structure of the productive sectors of society. Compared to the above countries, the change in the job structure of our nation's population, in certain aspects, was in the opposite direction.

For the past 30 years since founding of the nation, the number of workers in our nation's first industrial sector as a percentage among the workers of the whole society has always remained at about 80 percent except in certain years. The absolute number of workers in the first industrial sector increased from 185 million in 1956 to 294 million in 1978, an increase of nearly 60 percent. Workers in the second industrial sector increased from 12.4 million in 1952 to 50.08 million in 1978, an increase of more than 3 times. The number of workers engaged in heavy industry increased from 3.72 million to 31.83 million, an increase of over 7.5 times. Workers engaged in light industry increased from 8.74 million to 18.25 million, an increase of only 1.1 times. Workers in the third industrial sector during the past 20 years tended to decrease correspondingly. Among the number of workers of the system of ownership by the whole people, the number of workers in commerce and the service industries dropped from 20 percent of the total in 1956 to about 12 percent in 1978. The average population served by each commercial worker increased 45 percent and the gap between the number of such workers and the number actually needed in people's lives has become wider.

At present, the irrational job structure of our nation's population has seriously affected the increase in labor productivity.

As a result of the peak baby boom of the 1950's and 1960's, each year, thousands and tens of thousands of workers must be assigned jobs, therefore people frequently neglected this important question of increasing labor productivity. There is a very serious waste of labor force. In the past, when we solved the problem of employment for workers, we did not consider opening up employment opportunities and we did not increase the percentage of the workers employed by the third industrial sector. We sent as many people as possible into the first and second industrial sectors and, therefore, some extremely abnormal situations emerged. In the enterprises, there were already too many people for the jobs but the labor departments still issued directoves to hire workers. Labor productivity was already dropping but enterprises continued to increase their workers. The labor force in the rural areas had reached saturation but some urban youths were still sent down to the rural areas to join in the teams and brigades, etc. As a result, labor productivity stagnated or dropped. For example, the labor productivity of the whole staff of the industrial enterprises of the system of ownership by the whole people in our nation was 10,115 yuan in 1966. It dropped to 9,873 yuan in 1977, a drop of 3.2 percent from 1966. As for labor productivity in agriculture, the amount of food grains produced by each agricultural worker has always remained at the 1956 level of 2,080 jin for the past 20 years.

During the recent decade, an abnormal situation has also emerged in our economic life. On the one hand, labor productivity stagnated or dropped, and, on the one hand, the national income and the per capita national income grew. During 1966-1977 when labor productivity dropped as described above, the national income and the per capita national income rose respectively from 158.6 billion yuan and 213 yuan in 1966 to 265.7 billion yuan and 281 yuan in 1977.

Of course, there are many reasons for the occurrence of the above situations. But the fast population growth and the irrational job structure, i.e., the overly fast increase in the percentage of people employed by the first and second industrial sectors, constitute important reasons.

To change the irrational situation in the job structure of our nation's population, we must first correctly understand and handle the relationship between the expansion of employment opportunities and a good increase in labor productivity.

Some people worry that increasing labor productivity will make finding employment more difficult. Actually, the view that increasing labor productivity will correspondingly reduce the requirement for workers is only one side of the question. More important is the fact that only by increasing labor productivity can the quantity of surplus products be increased and conditions be created to open up new realms of production, and new workers and producers be equipped. In the long-term view, the key to solving the employment problems of our nation's labor force is by greatly increasing labor productivity.

First, the development of science and technology will necessarily lead to the emergence of a series of new technologies, new technological processes and new industries, therefore, labor productivity will greatly increase. Within a fairly long period, the number of employed people in our nation will not decrease absolutely as a result of scientific and technological progress. In the course of modernization in postwar Japan, the Japanese could effectively solve the employment problems of the population because the newly emerging industries (petrochemicals, electronics, household appliances, automobiles and such industries) served importantly in absorbing the labor force for employment.

Second, greatly increasing labor productivity requires production sectors to be highly socialized, specialized and to work cooperatively. This will necessarily bring about a great development in the sectors among the third industrial sector that directly serve production (such as post and telecommunications, transportation, production-type services). During the beginning stage of modernization of developed nations, the rapid growth in the number of people employed by the third industrial sector was mainly caused by the above reasons.

Again, only by greatly increasing labor productivity can the level of consumption of the people be rapidly increased on the foundation of development in production so that the consumption structure can undergo a fundamental change. The change in consumption structure, on the one hand, stimulates further development of production and, on the other hand, will necessarily bring about a rapid increase in the number of people employed by the third industrial sector directly serving daily consumption. During the latter stage of modernization of developed nations, the rapid increase in the number of people employed by the third industrial sector was mainly the result of the change in the consumption structure (the change from daily necessities to durable consumer goods).

Therefore, the view that places the increase in labor productivity and the expansion of work and employment opportunities in opposition to each other has no basis.

Second, we must develop the superiority of manpower and greatly develop labor-intensive industries. Because of the blind development and the overly fast increase in our nation's population, and because the population growth is mismatched with national economic development, serious population problems and employment problems exist. But this is only one side of the problem. We must also see that a large population, rich labor resources and low wages are also among our economic superiorities. We can completely rely on this superiority to develop in a big way those labor-intensive industries that require much work and time. For example, we can develop the various types of handicraft industries and industries of special technological processes which require less capital and technical facilities. In these sectors, frequently capital and technology cannot replace labor intensity. As long as we conscientiously organize, we can develop the advantages and avoid the shortcomings, develop the superiority, use labor-intensive products to enter and occupy the internation market, to earn large amounts

of foreign exchange for the state, and use our rich labor resources to make up for the shortage of capital and technical facilities in our nation.

Third, changing the direction of investment and readjusting the investment structure are important ways to change the irrational job structure of our nation's population. At present, the irrational job structure of our nation's nonagricultural population is mainly manifested by the long "leg" of heavy industry and the short "leg" of light industry, commerce and the service industry. This situation not only affected the increase in labor productivity but also brought about many difficulties in the life of the people and masses. To change this irrational situation, we must arrange capital construction truly according to the order of agriculture, light industry and heavy industry. We should appropriately increase investment in light industry, commerce and service-type professions, place emphasis on both production and livelihood, guarantee that agriculture, light industry, heavy industry and commercial services can develop in coordination. While adjusting the investment structure, we must comprehensively balance the labor force. Old enterprises that generally belong to heavy industry must not increase workers. They must follow the path of developing potential, renovating and improving. Light industry, commerce and service industries should appropriately increase the number of employees so that they can adapt to the needs in the development of the national economy and in elevating the people's living standards.

Fourth, gradually changing the structure of producing solely food grains by our nation's agriculture is an important way to decrease the number of workers mainly engaged in farming and their percentage among the workers of the whole society. It is also the fundamental direction in changing the irrational job structure of our nation's agricultural population.

During the 30 years since founding of the nation, the newly emerged labor force resulting from the rapid growth of the rural population mostly remained in the rural areas to engage in human sea warfare on 1.5 billion mu of land. As a result, the ways for agricultural production became narrower, the rich labor resources and natural resources could not be fully utilized, and this seriously affected the development of our nation's agricultural production, and delayed agricultural modernization.

Therefore, we must start out from our nation's rich natural resources to develop toward the mountain regions and the grasslands, toward the rivers, lakes, toward joint enterprises combining agriculture, industry and commerce, gradually establish an agricultural economy with an overall development in agriculture, forestry, livestock production, sideline production and fishery. This is not only a fundamental measure for our nation's agricultural modernization but also the correct way to make the job structure of our nation's agricultural population rational.

Finally, changing the irrational situation of the job structure of our nation's population also requires implementing correct employment policies. We must change the method of letting the state handle the problem of employment entirely, develop the function of all types of economies,

implement the combination of introducing employment by labor departments, letting collectives organize employment opportunities, and allowing self-employment. We must not only develop the economy of the collective ownership system in a big way, we must also appropriately develop individual economies. This will greatly serve to solve employment problems and vitalize urban and rural economies.

/3. The Urban and Rural Structure of the Population/

The urban and rural structure of the population, to a very large degree, reflects the level of economic development of a nation. The percentage of urban population has already become an important indicator to indirectly measure a nation's economic development and degree of wealth. The relationship between the percentage of urban population of each nation in the world and its percapita gross national product[5] shows that the per capita gross national product is directly proportional to the percentage of urban population, i.e., the higher the percentage of the urban population, the higher the per capita gross national product, and especially when the percentage of the urban population surpasses 50 percent, the per capita gross national product rises visibly. Statistical data also show that the per capita gross national product of nations with a percentage of urban population over 50 percent is generally over $2,000, and that of nations with over 60 percent is generally between $3,000 and over $4,000. In a few countries, it reaches as high as about $10,000. In countries with a percentage below 50 percent, it is generally only several hundred dollars. In the world, about one-fourth of the countries have urban populations below 20 percent, and their per capita gross national product averages about $300. In 1979, the percentage of urban population in our nation was 13.2 percent, and the per capita gross national product was only $253. both among the lowest among world nations. They indicate that our nation's economy is very backward and the people's living standard is very low. Therefore, in the course of building the four modernizations, adjusting the urban and rural structure of our nation's population, and increasing the percentage of urban population are important problems that should be emphasized in theory and solved in practice.

(1) Evolution of the Urban and Rural Structure of Our Nation's Population

Before Liberation, our nation was a semifeudal and semicolonial country deeply plundered and exploited by imperialism and new and old colonialism,

5. The concept of the gross national product comes from Western nations. Our nation did not use it in the past. It consists of the following: one, the value newly created by the materials production sector - net production value, equivalent to our nation's national income; two, depreciation of fixed assets of the whole society; three, the new income of non-material production sectors; four, public administration, national defense, household labor of residents. Therefore, the gross national product is much larger than national income.

therefore, the economy was very backward, and the urban and rural structure of the population was also very irrational. In 1949, our nation's per capita national income was only 66 yuan and the ratio of the urban and rural populations was generally 1:9. It was a backward agricultural country with an agricultural population constituting 90 percent. During the latter half of the 20th century, the world's population developed toward urbanization and a new type of densely populated areas resulted. This type of very highly and densely population urbanization was especially developed in the United States and Japan. For example, over half of Japan's population was concentrated in the areas centered around Tokyo, Osaka and Nagoya. During the past 30 years, the growth of urban populations in the cities of the world's nations has been very fast, and the percentage has continued to rise. In 1950, the world's urban population was 698 million, constituting 28.1 percent of the total population. By 1980, it is expected to reach 1.87 billion, constituting 42.2 percent. In some developed nations, the scale and speed of growth of the urban population are far higher than the world level.

After Liberation, along with the development of our nation's national economy, the urban population also grew from over 57 million in 1949, to over 128 million ln 1979, an increase of over onefold in 30 years. But because our nation's total population also increased almost onefold during the same period, the increase in the percentage of the urban population was very small and the rural population still constituted 87 percent. The rural labor force reached more than 300 million people, constituting 80 percent of the total labor force. It can be seen that our nation is still an agricultrual country consisting mainly of farmers. Now let us compare the change in urban populations over the recent 30 years in our nation and in several major countries of the world: (See Table 6)

It can be seen from Table 6 that the rate of growth of our country's urban population and the percentage of the urban population are far below the levels of the developed nations described above and they are also far lower than the world's averages, even much lower than India. It can also be seen that the urban population of each of the world's nations and the percentage of the urban population all rose in a straight line. Only our nation's urban population grew slowly and sometimes dropped.

The changes in our nation's urban and rural population structure can be generally divided into the following four periods:

The first period: 1949-1957. This was the normal period of rapid growth of our nation's urban population. In 8 years, the urban population increased 42 million, an average annual increase of 5.2 million. The percentage of urban population rose from 10.6 percent in 1949 to 15.4 percent in 1957. The rapid growth of the urban population during this period was the result of the joint effect of mechanical growth and natural growth of the population. During the First 5-Year Plan, our nation began a large-scale economic buildup, industrial production rapidly developed, large numbers of rural workers entered the cities causing the mechanical growth of the urban population to rise very quickly, constituting about 56 percent

Table 6. Comparison of the Development of the Cities and the Population of China and Major Nations of the World

		World	China	Britain	W. Germany	Canada	U.S.	France	USSR	Japan	India
1950	Number of people (10,000)	69,804	6,169	3,923	3,392	833	9,746	2,312	7,121	2,965	6,156
	Percentage	28.1	11.2	77.9	70.9	60.6	64.0	55.4	39.5	35.8	17.3
1960	Number of people (10,000)	98,202	13,073	4,116	4,066	1,266	12,610	2,847	10,602	4,092	7,753
	Percentage	32.9	19.8	78.6	76.4	68.4	69.8	62.3	49.5	43.9	18.2
1965	Number of people (10,000)	115,669	10,170	4,343	4,482	1,433	14,012	3,229	12,321	4,742	9,144
	Percentage	35.2	14.0	80.2	78.9	72.8	72.1	66.2	53.4	48.0	19.1
1970	Number of people (10,000)	135,434	10,230	4,521	4,753	1,634	15,274	3,576	13,857	5,565	10,896
	Percentage	37.3	12.4	81.6	80.0	76.6	74.6	70.4	57.1	53.3	20.4
1975	Number of people (10,000)	159,229	11,170	4,720	4,987	1,845	16,704	3,900	15,518	6,494	13,424
	Percentage	40.1	12.1	84.4	83.8	80.8	77.6	73.7	60.5	57.6	22.2
1980*	Number of people (10,000)	187,186	12,862	4,940	5,199	2,074	18,358	4,237	17,376	7,469	16,420
	Percentage	42.2	13.2	88.3	86.4	85.8	82.7	78.3	65.4	63.3	24.9

* Figures for the world and other nations for the year 1980 are all estimates, figures for China were 1979 figures.

of total growth. Many young farmers entered the cities and increased the percentage of the population of childbearing age in the cities. And because the living standards in the cities were higher and medical, sanitary and health care conditions were better, the natural growth rate of the urban population reached a high of 3 percent. In 8 years, this population increased by 18.5 million, constituting about 44 percent of the total growth.

The second period: 1958-1965. This was the abnormal period of large increase and large decrease in our nation's urban population. The urban population in 1965 registered a net decrease of 5.5 million from 1958. The percentage of the urban population dropped from 16.2 percent in 1958 to 14.0 percent in 1965. The urban population underwent abnormal fluctuations of large increases and large decreases demarcated by the year 1960. During the great leap forward period from 1958 to 1960 under the slogans of so-called "taking steel as the key link" and "overall leap forward," large numbers of rural worlers entered the cities. In 3 years, the urban population suddenly increased over 30 million (90 percent were mechanical increases) from more than 99 million in 1957 to 130 million in 1960. The urban population in 1960 both as an absolute number and as a percentage of the total population was the highest in our 30-year history. Because of the serious imbalance in the porportions of the national economy, workers had to be streamlined en masse beginning in 1961. From 20 million to 30 million urban workers were mobilized to return to the rural areas, the urban population decreased drastically and by 1965 it dropped to 101.7 million. Thus the mechanical inward and outward migration was basically balanced.

The third period: 1966-1976. The urban population during this period grew slowly, and the percentage continued to drop. In the 11 years, the urban population increased only 11.72 million, an average annual increase of 1.07 million, all natural increases. The percentage of the urban population dropped from 14.0 percent in 1965 to 12.2 percent in 1976. This was during the period of 10 years of upheaval. There was social chaos, mechanical fluctuations of the population were great, and the change in the urban population was very abnormal. Before 1971, several million office cadres and intellecutals were driven to the rural areas to perform labor, large numbers of so-called "monsters and demons" were sent to the rural areas for reform, more than 16 million intellectual youths could not find work or go to school and had to be mobilized and sent to the rural areas to join the brigades and settle down. The outward mechanical migration of people was large in number. After 1971, office cadres and intellectuals returned one after the other from the rural areas to work in cities and a number of "old intellectual youths" were also transferred back to the cities to work. The mechanical inward migration of the urban population increased greatly. Generally speaking, during the 10 years of upheaval, the outward mechanical migration amounted to more than the inward migration. The net outward migration amounted to more than 5 million therefore the growth of the urban population during this period was entirely natural growth.

The fourth period: 1976-1979. This was a normal period of relatively fast growth in the urban population. The natural growth rate of the urban population decreased greatly during this period because of the achievements

of family planning. But during these 3 years, the population still increased by 15.2 million, an average annual increase of 5.07 million. In 1979 alone, there was an increase of 8.72 million. The percentage of the urban population rose again from 12.2 percent in 1976 to 13.2 percent in 1979. This was because after the gang of four was crushed, the national economy rapidly revived and developed, the various policies of the party were implemented, the number of people employed in the cities rapidly increased, and the mechanical increase of the population quickened.

(2) The Basic Characteristics of Urban Population Changes in Our Nation

Over the past 30 years, the basic characteristics of urban population changes in our nation were as follows:

First, the rate of growth of the urban population was closely related to the development of the national economy.

Over the past 30 years, the rate of growth of our nation's urban population was slow, and the changes in the urban and rural structure of the population were very small. This was consistent with our nation's low productivity level, the slow development in industrial and agricultural production, and the backward national economy. The rate of industrial development is different in different periods, and the rate of urban population growth is also different. Before 1957, industrial development was rapid, and during this period, industrial production value grew the fastest, reaching an annual average increase of 22.4 percent. Correspondingly, the urban population growth was also the fastest, an annual average increase of 7.1 percent. After 1958, industrial development was slow because of the interference of the leftist mistakes and especially the serious sabotage by Lin Biao and the gang of four. The value of industrial production from 1958 to 1976 averaged an annual increase of only 8.7 percent. Urban population growth stagnated, and the annual average increase was only about 2 percent, even lower than its natural growth rate.

Second, political factors greatly affected the mechanicl fluctuations of the urban population.

Following the antirightist movement in 1957, the constant political movements all directly affected the mechanical changes in our nation's urban population. The result of every political movement was that large numbers of the urban population were sent to the rural areas and the urban population correspondingly decreased. The influence of the 10 years of upheaval of the cultural revolution upon the changes in urban population was even greater. Over the past 30 years, our nation's urban population increased 1.2 times, an increase of 70 million, but most of them were the result of the natural growth of the urban population. In the 1950's, the mechanial growth of the urban population was very large, and about 30 million of the agricultural population became part of the urban population. But in the mid 1960's, almost all of them returned to the rural areas. The people entering the cities by mechanical migration afterward were mostly those who moved from the cities to the rural areas during the same period (such as

intellectual youths, sent down personnel). In general, during the past 30 years, our nation's urban population was frequently caught in a type of major mechanical movement into and out of the cities because of political causes, but the mechanical growth of the urban population was very small. This type of abnormal mechanical change not only violated the objective laws of urban population development, it also seriously affected the development of our nation's national economy.

Third, the mechanical movement of the urban population greatly affected the natural growth rate.

The mechanical movement of the urban population not only directly affected the scale of the urban population, it also greatly affected the natural growth rate of the urban population. In the 1950's, the mechanical growth of the urban populatisn was very fast because of the high-speed development of our nation's national economy. Large numbers of young workers were taken in from the rural areas by the cities and the percentage of the childbearing population in the cities increased. Therefore, before the beginning of the 1960's, the natural growth rate of our nation's urban population was far higher than that in the rural areas. After 1961, the proportions in the national economy became seriously imbalanced, large numbers of urban workers who came from the rural areas were streamlined and returned to the rural areas, the percentage of the childbearing population in the cities decreased, and the natural growth rate of the urban population visibly dropped. After 1964, the natural growth rate always remained lower than that in the rural areas.

(3) The Fundamental Ways to Change the Urban and Rural Structure of Our Nation's Population

Because our nation has a large population, the foundation is weak, the percentage of the rural population is large. In our efforts to improve the percentage of the urban population and to readjust and reform our nation's irrational structure of urban and rural population, we must never follow the old ways of present capitalist nations where the population has developed toward the cities. We must start out from the actual situation in our nation and find a way suitable to our nation's situation. We believe we can start out in the following aspects:

First, we must strictly control population growth in medium and large cities.

Up to the end of 1978, our nation had 191 large, medium and small cities with a total population of 110 million (not including the population of countries under municipal jurisdiction). Of these, 10 have a population of over 2 million, 19 have a population of 1 to 2 million, 36 have a population of 500,000 to 1 million, 41 have 300,000 to 500,000 and 85 have under 300,000 people. This situation shows that our nation's cities are too few. Because of historical reasons, existing large and medium cities are overly concentrated, thus affecting the rational arrangement of our nation's productivity. For example, the Beijing, Tianjin, Tangshan region in northern China, the Shanghai, Ningbo, Suzhou, Hangzhou region in eastern

China, and the central Liaoning region centered around Shenyang (including Shenyang, Fushun, Anshan, Benxi and Liaoyang) are all regions with a dense population of cities. Although the industrial foundations of large cities are good, the technical strength is strong, and they serve a decisive function in the economic development of the whole nation and the provinces and regions, the population explosion in large cities has also brought about a series of problems that are difficult to solve, such as problems of energy, traffic education, employment, housing, environmental protection and municipal administration. Therefore, the population growth of existing large cities must be strictly controlled and existing medium cities should be prevented from continual development toward becoming large cities. For this, we must first continue to focus on family planning tightly, further reduce the natural growth rate of the population in large and medium cities, and quickly realize zero growth and negative growth of the population. Second, we must strictly implement the state's hiring laws, concretely control the mechanical growth of the population in large and medium cities, strive to maintain a relative balance between the inward and outward migration of the population in urban areas. In regions with favorable conditions, we can establish some satellite cities and towns around large cities so that the population of the urban areas can be spread out into the remote suburban regions to reduce the pressure of population growth in large cities.

Second, we must greatly develop and build medium and small cities and towns.

Compared to some developed nations, the scale and structure of our nation's cities have the following two characteristics: one is the percentage of large cities with a population of over 1 million is large; and two, the percentage of small cities with a population under 200,000 is small. (See Table 7 for details)

It can be seen from Table 7 that at the end of 1977, our nation had 189 cities with a population over 100,000 people, comparable to the figure in Japan and less than the figures for the United States and the Soviet Union. Among them, there were 27 large cities with a population over 1 million, much more than the numbers in the Soviet Union, the United States, Japan and France. They constitute 48.8 percent of the total urban population, also much higher than the percentages of the nations mentioned above. The situation of small cities with a population below 200,000 is the opposite: The population of our nation's small cities constitues only 6.4 percent of the total urban population, far lower than the nations mentioned above. Therefore, the key to readjusting the urban and rural structure of our nation's population and increasing the percentage of urban population is to greatly develop and build medium and small cities and towns. Medium and small towns established and developed according to local characteristics have superiorities that large cities cannot possibly have: 1) They can absorb the agricultural labor force released by agricultural modernization locally, utilize the locality's natural resources lcoally, develop the locality's economic superiority. 2) They can locally utilize agricultural and sideline products for processing, sell them locally and reduce the links of commodity circulation, avoid massive importation and exportation of raw

Table 7. The Number of Larg e, Medium and Small Cities and the Population in our Nation and Nations Including the United States and the Soviet Union

Population		China (1977)	U.S. (1973)	USSR (1975)	Japan (1974)	France (1968)
Over 1 million	Number of cities (unit)	27	6	11	10	1
	Population (10,000 people)	5,405	1,814	2,222	2,326	229
	Percentage	48.8	29.0	26.2	39.0	23.2
500,000-1 million	Number of cities (unit)	33	19	30	7	2
	Population (10,000 people)	2,422	1,234	2,128	371	142
	Percentage	21.9	19.7	25.1	6.2	14.4
200,000-500,000	Number of cities (unit)	78	38	87	67	6
	Population (10,000 people)	2,528	1,254	2,635	2,066	164
	Percentage	22.9	20.0	31.0	34.7	16.7
Under 200,000 people	Number of cities (unit)	51	189	113	87	44
	Population (10,000 people)	710	1,959	1,509	1,198	450
	Percentage	6.4	31.3	17.8	20.1	45.7
Total	Number of cities (unit)	189	252	241	171	53
	Population (10,000 people)	11,065	6,251	8,494	5,961	985

and processed materials and products, reduce back and forth shipments, and save shipping costs. 3) Working in medium and small cities and towns, the worker and his dependents can still remain in the rural area. This can reduce the amount of construction for urban public facilities and housing. 4) It is much cheaper and easier to procure land for municipal construction in the rural areas than in the suburbs of large and medium cities. 5) The average construction costs in medium and small cities and towns are also much lower than that in large cities.

Let us imagine that within this century, we gradually develop all of the more than 2,000 county seats now existing throughout the nation into small county towns with a population of about 50,000 to 100,000 people (taking the average as 70,000), they can contain about 150 million people. At the same time, each county can select 3 to 5 seats of communes with better conditions to establish small towns with a population of 20,000 to 30,000, and they can also absorb more than 200 million of the agricultural population. And the present 128 million population in large, medium and small cities will gradually develop to 150 million. Then, at the end of this century, the total urban population in our nation can develop to over 500 million. If the total population of our nation can be controlled to within 1.2 billion, the percentage of urban population will undergo fundamental changes. We believe as long as the policies and principles are appropriate, this will be a goal that can be realized with effort.

Third, we must greatly develop commune and brigade enterprises and follow the road of urbanization of the rural areas.

The surplus labor force in the rural areas in our nation at present is already too large. In the future, as agricultural modernization is gradually realized, the surplus labor will be more pronounced. Even if 50 percent of the agricultural population is left, there will be several hundred million of the rural population becoming part of the urban population. Obviously, we cannot let so much of the agricultural population enter the large and medium cities. The establishment of small cities and towns described above requires time and a course must be followed. Migration to reclaim the land and to develop the border frontiers requires a lot of capital and organization, and they are not easy to achieve at present. Therefore, the only practical way is to rely on the strength of the collective and self-reliance, to develop diversified businesses, to greatly develop commune and brigade enterprises and to follow the road of urbanization of the rural areas. There are many benefits to establishing commune and brigade enterprises. 1) It can strengthen the collective economy, increase income of commune members, improve the living standards of rural people, lessen the difference between the urban and rural areas. 2) It can provide capital for agricultural modernization and stimulate the development of agricultural production. 3) It can absorb a large portion of the labor force and find a correct outlet for the surplus agricultural labor force. 4) It can provide the material and technical foundations for establishing medium and small cities and towns and it will be favorable to basically change the irrational situation in the population structure of our nation's urban and rural areas.

In recent years, our nation's commune and brigade enterprises have developed very quickly with the massive support and enthusiastic concern from all sectors. According to statistics, at the end of 1978, the whole nation has 1.5 million commune and brigade enterprises, 320,000 of which were commune-operated enterprises. Their workers numbered over 28 million, constituting 9.5 percent of the total rural labor force. The total income of the commune and brigade enterprises reached 43.1 billion yuan, constituting 29.7 percent of the total income of the people's communes. Practice has proven that commune and brigade enterprises have a strong life force. The development of commune and brigade enterprises is an important way to hasten the realization of agricultural modernization and rural urbanization in our nation, stimulate the rural population to move to the urban areas, and to change the population structure of our nation's urban and rural areas. Of course, the development of commune and brigade enterprises must also start out from the actual situation and be carried out by measuring our own strength. We must prevent blindness and we must carry it out according to plan and in steps. We must especially prevent the small from crowding out the large, the advanced from crowding out the backward, and the competition for raw materials between commune and brigade enterprises and state-run large enterprises. Existing commune and brigade enterprises should also be appropriately adjusted.

/4. The Regional Structure of the Population/

Our nation has 9.6 million sq km of land, and nearly 1 billion hard working and courageous people. Natural resources are also very rich. Our nation has always been known as a land with abundant resources and a large population. Because our nation's population grew too quickly after Liberation, the population density increased from 56 people per sq km in 1949 to the present 102 people. The population density increased almost onefold in 30 years, and our nation has already become one of the world's nations with a relatively high population density. The average density of the present world population is 30 people per sq km. Our nation's population density is 3.4 times the average density of the world's population. In the world's nations, the per capita average area of cultivated land is about 5.5 mu. It is about 10 mu in most nations and in a few countries it surpasses 10 mu. In some countries such as Canada and Australia, it reaches as high as 30 to 50 mu but there are also a few countries that have a per capita average area of 1 to 2 mu of cultivated land. In Japan, the per capita average is only 1.5 fen. Our nation now has 1.5 billion mu of cultivated land,[6] the per capita average area of cultivated land is only 1.5 mu, and our nation is one of the countries having a very small per capita average area of cultivated land.

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6. According to some estimates, our nation's area of cultivated land is over 2 billion mu. Even so, our nation's per capita area of cultivated land is only about 2 mu, and our nation is still a nation with a small per capita area.

Our nation not only has a high population density, the per capita average area of cultivated land is small, and the regional distribution of the population is also very uneven. If we draw a bending line from Aihui County in Heilongjiang via Lanzhou to Tengchong in Yunnan, the area west of this line (including Heilongjiang, the northwestern part of Jilin, the western part of Sichuan and Yunnan, Ningxia, most of Gansu, and the entire province and region of Neimonggol, Qinghai, Xizang and Xinjiang) is the region where our nation's national minorities live and where there are very few people. The area east of this line is the densely populated region which has many people and less land. (See Table 8)

Table 8. Comparison of the Population Density in Eastern and Western China

Region	Population		Area		Population density (person/ sq km)	Cultivated area		Per capita area of cultivated land (mu)
	Number (10,000)	%	Amount (10,000 sq km)	%		Amount (10,000 mu)	%	
Nation	98,000*	100	960	100	102	150,000	100	1.53
Eastern part	95,000	97	460	48	207	139,500	93	1.47
Western part	3,000	3	500	52	6	10,500	7	3.50

* Estimates for 1980

It can be seen from Table 8 that the area of our nation's eastern region is less than half the total of the whole nation but 97 percent of the national population lives there. The western region which has over half of the area of the whole nation has only 30 million (constituting 3 percent of the national population) residents. The population density is only 1/35 that of the eastern region. The per capita area of cultivated land in the eastern region is much less than that of the western region, and the potential of land which can be cultivated in the western region is still very large. In the eastern region, the total area of cultivated land is decreasing because the land is being used for the construction of cities. In certain provinces and regions, the difference in population densities is even greater. For example, in 1978, the population density in Jiangsu reached 580 people per sq km, 480 in Shandong, and 440 in Henan, but in Xizang, the density was only 1.5 person per sq km and in Qinghai is was only 5 people per sq km. It is less than 8 per sq km in Xinjiang. The distribution of the population in our nation's eastern region is also not even. In the southeast coastal regions, the population density is even higher while the population density in some inland provinces is relatively much lower.

There are historical causes for the irrational regional structure of our nation's population. Our ancestors chose to settle and develop first mostly the coastal regions of the southeast that had a mild climate, fertile land, rich resources, convenient transportation and that was easy to develop. Therefore, the economy of the above region was always more developed and the population was highly concentrated. The feudal rulers of the past practiced Han chauvinism that was a discriminatory policy. Most of the minority nationalities lived in the northeast and northwest border regions where natural conditions were poorer and transportation was very inconvenient. They lived a nomadic life for a long time, and in many regions up to the beginning of Liberation, they still lived a primitive life of slash and burn cultivation and eating birds and animals raw. After Liberation, much work was done under the guidance of our party's correct policy toward national minorities to develop the border regions, to make the economy and culture of the regions of minority nationalities prosperous and to promote unity and friendship among the nationalities in our nation. Definite achievements were realized. But, the uneven regional distribution of the population left by history and the irrational regional structure were not fundamentally changed.

At present, population density is continuing to increase in the broad rural areas along our nation's southeastern coastal regions, the per capita area of cultivated land is gradually decreasing, the conflict of many people and little land is very pronounced, a surplus of the labor force is very widespread. But in the western border regions, there is a lot of land but few people, there is a lack of labor force, rich underground resources cannot be exploited, large areas of land suitable for agriculture, livestock production and forestry cannot be developed and utilized. Therefore, appropriate readjustment of the regional distribution of our nation's population is necessary. There are two ways:

First, different population policies should be implemented in different regions, and adjustments can be made via changes in the natural growth rate of the population.

In the western border regions where the population is sparse and where minority nationalities live, measures favorable to a population increase should be implemented to increase the natural growth rate so that the population can continue to increase and the average density of the population can continue to rise. In the eastern region where the population is dense, the growth of the population should be strictly controlled. The policy of allowing a couple to have only one child should be advocated in a big way to gradually realize a low population growth rate or a zero growth rate and even a negative growth rate so that the average density of the population can rise slowly, remain unchanged or even drop. The rise and fall of the population density will be definitely readjusted in the distribution of the population in our nation's eastern and western parts. But, this readjustment will be very limited and it will not produce results within a short time. This is because the population of the western regions of minority nationalities cannot be allowed to develop blindly. It must grow according to plan so that the growth in population and economic development

can be coordinated. Otherwise, a series of population problems will emerge there, too. Due to the influence of the two baby booms after Liberation, an absolute drop in the population in the eastern region will only occur in the next century.

Second, immigration measures should be taken to adjust the regional structure of the population by a mechanical movement of the population.

During the course of building the four modernizations, moving people into the western regions according to plan, after preparation and step by step (including moving people from the eastern regions and provinces toward the border regions and mountain regions) is the most effective way to readjust the regional structure of our nation's population, evenly distribute productive forces, develop our nation's natural resources, and stimulate the common prosperity of the economy and culture of the border regions of minority nationalities. Our nation has always had the tradition of moving people to reclaim border regions. Many areas of fertile and rich land in our nation's northeast and southwest borders were claimed by our ancestors during the long history of struggle with nature and of hard work and by overcoming difficulties. After Liberation, our nation had organized several relatively large-scale migrations of populations. There were both successful experiences and lessons of failure. As long as we conscientiously summarize the experience and lessons, we can do the work of moving population well. The potential of our nation for population migration is very great. If the population density in the western border regions can be increased from the present 6 people per sq km to 20, then an area of 5 million sq km can take in 70 million immigrants. Of course, this is only a rough idea. Because the areas of the west are very different, how many immigrants each province and region can take in must be gradually and appropriately arranged according to the needs and possibilities of the time and the locality.

Organizing immigrants to reclaim wasteland is a difficult and complex task. It must not be carried out carelessly. It must be actively, carefully and steadily carried out.

The present task is to establish well the existing production and construction corps and the state-run farms, continue to recruit demobilized soldiers and soldiers changing vocations and urban youths for work.

In the past, we organized large numbers of urban youths to go to the production and construction corps and state-run farms in the border regions to establish themselves and settle down. This was originally a good way of moving people to reclaim the border regions. But because of interference and sabotage by Lin Biao and the Gang of Four, and with the mistakes in our work, many deviations occurred as a result and many problems were created. This not only seriously discouraged the revolutionary enthusiasm of intellectual youths and very few were willing to settle and establish themselves in the border regions, it also brought about great difficulties in mobilizing people to migrate and to support the border regions in the future. We must conscientiously summarize this serious lesson.

A widespread phenomenon among the state-run farms and production and construction corps was their incurrence of serious losses. Practice in recent years has proven that as long as we strengthen the organizational management of production, develop diversification, strictly implement the principle of distribution according to work, it is entirely possible to turn losses into profits and run the farms and production and construction corps even better. The state-run farms and production and construction corps have conditions to carry out agricultural mechanization and modernization first to provide experience in agricultural modernization for the whole nation and to establish models. The life of agricultural workers should be elevated and continually improved on the basis of developing production. Generally speaking, the material wages of agricultural workers in the border regions should be higher than inland urban workers. This can make workers willingly settle and establish themselves in the border regions and will make future immigrants believe that after working hard in the border regions for several years, they can obtain better living conditions than inland workers. The above-mentioned farms or corps with better foundations still should mainly recruit demobilized soldiers and soldiers who have changed vocations and urban intellectual youths.

At the same time, we must also carry out a series of preparatory tasks for future large-scale migration of people to the western border regions. These preparatory tasks generally consist of the following aspects:

(1) Before organizing migrations, concerned departments must investigate and study profoundly, establish practical and feasible plans for migration based on the climate, soil conditions, resources and transportation conditions of the regions for the immigrants.

(2) The state should quickly draw up immigration laws, guarantee the rights of the immigrants, clarify the duties of the immigrants and the laws that they must abide by.

(3) Propaganda campaigns to encourage "migration to support the border regions" must be done well so that the whole society can understand that this is a major task related to solving our nation's population problem and the smooth realization of the four modernizations, that it is related to the long-term future of our offspring, and the whole party and the people of the whole nation should be called upon to care about and support this task.

(4) We should first select several regions for commanders and officers of the People's Liberation Army and demobilized soldiers and soldiers who have changed vocations to establish a number of small settlements of immigrants and establish test points for immigrants to reclaim wasteland. They will establish a foundation and provide experience for organizing future mass migration to reclaim wasteland.

To move people to reclaim the border regions, the state must pay a large sum of money. At present, there are still difficulties in our nation's finances and this cannot be done at the moment and temporarily this cannot

be included in the daily agenda. But, as long as the state's financial situation improves, and after all organizational tasks and preparatory tasks have been done, the work of moving people to reclaim the wasteland can be gradually carried out.

III. Population Growth and the Development of the National Economy

The relationship between population growth and the national economy is mainly manifested in two aspects, the proportional relationship between population growth and investment in capital construction, and between population growth and accumulation and consumption.

/1. Population Growth and the Scale of Investment in Capital Construction/

The scale of investment in capital construction is a major question in the comprehensive balance of the national economy. Whether the scale of investment in capital construction is appropriate greatly affects the comprehensive balance of the national economy. How should this scale be determined, what is its objective basis? These are questions worth our conscientious study.

Practice over the past 30 years in our nation shows that the scale of capital construction frequently has a decisive influence upon accumulation and consumption. A large scale (capital construction), a high accumulation, little consumption have become serious shortcomings in our capital construction for many years. Therefore, we believe, arranging capital construction according to the growth of the population and the needs of people is a basic starting point to determine the scale of investment.

The investment needed to maintain the current standard of living of the population groups whose total number of people is constantly changing can be called the minimum need for investment by population growth. To explain this question, we can conduct concrete studies and make estimates by considering our nation's actual situation. For 30 years, the natural growth rate of our nation's population has been generally about 2 percent (it will gradually drop in the future). To guarantee that the living standards of the original population and the population newly added each year does not drop while the ratio between accumulation and consumption does not change, each year the national income must increase correspondingly by 2 percent. To increase the national income by 2 percent, there must be a certain amount of investment. The size of this investment is determined by the investment coefficient.[7] If the investment coefficient is 3 (from 1953 to 1978, our nation's investment coefficient averaged 3.18), the investment needed to increase the national income by 2 percent will constitute 6 percent of the national income. Generally, population scholars believe

7. The amount of investment that has to be added for each additional unit of the national income.

that when the natural growth rate of the population is 1 percent, the minimum need for investment by the population growth will constitute 3 to 4 percent of the national income. When the natural growth rate of the population is 2 percent, the minimum need for investment will constitute 6 to 8 percent of the national income. Below this level, the people's consumption level will drop and the development of the national economy will be affected.

It can be seen that the minimum need for investment by population growth is mainly determined by two factors, the natural growth rate of the population and the investment coefficient. According to the above conditions, we can determine the minimum need for investment by population growth as follows:

Investment as a percentage of national income (%) = natural growth rate of the population (%) x investment coefficient.

According to the above formula, we can determine the minimum need for investment by the population growth in our nation for the past 30 years. (See Table 9)

Table 9. Relationship Between Population Growth and Investment

	Natural growth rate of the of the population %	Investment Coefficient	Actual investment as a percentage percentage of national income	Minimum need for investment as a percentage of national income	Minimum need for investment as a percentage of actual investment
First 5-Year Plan	2.38	1.68	13.6	4	30
Second 5-Year Plan	0.82	73.7	21.7	60.4	280
1963-1965	2.53	0.98	11.4	2.48	21
Third 5-Year Plan	2.6	2.32	11.4	6.03	53
Fourth 5-Year Plan	2.18	3.76	14.7	8.20	55

It can be seen from Table 9 that since founding of the nation, the minimum need for investment (as a percentage of the national income) by our nation's population growth increased from 4 percent during the First 5-Year Plan to 8.2 percent during the Fourth 5-Year Plan (during the Second 5-Year Plan it reached 60.4 percent). The minimum need for investment as a percentage of the actual total amount of investment rose from 30 percent to 55 percent during the same period (it reached 280 percent during the Second 5-Year Plan). The above situation was caused mainly be the rapid growth of our nation's

population, and especially the visible drop in the results of investment. If the natural growth rate of our nation's population over the past 30 years increases at the present rate of 1 percent, and if the results of investment reaches a higher level, then the minimum need for investment by the population growth would visibly drop, and thus investment beyond the minimum need could be used to hasten the development of the national economy and improve the people's living standard.

According to the above formula, it is not difficult to determine the minimum need for investment by our nation's population growth within the next few years.

If the natural growth rate of the population respectively increases at three different rates, 1 percent (i.e., the average natural growth rate of the population up to the end of this century if starting from now, the average birth rate is two children per couple and remains unchanged in the future), 0.7 percent (i.e., the average natural growth rate of the population up to the end of this century if starting from now, the average birth rate is 1.5 babies per couple and remains unchanged in the future), 0.4 percent (i.e., the average rate of growth of the population within the next 20 years if the percentage of single children is gradually increased to 50 percent in 1985 and to 90 percent by the end of this century), and the investment coefficient is 3, then the minimum investment needed by the annual population growth as a percentage of the national income is shown in the following: (See Table 10)

Table 10.

National growth rate of the population %	Investment coefficient	Investment as percentage of national income
1	3	3
0.7	3	2.1
0.4	3	1.2

It can be seen from Table 10 that in several years in the future, if the natural growth rate of our nation's population increases according to the three different rates above, the annual investment required to guarantee that the level of consumption of the people does not drop must be 3 percent, 2.1 percent and 1.2 percent of the national income.

It should be pointed out that when arranging capital construction, the determination of the minimum investment is not simply a question of theoretical methodology, it has its important practical significance.

We know that investment used for capital construction, generally speaking, is far greater than the minimum investment needed. Therefore, after determining the minimum need for investment, the arrangement of investment

for capital construction actually does not involve the entire amount of investment but only a part of it. This part is equal to the difference between the actual total investment and the minimum investment. The question now is how to use this part of the investment difference. The development of the national economy must be considered and the improvement of the living standards of the people must also be considered. This is a question that must be carefully considered in detail when determining the investment structure and the direction of investment.

After determining the minimum need for investment by the population growth, we must also determine the follow-up need for investment by the population growth, i.e., the need beyond the minimum need.

The determination of the added need for investment by the population growth is more difficult than determining the minimum need. If we say that there is a definite numerical boundary for the minimum need for investment by the population growth, then the added need for investment by the population growth does not have this definite boundary.

The goal of socialist production is to continue to elevate the people's material, cultural and living standards on the basis of developing the national economy. This places a general numerical limit on determining the added need for investment by the population growth. When determining the added need, the first factor to be considered is the rate of elevation of the people's living standard. Generally speaking, the elevation of the standard of living not only should be lower than the rate of growth of the national income, it should also be lower than the rate of increase in labor productivity. After placing such a condition on the rate of elevation of the standard of living, we can conduct some concrete studies and estimate the added investment needed by the population growth in the light of our nation's actual situation. Since the founding of the nation, the annual average increase in the level of consumption of our nation's people was 3 percent. If it increases at a rate of 4 percent in the future, and if the population increases at a rate of 1 percent, then the annual national income must increase 5 percent[8] (considering the need for national defense construction and barring the effects of some accidents on the national economy, the rate of increase of the national income should still be higher,

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8. Strictly speaking, it should equal 5.04 percent. Because the error is very small, this article omitted it. The method of calculation is as follows:

Let the national income of the base period = 100, then the national income of the planned period of the future is:

$100 \times (1 + 1\%) \times (1 + 4\%) = 105.04$

$$\text{Growth in national income: } \frac{105.04 - 100}{100} = 5.04 \text{ percent}$$

for example, 6 to 7 percent, which seems to coincide more with the actual situation) in order to guarantee that the living standards of the original population and the newly added population will increase (4 percent). To increase the national income by 5 percent, as described above, we must invest 15 percent of the national income (investment coefficient of 3) in capital construction. The added need for investment by the population growth is 15 percent - 3 percent (previously described minimum investment need) = 12 percent.

Based on the above, the formula for the highest limit of the investment needed by the population growth (minimum investment + added investment) can be expressed as follows:

Investment as a percentage of national income (%) = [natural population growth rate (%) + rate of improvement in living standards (%) x investment coefficient[9]

We can determine the added need for investment by the population growth in our nation in the near term according to the above formula. Assume that the natrual growth rate of the population is 1 percent, 0.7 percent and 0.4 percent respectively and the level of consumption by the people increases at the corresponding rate of 4 percent, 4.5 percent and 5 percent, then the highest limit of investment for capital construction (as a percentage of national income) is as follows: (See Table 11)

Table 11.

Natural growth rate of the population %	Rate of elevation of the level of consumption %	Investment coefficient	Investment as a percentage of the national income
1	4	3	15
0.7	4.5	3	15.6
0.4	5	3	16.2

We know from Table 11 that within the next few years, if the natural growth rate of our nation's population and the level of consumption by the people changes according to the three different situations described above, the added investment needed by the entire population is respectively 12 percent, 13.5 percent and 15 percent (the highest limit of investment minus the previously described minimun investment). The investment needed by the entire population (highest limit) generally constitutes 15 percent of the national

9. According to the method of calculation noted in footnote 8 on the previous page, this formula should be correspondingly revised. Taking into account the small error and for the convenience of this article and calculation, this formula is tentatively used.

income. Below this level of consumption of the people cannot be correspondingly elevated. The historical experience of the past 30 years proves that it seems suitable to control the investment in capital construction at this level. During the First 5-Year Plan, the scale of capital construction was arranged appropriately (13.5 percent), the various proportional relationships in the national economy were coordinated, the economy developed quickly, and the people's life showed visible improvement. During the Second 5-Year Plan, the investment coefficient rose greatly, therefore the results of investment greatly dropped, the above-described percentage rose to 21.5 percent, and this caused serious consequences in the development of the national economy and people's life. Since the 1970's, we again made the mistake of having overly large-scale capital construction and thus the various proportional relationships in the national economy became seriously imbalanced. Although we began to readjust capital construction in 1979, the problems were complex and the difficulties were many, the readjustment task could not be completed at the time, therefore we must make further adjustments.

Here we must point out that this article only explores the scale of investment in capital construction from the viewpoint of population growth, and it does not involve the structure of investment and the direction of investment. But, the scale of investment is related to the structure of investment and the direction of investment and they are mutually limiting, and they are important questions that cannot be ignored in arranging capital construction. Therefore, after determining a rational scale of investment, we still need to appropriately determine the proportional relationship of productive investment and nonproductive investment. At the same time, we also need to appropriately arrange the proportional relationship among the investments in agriculture, light industry and heavy industry, etc.

/2. The Proportional Relationship Between Population Growth and Accumulation and Consumption/

According to the minimum need for investment by population growth described above, it is not difficult to determine the minimum need by the population growth for the accumulation fund and the consumption fund.

During the First 5-Year Plan, the ratio of accumulation and consumption was generally 25:75, and the population grew at a rate of 2.4 percent. To keep the standards of living of the people from dropping, each year, the national income must grow by 2.4 percent (investment at 4 percent of the national income, see Table 9), then the minimum need for the accumulation fund and the consumption fund by the annual population growth is as follows: (See Table 12)

Table 12 clearly illustrates that during the First 5-Year Plan, the increment (24) of national income brought about by the minimum investment as the population grew (2.4 percent) could only satisfy the minimum need by the newly added population for the accumulation fund and the consumption fund (6 and 18 respectively). The standard of living of the people did not

Table 12.

	Base period			First 5-Year Plan		
	Number	%	Per capita (total population = 100)	Number	%	Per capita (total population = 102.4)
National income	1,000	100	10	1,024	100	10
Accumulation fund	250	25	2.5	256	25	2.5
Consumption fund	750	75	7.5	768	75	7.5

Table 13.

	Base period		First 5-Year Plan			
			Highest limit of accumulation fund minimum need for consumption fund		Minimum need for accumulation fund highest limit of consumption fund	
	Amount	&	Amount	%	Amount	%
National income	1,000	100	1,089	100	1,089	100
Accumulation fund	250	25	321	29.5	256	23.5
Consumption fund	750	75	768	70.5	833	76.5

change (the per capita consumption fund was still 7.5), and the ratio of accumulation and consumption did not change.

The minimum need for the accumulation fund by the entire population is 256 (250 x 102.4 percent), and the minimum need for the consumption fund is 768 (750 x 102.4 percent).

We should point out here that the development of the national economy is more complex. The rate of actual increase in national income will far surpass the 2.4 percent rate of increase, therefore, when the minimum amounts of the accumulation fund and the consumption fund in the planned period of the future have been determined, the highest limits of the two would have actually been determined. When the total national income is fixed, determination of the minimum need for the accumulation fund would determine the highest limit of the consumption fund, and determination of the minimum need for the consumption fund would determine the highest limit of the accumulation fund. Between the upper and lower limits of the two, we can increase the accumulation and carry out expanded reproduction according to the needs in the development of the national economy, and we can also increase consumption to raise the level of consumption of the people. The advantage of arranging accumulation and consumption this way is that the level of consumption of the people will not be lowered and the minimum accumulation will not be affected.

This can be explained by the situation during the First 5-Year Plan. During the First 5-Year Plan, the annual average growth rate of the national income was 8.9 percent, the ratio of accumulation and consumption and the natural growth rate of the population was as described previously. According to the previously described conditions, we can determine the lowest and the highest limits of the accumulation fund and the consumption fund during the First 5-Year Plan and the lowest and highest percentages of the national income. (See Table 13)

It can be seen from Table 13 that the highest limit of the accumulation fund during the period of the plan was 321 (1,089 - 768). If this figure is surpassed, the minimum need (768) for the consumption fund by the entire population cannot be guaranteed, and the living standard of the people will be lowered. The highest limit of the consumption fund was 833 (1,089 - 256). If this figure is surpassed, the minimum need (256) for the accumulated fund by national economic development cannot be guarantted. The corresponding lowest percentages of the accumulation fund and the consumption fund are 23.5 percent and 70.5 percent and the highest percentages are 29.5 percent and 76.5 percent.

Table 13 also tells us that when the total national income and the lowest needs for accumulation and consumption are fixed, the change in the ratio of accumulation and consumption in the planned period in the future has a fixed limit. During the First 5-Year Plan, the allowable scale of change in the ratio of accumulation and consumption was 29.5 pereent - 23.5 percent = 6 percent (or 76.5 percent - 70.5 percent = 6 percent). This was the limiting scope for the change in the ratio of accumulation and consumption established by the total national income.

An important conclusion can be obtained from this: When a rational ratio between accumulation and consumption is determined, and when the national income grows steadily, the ratio between the two should never be adjusted by a large scale. Even if the development of the national economic situation requires making certain adjustments, the scope of adjustment of the two should be very small. During the First 5-Year Plan, it was generally at 6 percent.

Yet, over the past 30 years, we have completely neglected this objective requirement in most of the years in arranging the ratio between accumulation and consumption. The large variation in the ratio between accumulation and consumption was rarely seen in other nations. (See Table 14)

Table 14. The Scale of Change in the Rate of Accumulation in China

Period	Scale of Change (%)[10]
First 5-Year Plan	2.6
Second 5-Year Plan	33.4
1963-1965	9.6
Third 5-Year Plan	11.8
Fourth 5-Year Plan	2.5
1976-1978	5.5

It can be seen from Table 14 that except for the First 5-Year Plan period and certain years in the 1970's (even in this period, the problem of a high accumulation was still not solved), the scale of change in the ratio between accumulation and consumption was generally about 10 percent, and in individual periods, it reached a high of 33.4 percent. Such a large-scale change was mainly caused by the pursuit of high accumulation. As a result, the ratio between accumulation and consumption was seriously imbalanced, the life of the people could not be improved and elevated as it should have.

Of course, we must not overlook this fact: the faster the rate of increase of the national income in the planned period when the natural growth rate of the population does not change, the greater the scale of variation of accumulation and consumption. If the future natural growth rate of our nation's population increases at a rate of 1 percent, then when the national income grows by 7 percent (since founding of the nation, the average annual growth rate of our nation's national income was 7.3 percent), the variable

10. The scale of change in the ration between accumulation and consumption equals the highest accumulation rate (or the highest consumption rate) minus the lowest accumulation rate (or the lowest consumption rate) of a certain period. For example, from 1976 to 1978, the highest accumulation rate was 36.6 percent, the lowest accumulation rate was 31.1 percent, the scale of change in the ratio between accumulation and consumption was: 36.6 percent - 31.1 perdent = 5.5 percent, or the highest consumption rate minus the lowest consumption rate: 68.9 percent - 63.4 percent = 5.5 percent. percent.

scale of the ratio between accumulation and consumption is 5.6 percent (the method of calculation is the same as above). When the growth of the national income is 10 percent, the variable scale of the ratio between the two is 8.2 percent. But, our nation's historical experience shows that it is difficult for the national income to grow at a rate of 10 percent. Therefore, the variable scale of the ratio between accumulation and consumption is limited.

We should also point out that if the natural growth rate of the population changes during the planned period, it will also affect the variable scale of the ratio between accmuulation and consumption. This is because the minimum needs for the accumulation fund and the consumption fund are brought about by the natural changes in the total population. Yet, because population movement and change are long-term and slow, the above influence is also very small.

The above analysis is sufficient to show that the rate of growth of the national income and the natural growth rate of the population are two major factors that affect the variable scale of the ratio between accumulation and consumption. This is a question that should be especially noted when arranging the ratio between accumulation and consumption.

Summarizing the above, we see that the proportional relationship between population growth and investment, between population growth and accumulation, between population growth and consumption, are important proportional relationships for population growth and the national economy to adapt to each other. Correctly arranging and determining the proportional relationship among the three are major topics encountered in the development of our nation's national economy and construction for the four modernizations.

To realize the strategic task of controlling our nation's population growth, we believe, the following measures can be implemented:

First, population growth must be planned. We must include population growth in the national economic plan, change the past tendency of emphasizing only material production and neglecting population production in our nation so that population growth and economic development can be suited to each other. We must establish special population study agencies and offices to study, draw up and implement population plans and population policies.

Second, we must advocate in a big way that each couple give birth to only one child. We must continue to launch propaganda and educational work profoundly and persistently so that everyone understands that family planning is an important matter that relates to the future and the fate of the nation, and the progress of the four modernizations. Everyone must self-consciously carry out family planning.

Third, we must implement appropriate economic measures. Since the population problem is actually an economic problem, population control cannot be separated from economic means. The concrete method is to encourage the birth of one baby. Those having three babies or more are subjected to

multiple baby taxes. And population production must be linked to the economic benefits of the individual so that people will care about population control based on material benefits.

Fourth, we should gradually implement social security for old people. The problem of "raising sons for security in old age" is a major hindrance in controlling our nation's population growth at present. This problem is especially outstanding in the rural areas. Therefore, as the rural collective economy develops and under conditions allowed within our economic strength, a fixed amount of security payments should be given to old people without offspring or with few offspring to solve their worries about their livelihood in old age.

The CPC Central Committee has called upon all party members and members of the CYL to lead the way in implementing the one child per couple policy, and to strive to control our nation's population to within 1.2 billion by the end of this century, and clearly pointed out the long-term goal of controlling our nation's population.

The goal of population development of a nation is a major question related to the entire national economy. If our nation's population continues to develop according to an average birth rate of two babies per couple, then by the year 2000, the whole nation's total population will reach 1,217,000,000 and 1,539,000,000 by the year 2050. This development will further worsen the conflict between the population and the four modernizations, and the long-term goal of controlling our nation's population growth as proposed by the Central Committee cannot be realized.

For this, demographic experts have made forecasts of our nation's future population development based on many plans. Those plans which can be selected and implemented are the following:

1. If the rate of births by women of childbearing age rapidly decreases starting from this year, and drops to 1 by 1985 and reaches the highest peak value by the year 2004, the total population will be 1,054,000,000, and the total population will begin to decrease after the year 2005. The population in the year 2028 will drop to the present 960 million, and to 613 million by the year 2060 and down to 370 million by the year 2080. The index of support shows that as the percentage of the population of youths decreases to 0.39 by the year 2000, approaching the lowest point, then because of the annual rise in the percentage of the population of old people, the index of support will rise again to 0.46 by the year 2017 and by the year 2034 it will approach the present level of 0.9, then it will rise more quickly to 1.65 100 years later.

2. We should gradually increase the percentage of single children so that by 1985, over half of the nation's women of childbearing age will give birth to only one child, and by the end of this century, 90 percent of childbearing women will give birth to one child, then by the year 2000, the nation's total population will be 1.06 billion, and it will drop to 750 million by the year 2040, and to 400 million by the year 2080. The

index of support shows that between 1995 and the beginning of the 21st century, it will remain steady at 0.33 and will gradually rise afterward.

3. If the average rate of birth of women of childbearing age is 1.5 babies starting from 1979, then by the year 2000, the national population will reach 1,125,000,000 and by the year 2027 it will reach the highest peak of 1,172,000,000, and it will begin to decrease in the year 2028 and reach 777 million by the year 2080. The index of support shows that as the birth rate decreases, it will reach the lowest point (0.47) in 1996, then, as the percentage of the population of old people increase, the index of support will gradually increase, and will approach the current level in European and American countries by the year 2026. It will rise to 0.93 in the year 2036, equivalent to the current level in our nation, and reach 1.18 by the year 2080.

Among the three plans described above, why does the population continue to grow for 20 to more than 40 years when the average childbearing rate is 1.5 babies and 1 baby? This is to say, why does the total population still increase year after year even when the birth rate continues to drop? This is determined by the particular young age structure formed by the rapid growth of our nation's population over the past 30 years. Since the founding of the nation, the number of people of every generation of young people has surpassed the number of people of every older generation along with the rapid increase in population. The number of people entering marrying and childbearing age each year far surpasses the number of deaths. For example, at present, the number of people entering marrying and childbearing age in our nation each year averages about 20 million while the number of deaths is between 6 million and 7 million. Therefore, even if each couple gives birth to only one child, the number of people born will still surpass the number of deaths, and thus bring about an increase in the total population. This growth trend needs a long time before it can be stopped and thus gradually decrease. The growth inertia determined by the age structure of the population is very visibly manifested.

The three plans described above actually are the goals that can be selected for controlling the development of our nation's population.

Plan I and plan II can serve a visible function in easing the peak population growth and control the population growth, and they are expected to realize the long-term goal of controlling our nation's population growth. But we should see that there will be definite difficulties in requiring the whole nation's women of childbearing age to give birth to one baby within these few years, and using this kind of "emergency stop" to control childbearing will cause abnormalities in the population structure and bring about many social problems. We should also see that changing from many babies to two babies to only bearing one baby will lead to a series of profound changes in the family's concept of childbearing and kinship. It will bring about a series of yet to be solved problems of child care and old age support. At the same time, the people and masses must be given time to gradually understand such new changes and new problems and to accept them willingly. And time must be given to the actual working departments to learn and adopt.

Under plann III, the national population will grow at a rate of 0.7 percent by the end of this century, an average annual increase of 8 million people. Each year 16 million people will be born. After the year 2000, each year 8 million young couples will enter the marrying and childbearing age. This can guarantee the reproduction of the labor force and also slow down the rate of population growth. The total population can be controlled within 1.2 billion. The degree of aging of the population is much lower than the two pervious plans. The characteristic of this plan is that it affirms the necessity and the possibility of the advocacy of one child per couple, it also reflects the objective requirement of the reproduction of our nation's population. It allows some couples of childbearing age to give birth to two children and also allows people in scarcely populated regions of minority nationalities to give birth to three children.

In implementing this plan, the percentage of multiple babies will gradually disappear, the percentage of single babies will gradually increase, the change in the age structure is relatively stable, thus benefiting the reproduction of the population.

Implementation of this plan coincides with the course of ideological understanding by the people and also favors the implementation of the principle of combining guidance by the higher authorities and willingness by the masses in family planning.

Therefore, the implementation of the third plan seems to be the more ideal plan to solve our nation's population problem. We profoundly believe that as long as we do things according to the objective laws of population development, the population problems that exist in our nation at present will finally be solved properly.

Summarizing the above, we see that our nation's population growth and the development of the national economy are not suited to each other. This is not only manifested in an overly large population and an overly fast rate of growth, it is also manifested in the irrational population structure. Therefore, to concretely solve our nation's population problem so that population growth and economic development can be suited to each other, we must not only control the growth of the population according to plan, we must also study the various types of structures of the population, make appropriate adjustments to that they can gradually become rational in order to promote the development of the national economy.

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Chapter XVII

EMPLOYMENT STRUCTURE

By Hua Yingchang [5478 5593 2490]; original text pp 526-542; portions between slantlines in boldface in original text.

[Text] China's population is large, labor resources are abundant, but the economy is not developed, the conflict between the production of materials and the production of people has existed for a long time. Employment is a prominent and serious problem. In the 1905's, we solved the problem of unemployment left by old China on the basis of developing production and increasing labor productivity. Now we again face the problem of employment for the massive numbers of workers who have grown up. As the economic structure changes and as the employable population increases, the employment structure is also changing. The question we want to explore is to study the pattern of development and change in our nation's employment structure and to find an employment structure that suits our nation's situation and that is more rational, and to further expand ways for employment.

I. The Evolution of the Employment Structure

The distribution of workers in the entire society among industry, construction, transportation, commercial services, culture, education, science, health, public finance and banking, and the employment structure thus formed, are limited by a definite economic structure. It reflects the level of economic development of a nation. For 30 years, the evolution of our nation's employment structure is generally as follows:

1. The absolute number of agricultural workers increased and the relative number decreased. Our nation's agricultural workers have increased from 173.17 million in 1952 to 294.26 million in 1978, an increase of 70 percent. But the number of agricultural workers as a percentage of the workers of the whole society dropped from 84 percent in 1952 to 74 percent in 1978. In these 26 years, the percentage dropped 10 percent, an average drop of 0.4 percent a year. The rate of relative decrease, compared to the average annual rate of decrease of 0.5 percent of the world's nations, is basically similar. It is not considered fast. For example, the population employed in agriculture in the United States as a percentage of the total population dropped from 50 percent in 1870 to 3.1 percent in 1977. The average annual drop of

0.44 percent took 107 years. In the Soviet Union, the percentage dropped from 75 percent in 1913 to 23 percent in 1975, taking 62 years to achieve an average annual drop of 0.6 percent. In France, the percentage dropped from 29 percent in 1949 to 10 percent in 1977, taking 28 years to achieve an average annual drop of 0.67 percent. But, the situations in these nations all show that the condition for the agricultural labor force to shift into non-agricultural sectors was the large-scale rise in agricultural labor productivity. In the United States from 1910 to 1975, agricultural production increased 1.6 times, agricultural workers decreased by three-fourths, the output of each agricultural worker increased nearly 10 times. As Marx said: "The less time needed by society to produce wheat and livestock etc., the more time it gains to engage in other types of production, material or spiritual production."[1] The agricultural production value produced by each agricultural worker in our nation increased only 35 percent from 1952 to 1978. With a relatively low agricultural productivity, the rate of transfer of the agricultural labor force cannot be fast. Otherwise, if it surpasses the actual objective possibilities, a proportional imbalance in the national economy would be created. In the history of our nation, the severe lesson of a great increase in population and a great reduction in population occurred. In 1958, the workers of the system of ownership by the whole people drastically increased by 20.8 million, the large number of agricultural workers who constituted 81.2 percent of society's workers in 1957 dropped drastically to 58.2 percent, creating a shortage of agricultural workers. Agricultural production dropped, urban subsistence supplies were difficult to obtain, the state was forced to begin streamlining the work force in 1961, and mobilized nearly 20 million workers to return to agricultural production. Only then were the economic difficulties of the time turned around.

2. There has been a relatively large increase in industrial workers, whether in absolute numbers or relative numbers. In particular, the number of workers engaged in heavy industry increased by an even greater scale. Our nation's industrial workers (including industrial workers of the system of ownership of the whole people, industrial workers of the system of collective ownership in towns, workers of commune-operated industries in rural areas) increased from 12.4 million in 1952 to 50.08 million people in 1978, an increase of 3 times. The proportion of industrial workers as a percentage of workers of the whole society also increased from 6 percent in 1952 to 12.6 percent in 1978. During the same period, the number of workers engaged in heavy industry increased from 3.72 million to 31.83 million, an increase of 7.5 times. Workers engaged in light industry increased from 8.74 million to 18.25 million, an increase of 1.1 times. This caused a visible change in the employment structure within industry. The ratio of heavy industry workers to light industry workers changed from 30:70 in 1952 to 64:36 in 1978, basically an inverse change.

As industry develops, a gradual increase in industrial workers is necessary. It is also necessary for the number of workers in heavy industry to increase

[1]"Collected Works of Mary and Engels," Vol 46 (I), p 120.

even more. But we must guarantee that labor productivity continues to rise. The labor productivity of the industries of the system of ownership of the whole people increased an average of 4.6 percent a year from 1950 to 1978, and it dropped in 10 of the years. Labor productivity of some sectors of heavy industry, such as metallurgy and coal remained stagnant for more than 10 or 20 years, and there was a great lag behind foreign nations. The labor productivity of the coal industry of the United States, Britain and West Germany is 2 to 7 times higher than that of our nation. Labor productivity of the iron and steel industry of the United States and Japan is more than 20 times higher than that of our nation. Labor productivity of the light industry and textile industry of our nation lags behind foreign nations by a smaller scale. Labor productivity of cotton yarn in Japan, West Germany and France is about 20 percent higher than our nation. Their labor productivity for cotton cloth is 50 percent to 70 percent higher. The sectors of heavy industry took in large amounts of capital, materials and manpower and could not guarantee an increase in labor productivity. This was the fatal weakness in the employment structure of our nation's industrial sector.

3. The number of employed in the sectors of capital construction, transportation, post and telecommunications and urban public enterprises experienced different degrees of growth. Workers in the capital construction sectors of the system of ownership of the whole people increased from 1.04 million in 1952 to 5.83 million in 1978. Their number as a percentage of the total number of workers of the system of ownership of the whole people also increased from 6.6 percent to 8.9 percent. The workers in the transportation sector and post and telecommunications of the system of ownership of the whole people increased from 1.13 million in 1952 to 4.1 million in 1978. Their number as a percentage of the total number of workers of the system of ownership of the whole people dropped from 7.1 percent to 6.3 percent. The workers in urban public enterprises of the system of ownership of the whole people increased from 40,000 in 1952 to 780,000 in 1978. Their number as a percentage of the total number of workers of the system of ownership of the whole people also increased from 0.3 percent to 1.2 percent.

4. The number of people employed in the sectors of commercial services, science, culture, education and health, and finance experienced different degrees of increase, but the relative numbers experienced different degrees of decrease. Workers in commerce, food service and other service professions of the system of ownership of the whole people increased from 2.92 million in 1952 to 7.84 million in 1978, an increase of 1.7 times. But their number as a percentage of the total number of workers of the system of ownership by the whole people dropped from 18.5 percent to 11.9 percent. Workers in the sectors of science, culture and education, and health increased from 2.39 million in 1952 to 8.44 million in 1978, an increase of 2.5 times. But their number as a percentage of the total number of workers of the system by the whole people dropped from 15.1 percent to 12.9 percent. Workers in the financial sector of the system of ownership by the whole people increased from 340,000 in 1952 to 280,000 in 1978, an increase of only 12 percent. Their number as a percentage of the total number of workers of the system of ownership by the whole people dropped from 2.2 percent to 0.6 percent.

II. The Major Characteristics of the Employment Structure and The Causes of Their Formation

At present, our nation already has 400 million workers engaged in various types of productive labor. A change in the employment structure occurs when the number of people employed continues to increase and the scope of employment continues to expand. The following characteristics can be seen in the evolution of the employment structure of our nation:

First, the main body of workers mostly consists of agricultural workers, and the proportion of the number of nonagricultural employees is relatively low. In 1978, the national income generated by agricultural workers who constituted only 36 percent of the entire national income. The level of agricultural production and the level of consumption by farmers were both relatively low.

Second, a "heavy production structure" brought about a "heavy employment structure." Since 1952, over 70 percent of the increase in the number of industrial workers of the system of ownership by the whole people entered the sectors of heavy industry. The amount of subsistence goods that could possibly be provided by the development in agriculture and light industry could not meet the massive increase in the number of workers in heavy industry.

Third, commercial services were a short leg in the employment structure. The people engaged in commercial services correspondingly decreased. This not only was contrary to the pattern of absolute and relative increase in the number of people employed in the services in economically developed nations, it also did not suit our nation's actual need.

Continued development of this type of employment structure cannot further expand employment to change the extremely irrational situation of "not having anybody available to work and having people without any work to do" which has existed for a long time, it is also difficult to satisfy the ever-increasing needs of the material and cultural life of workers.

There are many reasons that formed the above characteristics of our nation's employment structure.

1. The population was not controlled according to plan. Engels once said: "According to the materialist viewpoint, the decisive factors in history, fundamentally speaking, are production and reproduction for subsistence. But, production itself includes two types. One is the production of materials of subsistence, i.e., food, clothing, houses and the tools need for this. The other is the production of mankind itself, i.e., the propagation of the human species."[2] For a long time, we have lost control of the production of people. The production of materials of subsistences cannot adapt to the needs of the

[2]"Collected Works of Marx and Engels," Vol 21, p 29-30.

massive increase in the population and the labor force. The nation's population increased from 540 million in 1949 to 970 million in 1979 (not including compatriots in Taiwan province, Hong Kong, Macau and overseas Chinese). The net increase in population over 30 years was 430 million, an average annual net increase of 14 million. The natural growth rate of the population averaged 20 percent a year, much higher than in old China. The percentage of workers in the total population increased from 36 percent in 1952 to 41.5 percent in 1978. Farm workers increased from 182 million in 1952 to 303 million in 1978, an increase of 120 million. The newly emerged labor force in new cities and towns increased from 800,000 annually at the beginning of Liberation to about 3 million. People are producers and also consumers. More people can increase production but at the same time they also increase consumption. People must be fed first but the land to produce food is limited. The conflict between the massive numbers of agricultural workers and the limited area of cultivated land has forced agricultural workers into industry and other nonagricultural sectors, but the scale of development of industry and other nonagricultural sectors cannot absorb so many workers. A situation where the increase in population and labor force does not match the increase in material production, leaving a large population of workers outside the production process, is obviously not appropriate. An employment structure that includes them in the production process and that also realizes better economic results is also difficult to form.

2. The economic structure is unsuitable to the needs of expanding employment. The rate of development of our nation's production is not considered slow. The total value of industrial and agricultural production from 1952 to 1978 grew an average of 8.2 percent a year. Agricultural production grew an average of 5 percent a year, light industry production grew an average of 9.1 percent a year, heavy industry production grew an average of 13.6 percent a year. But the retail sales of consumer products increased an annual average of only 6.1 percent from 1952 to 1978. In 1952, the retail sales of consumer products was equivalent to 31 percent of the total value of industrial and agricultural production. In 1978, it dropped to 22 percent. Among the consumer products, there was a greater increase in the products using industrial and mineral products as raw materials, but the products using agricultural products as raw materials increased very little, and even decreased. For example, the amount of food grains and edible vegetable oils averaged over the population decreased by varying degrees. When industrial and agricultural production increases and the percentage of individual consumer goods decreases correspondingly to a point where an increase in the average amount of individual consumption cannot be guaranteed, they show that the growth of the population and the production of productive materials are too fast, and the proportional relationship between the production of productive materials and the production of consumer materials in the national economic structure and the proportional relationship between accumulation and consumption are not coordinated. Such an economic structure can hardly guarantee the expansion of employment and elevation of the living standard.

3. Regulation of employment of the labor force could not be done according to the requirements of objective economic laws. Marx once said: "Social needs

are utility value on a social scale. To the portion of the total time of work of society being separately used in each realm of specialized production, they are decisive."[3] The distribution of society's labor force among all sectors is determined by whether the commodities produced by a specific amount of labor force used by that sector can satisfy social needs. Therefore, the satisfaction of social needs is determined by objective economic criteria in the employment structure. But, for a long time, under a planned economic system that is highly centralized and unified, plans for the labor force are also highly centralized and unified, and in the order of arrangement, production comes first and subsistence materials come second, heavy industry comes first and light industry and other professions follow. And with the labor system of "unified contracting and unified assignment," our nation's labor force could not adapt to objective social needs and be arranged in a versatile manner. The light industry, handicraft industry and service sectors that really needed workers could not obtain the necessary supplementary labor force while some heavy industry sectors with already relatively low labor productivity were massively increasing hiring.

4. The transition toward a single system of ownership by the whole people closed the employment opportunities of other economic elements. As the economic elements gradually shifted toward a single system of ownership by the whole people, employment opportunities became narrower, and basically the only way left was to let the state assume full responsibility for placing workers in units of the system of ownership by the whole people and "collective" enterprises with characteristics of belonging to the whole people. In having the state assume the task of placement, first of all, the state cannot handle the task, and second, even if it did it would be very difficult to meet the many needs of society. At present, the problem of our nation's employment structure, which is not suited to social needs, is directly related to the blind transition of many economic elements toward the single system of ownership by the whole people. In 1953, there were nearly 9 million individual workers in our nation's cities and towns, equivalent to one-half of the total number of workers at the time. After the cooperative movement in 1956, there were still more than 7.5 million people who were collective and individual workers in 1957. Most of these collective and individual workers were engaged in productive labor in the service industry, handicraft industry and light industry. Therefore, when the collective economy changed to "collective" enterprises with characteristics of belonging to the whole people, and after the individual worker was limited and even eliminated, they necessarily created a visible change in the employment structure. Take the collective and the individual industrial workers as an example. During the First 5-Year Plan, the number of people engaged in the handicraft industry and light industry constituted about 85 percent. This change in economic composition made the "heavy employment structure" more severe. Under the slogan of so-called changing cities of consumption into cities of production, the people employed in the service industries were transferred to industry and such materials production sectors. This is an important reason for the decrease in the people employed in the service industries.

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[3]"Collected Works of Marx and Engels," Vol 25, p 716.

III. The Future Trend in the Evolution of the Employment Structure

An overview of all economically developed nations shows that as production develops, as science and technology progress, the labor productivity rate and the people's living standards improve, the trend of the change in employment structure is that the number of people employed in the agricultural sector absolutely and relatively decreases and the proportion of the number of people employed in the nonagricultural sectors greatly increases. The people employed in the industrial, agricultural and materials production sectors begin to transfer into the service sectors (including commercial services, finance and insurance, culture, education, health, urban public utilities, post and telecommunications and such broad services). A relatively large portion of the newly emerged labor force becomes dependent upon the service sectors to absorb and employ them. In the materials production sectors, indirect production personnel (mainly economic management and scientific research personnel) correspondingly increase, and the rate of increase in intellectual workers becomes faster than that of manual laborers. In the long-term view, the change in our nation's employment structure will not deviate from the trend of change that has already occurred in other nations of the world. But, the rate of this change in our nation's employment structure and the scale will be determined by the growth of the population and the labor force, the development of the national economy, the change in the economic structure, the increase in labor productivity and the progress of the four modernizations.

In controlling the population growth of our nation according to plan, if the goal of lowering the natural population growth rate to 0.5 percent by 1985 and to zero by the year 2000 can be realized, then by the end of this century, our nation's population can be controlled at about 1.2 billion. This long-term strategic measure is an important prerequisite to ease the pressure on employment and to improve the employment structure. But in the next 20 years, our nation's population and labor force will still grow on the already large base figure of the population and labor force. Starting out from this characteristic to provide more employment and to develop the superiority of a large labor force, it is not possible to increase by a large scale the technical equipment that can be operated by each worker, and manual work cannot be eliminated from agriculture and other sectors. Therefore, the rate of transfer of the agricultural labor force toward nonagricultural sectors will not be too fast. The society's labor force cannot be transferred at a large scale toward the service sectors as in economically developed nations. Workers must still find employment in the realm of material production. The number of people employed by the service sectors will increase more and the relative growth rate may be faster.

1. The transfer of agricultural workers to nonagricultural sectors and the transfer of workers engaged in planting within the agricultural sector to forestry, livestock production, sideline production and fishery will occur simultaneously, but the rate of transfer of the agricultural population toward the cities will be lower than the rate of change of agricultural workers to nonagricultural workers.

In some economically developed nations, the large-scale transfer of the agricultural labor force to the nonagricultural sectors occurred on the basis of the large-scale improvement in technical equipment for agriculture and, therefore, the large-scale growth in agricultural labor productivity. In the coming period in our nation, the increase in agricultural production and labor productivity will not mainly depend on technology and equipment but on developing the enthusiasm of the workers. Technical progress manifested in labor is nothing more than conserving the labor force and changing the characteristics of man's labor. When the degree of technically equipping agriculture cannot be increased by a large scale, it is very difficult to massively conserve the agricultural labor force. To satisfy the needs of agricultural production, it is not possible for the agricultural labor force to transfer en masse to nonagricultural sectors. The employment structure consisting mainly of the agricultural labor force cannot fundamentally change. According to estimates by those concerned, in the next 10 years, the rural areas will have nearly 200 million new workers. Besides the 100 million people counted to replace those workers who have passed their working age and who have died and students who are new additions to rural schools, the net increase in the labor force will reach 90 million. Only a small number will go to the cities as hired workers or students. The majority will still remain in the rural communes and brigades, and will be absorbed by developing forestry, livestock production, sideline production, fishery and diversification and by developing commune and brigade enterprises. In this way, it is possible to avoid a massive transfer of the rural population to the cities, and still maintain the trend of the past 30 years when the rate of transfer of the agricultural population to a nonagricultural population was relatively lower than the rate of transfer of the agricultural labor force to a nonagricultural labor force. This will produce a favorable influence in reducing the pressure of the urban population so that the growth of our nation's urban population will match the growth of agricultural production.

2. The number of people employed in industry, construction, transportation, post and telecommunications and such sectors will maintain an absolute and relative growth in the next 10 to 20 years.

Our nation's foundations are weak, the material foundation is poor, the proportion of industrial workers among the workers of the whole society is still not large. Therefore, the industrial sector is still the major sector that will absorb many workers. In the employment structure of the sectors within industry, one of the important indicators of improvement is that the ratio between the number of people employed in the mining industry and raw and processed materials industry and the number of people employed in the processing industry will correspondingly drop. This means, the amount of raw and processed materials provided by each worker in the mining and raw and processed materials industry can satisfy more needs for production by workers in the processing industry. This requires the mining industry and the raw and processed materials industry to increase labor productivity at an even higher rate. The increase in production must rely on developing potential to increase labor productivity, not on increasing the number of people. Only by making the production of productive materials grow first under this condition

can we guarantee that the level of consumption of the worker can be elevated while expanding employment and gradually solve the problems brought about by the "heavy employment structure" at present. According to the principle that heavy industry must rely on developing potential and light industry must rely on joint ventures, the number of people employed in heavy industry as a proportion of the total number of people employed in industry may drop within a definite period. The added number of people employed in industry in the future will mainly be in light industry, the textile industry, the handicraft industry and sectors producing durable consumer products that are directly related to people's life.

The per capita average housing area in our nation's cities is only 3.6 M^2, far from meeting the actual need. The construction industry that has developed on the basis of increasing labor productivity can take and employ more workers. In some countries, the expansion of civilian housing construction is closely related to the increase in expenses for housing in the consumer expenditure structure. For example, in the consumer expenditure structure, expenditure for housing constitutes about 40 percent. Civilian housing in our nation's cities is basically built with investments by the state and by enterprises. If the proportion of the consumer expenditure structure for housing can be appropriately increased, housing construction can be hastened. Our nation has already begun to encourage individuals to purchase houses. If the measures are appropriate, and if there are corresponding policies governing rent, the construction industry can develop even faster and absorb and employ more people.

Transportation and post and telecommunications also need to develp. The rate and scale of development of railroads, highways and shipping are to a large degree determined by state investment. Now there is a severe shortage of municipal public transportation, short-distance transportation and moving and shipping. These can also take in job seekers.

3. The number of people employed in commercial services, cultural professions, education, health, finance and insurance and foreign trade and exports, etc. will also absolutely and relatively increase.

Difficulties in buying merchandise, in finding food, in making clothes and in obtaining housing are relatively common because there is a lack of business service networks and points and few service personnel. Increasing the population employed by the commercial service industry is an important aspect in adjusting the employment structure so that it can adapt to social needs. The key to whether these can take in and provide employment for more people lies in having appropriate policies and measures and developing networks and points.

Cultural activities will correspondingly develop along with the elevation in the material, cultural and living standards of the people. In education, the number of people engaged in education in the middle and elementary schools will decrease after planned parenthood achieves results and the birthrate of the population drops. But as the educational structure is reformed, higher educational institutions and vocational education and spare time education will experience greater development. The total number of people engaged in education

will increase. Personnel engaged in health care, finance and insurance will definitely increase. Tourism is a new sector. Its function in expanding employment opportunities cannot be neglected.

IV. Opinions on Readjusting the Employment Structure and Expanding Employment Opportunities

Our nation's employment has several shortcomings. We must readjust it step by step and according to plan so that the labor force can be adjusted in a versatile manner between the production service sectors and between this sector and that sector according to needs. This can further expand employment opportunities and also realize better economic results. This needs appropriate policies and measures.

1. The expansion of employment opportunities, fundamentally speaking, is determined by the rate of development of production. Under a definite rate of development of production, whether the employment structure can be rationally readjusted is determined to a large degree by the economic structure. Employment requires the economic structure to first provide additional jobs for expanding employment opportunities and second to provide increasing individual consumer products and various types of services as employment opportunities expand and as the purchasing power of society increases. Developing the labor-intensive light, textile and handicraft industries and commercial services can realize the goal of providing quick results and more employment opportunities with less investment. The fixed capital investment for each worker in heavy industry in our nation average 12,000 yuan. The fixed capital investment for each worker in light industry averages 6,200 yuan. The same capital investment, when used in light industry, can absorb a labor force onefold larger than in heavy industry. In agriculture, light, textile and handicraft industries and such consumer materials production sectors, the additional consumer products produced by the additional number of employees resulting from the continued increase in labor productivity not only can satisfy one's own needs, they can also satisfy the additional needs resulting from the expanded employment opportunities in other sectors. Although the service industry cannot provide consumer products, the additional wages resulting from expanded employment opportunities in the service industry constitute only a transfer of the purchasing power of the consumers, and the pressure on consumer products in society resulting from the increased purchasing power will not increase. Therefore, in investment, in the supply of raw and processed materials, in the establishment of networks and in the various economic policies, promoting the development of labor-intensive professions and commercial services will serve importantly to improve the economic structure, expand employment opportunities and develop the superiority of a surplus labor force.

2. To expand employment opportunities, we need to develop labor-intensive professions more and capital-(technology) intensive professions less. In a definite period in the future, a small number of advanced technologies, a

large number of intermediate technologies and manual labor will coexist. We must realize a situation favorable to promoting the development of technology and favorable to expanding employment opportunities. We need to implement appropriate policies to solve the relationship between the two. We can consider this method, i.e., require enterprises with advanced technology and a high labor productivity to hire fewer people, appropriately increase the wages for workers of these enterprises and let them first become rich relatively quickly. Enterprises which have a relatively low technical level and which mainly rely on manual labor can hire more people, expand employment opportunities and pay correspondingly lower wages. This method will, within a definite period, still provide low wages and more employment opportunities among a relatively large employed population. But as technology develops and progresses, new employment opportunities will be created. At the same time, when manual labor is replaced by mechanization, when intermediate technology is replaced by advanced technology, wages of the workers of these enterprises will increase as labor productivity increases. From the developmental viewpoint, this is no longer providing low wages. When using this method in arranging employment, the caliber of the labor force of units with advanced technology must be guaranteed in a key way. We must allow these enterprises to have the authority to hire and to fire employees. Hiring should best be done by open exams to select the best candidates. We must stop the practice of using personal authority to place people.

3. To adapt to the situation of coexistence of many kinds of economic elements, we need to implement the principle of employment that combines the practice of seeking employment by introduction from labor departments, voluntarily organizing employment and self-employment. In 1953, similar policies were implemented. At that time, many types of economic elements coexisted and there were more employment opportunities. Later, as the collective ownership system changed to the system of ownership by the whole people, and after individual economies were limited and eliminated, the state took charge of arranging employment, and only units of the system of ownership by the whole people and "collective" units with characteristics of the whole people remained. Channels for employment became narrower and the scope of the personnel to be assigned employment by the state became larger. This is a very big shortcoming. When many types of economic elements exist, there will necessarily be many types of employment channels and methods. All employment opportunities can be opened up only by implementing the principle of combining introduction of employment opportunities by the labor department, voluntarily organizing employment and self-employment.

Since 1979, besides the units of the system of ownership by the whole people and the units of collective ownership which arranged for employment, at many places, jobseekers voluntarily organized themselves and sought private capital to establish enterprises of the collective ownership system that enjoyed independent accounting and that shouldered their own profit and loss. These are generally called "collectives run by the local people." This type of collective economy, to a certain degree, is even more favorable to combining workers and productive materials, to developing the economy, to satisfying needs, to solving employment problems. It is an important method to solve the employment problem of jobseekers and it needs to be promoted in a big way.

At the beginning of the 1950's, individual workers in the nation's cities reached 9 million people once, approaching one-half of the total number of workers at the time. After socialist reform of the handicraft industry, there were still nearly 2 million people but during the 10 years of upheaval, they were almost completely eliminated. In view of the level of development of our nation's productivity, individual economy is still a supplement to publicly owned economy and it requires a definite degree of revival and development. In fact, some professions such as shoe repair and sewing did not achieve a higher labor productivity because of the changes in the division of labor and cooperation after they were organized. Why must they be organized into collectives?

Encouraging jobseekers to seek ways of self-employment cannot be separated from the support and assistance from enterprises of the system of ownership by the whole people. Enterprises of the system of ownership by the whole people hold most of the productive materials, and there are surplus materials, idle equipment and factory facilities that can be utilized. Fairly large numbers of unemployed youths are dependents of workers of the enterprises of the system of ownership by the whole people, therefore, enterprises of the system of ownership by the whole people should think of ways to support the economy of the system of collective ownership and help unemployed youths find employment. As long as the collective economy insists on independent accounting and shouldering its own profit and loss, and clearly draws the line between itself and the enterprises of the system of ownership by the whole people economically, and broadens ways for production services according to market needs, the problem of joining with the enterprises of the system of ownership by the whole people in "eating from the big pot" will not occur. Some collective units run by the whole people at times joined with enterprises under ownership of the whole people in "eating from the big pot." With efforts, this can be solved.

Encouraging and helping jobseekers to voluntarily organize employment opportunities and to seek self-employment will promote the development of many types of economic elements. The production services of production service units of all types of ownership systems must be tested by the market, and competition will serve as a limiting force forcing each production unit to develop its own business according to the requirements of economic laws.

Although rural workers are different from the urban unemployed who face employment problems, they still face the problem of opening up ways for production and solving the problem of finding outlets for the surplus labor force. To solve these problems, we must recognize the system of collective ownership in agriculture, respect the autonomy of production teams, implement strict responsibility systems, such as linking production and remuneration, and fully mobilizing the enthusiasm of agricultural workers. Also, we must use the various methods of joint operation, cooperative operation, developing forestry, livestock production, sideline production, fishery, commune and brigade industries, commune and brigade commerce, etc. to solve the problem of finding outlets for the surplus labor force in the rural areas.

4. When expanding employment opportunities, we must correspondingly reform the labor system. The reform of the labor system must also take into consideration the benefits of the state, the enterprises (collective) and the individual. Under socialist conditions, exploitation has been eliminated. People engage in labor on the basis of receiving a uniform and fundamental benefit. The labor system is fundamentally different from the labor system of hiring under capitalism. This is the manifestation of the superiority of the socialist system. But, if we only talk about the uniformity of basic benefits and neglect the benefits of the collective and individual benefits beyond the level of development of productivity and the degree of ideological consciousness of the people, then this superiority may become passive. The labor system of "uniformly contracting work and uniform distribution" and "taking in but not giving out" currently being practiced are precisely the results of the development of this type of passivity.

The problems of the labor system currently practiced are mainly the results of replacing employment systems with their own characteristics by the single system of fixed employment. Under the influence of leftist mistakes, the fixed employment system was regarded as socialist. The contract worker system and the temporary worker system were regarded as capitalism and were criticized. This forces the various professions of the system of ownership by the whole people and the collective enterprises with characteristics of ownership by the whole people to finally change to the fixed employment system. But the fixed employment system cannot adapt to the production characteristics and requirements of all the professions. For example, before a worker reaches retirement age, his physical strength weakens, and if all of his working life is spent at one work post, in many jobs requiring stronger labor intensity, there will be a conflict when the physical strength of the worker is unsuitable for the job. This problem is easier to solve by implementing the contract worker system. Work is done under contract decided between the enterprise and the worker. After the contract expires, the worker, after being retrained, can find employment that is more suited to his own age and physical condition. There is another situation. Many people will be unwilling to take jobs with harsher working conditions or jobs in remote areas if they are required to work at those jobs permanently there. If a contract worker system is implemented, if the duration of the work is determined beforehand, and if the people will be willing to work at those jobs or find employment in those regions. It can be seen from this that appropriately expanding the system of contract workers (temporary workers) and implementing the system that combines permanent workers and contract workers (temporary workers) according to the different production characteristics and requirements are important aspects of reforming the labor system. At the same time, the fixed employment system currently practiced must be improved, for example, allowing workers to resign under definite conditions (when the skills of the person do not coincide with the job), allowing enterprises to fire workers who have seriously violated work discipline and who have not reformed after many warnings.

Reforming the hiring system is also an aspect of reforming the labor system. Now, many localities have implemented the method of volunteering and hiring the best. The results are very good. In the future, the scope of uniform

job assignment and arrangement by the state must not be enlarged further. To enable the graduates trained in higher professional schools and middle vocational schools to better adapt to social needs, we can also consider the method of allowing the hiring units to sign contracts with related schools and allowing schools to send their graduates according to plan.

The reform of the labor system also includes the reform of the system of working hours. The readjustments in the organization of work implemented in the textile industry, the increase in the number of shifts, the change from the system of 7 days of work and 1 day of rest to the system of "four shifts and three rotations" or working 8 days and resting 2 days have served actively in increasing the rate of utilization of equipment, increasing production, increasing labor productivity, and in expanding employment opportunities. We can also think of more versatile systems of working hours for some jobs, such as the system of half-day work, so that unemployed youths can have a definite income from work and also have time to attend various types of half-day schools and to continue their training and advancement.

Collective economies run by the local people must implement work systems suitable to their own characteristics and needs. Personnel should be allowed to move in and out, enterprises should be able to fire and retire workers and individuals should be allowed to resign. Individual benefits should be linked more directly to the ups and downs of the enterprises, workers should be allowed to receive more when profits increase, the enthusiasm of the workers should be better adjusted, and stability should be provided to unemployed youths to work there.

When rural commune and brigade enterprises absorb the rural labor force, it is not appropriate to implement a fixed employment system. Experience of some localities showed that the contract worker system allowing workers to engage in either nonagricultural work or in farming is a better way. Contract workers allowed to engage in either nonagricultural work or in farming are still members of the agricultural family but they do not consume commercial food grains. They are rotated at fixed intervals or are returned to their brigades in rotation to engage in farming. The wages are distributed according to work, and the more work done, the more one receives, and a part of the income is given to the production team as work points or as public funds and public welfare funds. This method is favorable to adjusting the overly large difference in the income of commune members engaged in nonagricultural work and commune members engaged in farming. This can transfer the surplus rural labor force to industry, commerce and forestry, livestock production and fishery without increasing the population consuming commercial food grains, expand ways for production and also provide jobs for the rural labor force.

5. Employment service companies may become the organizations to carry out social regulation to the labor force in our nation and serve to take in and displace the labor force. To guarantee the necessary labor force for enterprises and business units to carry out production and business activities normally, the society must maintain an appropriate number of reserve workers. This is the unemployed population in the capitalist system. Unemployment

is not the necessary product of the method of socialist production. At present, the large number of unemployed is the result of the imbalance between the production of materials and the population. It is because some links in national economic development do not meet the requirements of economic laws. As the population growth is controlled, as the national economy develops according to plan and proportionally, as many types of economic elements coexist, as the economic system, economic structure and the corresponding employment structure and labor system are gradually readjusted and reformed, it is possible to realize full employment. Under this situation, society still must maintain an appropriate number of workers to regulate the supply and demand for workers by each enterprise and business unit. Employment service companies can organize this labor force which society must maintain. When enterprises and business units need to hire workers, the employment service companies can provide them. Surplus personnel of enterprises and business units can be introduced to new employment opportunities by the employment service companies or organized to engage in production and service work.

Employment service companies should engage in relatively more labor-intensive production and service activities, meet social needs in a more versatile way so that the labor force to be absorbed has a greater flexibility. At the same time, they should shoulder the task of introducing employment opportunities and conduct job training. On the basis of investigating the surplus and shortage of personnel of each profession and each job, they should train a labor force with a higher caliber according to plan and send it to the enterprises, and they can also take in the surplus labor force of the enterprises and provide training for other professions, reintroduce the workers to job opportunities, and they can also organize and introduce temporary workers to satisfy the need for temporary workers by the enterprises and business units.

In our nation, it is very necessary to establish a social labor insurance system. At present, the enterprises of the system of ownership by the whole people have implemented a labor insurance system, but collectives run by local people and individual workers do not have such guarantees. This has affected the unemployed in selecting collective and individual channels of employment. An appropriate social labor insurance system has to be established for collective workers and individual workers and personnel organized by the employment service companies. The labor insurance fund need not entirely rely on the state as does that of units of the system of ownership by the whole people. The fund can be collected from the state, from the collective and from the individual together and be uniformly managed by special agencies in the society.

6. The educational structure should be readjusted, vocational education should be developed, the caliber of the teams of reserve workers should be elevated to create conditions for employment. Most of our nation's unemployed youths are graduates of ordinary junior high and high schools. They have not received any specialized vocational and technical training. Some ordinary middle schools should be changed to vocational schools, and at the same time, opportunities for learning should be opened up. The strength of all sectors

should be developed to provide vocational and technical education. Besides the state, factories and mining enterprises, enterprises of the system of collective ownership, and even individuals can provide such education. Employment service companies must also hold various types of vocational and technical training classes. The method of establishing schools can be versatile and varied. There can be full-day schools, and half work and half study schools. The length of study can be long or short according to the requirements of the different professions. The vocational schools and the various types of vocational and technical training classes developed in this way including middle vocational schools, technical schools, correspondence schools, television schools will gradually develop and form a system of technical education for workers and this will effectively elevate the level of job skills of our nation's workers so that the superiority of an abundance of workers in our nation can be fully developed.

7. The expansion of employment opportunities and the coordination of the distribution of the labor force among the sectors all require plans to guide the work. The labor plans currently in force in our nation only include plans for the number of workers in units of the system of ownership by the whole people. They do not serve the function of uniformly guiding employment for workers and rational distribution of the labor force among the sectors. Therefore, it is necessary to include plans for labor resources and plans for the distribution of the labor force as the main aspects of labor plans and to include them in the whole national economic plan for comprehensive balancing.

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Chapter XIX

THE RATIO BETWEEN ACCUMULATION AND CONSUMPTION

By Wang Haibo [3076 3189 3134]; original text pp 562-600; portions between slantlines in boldface in original text.

[Text] The proportional relationship between accumulation and consumption is important in socialist reproduction and a vital component of the socialist economic structure. In the first place, tied directly to the objectives of socialist production, this proportion affects the problem of upgrading the material and cultural lives of the people now and further improvement of their material and cultural lives in the future by expanded reproduction. Secondly, it is a comprehensive proportional relationship as the changes in the major proportional relationships of the national economy (such as the relationship between agriculture, light industry and heavy industry) are reflected in the proportional relationship between accumulation and consumption, while the changes in the latter will ultimately breed changes in the former. In the former instance, the delineation of the proportional relationship between accumulation and consumption marks the beginning of socialist reproduction. In the latter instance, it is a key to define the major proportional relationships of the national economy. The history of economic construction in all the socialist countries demonstrate that the continuation of socialist production, the betterment of the lives of the people and the reinforcement of political stability and unity and the dictatorship of the proletariat depends on flawless stipulation of the proportional relationship between accumulation and consumption. So research on the socialist national economic structure must include a serious study of the proportional relationship between accumulation and consumption, an important issue with far-reaching economic, political and theoretical ramifications. As we are implementing the program of readjustment, restructuring, reorganizing and improving sponsored by the CPC Central Committee, a discussion of this problem is even more realistically significant.

Like the other proportional relationships of the national economy, that between accumulation and consumption involves both qualitative and quantitative stipulations. Our study has to cover the former, though the focus falls on the latter. The changing proportional relationship between accumulation and consumption in China covers a history of 30 years. Although we have to touch upon its history, our primary concern will be the current situation and the trend of development hereafter.

I. Fundamental Changes in the Relationship between Accumulation and Consumption.

The Marxist political economy states that a given system of ownership of the means of production is the sum total of a given system of production relations (including direct production, exchange, distribution and consumption); a given system of relations between accumulation and consumption is the core of the distribution relations. Consequently, the relationship between accumulation and consumption underwent a fundamental change after the founding of New China as the ownership of the means of production had taken on a historical transformation.

First, according to Marxist definition, capital accumulation is the capitalization of surplus value. "Capitalist always take possession of the inanimate labor of others without paying an equivalent value and use it to acquire even more animate labor." [1] Capital accumulation, therefore, is a conflict of the basic interests of the capitalists and the proletariat. This is true of imperialist capitalism, bureaucratic capitalism and the national capitalism in old China. But it is not precise enough to describe imperailist capitalism and bureaucratic capitalism because their income and capital are derived not only from exploiting the surplus value created by the proletariat but also from exploiting the income from work earned by the peasants and the petty bourgeoisie, and even the profit earned by the national capitalists (this is still the surplus labor of the proletariat). The increase of imperialist and bureaucratic capital reflects not only a conflict of the basic interests between them and the proletariat, but also a conflict of interests between them, on the one hand, and the peasants and the petty bourgeoisie, on the other, as well as a certain degree of conflict of interests between them and the national capitalists.

Under the socialist system, the consumption fund is used to satisfy the immediate needs of the material and cultural lives of the workers while the accumulation fund is a resource for expanding reproduction which serves as a material base for upgrading the living standard of the workers. So the two, in essence are, identical. Of course there are contradictions between the two, but they are contradictions between the immediate and the long-term interests of the workers, contradictions arising out of identical basic interests rather than antagonistic contradictions. It differs completely from the antagonistic contradiction between accumulation and consumption which existed in old China. This represents the qualitative changes in the relationship between accumulation and consumption under the socialist system.

Second, a marked characteristic of the income distribution in the economy of old China was that the rate of accumulation was low and that the increase of the total amount of accumulation and consumption was unstable, and registered declines in quite a number of years.

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1. "Completed Works of Marx and Engels," Vol 23 p 640.

The following table based on Comrade Wu Baosan's estimate [2] of the national income distribution in old China between 1931 and 1936 illustrates the changes in accumulation and consumption during that particular period.

Table 1 Changes in Accumulation and Consumption in Old China 1931-1936

	Changes in Available National Income (based on 100 for the preceding year)	Changes in Consumption (based on 100 for the preceding year)	Ratios of Consumption and Investment in the Available National Income (%)	
			Consumption	Investment
1931	100.0	100.0	104.1	-4.1
1932	101.7	95.2	97.5	2.5
1933	84.9	88.8	102.0	-2.0
1934	91.8	98.2	109.0	-9.1
1935	115.8	108.1	101.8	-1.8
1936	126.4	116.6	93.6	6.0

The above table shows that positive investment occurred in only 2 out of the six years, 1931-1936, and the proportion of investment in the available national income peaked to 6 percent in one year and went down to 2.5 percent in the other. The rate of accumulation was very low and unstable. The investment in 4 of the 6 years was negative, the highest at -9.1 percent and the lowest at -1.8 percent. Moreover, in those 2 years of positive investment, foreign capital accounted for 863 million yuan in 1932 and for 1,033,000,000 yuan in 1936. If these foreign investments were excluded, the investment in 1932 was -280 million yuan while that of 1936 was only 693 million yuan. [3] This shows vividly the semicolonial nature of the economy of old China.

The above table also shows that the total amount of consumption dropped during 3 of the 6 years. Although it increased in 2 years, the increase was extremely unstable.

These facts of the distribution of income underscore the decadence of the imperialist, feudalist and bureaucratic capitalist economy.

2. Wu Baosan, ed. "China's National Income" (1933) Vol 1, Zhonghua Book Co 1947 edition, p 20. Although the data are estimates, they rest mainly on careful investigations of the economy of old China in 1933. They are systematic and reliable. Moreover, the author who used the statistical method of the Western capitalist countries claims that the workers of the material production sectors created the national income and so did the workers of the nonproductive sectors. Consequently, the national income is somewhat unreal. But on the whole, the reliability of the data remains intact. For instance, in 1933, the net output value produced by such material production sectors as agriculture, mining and metallurgy, manufacture, construction, transportation and commerce accounted for 89.6 percent of the total national income while that provided by the nonproductive sectors, such as banking and public administration, was only 10.4 percent (p 12 of the book). So we have to use the data to explain the problems involved here.

3. Wu Baosan, ed. "China's National Income" (1933), Vol 1, Zhonghua Book Company, p 20.

There are also quantitative changes in accumulation and consumption under the socialist system; higher accumulation rate; under normal circumstances, [4] the possibility of sustained increase of the accumulation and consumption funds; and the ever-expanding scope of both. These may be explained as follows:

1. Comparing the First 5-Year Plan period, when the rate of accumulation (24.2 percent) was moderate, with 1936, the accumulation rate of the former is 18.2 percent higher than that of the latter.
2. The amount of consumption during most of the years between 1952 and 1979 had increased even though it registered a drop in 2 years, 1959 and 1968. This was due to the "leftist" errors in the economic policy and the disruption by the counterrevolutionary clique of Lin Biao and the gang of four. The amount of accumulation had increased in most of the years during this period except for drops being registered in the following 8 years, i.e., 1955, 1960, 1961, 1962, 1967, 1968, 1972 and 1976. Although the drop in 1955 was brought on by oversight in national economic planning, [5] that was unavoidable. The causes responsible for the drop in the amount of accumulation the other 7 years are the same as those which led to a drop in the amount of consumption as stated above. It must be noted that even though the development of China's economy had suffered two severe setbacks and drops in the amount of accumulation as had happened in old China. Under normal conditions, the socialist consumption and accumulation funds, on the one hand, and the national income, on the other, could have grown steadily and continually. During the entire period mentioned above, the national income increased in most of those years except for drops in the following years: 1960, 1961, 1962, 1967, 1968 and 1976. This was due to the same causes which led to a drop in the consumption and accumulation funds.
3. Between 1952 and 1979, the consumption fund increased 3.6 times and the accumulation fund increased 7.6 times. The average annual increase of the former is 4.9 percent and that of the latter is 7.8 percent.
4. If we compare the average annual consumption and accumulation of funds of the different planning periods, we can see very clearly that the scope of consumption and accumulation tends to expand more and more. As has been said above, the socialist national income can increase year by year and the rate of accumulation will change moderately under normal conditions. Viewed in the light of the actual conditions in China, although recurrent setbacks in its economic development had cut back the consumption and accumulation funds in a number of years, both had increased over the planning periods as a whole. The average annual consumption and accumulation funds of each planning period had grown steadily except during the readjustment in 1963-1965 when the average annual accumulation fund fell back. All these changes differ completely from the drop in national income and consumption fund as well as the negative accumulation which persisted for many years in old China.

Third, the capitalist law of accumulation always ends in two extremes, the accumulation of capital by the capitalists, on the one hand, and increasing poverty of the proletariat, on the other. Marx offered a profound analysis of this issue. He said: "The greater the operational capital of the social

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4. For instance, if there were no armed agression by the imperialists, no disruption by erroneous policies and no serious natural disasters.

5. Zhou Enlai: "A Report on the Recommendations Concerning the Second 5-Year Plan for the Development of the National Economy," "Collected Documents of the Eighth CPC National Congress" The People's Press, 1980 Edition, p 192.

wealth becomes, the greater would be its growth and capability which in turn leads to a bigger and bigger absolute number of proletarians, a greater productive force and a greater industrial reserve force. The factors which propel the growth of capital will increase the amount of available labor force. Consequently, the amount of wealth and a comparable amount of industrial reserve force will grow simultaneously. Compared to the currently employed labor force, the greater the reserve, the greater would be the size of the surplus population as their poverty and load of work are inversely proportioned (author's note: the term "direct proportion" is used in the French text which Marx had personally edited). Eventually, the government will find more and more poor people seeking help as the number of poor proletarians and the industrial reserve force get bigger and bigger. /This is the absolute and general law of the capitalist accumulation/." [6] The situation under the socialist system is entirely different. The law of socialist accumulation leads, on the one hand, to the growth of publically owned social wealth and, on the other, to the upgrading of the material and cultural lives of the workers. After the founding of the PRC, the increase of the accumulation and consumption funds has led to rapid growth of socialist production construction and publically owned wealth, and greater improvement of the lives of the people than in the early years of the Liberation.

China had initiated large-scale capital construction projects after the founding of the PRC. The total capital construction investment reached 1.134 billion yuan in 1950 and 50 billion yuan in 1979. The accumulated total between 1950 and 1979 was 651.729 billion yuan. Such large-scale investment in capital construction far outstripped what had been done in old China.

The huge amount of investment in capital construction has built a powerful material base for the development of socialist production. The newly acquired fixed assets which were worth 3.114 billion yuan in 1952 increased to 41.8 billion yuan in 1979, and the accumulated total between 1952 and 1979 was 451.331 billion yuan. Additionally, China had accumulated a total of 300 billion yuan as circulating capital during the same period. That was far ahead of old China because its accumulation of nearly 100 years prior to the Liberation amounted to no more than 12.8 billion yuan in industrial fixed assets while China's industrial fixed assets in 1979 were valued at nearly 350 billion yuan, 27 times those of old China.

The development of socialist production and construction has led to a higher standard of living for the Chinese people.

1. The consumption fund for both urban and rural population has increased. The average per capita annual consumption of the urban and rural population of China in 1952 was 76 yuan, which increased to 174 yuan in 1978 and again up to 197 yuan in 1979. After adjusting for rising prices, the 1979 average is 90 percent over that of 1952.
2. The average wage of the staff and workers under the ownership of the whole people has also increased. The per capita monetary wage of the staff and workers which was 446 yuan in 1952 rose to 644 yuan in 1978, an increase of 44.4 percent. After adjusting to the cost of living index, the real wage of

6. "Collected Works of Marx and Engels," Vol 23 p 707.

the staff and workers registered an average increase of 23.1 percent. The average monetary wage of the staff and workers was increased in 1979 to 705 yuan, 9.5 percent higher than that of the preceding year. After adjusting to the cost of living index, the real average wage of the staff and workers had increased by 7.6 percent over that of the preceding year. Although the average wage of the staff and workers did not increase very much during the last 30 years, the fact that more people were employed has helped increase the total family income of the staff and workers. According to sampling studies of urban centers, the number of dependents (including the worker himself) a worker supports had dropped from 3.4 persons in 1956 to 2.1 in 1978.

The increase in labor protection benefits and various subsidies have contributed to upgrade the living standard of the staff and workers. In 1952, the labor protection benefit funds of all the units owned by the whole people was 952 million yuan, the equivalent of 14.1 percent of their total wage. It went up again in 1978 to 6.691 billion yuan, an equivalent of 15.7 percent of their total wage. According to the estimates of the departments concerned, in 1978 the amount of labor protection benefits and various subsidies of the staff and workers of the enterprises owned by the whole people was 526.7 yuan per capita, an equivalent of 81.71 percent of the average wage for that year.

The average per capita income which the rural commune members draw from the collective economy also increased. It was 40.5 yuan in 1957, but went up to 73.9 yuan in 1978, and up again in 1979 to 83.4 yuan which is more than double that of 1957.

3. The average per capita consumption of most consumer goods other than grain and edible vegetable oil has also increased. The details are shown as follows. (Table 2)

Table 2 Average Per Capita Consumption of Major Consumer Goods

Year	1952	1978	Increase in 1978 over that of 1952(%)
Pork (jin/person)	11.8	15.4	30.5
Cotton cloth (chi/person)	16.4	23.2	41.4
sugar (jin/person)	1.8	6.6	266.6
Knit cotton goods (cotton cloth, chi/person)	2.2	6.2	181.8
Bicycles (bicycle/10,000 people)	5.8	85.1	1,367.2
Sewing machines (machine/ 10,000 people)	1.8	46.2	2,466.6
Watches (watch/10,000 people)	6.8	145.9	2,045.6
Radios (radio/10,000 people)	0.3	145.9	48,533.3

According to Table 2, the per capita consumption of pork and cotton cloth has not increased much. The consumption of edible sugar and knit cotton wear has increased considerably, while that of bicycles, sewing machines, watches and

radios has increased even more. The statistics of the departments concerned indicate that the pork consumed by the inhabitants of cities and towns in 1979 was 38 jin per capita, nearly 7 jin over that of the preceding year. [7] The average amount of high-grade durable consumer goods owned by both urban and rural inhabitants register a marked increase by the end of June, 1980. The number of bicycle owners has changed from 12 people per bicycle to 11 people per bicycle, that of sewing machines from 25 people per machine down to 23 people per machine, that of watches from 10 people per watch to 9 people per watch, that of radios from 11 people per radio to 9 people per radio, and that of TV sets from 280 people per TV set to 216 people per TV set. [8] This shows that the standard of living of the Chinese people has improved considerable since the Third Plenum of the 11TH CPC Central Committee.

4. The scientific and cultural level has been raised. The natural sciences and technology personnel of all the units owned by the whole people accounted for a total of 425,000 people in 1952, and the number went up to 4,345,100 in 1978 and again up to 4,705,000 in 1979. The number in 1979 is 10.1 times more than that of 1952. The number of natural sciences and technological personnel per 10,000 people rose from 7.4 in 1952 up to 45.4 in 1978 and up again in 1979 to 47.4. The 1979 number is 5.4 times that of 1952.

The student enrollment in colleges and universities rose from 117,000 in 1949 to 856,000 in 1978 and up again to 1.02 million in 1979. The 1979 total is 7.7 times that of 1952. The student enrollment in general middle schools rose from 1,039,000 in 1949 to 65,483,000 in 1978, a 61-fold increase. The 1979 reorganization of middle school education has cut back student enrollment in the general middle schools to 59,050,000 or 6,433,000 fewer students than those of the preceding year.

Student enrollment in vocational middle schools rose from 229,000 in 1949 to 889,000 in 1978 and up again in 1979 to 1,199,000. The 1979 total is 4.2 times that of 1949. Student enrollment in elementary schools rose from 24.39 million in 1949 to 146.24 million in 1978 and up again in 1979 to 146.63 million. The 1979 total is 5 times that of 1949. The number of college and university students per 10,000 people rose from 2.2 in 1949 to 8.9 in 1978 and up again in 1979 to 10.5. The number of general middle school students per 10,000 people rose from 19.2 in 1949 to 683.5 in 1978. The number of students in vocational middle schools per 10,000 people rose from 4.2 in 1949 to 9.3 in 1978 and up again in 1979 to 12.2. The number elementary school pupils per 10,000 people rose from 450.2 in 1949 to 1,526.3 in 1978.

5. Medical and health services have improved. The number of professional health personnel in China rose 555,000 in 1950 to 2,642,000 in 1979. The 1979 total is 3.7 times that of 1950. China had 1,575,000barefoot doctors for villages in 1979. The number of hospital beds for the whole country rose from 100,000 in 1950 to 1,932,000 in 1979. The 1979 total is 18.3 times that of 1950. The number of professional health personnel per 1,000 people rose from 1 in 1950 to 2.7 in 1979. The number of hospital beds per 1,000 people rose from 0.2 in 1950 to 2 in 1979.

6. The upgraded level of the material and cultural lives of the people and better health services have cut down the morality rate and prolonged the average life

7. RENMIN RIBAO 26 July 1980.

8. RENMIN RIBAO 22 July 1980.

expectancy. The mortality rate in China dropped from 18 percent in 1950 down to 6.2 percent in 1979. According to the findings of the departments concerned, the current life expectancy in China is 68 years, 11 years longer than the 57-year average of 1950's and nearly double the average of 35 years prior to the war against Japan.

The facts mentioned above show that the material and cultural lives of the Chinese people are much better now than they were in the early years of the Liberation. The people's lives have been further upgraded by a series of proper policies to readjust the relationship between accumulation and consumption adopted by the CPC Central Committee since the Third Plenum of the 11TH CPC Central Committee.

All these changes are manifestations of the superiority of the socialist economic system. The fact that the superiority of the socialist system in China has not been brought into full play is due to a number of factors, especially the excessive rate of accumulation over a long period of time and the failure to bring into play the superiority of socialism in raising the level of consumption

II. Serious Distortions of the Proportional Relationship between Accumulation and Consumption

The above is an account of the role played by the superiority of the socialist system in terms of the differences between the old and new China but does not include a full explanation of the basic changes in the relationship between accumulation and consumption since the founding of new China. This does not mean that the relationship between accumulation and consumption has become flawless. In reality, it has become seriously distorted for a long time.

However, we have to clarify two theoretical positions before we can really appreciate the seriousness of the distortions. In the first place, we must adhere to the objective of socialist production and abandon the idea of producing for production's sake which has haunted us for so long. The objective of socialist production is to satisfy the needs of the material and cultural lives of the people, and the realization of this objective requires not only consumption but also accumulation. Although these two are basically homogeneous, there are contradictions. Out task is "to make the two reach a satisfactory integration" [9] (the best integration). This "satisfactory integration" (the best integration) is to speed up the growth of both accumulation and consumption over a long period of time. This, in essence, seeks a steady, sustained and faster improvement of the material and cultural lives of the people. Since this is the objective of socialist production and expanded reproduction, it should be also apply to accumulation, the means of achieving expanded reproduction. Consequently, to adhere to the objective of socialist production means to adhere to the requirements of this best integration. Only by adhering to this specific approach can we assess the seriousness of the

9. "Instructions of the 15th CPSU National Congress on the Drafting of the 5-year Economic Plan," "Collected Resolutions of the CPSU Congress, Meetings of Delegates and the Plenary Sessions of the Central Committee," Vol 3, The People's Press, 1956 ed. p 379.

distortions of the relations between accumulation and consumption in China. Otherwise, the distorted relations would become invisible.

In the second place, an evaluation of the serious distortions of the relationship between accumulation and consumption requires a study of the rate of accumulation, but it is not enough to rely solely on the fluctations of the accumulation rate. (1) Although there are many factors affecting the rise of the accumulation rate, the controlling factor is the level of the development of the social productive forces. If all the other factors were left out, then a certain accumulation rate (too much accumulation and too little consumption) which distorts the proportional relationship between accumulation and consumption would emerge when the level of the development of the social productive forces is comparatively low. When the level of the development of the social productive forces is comparative high, it means the accumulation and consumption are well adjusted. Whether a given accumulation rate will distort the ratio between accumulation and consumption cannot be accurately assessed unless we consider both the level of the development of the social productive forces and all the other factors involved, and analyze the impact of such an accumulation rate on production and the people's standard of living. (2) The direction in which the accumulated fund is applied has an important bearing on whether the proportional relationship between accumulation and consumption is well adjusted. The first thing to consider is the application of the productive accumulation and the nonproductive accumulation funds. Although both the latter and the former are parts of the same accumulation fund, the latter is used to provide the means of livelihood to satisfy the needs of the material and cultural lives of the people, such as the construction of residential housing, schools and hospitals. In China, as far as the staff and workers of the units owned by the whole people are concerned, all medical services are free, education is free in most cases and housing is practically free as the rent is very low because residential housing is not yet commercialized. In a way non-productive accumulation is a consumption fund which lasts for a long time once the construction time is over. If too much productive accumulation and too little nonproductive accumulation fund were applied, the people's lives would be affected. As for the current situation in China, if one did note how the accumulation funds were applied in this area, it would be impossible to explain why the residential housing, municipal public utilities and the cultural, educational and health services had failed to satisfy the needs of the people. The proportion of the application of the productive accumulation fund for producing the means of production and the means of livelihood and its impact on the lives of the people should not be overlooked either. If too much were spent for the former and too little for the latter, the purchasing power of the people would exceed the available amount of consumer goods. This would lead to higher price and poor-quality consumer goods, and lower the real standard of living of the people. But the application of the accumulation in these two areas is not included in the rate of accumulation. Therefore, we must study the application of the accumulation fund in the two areas mentioned above in order to get an overall picture of the seriousness of distortion in the proportional relationship between accumulation and consumption in China.

Now let us take a close look at the seriously distorted relationship between accumulation and consumption from the theoretical positions mentioned above.

First, the ration of the accumulation fund is too big and that of the consumption fund is too small. China's accumulation rate was 24.2 percent in the First 5-Year Plan, 30.8 percent in the Second 5-Year Plan, 22.7 percent in 1963-1965, 26.3 percent in the Third 5-Year Plan, 33 percent in the Fourth 5-Year Plan and 33.4 percent in 1976-1979. The accumulation rate of the several periods, except the First 5-Year Plan and 3 years of readjustment, far exceeded what the social productive forces could bear. The total national income, especially the average per capita national income, is a comprehensive indicator of the level of the development of the social productive forces. But the increase of the accumulation fund since the Second 5-Year Plan (except the 3 years of readjustment) far exceeded the growth of the total national income (especially the per capita national income). This is shown in Table 3.

According to Table 3, the average annual growth of the accumulation fund during the Second 5-Year Plan was over two times the growth of the total national income, and nearly three times the growth of the average per capita national income. The average annual growth of the accumulation fund during the Third 5-Year Plan was a bit lower than that of the Second 5-Year Plan while that of the Fourth 5-Year Plan was a bit higher than that of the Second 5-Year Plan. Since these two periods were the 10 turbulent years of the great cultural revolution when many production units were practically crippled, such a rate of growth is indeed alarming. Although the growth of the accumulation declined after the downfall of the gang of four, it still exceeds the growth of the total national income and the average per capita national income. When the growth of the accumulation stays over the growth of the national income for such a long time, it is bound to make the growth of the consumption fund trail far behind the growth of the national income and seriously distort the ratio between the two.

(1)表3 国民收入与积累增长速度的比较

(2)时期		(3)一五时期	(4)二五时期	(5)1963—1965年	(6)三五时期	(7)四五时期	(8)1976—1979年
(9)平均每年国民收入	(10)总额（亿元）	807.0	1,096.0	1,184.3	1,606.2	2,280.8	2,868.7
	(11)比上个计划时期增长（%）	—	35.3	8.1	35.6	42.0	25.8
(12)按人口平均计算的国民收入	(13)总额（元）	131	165	167	205	258	321
	(14)比上个计划时期增长（%）	—	25.9	1.2	22.8	25.8	24.4
(15)平均每年消费额	(16)总额（亿元）	624.8	776.8	922.3	1,147.6	1,482.0	1,876.2
	(17)比上个计划时期增长（%）	—	24.3	18.7	24.4	29.1	26.6
(18)平均每年积累额	(19)总额（亿元）	199.4	346.4	270.3	409.4	728.8	947.7
	(20)比上个计划时期增长（%）	—	73.7	—22.2	51.4	78.0	30.0

Key:

(1) Table 3 The Growth of the National Income and the Accumulation Compared

(2) Periods

(3) First 5-Year Plan

(4) Second 5-Year Plan

(5) 1963-1965

(6) Third 5-Year Plan

(7) Fourth 5-Year Plan

(8) 1976-1979

(9) Average annual national income

(10) Total (100 million yuan)

(11) Compared with the growth (%) of the preceding year

(12) Average per capita national income

(13) Total (yuan)

(14) Compared with the growth (%) of the preceding year

(15) Average annual consumption fund

(16) Total (100 million yuan)

(17) Compared with the growth (%) of the preceding year

(18) Average annual accumulation fund

(19) Total (100 million yuan)

(20) Compared with the growth (%) of the preceding year

The seriousness of the distorted ratio between the accumulation fund and the consumption fund can be seen more clearly if we take note of the apectacular rise of the rate of accumulation in China.

Table 4 shows that the 1958 accumulation rate rose by 9 percent over that of 1957 while that of 1958 rose again by 9.9 percent over that of 1957. The accumulation rate of 1970 rose suddenly by 9.7 percent over that of 1969. The accumulation rate of 1978 rose up to 36.6 percent from the 1977 rate of 32.3 percent. This sudden rise of the accumulation rate represents a tremendous growth of the accumulation fund far exceeding the growth of the national income (especially the average per capita national income) and sharp drop of the growth of the consumption fund way below the growth of the national income. In 1959 the growth of the accumulation fund was over 5 times the national income and over 6 times the per capita national income. As a result, the consumption fund was 2.9 percent less than that of the preceding year. This shows conspicuously the seriously distorted ratio between the accumulated fund and the consumption fund.

(1) 表4 积累率的上升幅度

(2)年份		1957	1958	1959	1965	1970	1977	1978
(3)国民收入总额	(4)总额（亿元）	908	1,118	1,222	1,617	1,926	2,659	3,011
	(5)比上年增长（%）	—	23.1	9.4	—	19.1	—	17.7
(6)按人口平均计算的国民收入	(7)总额（元）	140	169	182	201	233	281	314
	(8)比上年增长（%）	—	20.7	7.7	—	15.9	—	11.7
(9)消费额	(10)总额（亿元）	702	738	716	1,180	1,258	1,741	1,877
	(11)比上年增长（%）	—	5.1	-2.9	—	6.6	—	7.7
(12)积累额	(13)总额（亿元）	233	379	558	357	618	832	1,083
	(14)比上年增长（%）	—	62.7	47.3	—	73.1	—	30.1
(15)积累率（%）		24.9	33.9	43.8	23.2	32.9	32.3	36.6

Key:

(1) Table 4 The Rise of the Accumulation Rate

(2) Year

(3) Total amount of national income

(4) Total (100 million yuan)

(5) Compared with the growth (%) of the preceding year

(6) Average per capita national income

(7) Total (yuan)

(8) Compared with the growth (%) of the preceding year

(9) Amount of consumption

(10) Total (100 million yuan)

(11) Compared with the growth (%) of the preceding year

(12) Amount of accumulation

(13) Total (100 million yuan)

(14) Compared with the growth (%) of the preceding year

(15) Accumulation rate (%)

Second, the proportion of productive accumulation is too big while that of the nonproductive accumulation is too small as shown in Table 5. It is clear that the ratio between productive and nonproductive accumulation during the several periods, except the First 5-Year Plan and the 3 years of readjustment, was seriously distorted.

These distortions become even more apparent in the proportional relationship between investment in the productive construction, on the one hand, and that in nonproductive construction, on the other.

Table 5 The Ratios (%) of Productive and Nonproductive Accumulation in Total Accumulation

Period	Productive Accumulation	Nonproductive Accumulation
First 5-Year Plan	59.8	40.2
Second 5-Year Plan	87.1	12.9
1963-1965	65.5	34.5
Third 5-Year Plan	74.5	25.5
Fourth 5-Year Plan	77.6	22.4
1976-1978	78.2	21.8

Table 6 The Ratio (%) of Productive and Nonproductive Investment in the Total Capital Construction Investment

Period	Productive Capital Construction Investment	Nonproductive Capital Construction Investment	
		Total	Including Residential Housing
The First 5-Year Plan	71.7	28.3	9.1
The Second 5-Year Plan	86.8	13.2	4.1
1963-1965	83.0	17.0	6.9
The Third 5-Year Plan Period	89.4	10.6	4.0
The Fourth 5-Year Plan Period	86.6	13.4	5.7
1976-1978	83.6	16.4	6.9

According to Table 6, the proportion of productive capital construction investment in total capital construction investment during all the periods (including the 3 years of readjustment) except the First 5-Year Plan was too high, the highest at 89.4 percent and the lowest no less than 83 percent.

The proportion of nonproductive capital construction investment has been rising since the Third Plenum of the 11TH CPC Central Committee. It rose in 1979 to 27 percent, including a rise to 14.8 percent of investment in residential housing far exceeding the level ever reached in all the preceding periods.

Third, too much productive capital construction investment went to those heavy industries which produce mainly the means of production, and not enough of it went to agriculture and the light industries which produce the consumer goods, and very little went to those services and departments directly related to the material and cultural lives of the people, such as culture, education, health, science and research and municipal construction. Too much of the investment in heavy industry went to those which serve heavy industry and not enough to those which serve agriculture and light industry. These are shown in Table 7 and Table 8.

Table 7 The Ratios (%) of Investments in Agriculture, Light Industry and Heavy Industry in the Total Capital Construction Investment

Period	Agriculture	Industry	Industry includes		Heavy industry includes	
			Light industry	Heavy industry	Agricultural Machinery	Chemical Fertilizers, Pesticides
First 5-Year Plan	7.8	52.4	5.9	46.5	0.5	0.9
Second 5-Year Plan	12.3	61.3	5.2	56.1	1.4	1.8
1963-1965	18.8	53.7	3.9	49.8	1.6	3.3
Third 5-Year Plan	11.8	61.4	4.0	57.4	1.6	3.6
Fourth 5-Year Plan	11.3	60.2	5.4	54.8	1.4	4.1
1976-1978	12.1	61.3	6.7	54.6	1.1	5.1

Table 8 The Investment Structure of Various Sectors of the National Economy

	First 5-Year Plan	Second 5-Year Plan	1963-1965	Third 5-Year Plan	Fourth 5-Year Plan	1952-1979 Total
National total	100	100	100	100	100	100
Industries	52.4	61.3	53.7	61.5	60.2	59.3
Transportation, post and telecommunication	17.3	15.1	15.0	18.1	19.6	16.8
Agriculture, forestry, waterpower and gas	7.8	12.3	18.8	11.8	11.3	12.0
Commerce, grain, foreigh trade	3.6	2.7	2.2	2.5	3.1	3.0
Culture, education, health scientific research	5.5	2.5	3.2	1.9	2.3	2.9
Municipal construction projects	2.6	2.0	2.4	1.4	1.4	2.2

Table 7 and Table 8 indicate that the proportion of investment in heavy industry, which was already a bit too high during the First 5-Year Plan kept rising during the several succeeding planning periods without receding. Investments in agriculture, light industry, culture, education, health, scientific research, municipal construction projects and investments in those sectors of heavy industry which manufacture agricultural machinery, chemical fertilizers and pesticides were somewhat too low at the beginning. Although the proportion of investment in agriculture rose considerably during the several succeeding planning periods, investment efficiency was very poor due to the erroneous "leftist" agricultural economic policy and the disruption by Lin Biao and the gang of four. The proportion of investment in light industry had dropped instead of increasing. It did not increase until the downfall of the gang of four, and the increase was way above the level of the First 5-Year Plan. The proportion of investment in culture, education, health, scientific research and municipal constructions had dropped even more extensively. Although the proportion of investment in those sectors of the heavy industry which manufacture agricultural machinery, chemical fertilizers and pesticides had increased considerably, the overall proportion of investment in heavy industry for the benefit of agriculture was inadequate. All these illustrate the proportions in these areas were badly distorted.

The three different situations mentioned above are bound to result in disparity between speedy increase of production, on the one hand, and lack of comparable

improvement of the people's lives, on the other. Of course, the disparity is due to a number of factors, including, for instance, erroneous guidance of economic work, irrational economic organization and structure, backward economic administration, rapid and excessive population growth, excessive consumption and waste during the progress of production and construction, too many intermediate products, not enough end products to meet the consumption requirements of the people, and an overstock of unmarketable products already produced. But the situations in the three areas mentioned above are no doubt the direct causes.

Between 1958 and 1978, China's gross industrial output value increased at an average annual rate of 11.6 percent while gross agricultural output value increased at an average annual rate of 3.1 percent. Such a speedy increase of production not only overtook old China but also ranked high even among the contemporary developed countries. According to statistics, between 1950 and 1977, the average annual rate of growth of Japan's gross industrial output value was 12.4 percent, that of its agriculture 2.7 percent; that of West Germany's industry 6.9 percent and that of its agriculture 1.8 percent; that of American industry 4.5 percent and that of its agriculture 1.9 percent; and that of Soviet industry 9.7 percent and that of its agriculture 3.3 percent. We can see that during this period, China only trailed behind Japan in industrial growth and behind the Soviet Union in agricultural growth but was way ahead of all the rest. Consequently, we may say on the strength of these figures that China had succeeded to a given extent in attaining high-speed development of production since the Second 5-Year Plan. But the people's lives did not improve as expected, and there were serious hardships in some areas.

1. The real wage had dropped. The average monetary wage of the staff and workers of the units owned by the whole people had increased very little since the Second 5-Year Plan. The average monetary wage of the staff and workers was 637 yuan in 1857 and 644 yuan in 1978, an increase no more than 1.1 percent in 21 years. Their cost of living index registered a 5.9 percent increase during the same period. This was a drop in real wage. The average real wage of the staff and workers which was 582 yuan in 1957 became 549 yuan in 1978, a drop of 5.7 percent.

2. The per capita consumption by urban and rural inhabitants of such basic means of livelihood as grain and edible oil had dropped. The average annual per capita consumption of grain by both urban and rural inhabitants during the First 5-Year Plan was 399.8 jin, and it dropped to 387.3 jin between 1976-1978, a drop of 12.5 jin. But the average annual per capita consumption of grain by rural inhabitants, the largest majority of the Chinese people, had dropped from 394.2 jin to 377.3 jin, down by 16.9 jin. The average annual per capita consumption of edible oil had dropped during the same period from 4.5 jin to 3.2 jin, down by 1.3 jin, while that of rural inhabitants dropped from 3.42 jin to 2.03 jin, down by 1.39 jin. Although the average annual per capita consumption of cotton cloth had increased from 21.34 chi to 22.76 chi, up by 1.42 chi, that of rural inhabitants had dropped from 18.74 chi to 18.43 chi, down by 0.31 chi.

The residential housing is also a basic means of livelihood of inhabitants. But average per capita area of housing had been declining over a long period. According to the statistics of 182 cities prepared by the departments concerned in 1978, the average per capita living area was 3.6 M^2, 0.9 M^2 less than the 1952 average area of 4.5 M^2. There was 6,891,000 housing-deficient households in these cities, or 38.6 percent of their total number of households. The shortage of residential housing affects not only urban inhabitants but also rural inhabitants.

3. Today there are still considerable numbers of hardship households among urban and rural inhabitants. According to the 1977 findings of 16 provinces, municipalities and regions on more than 88,000 staff-worker households, the average monthly per capita income of 39 percent of the households surveyed was less than 20 yuan. According to the findings of the Wuhan City, each individual had to spend 22.74 yuan per month to buy all the rationed consumer goods and pay rent and utility charges, and the average was about 24 yuan in Beijing. Such being the case, a household with income less 20 yuan as mentioned above would find it difficult to buy all rationed daily necessities. In 1978, according to statistics, there were 770,200 basic accounting units in which the per capita income which a commune member received from the collective economy was 40 yuan, and they accounted for 16.5 percent of the total basic accounting units. There were 463,000 basic accounting units, each receiving from the collective economy less than 300 jin of grain per capita, and they accounted for 1.6 percent of total basic accounting units. There were 32.94 million households, 19.5 percent of all the households covered by the rations, which lived beyond their means.

4. The devleopment of education was too slow to meet the requirement for upgrading the cultural level of the people. In 1957, 61.7 percent of the school-age children were enrolled. In 1978, after 21 years, the enrollment was no more than 94 percent, and only 67.8 percent of those enrolled actually completed 5 years of elementary education. In 1957, 44.2 percent of the graduates of senior elementary schools were promoted to middle schools, and the total was no more than 87.7 percent in 1978. In 1957, 39.8 percent of junior middle school graduates were promoted to senior middle schools, and the total was less than 50 percent in 1978. In 1957, 56.7 percent of senior middle school graduates were promoted to colleges, but the total dropped to 5.9 percent in 1978. This big drop of the proportion of senior middle school graduates enrolled in colleges is due to the overwhelming increase of senior middle school graduates, but the retarded development of higher education is another major factor.

All these prove that the relationship between accumulation and consumption in China had become seriously distorted over a long time. Its seriousness has the following ramifications: (1) Its impact reached the whole material and cultural lives of the people, and not just some areas. It affected the essential areas of their material lives, including clothing, food, shelter and transportation. (2) Its impact on the lives of the people was far-reaching. The prescribed rate of accumulation in China for many years not only made it difficult to

improve the lives of the people but impossible to maintain the original standard of living (as indicated by the drop of the real wage), and even cut back the basic means of livelihood required to sustain the reproduction of the labor force (as indicated by the decline of the amount of rationed grain, edible oil and the area of living quarters allotted on a per capita basis to both urban and rural inhabitants and hardship households). (3) Its impact had lasted a long time. In a period of 21 years, 1958-1978, the accumulation rate stayed at the 25 percent level for only 8 years, while the remaining 13 years registered 31 percent or more. If the 25 percent accumulation rate were suitable, it happened only one-third of the time. Moreover, 5 (1961-1965) of those 8 years were devoted to economic readjustment [10] and the remaining 3 (1967-1969) were engulfed in the turbulent great cultural revolution when many industries were practically crippled. The accumulation rate of those 3 years, over 20 percent, was still quite high (they were 21.3 percent, 21.1 percent and 23.2 percent respectively). The accumulation rate was excessive two-thirds of the time, especially so in the 9 years between 1970 and 1978 when it stayed over 30 percent. Such an excessive rate of accumulation has seriously affected the lives of the people for more than 20 years, and its impact is here to stay for quite some time to come.

Starting with the objectives of socialist production, we may visualize four different kinds of the socialist accumulation rates. (1) A suitable rate of accumulation which sustains and improves over a long time the people's standard of living. This represents the best combination of accumulation and consumption. (2) An accumulation rate which is a bit too low or a bit too high. The former may bring faster improvement of the current standard of living of the people but may retard the improvement of the standard of living in the long run. The latter may slow down the improvement of current standard of living of the people but may help improve the standard of living in the long run. Although the two situations are different, they still offer a good combination. (3) An excessively low rate of accumulation, which may hasten the improvement of the current standard of living, will not be conductive to a higher standard of living in the long run. This may be regarded as a poor combination. (4) An excessively high rate of accumulation will seriously affect the improvement of the living standard of the people now and for a long time to come. This is the worst combination. The excessively high rate of accumulation in China since the Second 5-Year Plan (except the 3 years of readjustment) belong in the class of the worst combinations. If the classification of the accumulation rates were correct, it would demonstrate even more comprehensively and more explicitly the seriousness of the distorted ratios between accumulation and consumption in China.

The fact that the ratio between accumulation and consumption in China has been seriously distorted for so long is by no means coincidental. There are many other complicated factors in addition to the 10 years of counterrevolutionary sabotage staged by Lin Biao and the gang of four.

First, one of the characteristics of China's current system of economic administration is overemphasis on centralization and uniformity. This led to the adoption of state control of revenue and expenditure in financial administration. All the revenue had to be turned over to the state except what the

10. Although 1963-1965 was popularly regarded as a period of economic readjustment, actual readjustments began in 1961.

central government had allocated to the localities in accordance with the approved plans. All the enterprises had to surrender to the state all their profit and deprecialtion funds. The investments for expanding reproduction and all the operating expenditures were controlled by the central government and dispensed to the localities and enterprises by the central government departments concerned in accordance with the specifications of the state plan. Although the system helped the state mass all the available capital to invest in those key projects which were vital to the national economy, it is conducive to an excessively high accumulation rate. Moreover, this system of state control of revenue and expenditure and reimbursement of what is actually spent is in reality a ration system, "mess together," and the various departments, localities and enterprises do not assume any economic responsibilities for construction investments. This tends to encourage the various units to jostle for construction projects and investments, leading to excessive accumulation and serious waste. The current system of economic administration is a major cause of the long-drawn distortion of the proportional relationship between accumulation and consumption in China. But it is not the only cause. It was copied from a Soviet system of the Stalin era, but the Soviets did not make as many serious mistakes as we did. This proves there are other causes of the long-drawn distortion.

Second, faulty guidance of the economic work is a direct cause of the long-drawn distortion, and this may be seen in the following four areas.

(1) The foremost mistake is overemphasis on priority development of heavy industry and the program "geared for steel production" which led to an excessive production quota, mainly a high heavy industry quota, especially a high steel industry quota. This has recurred three times since China's Second 5-Year Plan. To achieve such production quotas, it was necessary to enforce an excessively high rate of accumulation to finance excessively large-scale capital construction projects. In 1958, the hot-headed asked that steel output should double the 5.35 million tons produced in 1957 in order to reach a total of 10.7 million tons. In spite of the arduous and foolhardy efforts, the steel output of 1958 was no more than 8 million tons. In 1959, the schedule steel output was 18 million tons, but the actual amount produced was 13.87 million tons. The demand for 18 million tons was repeated in 1960. To achieve such a great leap forward in production, the total capital construction investment rose from 13.829 billion yuan in 1957 up to 26.696 billion yuan, and it rose again in 1959 and 1960 to 34.465 billion yuan and 38.407 billion yuan, respectively. The proportion of capital construction investment in overall national expenditure rose from 40.7 percent in 1957 to 56 percent in 1958, and again to 54.7 percent and 54.2 percent in 1959 and 1960, respectively. The total amount of accumulated fund rose from 23.3 billion yuan in 1957 to 37.9 billion yuan in 1958, and again up to 55.8 billion yuan in 1959 and 50.1 billion yuan in 1960. The rate of accumulation rose 24.9 percent in 1957 up to 33.9 percent and 43.8 percent in 1958 and 1959, respectively, and it was still as high as 39.9 percent in 1960. When the Fourth 5-Year Plan was drafted, the production quota was raised once more, setting steel output in 1975 at 40 million tons. Consequently, capital construction investment suddenly rose from 18.565 billion yuan in 1969 to 29.499 billion yuan in 1970, the proportion of capital

construction investment in the national expenditure rose from 39.2 to 45.9 percent, the amount of accumulated fund rose from 35.7 billion yuan to 61.8 billion yuan, and the rate of accumulation rose from 23.2 to 32.9 percent. When the "Ten-year Outline Program" was prepared in 1978, the production quota was raised again, asking steel output to reach 60 million tons. In response to this, capital construction investment rose from 36.441 billion yuan in 1977 to 47.955 billion yuan in 1978, the ratio of capital construction investment in the overall national expenditure rose from 35.7 percent to 40.7 percent, the amount of accumulated fund rose from 83.2 billion yuan to 108.3 billion yuan, and the rate of accumulation rose from 32.3 to 36.6 percent.

Excessively high heavy industry quotas, especially the steel industry quota, which lead to an excessively high rate of accumulation and a sharp cutback of the consumption fund will inevitably lead to a sharp slash of nonproductive accumulation and investments for agriculture, light industry, urban construction projects, as well as culture, education, health and scientific research, and will encourage heavy industry to invest excessively in what facilitates its own growth. As a result, the entire relationship between accumulation and consumption becomes seriously distorted.

(2) The impractical proposal asking each large administrative area and province to establish its own independent economic system. The 1958 proposal asked the large administrative areas and those provinces with favorable conditions to establish their own independent economic systems. The 1964 call for war preparations required that an independent economic system be established at the third line. After 1970, there was a drive to establish industrial provinces and make every province and its subdivisions self-sufficient. The drive to achieve "small and complete" "big and complete" by every single unit was responsible for the proliferation of capital construction projects, excessively high rate of accumulation, too much productive accumulation and too much investment in heavy industry. This is shown by a sudden increase of locally raised investments. Locally raised investments reached a total of 5.729 billion yuan during the First 5-Year Plan, or 10.4 percent of total capital construction investment. It suddenly rose to 26.171 billion yuan, or 22.1 percent, during the Second 5-Year Plan. It rose again during the Fourth 5-Year Plan to 30.923 billion yuan or 18.4 percent. The increase of locally raised investments during the Second 5-Year Plan and the Fourth 5-Year Plan was due to the delegation of central administrative authority to the localities in 1958 and 1970, but the impractical call for the establishment of independent economic systems by the large administrative areas and provinces was obviously an important factor.

(3) The national defense and war preparations expenditure and the investments in military industry and the third-line construction projects were too high. No doubt, as long as imperialism exists, China must strenghten its national defense construction projects, develop its military industry and pursue the third-line construction projects. The third-line construction projects are a significant measure to rectify the irrational distribution of industries laid out by old China. The problem is that the layout in these areas since the founding of the PRC has been excessive, far beyond the financial capability of the state. Judging by what actually took place, the proportion of national defense and war preparations expenditure in the expenditure of the state, and

the proportion of investments in the national defense industries, national defense research and the third-line construction projects in the capital construction investment are too big. It is worth noting that Comrade Mao Zedong pointed out in 1956 after having summed up the experience of the First 5-Year Plan: "Cut back military expenditure to a suitable proportion and make more funds available for economic construction." [11] Thus, the proportion of the national defense and war preparations expenditure in the national expenditure during the Second 5-Year Plan dropped below that of the First 5-Year plan, and the proportion of investment in the defense industries and defense research in the capital construction investment also dropped. But there was a call for war preparations in 1964, the Third 5-Year Plan was geared for war preparations and speedy third-line construction projects, and more emphasis was placed on extensive construction of the third line in the interior in the Fourth 5-Year Plan. This led to a sudden increase in national defense and war preparations expenditure and investment in military industries and third-line construction projects. The proportion of national defense and war preparations expenditure in the national expenditure during the 3 years of readjustment rose far above that of the Second 5-Year Plan. It rose again during the Third 5-Year Plan. Although it dropped below that of the Third 5-Year Plan during the Fourth 5-Year Plan, the proportion was still quite big. The proportion of capital construction investment allocated for the defense industries, defense research and third line construction projects were on the rise during these three periods.

If we say the high production quota resulting from priority development of heavy industry and the implementation of the program "geared primarily for steel production" was a major cause of the excessively high rate of accumulation, excessive productive accumulation and excessive investment in heavy industry since the Second 5-Year, then the excessive national defense and war preparations expenditure and investment in the defense industries and the third-line construction projects since the Third 5-Year Plan were another major cause. Nearly one-fourth of the additional accumulation fund massed during both the Third and the Fourth 5-Year Plans was allocated to cover the increased investment in third-line construction projects. The accumulation for third-line construction projects covers not only the additional capital construction investment but also increased operating capital and reserve fund. The accumulation fund covers the capital construction investments as well as subsidies for simple reproduction and funds which do not become fixed assets. Generally speaking, the figures given above represent the rising proportion of accumulation for third-line construction projects in the total accumulation fund. Moreover, the proportion of the total accumulation fund allocated for investment in military projects, military installations and people's defense projects which do not directly become productive forces had registered marked increases during both the Third and the Fourth 5-Year Plans.

(4) There were mistakes in handling the relationship between the economic construction in China and foreign aid. That is to say, there was too much foreign aid. It is no doubt necessary for a socialist country to extend a reasonable amount of foreign aid in order to carry out its international obligations. But it must be within one's capabilities. Our trouble is that

11. "Selected Works of Mao Zedong," Vol 5 p 271.

we acted contrary to this principle. The proportion of China's national income allocated for foreign aid was 0.5 percent during the First 5-Year Plan and as high as 2.1 percent during the Fourth 5-Year Plan. Its share of the national expenditure was 1.5 percent during the First 5-Year Plan and as high as 6.1 percent during the Fourth 5-Year Plan, and it went up to 7.2 percent in 1973. Such a high proportion has never occurred in any other country, let alone the fact that China is an economically underdeveloped country. China's foreign aid in 1950-1978 was over three times its capital construction investment in 1962-1978 for culture, education, health and scientific research, over four times its urban construction investment of the same period, and over the total investment in residential housing during the last 30 years since the founding of the PRC. These facts illustrate that China's foreign aid expenditure was far beyond its capability. True, this item of expenditure is figured in terms of the national income and not in terms of the amount of the national income put to use. Obviously if the foreign aid expenditure under the total national income were cut back, more national income would be available for use. That would help rectify the proportional relationship between accumulation and consumption. This implies that too much foreign aid is a cause of serious distortion of the relationship between accumulation and consumption.

Third, there are theoretical reasons for the long-drawn distortion of the relationship between accumulation and consumption. This is a complicated multifaceted problem. This article covers only an analysis of the essential points. Since the founding of the PRC, especially since the great leap forward of 1958, there have been many one-sided theoretical approaches which serve either as the guiding ideology of high accumulation or as the source of public opinion in support of the high accumulation policy. An analysis of these theoretical approaches is necessary while the current readjustment of the national economy is in progress.

To support high accumulation, some comrades claim that production is the foundation of consumption and that the upgrading of the lives of the people should be subordinated to the development of production. Viewed superficially or viewed in the light of the subjective motive of those comrades who advocate the approach, it seems to aim at upgrading the lives of the people in the long run. But that is actually not true. Looking at the production process as being the reproduction process, if the upgrading of the standard of living were subordinated to the development of production, would that not make production per se the sole purpose of production and thus exclude the upgrading of the lives of the people? It is true that since the means of livelihood are provided by production, the upgrading of the standard of living has to be based on the development of production. This general law of social reproduction is also applicable to a socialist society. Whether the approach is viewed in terms of reproduction in general or in terms of social reproduction, the "foundation" means simply the "medium". The difference lies in the fact that the former regards consumption as the ultimate objective of production while the latter regards consumption as the immediate objective of production. Consequently, this approach actually mistook production as the "foundation" (or "medium") for the "purpose" of production.

This approach is actually the concept of "production for production's sake," a "capitalist ideology" advocated by Ya-luo-shen-ke [phonetic] which Stalin had criticized. [12] To publicize this concept under socialism does not imply the concept of "production for production's sake" advocated by the capitalist classical economists in the heyday of capitalist production. Since capitalist production is basically for the production of surplus value and not for the production of consumer goods for the masses, it therefore appears to be producing for production's sake. As far as this goes, the concept agrees with the reality of capitalist production. Moreover, when the capitalists "pursue the multiplicaiton of value and force mankind to produce for production's sake, they actually develop the social productive forces and create the material condition conducive to production (this means socialist production--author)." [13] Marx said: "To accumulate for accumulation's sake and produce for production's sake is a formula used by the classical economists to accomplish the historical mission of the capitalist era." [14] Under the socialist system, the above concept is contrary to the fundamental socialist economic law and perpetuates the erroneous trend of production for production's sake and accumulation for accumulation's sake.

This is another approach which supports this trend. Some comrades claim that accumulation represents the collective interests of the workers while consumption represents their individual interests. Although they are in favor of taking both into consideration, they allege that the latter should be subordinated to the former. In spite of the difference between this and the above-mentioned approach, they lead to the same conclusion. According to basic socialist economic law, both production and expanded reproduction are for satisfying the daily needs of the people. Accumulation, a medium to expand reproduction, should also be subordinated to this objective. This means consumption should rank ahead of accumulation, which should be subordinated to consumption, and not the other way around. A more accurate way to describe this is let consumption (immediate consumption) stand for the immediate interests of the workers and accumulation (a medium to expand the reproduction of a material base to upgrade the lives of workers in the future) their future interests.

The above-mentioned approach not only perpetuated the erroneous trend of excessive accumulation but also served as a springboard for the gang of four to launch their radical leftist theories that to upgrade the lives of the workers is an "economic heresy," a form of revisionist material incentive, capitalist welfare-ism, and that accumulation and consumption harbor "a struggle between two different classes and two different roads." But such erroneous concepts did not attract enough academic attention and I think it is time to rectify the confusion of theory.

There is another concept claiming that the higher the rate of accumulation, the faster would be the growth of production. This is clearly tied to a high rate of accumulation. A suitable rate of accumulation is needed to achieve speedy development of production. However, it is contrary to historical facts to claim that the higher the rate of accumulation, the faster would be the development of production.

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12. Stalin: "The Problem of the Soviet Socialist Economy," The People's Press, 1973 ed. p 63.

13. "Completed Works of Marx and Engels," Vol 23 p 649.

14. "Completed Works of Marx and Engels," Vol 23 pp 652-653.

Table 9 The Rate of Accumulation and Economic Growth

Periods	Accumulation Rate	The average annual increase (%) of the per capita consumption of China's staff, workers and peasants	Average annual increase (%) of the national income
First 5-Year Plan	24.2	6.1	8.9
Second 5-Year Plan	30.8	3.0	-3.1
1963-1965	22.7	2.2	14.5
Third 5-Year Plan	26.3	2.3	8.4
Fourth 5-Year Plan	33.0	2.2	5.6
1976-1978	33.3	3.1	6.0

The foregoing table shows that, leaving out the period of rehabilitating readjustments, the growth of the national income, induced by a suitable accumulation rate and the right combination of accumulation and consumption, was at its peak during the First 5-Year Plan. The excessively high rate of accumulation retarded the growth of the national income during all the other periods and there was even a deficit during the Second 5-Year Plan. What are the causes of this? (1) Since it takes a right combination of accumulation and consumption to reflect the requirements of the basic socialist economic law, the accumulation law and the law of distribution according to work, and to serve the immediate and future interests of the workers and activate their enthusiasm, an excessively high rate of accumulation would work against these law, jeopardize their immediate and future interests and dampen their enthusiasm. (2) The collection of the accumulation fund should meet the requirement to keep social production within the established proportions and agree with the physical structure of the national income. If it were too high, it would act against this requirement and contradict the physical structure of the national income, making it difficult to realize fully the accumulation fund and make capital construction economically efficient. [15] (3) "Simple reproduction is an integral part, a vital part, of expanded reproduction each year." [16] Consequently, the existing scale of production must be maintained to expand production, and that requires an appropriate rate of accumulation. If the accumulation rate were too high and too much of the means of production and labor force were committed to construction, it would be difficult to

15. The causes (1) and (2) are described in greater details in my article: "Pay Attention to Both Accumulation and Consumption," XUESHU YUEKAN [Academic Monthly] No 1, 1980.

16. "Completed Works of Marx and Engels," Vol 24 p 457.

maintain the existing scale of production. That means the economic effectiveness of production will drop significantly. All these demonstrate that it takes a suitable accumulation rate to raise the economic effectiveness of both production and construction, and it would drop if the accumulation rate were too high. This is illustrated by the changes of the following quotas. The average annual amount of national income derived from each 100 yuan of accumulation fund was 35 yuan during the First 5-Year Plan, only 1 yuan during the Second 5-Year Plan, 57 yuan in 1963-1965, 26 yuan during the Third 5-Year Plan, 16 yuan during the Fourth 5-Year Plan, and 17 yuan in 1976-1978. It is clear the economic effectiveness of the First 5-Year Plan is attributable to its suitable rate of accumulation, and that of all the other periods (except the period of rehabilitating readjustments) was jeopardized by an excessively high rate of accumulation.

China had accepted in theory and in practice Stalin's principle that "accumulation is the only resource to expand reproduction" which became a major theoretical justification of China's excessively high rate of accumulation. In reality, accumulation is a resource, but not the only resource, to expand reproduction. For instance, upgraded economic and industrial management and more efficient utilization of the means of production and labor force would help expand reproduction without or with very little increase of accumulation. Again, the utilization, renewal or transformation of existing enterprises require much less investment to attain better results in expanding reproduction than the construction of new ones. Today China has an acceptable industrial base even though it lacks economic strength and efficient management. Working through the existing channels to expand reproduction is even more meaningful than to construct new enterprises. The fact that people had accepted Stalin's one-sided approach is perhaps attributable to their one-sided understanding of Marx's view on the subject. In "Das Kapital," Marx used accumulation and expanded reproduction as synonyms. For instance, he said: "As long as there is accumulation, simple reproduction will always be a part of the accumulation."[17] But he pointed out again and again in the same book: "A given amount of capital, even without accumulation, is still enough to expand, within a certain limit, the scale of production."[18] It is clear the arbitrary statement that "accumulation is the only resource to expand reproduction" is nowhere to be found in Marx's works.

For a long time, it has been a popular belief that $I(v+m)$ IIc is the basic formula to expand reproduction, and $II(c+m)$ $I(v+\frac{m}{x})$ has not been accepted as another basic formula to expand reproduction. In view of Marx's basic principle on the expansion of reproduction and the lesson we learned during the great leap forward of 1958, we pointed out in 1961 that we need both the first and the second basic formulas to expand reproduction because the expansion of reproduction requires more means of production and more labor force, and consequently more consumer goods. The first formula reflects only the need for additional means of production but not the need for additional consumer goods which is reflected in the second formula.[19] This suggestion, though

17. "Completed Works of Marx and Engels," Vol 24 pp 438, 565.

18. "Completed Works of Marx and Engels," Vol 24 pp 438, 565.

19. My own article: "Preliminary Discussion on the Formulas to Expand Reproduction" GUANGMING RIBAO 4 December 1961 p 4, "JINGJIXUE" [ECONOMICS] No 115. That article was written by me and Zhou Shulian under the name of Shixue.

it appeared acceptable at the time to some comrades, did not win the approval of others. After 30 years of socialist construction, people begin to see very clearly that to rely solely on the first formula to expand reproduction is conducive to an excessively high rate of accumulation, excessive production accumulation, and excessive accumulation for heavy industry which jeopardizes the current readjustment of the national economy. Now it is time to discuss the issue.

Fourth, the long-drawn distortion of the relationship between accumulation and consumption is also attributable to social factors.

China has been a semicolonial and semifeudal state dominated by an absolute majority of petty-bourgeois and deep-rooted bourgeois ideology. The subjective and one-sided bourgeois thinking lacks tolerance for long-term revolution and long-term constructions. They tackly problems from the standpoint of subjective wishes rather than objective realities, and take trees for forests. On top of this, there was an urgent drive after the Liberation to transform the backward economy of old China. This made the guidance of economic work vulnerable to the onslaught of impatience and unrealistic "leftist" tendencies. We cannot say that the high production quotas and the resultant high accumulation in the distribution system were entirely free from the impact of bourgeois ideology.

The deep-rooted feudalist ideology permeated every phase of social life in China, which had been for a long time a feudal and semifeudal society. After the Liberation, we did not criticize feudalism as much as we criticized capitalism. Having failed to clarify what socialism is and what feudalism is, we sometimes resorted to feudalism to criticize capitalism. Instead of uprooting capitalism, we let feudalism run rampant. Thus, a feudalist patriarchal rule and personality cult emerged within the CPC in the wake of the triumphant socialist transformation and construction. That was a serious blow to the party's democratic centralism. There was no democratic tradition to speak of in China, nor did the proletarian democracy develop fully after the Liberation. Even this underdeveloped democratic system did not manage to survive in the rising tide of class struggle. This enabled a single individual or a small group of individuals to overrule many healthy resolutions of the First Session of the Eighth CPC National Congress. There was no way to reflect the healthy views of the party and the masses, and they were even criticized as "rightism." On how to handle correctly the relationship between accumulation and consumption, Comrade Zhou Enlai pointed out in "A Report on the Contradictions under the Second 5-Year Plan for the Development of the National Economy" which he delivered on behalf of the CPC Central Committee at the First Session of the Eighth CPC National Congress: "Since China's economy is still backward, since agriculture still dominates and since the people's living standard is still low, the proportion of accumulation in the national income cannot and should not increase too much, too fast, though it may be a bit higher than the level already achieved during the first 5 years." [20] In his address to the same congress, Comrade Bo Yibo proposed: "The proportion of accumulation in the national income should be no less than 20 percent or a bit higher." Approaching it from a different angle, Comrade Chen Yun tried to look for measures to stem construction projects which were

20. "Collected Documents of the Eighth CPC National Congress," p 202.

incommensurate with China's national strength. He recommended: 1) that revenue, expenditure and bank credit should be balanced, preferably with some surplus; 2) that production should take precedence over construction to receive allocated raw and processed materials; 3) that the people's purchasing power and the supply of commodities should be balanced; and 4) that the scale of capital construction, purchasing power and financial and material resources should be balanced not only for the current year but also for the foreseeable future. All these healthy views were irrevocably lost. The situation mentioned above made it easy for the leadership to reach unrealistic wrong decisions which could not be corrected immediately. For instance, the 1958 drive "to gear up primarily for steel production," the call for the establishment of independent economic systems by the large administrative areas and provinces and the 1964 call for third-line construction projects are, among others, the major causes of the long-drawn distrotion of the relationship between accumulation and consumption in China. It must be noted that there was another mistake in 1978 which hiked accumulation. These mistakes have been uncovered and gradually rectified after the Third Plenum of the 11TH CPC Central Committee which reinstated the party's correct political, ideological and organizational lines and reactivated democratic life within the party.

The economic vehicle of the feudalist rule was individual production which had kept the people in poverty. The ration system which the CPC experienced in the protracted revolutionary wars before the Liberation represents exactly that kind of hardship. The impact of this kind of hardship was so far-reaching that people wittingly or unwittingly took socialism to stand for small-scale production. They seemed to believe that the socialist economy did not call for substantial upgrading of the people's lives, which they claimed could be kept at a lower level. A typical justification of these claims is that there are only two requirements under the socialist system. As long as nobody dies of starvation and as long as nobody suffers from poor health, anything other than these two basics is nonessential. To appreciate the arduous struggles of the party in the light of such a concept of small-scale production is bound to pit that tradition against the upgrading of the lives of the people. This is also a major cause of the long-drawn downgrading of the importance of consumption.

The above analysis demonstrates that it is necessary to restructure the system of economic administration; rectify the "leftist" errors and provide a correct guide in economic work; clarify issues of theory; criticize feudalism and small-scale production mentality, and enhance democratic centralism, socialist democracy and the rule of law in order to handle correctly the relationship between accumulation and consumption.

III. Set the Accumulation Rate at About 25 Percent

The seriously distorted proportional relationship between accumulation and consumption is a major part of the seriously distorted relationships in the national economy. The readjustment of the national economy calls for readjustment of these proportions.

Most economists and theoreticians believe that the accumulation rate under normal conditions should be in the neighborhood of 25 percent. This is a sound

judgement based on the data of China's experience of socialist construction in the last 30 years.

However, some comrades question the wisdom of setting the accumulation rate at the level achieved during the First 5-Year Plan because China's productive forces have increased tremendously since then. Is it really too low? Would it affect the progress of socialist modernization? We believe their concern is uncalled for.

First, the point they raised touches upon the accuracy of the estimated distortions of the current proportions of accumulation and consumption. Since we have already analyzed it, we find no need to rehash it. It also touches upon the estimated accumulation rate of the First 5-Year Plan. As we have said above, although the accumulation rate of the First 5-Year Plan was suitable as a whole, it was a bit too high in terms of the per capita consumption of the means of livelihood at that time by urban and rural inhabitants. The per capita consumption of grain, edible vegetable oil, pork and cloth by urban and rural inhabitants which were 394 jin, 4 jin, 12.1 jin and 21.2 chi, respectively, in 1953 rose to 406 jin, 4.8 jin, 10.2 jin and 19.5 chi, respectively, in 1957. More grain and edible vegetable oil were consumed in 1957 than in 1953, but the consumption of pork and cloth had dropped. That was due to the commitment of the accumulation fund, too much invested in heavy industry and too little in agriculture and light industry. The excessive investment in heavy industry is related to and reflects the high rate of accumulation. To bring the accumulation rate down to the neighborhood of 25 percent is hardly too low even though the current accumulation rate and that of the First 5-Year Plan are a bit too high.

Second, the point they raised also touches upon the estimate of China's national strength today and in the years to come. The ratio of the accumulation rate rests not so much on the subjective wishes of people as on what is required to develop the national economy, the amount of available resources and the national income. Both the total and the per capita national income have increased considerably since 1957. Today as political stability and unity began to prevail in China, the party's priority has turned to socialist modernization. We should not underestimate the material base built in the past 30 years. The impact of the correct policies formulated by the CPC Central Committee based on its assessmentof the successes and failures since the founding of the PRC will be more and more pronounced as time goes on. We should not underestimate what the restructured system of economic administration can do to liberate productive forces and enhance socialist construction. China's national income will no doubt increase as its socialist construction surges ahead in the years to come. However, we must keep in mind that the current level of development of social productive forces is by no means high; the population is huge and still growing at a rapid pace; the distorted proportions of the national economy still await thoroughgoing changes; and the immediate task of readjustment of the national economy still require a few more years. Some of the basic projects, such as the geological exploration of resources, mining (including energy) construction, afforestation and training of specialized personnel, will take 7 to 8 or even 10 years to achieve any noticeable results.

Consequently, China's national strength will still be limited for some time to come as construction is not likely to pick up too much speed and the national income will probably not increase very much.

It must be pointed out that accumulation is derived from the value of surplus products rather than the national income as a whole. Today, due to limited social labor productivity, the proportion of the value of surplus products is limited, especially that of agriculture. The proportion of commercial grain production at present is about 20 percent of all the grain produced. The grain for subsistence contains some surplus, just as commercial grain contains grain for subsistence. Grain production in China is the mainstay of its crop-growing industry (in 1978 the area seeded for grain crops was 80.3 percent of the total area seeded for all agricultural crops), and the output value of crop-growing constitutes a major portion of gross agricultural output value (67.8 percent in 1978) which accounts for a considerable part of the entire national income (35.6 percent in 1978). The situation is not likely to change in the immediate future. Backward agriculture decides, to a great extent, that the proportion of accumulation in the immediate future can only stay at the level achieved during the First 5-Year Plan. The following figures will help illustrate the point. The national income created by each agricultural worker was 220 yuan in 1957, up to 364 yuan in 1978, an increase of 65.4 percent. But the number of dependents each agricultural worker supports dropped from 3.3 persons in 1957 down to 3.2 persons in 1978. Moreover, while China exported 1.93 tons of grain in 1957, it imported 6.96 million tons instead in 1978. The import of cotton during the same period went up from 13,000 tons to 475,000 tons.

The above analysis covers only the impact of the value of the national income (especially the value of surplus products) on the accumulation rate. In addition to this, the national income also acts on the accumulation rate through the structure of material resources. In his discussion on the reproduction and circulation of capital, Marx said: "This movement represents a reimbursement in both value and material. Consequently, it is controlled by the ratio between the value of social products, on the one hand, and by their use value and physical structure, on the other." [21] This general principle is applicable to the socialist national income (a component of the total social products). In terms of physical structure, the accumulation fund includes mainly the means of production, plus some consumer goods, while the consumption fund consists of the means of livelihood. So, the accumulation fund and consumption must be commensurate with the physical structure of the national income. Due to the excessive rate of accumulation over all these years, there is an acute shortage of the means of production. Furthermore, the proportional relationships between heavy industry, on the one hand, and agriculture and light industry, on the other, are so seriously distorted that they require immediate readjustment. That is say, the proportion of heavy industry which produces the means of production should be cut back while that of agriculture and light industry which produce the means of livelihood should be raised. If the accumulation rate were not cut back commensurably, the contradiction between the accumulation fund and the physical structure of the national income would become more acute.

21. "Collected Works of Marx and Engels," Vol 24 pp 437-438.

Third, the point they raised put too much emphasis on the growth of China's national strength since the First 5-Year Plan and in the immediate future (as stated before, the estimates are too high). It overlooked the increase of consumption in the years ahead, especially a fast-growing huge population, and the need to meet certain special "obligations." Under the socialist system, the purpose of production is to satisfy the daily needs of the people. Of course accumulation must be considered in the distribution of the national income in order to upgrade the lives of the people. Since the primary concern is to upgrade their lives right now, accumulation must be subordinated to consumption, and not the other way around. Once the size of the national income is determined, the proportion of accumulation should rest on the consumption required to upgrade the lives of the people. The effort to upgrade their lives must not allow the level of consumption of the existing population and possible additional population fall below the level of the base period. As a matter of fact, it should be raised above that of the base period on the strength of the growth of the social productive forces and other factors. This cannot be done when the population grows rapidly and the consumption level of the existing population has already been upgraded unless there is a hugh reserve in the consumption fund. For instance, the population of China was 646.53 million in 1957, an increase of 18.25 million over that of 1956, while the per capita consumption level of all the staff, workers and peasants of the whole country was 99 yuan. If it were to increase by 1 yuan in 1956, the total per capita consumption fund would be 64.653 billion yuan. The population increased to a total of 958.09 million people in 1978, an increase of 12.85 million over that of 1977. The per capita consumption of all the staff, workers and peasants was 165 yuan. If it were to increase by 1 yuan in 1978, the total per capita consumption fund would be 159.04 billion yuan, 1.46 times that of 1957. If the social consumption fund were included, the total would be even bigger. As China's population grows at an annual rate of 10 million people, the total population is bound to increase, and so would the per capital consumption of the urban and rural inhabitants. So, a much greater consumption fund is required to upgrade the standard of living of the people in any planning period above that of the base period. Moreover, due to the long-drawn excessive rate of accumulation, the state is under an extensive "past-due obligation" to the lives of the people which must be repaid step by step in accordance with the development of production. The total amount of the national income already spent during the second, third and fourth 5-year plans and 1976-1979 was 3,675.1 billion yuan. If 25 percent were a suitable rate of accumulation, the consumption fund for this period should be 2,681.3 billion yuan. The actual consumption fund was no more than 2,453.7 billion yuan, a shortage of 227.6 billion yuan. Consequently, to set the accumulation rate at the level of the First 5-Year Plan should not be too low if we take into consideration the limited growth of China's national strength, on the one hand, and a likely sizeable increase of the consumption fund, on the other.

To illustrate that a 25 percent accumulation is not too low, let us compare it with the accumulation of other countries.

Since the statistical procedure of the Soviet Union and the East European countries is the same as that of China, it is comparatively simple to compare

China's accumulation rate with theirs. The Soviet accumulation rate during the rehabilitation of its national economy was between 9 percent (1923) and 18.2 percent (1927). Its prewar accumulation rates during its First 5-Year Plan (1928-1932), the Second 5-Year Plan (1933-1937) and the Third 5-Year Plan (1938-1940 disrupted by the war) were between 18.7 percent (1929) and 26.9 percent (1932). It went up as high as 33 percent (1942) during the war of national defense. During the Fourth 5-Year Plan after the war (1946-1950), its accumulation was by no means high, only 23.9 percent in 1950. In the subsequent years when it implemented its Fifty 5-Year Plan (1951-1955), Sixth 5-Year Plan (1956-1960), Seventh 5-Year Plan (1961-1965), Eifhth 5-Year Plan (1966-1970), Ninth 5-Year Plan (1971-1975) and the first 3 years of the Tenth 5-Year Plan (1976-1978), its average annual accumulation rates were 25.1, 26.3, 27.1, 27.4, 28.1 and 26.7 percent, respectively. Leaving aside the low accumulation rates during the rehabilitation of its national economy, the average annual accumulation rate during its 10 5-year plans was in the neighborhood of 25 percent, the lowest at 20 percent and the highest at 28.1 percent.

The average annual accumulation rate of Hungary during its First 5-Year Plan was as high as 29.2 percent, and it went up to 34.4 percent in 1951 and 33 percent in 1953. These excessively high accumulation rates, which led to serious distortions in its national economy and a sharp drop in the people's living standard, were a major economic cause of the "Hungarian Incident" of 1956. It was cut back in 1955-1960. The average annual rates of accumulation during its Second 5-Year Plan (1961-1965), Third 5-Year Plan (1966-1970) and Fourth 5-Year Plan (1971-1975) were 21.2, 23.5 and 27.7 percent, respectively. So if we leave out the abnormal rates of accumulation during its First 5-Year Plan, the Hungarian accumulations rates during its second, third and fourth 5-year plans were in the neighborhood of 25 percent, though they stayed in the neighborhood of 28 percent for 3 years after 1975.

During its three five-year plan periods between 1951 and 1965, the Romanian average annual accumulation rates were 17.6, 16 and 24.3 percent, respectively, all below the 25 percent level. It went up to 28.8 percent in 1966-1970, up again to 34.1 percent in 1971-1975 and 33.5 percent in 1976-1980. The rate of accumulation in Romania stayed in the neighborhood of 25 percent for 20 years and did not go over the 30 percent level until after 1971-1975.

Now let us compare the accumulation rates of China with those of the developed capitalist countries. Someone had figured out the accumulation rates of the United States in 1929, 1956 according to Soviet statistical procedure. Except the low or even negative accumulations caused by economic crises and wars, its lowest rate was 5.4 percent (1936) and the highest was 19.7 percent (1951), while those of all the other years simply fluctuated within that range. [22]

The accumulation rates of the United States, Japan and the West European capitalist countries are the proportions of capital investment in their national income, and that proportion in the United States was 19 percent in 1970 and 20 percent in 1973. In Japan, it was 25 percent in 1952, 39 percent in 1960,

22. Ke-er-gang-nuo-fu [phonetic] of the Soviet Union: "On National Income," Sanlian Book Store, 1961 ed. pp 388-391.

44 percent in 1970 and 42 percent in 1973. In West Germany, it was 25.5 percent in 1960, and 25.4 percent in 1974. In France it was 22.5 percent in 1960, 29.9 percent in 1970 and 28.4 percent in 1974. In Great Britain, it was 17.3 percent in 1960, 19.6 percent in 1970 and 22.1 percent in 1975. These figures[23] are not very accurate representations of the accumulation rates because they are figures derived in accordance with the traditional statistical procedure of the capitalist countries. Moreover, capital investments and accumulations are not the same. At any rate, they do show the general trend.

The figures mentioned above demonstrate that the accumulation rates (the proportion of capital investment in the national income) in the United States between 1929 and the 1970's were below 20 percent. In the 1960's and 1970's were below 25 percent in Great Britain, around 25 percent in West Germany and France. Japan is the only country to register a rate in the neighborhood of 40 percent.

A comparative analysis of the accumulation rates of other countries confirms that an accumulation rate set in the neighborhood of 25 percent is not too low. But such a simple comparision is not sufficient because the accumulation rates differ under different social systems and in different periods of time under the same social system as the concrete economic, political and social factors vary from one period to another. The common denominator is that the accumulation rates are determined by the level of development of the social productive forces and the per capita national income. China is underdeveloped and weak in productive forces and very low in per capita national income due to a rapidly growing huge population. China's per capita national income in 1979 was only $240, comparable to that of the United States in the 1860's, but far below the per capita national income of the economically developed countries in the 1970's. Figured out in accordance with the statistical procedure used by the Soviet Bureau of Statistics, the per capita national income in 1976 was $4,345 in the United States, $1,973 in the Soviet Union, and in 1973, it was $3,270 in West Germany, $2,670 in France, $2,235 in Japan and $1,640 in Great Britain.[24] The per capita national income of China is less than that of many economically underdeveloped countries, ranking below the first 100 of the world's 100 and several tens of countries and regions. So, when we bring in the per capita national income of other countries for a comparison, it is even more clear that a 25 percent accumulation rate is not too low, if indeed not too high. Realistically speaking, it should be less than 25 percent and stay there for a period of time.

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23. The above-mentioned figures are based on the data given in "Digest of Worldwide Economic Statistics" (Sanlian Book Store, 1979 ed.) pp 42, 49 50 and 51 and "Digest of Japan's Economic Statistics" (Published by Zhongguo Caizheng Jingji, 1976 ed.) p 7.

24. "Sixty Years of the Soviet National Economy" Soviet Statistical Press, 1977 Russian Edition p 98.

Since it is desirable to set the accumulation rate in the neighborhood of 25 percent, the economic results should be rewarding and conducive to stable, sustained and speedy development of China's socialist construction. The concern about its unfavorable impact on the progress of socialist modernization is uncalled for. As the reasons for this have been discussed in the second part of this article, there is not need to repeat them. The readjustment of the seriously distorted relationship between accumulation and consumption calls for not only a lower rate of accumulation but also a change in the direction of the use of the accumulation fund. But this is not covered in this article as it requires specialized deliberations.

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CHAPTER XX

SCIENCE AND TECHNOLOGY AND ECONOMIC STRUCTURE

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[Text]

I. The Status and Role of Science and Technology in the National Economy

The history of social development has reflected the close relationship among science, technology, society and the economy. The development of social production has created the material conditions for the development of science and technology [S&T], and the major breakthroughs in S&T have frequently pushed forward a major development in society and in production. When man learned to make fire and to use fire, it was an S&T achievement that had epochmaking significance during the early period of human society. Engels pointed out: "In view of the worldwide liberation, making fire by friction surpassed the steam engine because making fire by friction enabled man for the first time to control a force of nature, thus finally separating man from the animal kingdom."[1] A review of the development of productivity in modern society more clearly illustrates the great function S&T have served in economic development. The emergence of the steam engine in the 18th century brought about the first industrial revolution. Industrial production freed man from the limitations of manpower and animal strength, and caused social production to take a major leap. Engels regarded the utilization of the steam engine as "one of the great levels that industry used to shake the foundations of the old world."[2] The discovery of electric power and its application in the 19th century not only led to the power revolution, it also pushed forward the development of society toward electrification. Its profound influence has continued to the present day. The application of atomic energy in the atomic bomb and the nuclear power station in 20th century is only a beginning in the discovery and utilization of atomic energy. As we gain a deeper understanding and make deeper probes into structure of the atom, a great change in production will surely be

1 "Works of Marx and Engels", Vol 3, p 154.
2 "Collected Works of Marx and Engels", Vol 2, p 300.

pushed forward. During the recent decades, the invention of the computer and its broad applications are exerting a greater and greater influence on social production and social life. The development of the computer and of automation technology not only will make labor productivity grow by multiples, but also fostering the arrival of a new technological and industrial revolution.

As S&T progress, the function of S&T in economic development is growing. According to the historical experience of developed nations, at the beginning of this century, technical progress constituted 5 to 20 percent among the serious factors underlying economic growth and the increase in productivity. Now the percentage has surpassed 50 percent. Because the achievements of modern S&T have been used, labor productivity in agriculture has been visibly increased. In the United States at the beginning of this century, the quantity of agricultural products produced by each agricultural worker could only support 10 people. Later, advanced technology was used, and labor productivity continued to rise. Now, each agricultural worker can support 62 people. The agricultural labor force has decreased to less than 4 million, constituting only 1.6 percent of the total population of the United States. Also, for example, in steel production a century ago, blast furnace technology was the epochmaking iron smelting technology that replaced the ancient crucible smelting of iron. Later, it matured after continuous improvements. After World War II, the top-blown oxygen rotary furnace replaced the open hearth furnace, and the use of a series of modern technologies enabled the production of steel to develop toward large-scale production. In the past, crucible smelting of iron produced less than 1 ton of iron a day. Now, a large blast furnace can produce 10,000 tons of iron a day. A modern steel enterprise can produce over 10 million tons of steel a year.

The progress in S&T not only pushed forward the development of productivity, it also exerted a profound influence on the changes in the socioeconomic structure. As S&T and social division of labor developed, the economic structure continued to change. The percentage of agriculture gradually dropped and the percentage of industry rose. The percentage of the mining industry gradually dropped and the percentage of the manufacturing industry rose. The percentage of the manufacturing industry gradually dropped and the percentage of the service industry rose. In different nations, the economic structure is different because of the difference in the level of S&T. In developed nations such as the United States, agricultural production has been completely mechanized. Among the working population, only 4 percent are engaged in agricultural production. In industrial production, simple physical labor is disappearing and complex manual labor is being replaced by machinery. The percentage of the traditional consumer industry (such as textiles) and basic industries (such as the steel industry) has gradually decreased and the emphasis has been placed on the development of industries based on science (such as aviation, machinery, electronics, chemical industry). Western European nations and Japan have the same characteristics as the United States in economics and in science but they cannot catch up with the United States in degree. In these nations, agriculture has

continued to give way in the economy, and industry is already modernized. Industries based on science are developing greatly. But the center of the economy of these nations still remains in the traditional basic industries. In most of the developing nations, agriculture is still the main component of the economy. Their industrial foundation is relatively weak and it has not formed a system. The major industries are still the traditional basic industries and consumer products industries. Industries based on science are still mostly in an emerging state.

The effect of science and technology on the economy is realized mainly via technology. Technology is the bridge and the link between science and the economy. It is a huge force that pushes economic development forward. In the history of development of S&T, the major inventions of the steam engine, electric power and radio all reflected the close relationship between science and technology. The major acheivements of modern S&T, such as radar, nuclear power and space flight, are actually technical achievements. The scientific problem of man landing on the moon had been solved by Newton 300 years ago: the accomplishment of the task had to await development of the needed technology. The same situation also occurred in radar and nuclear power but the time of development was much shorter. To push the economy forward, we must focus on technology as the priority. Now the world's nations, whether it be the United States and Japan based on technology or Britain with a scientific tradition, are all emphasizing technological work and most of the strength of S&T is placed in the development of technology.

Science and technology, after a long period of development, have already formed a broad system with many fields. But according to their nature, they can be categorized into three types. Studies of these three types have formed three different stages in the entire course of scientific research:

1. basic research to explore and discover new facts and new laws;

2. applied research to explore the possibility of applying new knowledge and to invent new things;

3. developmental research to apply research achievements in production, to form new products and new techniques.

As S&T develops, the number of scientific research agencies in the world has continued to increase. At the beginning of the 20th century, there were only over 100 scientific research agencies in the United States. Now there are more than 5,000. Prior to the October Revolution, Russia had only over 300 scientific research agencies. Now the Soviet Union has already increased the number to more than 5,000. To adapt to the needs in S&T development, the S&T teams of each nation have continued to grow. At the beginning of this century, the population of people engaged in scientific research throughout the world amounted to only some 15,000 people. But at present, according to incomplete statistics, the population of scientific research personnel among the three types of research described above in some developed agencies of each nation are different, their structure can be generally

categorized into the several following types:

1. science academies or national research centers;
2. research agencies directly subordinate to government departments;
3. universities;
4. research agencies of enterprises.

Generally speaking, the science academies, the national research centers and the universities are the centers of basic research. The research agencies of government departments and enterprises emphasize applied research and developmental research. The obvious characteristics of the scientific research agencies in the United States is that the research agencies of industrial enterprises are very strong. Among the more than 5,000 research agencies throughout the nation, those belonging to the enterprises number more than 4,000 and their personnel and funds constitute 70 percent of the national totals. In contrast, the scientific research personnel and funds of enterprises in the Soviet Union constitute only 3 percent of the national totals.

The funds used for S&T research and development each year throughout the world totals $150 billion. The funds for scientific research in some developed nations constitute about 2 to 3 percent of the GNP. The proportional distribuiton of scientific research funds among the three types of research is 1:2:6. In the Soviet Union before the 1970s, the percentage of the funds for applied research was 60 percent. This was readjusted in the 1970's and the proportional distribution approached 1:2:6.

A country's S&T structure is determined to a large degree by the country's economic strength, the level and the scale of development of science and technology. The S&T structure of a country is different at different times. For example, in 1940, the funds for scientific research in the United States totaled less than $600 million, about 0.6 percent of the gross national product. At the beginning of the 1950's, it rose to over 1 percent of GNP. It rose to 3 percent only in the middle of the 1960's. The development in different countries is also different and it is not possible to have a uniform S&T structure.

II. The Several Stages of S&T Development

Before Liberation, our nation was a semifeudal and semicolonial country. The economy was very backward, and S&T was even more backward. At the time, there were very few scientific research agencies. Including the 21 research institutes of the former Academia Sinica and the Beiping Research Academy, there were at most several dozen research institutes and only several hundred scientific research personnel. The scientific disciplines were not complete, and there was almost a blank in S&T departments closely linked to production and new S&T departments.

After the founding of new China, the party and the state exerted great efforts to revive the national economy and at the same time, implemented forceful measures, and developed S&T according to plan. In the second month following the founding of the People's Republic of China, the Chinese Academy of Science was founded. And in January, 1950, a national natural sciences workers conference was held. S&T personnel from all fields throughout the nation were called upon to jointly explore the future of developing science and technology, and principles and tasks to develop science and technology were clearly proposed. This enabled the science and technology of new China to follow a healthy path of development under the direct care of the party and the state from the beginning.

From then on, and after 30 years, our nation's S&T continued to develop and strengthen, and the achievements are abundant. The course of development of 30 years, in view of the changes in the S&T structure, can be generally divided into five stages.

/1. The Pioneering Stage (1949-1957)/

In November, 1949, the establishment of the Chinese Academy of Sciences marked the beginning of this stage. The Chinese Academy of Sciences was established on the foundation of the former Academia Sinica and the Peiping Research Academy which it took aver. After reorganization and strengthening, preparatory offices were established for 17 research units and 3 research institutes. At the same time, the administrative departments of the government, such as the departments of fuel industry, metallurgical industry, machinery industry and agriculture also established their own scientific research academies one after the other. The basic task during this stage was to establish the S&T foundation, stimulate and unite the work of scientists, bring the relationship between scientific research agencies and related industrial and agricultural departments closer together, strengthen experimental work in scientific research, develop investigation and study of our nation's natural conditions and natural resources step by step, place emphasis on solving key problems and common problems related to national construction and the development of each scientific discipline, and take charge of training scientific research personnel.

At the same time, the teams of S&T personnel shouldering this historical task consisted of three groups:

(1) The S&T strength nurtured during the period of the revolutionary wars of the party. The large number of intellectuals who joined the revolution during the long period of revolutionary wars engaged in military industry, health, communications and education, became the first group of S&T personnel of the party. After national Liberation, the numbers were not large but they all took up leading positions in the S&T departments and became the backbone and a part of the core of our nation's S&T teams.

(2) The overseas students who returned before and after national Liberation and during the 1950's numbered over 3,000. Most of them learned a special

skill. Because they grasped advanced S&T and production experience, most of them became leaders in science, leaders and organizers of scientific and technical work after returning.

(3) The S&T personnel left by old China after Liberation amounted to about 50,000 people. Among them were a group of old professors, old scientists and technical experts. The party carried out the policy of taking them in. Most of them were patriotic and could self-consciously serve the construction of the motherland.

Because the party carried out the correct policies, these three forces were able to join closely together and develop their function in scientific research work. At the time, the main research tasks were:

1) research in the peaceful use of atomic energy;
2) research coordinated with the construction of the new steel bases;
3) petroleum research;
4) earthquake research;
5) study and research coordinated with river valley planning and river valley development;
6) research and survey of the resources of tropical plants in southern China;
7) research in zoning China's natural regions and economic regions;
8) research in antibiotics;
9) research in high polymers.

The development of the research tasks described above greatly promoted the completion of our nation's First 5-Year Plan.

Because of the victorious completion of the First 5-Year Plan, 156 industrial projects were put into use and began production. They not only greatly strengthened our nation's original industrial sectors, they also began to establish many new industrial sectors that did not exist previously, such as metallurgical equipment manufacturing, mining equipment manufacturing, power generating equipment manufacturing, aircraft manufacturing, automobile manufacturing, manufacturing of new types of machine tools, and high-grade alloy steel smelting and important nonferrous metals smelting etc. The technical strength increased greatly. In 1957, the number of engineers and technical personnel in industry throughout the nation reached 175,000 people, a twofold increase over the 58,000 people in 1952. At the beginning of national Liberation, the more than 10,000 students our nation sent to the Soviet Union to study (including 9,500 science and engineering students) graduated and returned. Most became the backbone of the S&T work of each unit. During the period of the First 5-Year Plan, our nation's education also developed greatly. More than 200,000 S&T personnel were trained and they provided a newborn force for the S&T teams.

The development of the economy is the material foundation for science and technology to develop according to plan. At the end of 1955, while the First 5-Year Plan was still being smoothly carried out, the work of drawing up a "long range plan for science and technology for 1956-1967" began under the organization and leadership of the Scientific Planning Commission of the State Council. The plan was drawn up mainly according to the scientific

tasks urgently needed to be completed by the state, i.e., "using tasks to lead science". At the same time, emphasis was also placed on theoretical research. The plan proposed 57 important scientific and technical tasks and 616 central questions. Twelve key points were summarized from among the important tasks including: the peaceful use of atomic energy, new technology in radio electronics, jet technology, automation of production processes and precision instruments, prospecting for petroleum and other especially deficient resources, prospecting and determination of bases of mineral raw materials, establishment of the series of alloys based on our nation's resources and the search for new metallurgical processes for the comprehensive utilization of raw materials, the development of organic synthesis, new types of power machinery and large machinery, major S&T problems in the comprehensive development of Huang He and Chang Jiang, the major questions of the use of chemicals in agriculture, mechanization, electrification, the prevention, control and elimination of several major diseases that threaten people's health, and several important theoretical questions in natural sciences, etc.

This plan was basically completed 5 years ahead of schedule under the correct leadership of the party and with the efforts of the S&T personnel throughout the nation. Up to that time, our nation had basically formed a relatively rational S&T structure. The rationality of this structure was manifested in the following:

(1) The direction of S&T work was clear. Scientific research work has always served the major efforts for completing economic construction. Emphasis was placed on applied research and developmental research to greatly develop technology, and necessary theoretical and basic research was appropriately arranged. S&T work and economic development were proportionally coordinated and the proportional efforts within scientific research work were also more coordinated.

(2) The structure of the S&T teams was relatively rational. The ratio of high- mid- and elementary-level S&T personnel was relatively appropriate. High-level scientific research personnel maintained a definite percentage, the age composition of S&T personnel was relatively normal, most of them were young and strong. The average ages of high-level research personnel was 30 to 40 years old. The ages of famous scientists were below 50 years old. Most people were in the best age group for scientific creativity (in foreign countries, the range is 25 to 45 years of age). Therefore, although the number of scientific research personnel at that time amounted to only about 50,000 people, the scientific research ability was strong or relatively strong. During the First 5-Year Plan, many S&T problems in socialist construction were solved by relying on our own efforts.

(3) Scientific research tasks were mostly combined closely with production and the economy. The popularization of scientific research achievements was smooth, and many achievements quickly produced results in production.

(4) The combination of scientific research and imported technology was good. During the period of the First 5-Year Plan, 156 large complete sets

of equipment were imported from abroad. In addition, a much technical data was imported via bilateral technical cooperation. The use, digestion and popularization of such equipment and technologies began mostly on schedule (some ahead of schedule). This was the result of the full combination of domestic scientific research and imported technology.

(5) In scientific and technical work, the use of manpower materials and money was coordinated. During the First 5-Year Plan period, the state appropriated 764 million yuan for S&T research. Although it constituted only 0.13 percent of the total industrial and agricultural production value, the ratio of manpower, materials and money was coordinated and the economic results were visible.

/2. The Stage of the Great Leap Forward and Imbalance (1958-1960)/

In 1957, we victoriously completed the First 5-Year Plan. In 1958, we carried out the great leap forward in a big way. On the S&T front, we proposed the slogan of catching up with and surpassing the world's advanced S&T levels. An enthusiastic movement of mass character to develop S&T rapidly engulfed the entire nation. Many scientific research subjects that we never dared to propose were proposed, for example: high-temperature alloy technology, ultrasonic wave technology, semiconductor technology, etc. they were countless. Although this reflected the urgency of the broad number of people and S&T workers to catch up with and surpass the world's advanced technological levels to bring credit to the country, a lot of scientific research began in a hurry and in a rush. There was a fundamental lack of mutual coordination, and correct leadership was even lost, and there were no coordination and connection with surrounding related professions. This greatly scattered manpower, money and materials, and at the end, many projects ceased after wasting money and manpower.

In addition, scientific laws were violated, S&T workers were looked down upon, we unilaterally understood that the masses were heroes, and we used the method of carrying out political movements to direct scientific experiments, and greatly hurt the enthusiasm of S&T workers. We caused a great loss in economic construction, and also caused an imbalance in the S&T structure. The main manifestations were the following:

(1) Many of the achievements of the great leap forward could not be popularized and used. The economic results of scientific research work greatly decreased. Scientific research and production, scientific research and economic development began to detach from each other.

(2) Because of the rush, there was a lack of coordination, a large number of people joined in the work and this disrupted the normal order in scientific research work. Basic research, applied research and developmental research within scientific research work were also mixed together.

(3) Because of the campaign to expose "white banners" and to oppose "the line of the experts," professors and experts were stripped of their right

to speak in scientific research matters. Thus, the proportion among high-, mid- and elementary-level research personnel in the scientific research teams was not coordinated, and this greatly affected efforts to produce results and to train talent.

(4) Because of the singular effort to catch up with and surpass, surplus research strength was placed in pioneering S&T, and research in ordinary S&T was relaxed. The ratio between pioneering S&T and ordinary S&T was imbalanced, and research in pioneering S&T could not produce results for a long time. This created a great waste of scientific research strength.

(5) In attempts to catch up and surpass, we overestimated our own strength and underestimated the technological levels of foreign nations, relaxed efforts to absorb and digest foreign technology, and caused a proportional imbalance between imported technology and domestic research.

The Central Committee discovered the above situation, implemented forceful measures in time, and corrected it. In November, 1959, the State Scientific and Technological Commission was founded on the basis of the original Scientific Planning Commission and the Technological Commission of the State Council. Comprehensive management and organization of coordinated efforts in S&T work were grasped from the Central Committee down to the localities in an overall way, and we strived to adjust the imbalance in the S&T structure. The main tasks after establishing the State Scientific and Technological Commission were:

1) to implement the S&T policies of the state;
2) to organize and draw up plans for the development of S&T, and to organize efforts to implement, supervise and examine the plans;
3) to organize and coordinate major scientific research tasks;
4) to organize efforts to evaluate, award, popularize and use important scientific research achievements and inventions;
5) to study and solve problems in the conditions for scientific research work;
6) to organize and manage efforts to train, improve and use S&T teams;
7) to distribute scientific research funds;
8) to organize and develop S&T cooperation and academic exchange with foreign nations.

Under comprehensive management and unified coordination by the State Scientific and Technological Commission, our nation's S&T workers held firmly onto the spirit of firm determination, overcame difficulties and made contributions even though during the great leap forward we faced 3 years of economic difficulties, and the Soviet revisionists betrayed our trust, tore up contracts and withdrew experts, and many imbalances were created in the economic and S&T structures.

/3. The Stage of Readjustment (1961-1965)/

To further overcome the imbalance in the S&T structure, the Central Committe Committee directed the State Scientific and Technological Commission and the

Chinese Academy of Sciences in 1961 to summarize the experience and lessons of the work of the previous period, and drew up the document "Several Questions Concerning the Present Work of Natural Science Research Agencies" i.e., "Fourteen Articles on Scientific Research." In March, 1962, a scientific work conference was held in Guangzhou. The Central Committee again emphasized that most of the intellectuals were patriotic and progressive. This conference also studied the goals of the "long-range plan for 1963-1972" and after the conference, work to draw up the plan was organized.

To realize comprehensive management and balance of S&T, the State Scientific and Technological Commission also spent much effort to carry out work to establish specilized groups, to examine the work through specialized groups, to reflect on and solve problems. The specialized groups had the authority to propose opinions concerning investment in scientific research, appropriation to agencies, personnel and equipment and their coordination. These were carried out after approval by the specialized departments and the Scientific and Technological Commission. The coordination of ordinary tasks and nonscientific and technological problems could be decided by the specialized groups on their own. The specialized groups were formed by leading cadres and specialists to reflect the opinions of the basic-level units. It is a better form of three-way alliance. By the end of 1965, 75 specialized groups were established with 1,785 members and 127 specialized group secretaries.

Because of these correct policies and foreful measures, the 12-Year Plan was completed 5 years ahead of time in 1962. A group of new sciences and industries including atomic energy, semiconductors, computers, petrochemistry were established, and they filled some blank areas in our nation's S&T. The year 1964 was a year of rapid development of new sciences in our nation. The second generation computer was successfully test manufactured. The first atomic bomb was successfully detonated. This made ours one of the world's nations having nuclear weapons.

In 1965, the number of S&T research agencies throughout the nation developed to 1,741 agencies with a total of 312,749 workers, including 119,966 research technicians. University graduates amounted to 99,274 people, constituting 82 percent.

/4. The Cultural Revolution Stage (1966-1976)/

During the 10 years following 1966, our nation's S&T efforts, like other efforts, were seriously sabotaged by Lin Biao and the gang of four. They pushed for the extreme "leftist" line, persecuted intellectuals and S&T personnel, and widened the gap between our nation's S&T and the international levels, which was narrowing at the time. From 1961 to 1965, the relatively rational S&T structure which had been readjusted on an overall basis was seriously sabotaged and the loss was very great.

(1) The State Scientific and Technological Commission was combined into the Chinese Academy of Sciences and abolished, and the Chinese Scientific and Technological Association also ceased its activities;

(2) Many research agencies were abolished, combined or sent down. Many scientific research personnel were sent down or dismissed. Basic theoretical research was completely stopped. Technical personnel were sent to work in the fields.

(3) The working conditions of S&T research, such as libraries, information, instruments and propaganda publication were almost completely destroyed. Over 300 types of S&T publications throughout the nation were all terminated, causing the broad S&T circles to lose their ears and eyes.

(4) S&T contracts and exchanges with foreign nations almost ceased. The entire nation's S&T research work was actually isolated from the rest of the world.

The loss created by all this cannot be made up. The entire nation's S&T structure was not only disrupted, some links were severed.

The broad numbers of S&T personnel did not waver in their confidence in the party and in socialism under the suppression, persecution and devastation by the gang of four. They still insisted on conducting scientific experiments under extremely difficult conditions and contributed to the development of the nation's S&T. The launching of a satellite, the detonation of an atomic bomb and a hydrogen bomb, the building of the Chang Jiang Bridge in Nanjing and the development of acupuncture anesthesia and such new S&T achievements during this period were all inseparable from the conscientious efforts and fearlessness of countless S&T workers.

/5. The Stage of New Development (After 1976)/

After crushing the gang of four in 1976, our nation entered a new historical period. The party and the state implemented a series of important measures to strengthen S&T work to realize the general task of building our nation into a strong socialist nation and completing our nation's four modernizations. In September, 1977, the Central Committee decided to reestablish the State Scientific and Technological Commission. In March, 1978, a National Science Conference was held and the "Guideline for the 8-Year Plan of 1978-1985 to develop Science and Technology" was drawn up. After the national science conference, the China Scientific and Technological Association and its subordinate societies, research associations and organizations engaged in the popularization of science became active again and academic exchange activities were conducted on a widespread basis. In March, 1980, the Second Conference of the National Scientific and Technological Association was held. It further pushed forward the activities of the nation's academic societies and the efforts to popularize science.

The party and the state insisted on bringing order out of chaos along the entire S&T front. The past policies and measures which were inappropriate or which were unsuited to the present situation were firmly corrected and changed. Especially concerning the question of intellectuals, they affirmed that S&T workers were intellectuals of the working class and were forces which the party relied upon. They clearly determined that S&T were

productive and motive forces to push forward social and economic development. The various policies toward S&T work once again began to be included in the correct paths.

In 1978, the number of S&T research agencies throughout the nation developed to 5,962 agencies with 604,972 workers, an increase of 93 percent over the number in 1965. Among them were 202,332 research technicians, constituting 33 percent of the total and showing an increase of 68 percent over 1965. In 1979, the state allocated 3.3 billion yuan as funds for scientific research agencies throughout the nation. This constituted 0.54 percent of the total value of industrial and agricultural production.

III. Existing Problems

For 30 years, our nation's science and technology have developed greatly. The entire nation has now formed "five realms" that are relatively complete in all fields and that involve various academic disciplines.

First, the Chinese Academy of Sciences is the comprehensive research center for natural sciences of the entire nation. Branch academies have also been established in some provinces and cities.

Second, higher educational institutions have implemented the principle of combining teaching with scientific research. They are both the centers of teaching and the centers of scientific research.

Third, the various departments of the State Council have related special research agencies, such as the Agricultural Science Academy, the Medical Academy, the Forestry Academy engaged in scientific research mainly involving applied research and developmental research.

Fourth, the scientific research agencies of each province, city and autonomous region are mainly engaged in applied research and developmental research based on the needs of national economic development at the locality.

Fifth, are the scientific research agencies of the National Defense Scientific Committee.

Relying on these agencies, we conducted scientific research and technical research of our nation's natural resources and environment on an unprecedented scale, conducted many experiments and much research in scientific research topics urgently needed in economic construction and national defense, created and invented a number of new products, new techniques, new technologies, new equipment and new materials, and also created some sciences and technologies possessing special characteristics by combining them with our nation's special characteristics.

We also established a series of new S&T departments from nothing, such as the S&T of atomic energy, information theory and technology, laser

technology and remote-sensing technology, and conducted much research and experimental work.

The S&T reserves already accumulated by us, the scientific research achievements realized and the S&T talent trained are the huge material and technological foundation and strength that can be relied upon to march toward the four modernizatinns.

But, on the other hand, S&T endeavors of the recent 20 years also suffered irreparable loss. In the structure of S&T, in the relationship between S&T and the economy, there are still varying degrees of imbalances and irrational situations. They await study and resolution.

/1. S&T and the Economy Are Not Coordinated./

For many years, our nation's S&T has not been coordinated with the economy. First, the national economic development plan and the S&T development plans are mutually detached. Subjects of S&T development are not included in economic development plans and a large number of scientific research achievements have no place for popularization, thus a productive capability to stimulate economic development cannot be formed. Thus, S&T and the economy have formed so-called "two skins." Beginning from the First 5-Year Plan to 1979, the cumulative expenditure of funds for civilian S&T throughout the nation was 34 billion yuan. Subtotals during different periods are listed in the following table:

Our Nation's Expenditure for Science and Technology

Period	Amount (100 million yuan)	As a percentage of total industrial and agricultural production value %
First 5-Year Plan	7.64	0.13
Second 5-Year Plan	39.44	0.46
1965	15.00	0.8
1966-1976	?	0.4
1978 (rose again)	53.33	0.48
1979	?	0.54

Very obviously, the ratio between economic development and S&T development was very mismatched.

From 1953 to 1979, the total value of industrial production in our nation grew an annual average of 11.1 percent. The growth was mainly due to the increase in capital (including fixed assets and circulating capital), or the increase in the labor force. Only a small portion resulted from technological progress. In postwar Japan from 1955 to 1978 (a 23-year

period), its economy grew 11 times, averaging an annual growth of 11.2 percent. Of this, 6.4 percent relied on the increase in capital, 3.3 percent relied on technological progress, and 1.5 percent relied on increases in work. Japan continued to renovate technology in the course of expanding reproduction, used new S&T achievements (of course there were also other important factors), and even though resources were exhausted, it could realize high accumulation (the rate of accumulation in 1965 was 31.7 percent, reaching 40.6 percent in 1970) and a high rate of economic development. In our nation, whenever we encountered high accumulation, the rate of development was always slow. Now, the economics circle has proposed that 25 percent is the best rate of accumulation, but, in the structure of accumulation, how to consider S&T factors is worth studying.

/2. Separated Management From Top to Bottom Is Unfavorable to the Development of S&T./

The system of separated management based on the system of administration from the Central Committee down to the localities, from top to bottom, has allowed the "five realms" of the S&T front described above to establish their own individual systems and each engaged in its own activities. Under this situation, research topics (including the task of research and development of new products) were all vertically assigned by the higher administrative departments of the administrative system. There was absolutely no connection and coordination between departments. Sometimes research topics were rashly started or terminated according to the situation abroad. Many research agencies were founded instanteously just to be fashionable. This caused serious redundancy and waste.

In addition, this kind of management system that exercised unified control from top to bottom, such as the unified planning and unified expenditure of scientific research funds, the unified procurement and unified marketing of material supplies, unified importation and unified exportation in foreign trade, unified contracting and unified assignment of personnel and work, etc. has made it difficult for research agencies, except a very few number, to fully guarantee the acquisition of manpower, money and materials in the course of carrying out scientific research plans. Thus, many research institutes had to become "large and complete" and "small and complete" agencies. This scattered and wasted manpower, money and materials. In particular, some sophisticated large general-purpose experimental equipment were frequently monopolized and the rate of utilization was very low.

/3. The Ratio of the Three Types of Research, Basic Research, Applied Research and Developmental Research Was Imbalanced./

As described above, in developed nations, the ratio of investment in basic research, applied research and developmental research is generally 1:2:6, and this is maintained at a relatively stable level for a long time. See the following table for details:

Ratio of Investment in Basic Research, Applied Research and Developmental Research

Country	Basic research %	Applied research %	Developmental research %
United States (1977)	12.7	23	64.3
Britain (1975)	16.1	25.4	58.5
West Germany (1975)	23	*	77.0
Japan (1977)	16.2	25.1	58.7
France (1975)	20.3	36.2	43.5

*West Germany's applied research and developmental research were not separated.

There are no direct statistical figures for the ratio of investment in the three types of research in our nation. But, in the distribution of scientific research funds, the Chinese Academy of Sciences is a big receiver. In 1978, the scientific research fund for the Chinese Academy of Sciences was about 500 million yuan. Its scope of research is very broad, including basic research, applied research and developmental research, and the amount of funds used for basic research may be even more. The scientific research funds of the industrial sectors are mostly used for applied research and developmental research. There is a definite amount of funds used in basic research. Scientific research funds of provinces, cities and autonomous regions can be said to be used for all three, basic research, applied research and developmental research, but mainly for the first two. Scientific research funds of higher educational institutions are mostly used for theoretical and basic research. According to these situations, we preliminarily estimate that the percentages for basic research and applied research at present in our nation is larger and the percentage for developmental research is smaller. This situation is also reflected in the distribution of S&T personnel. Over half of all S&T personnel are engaged in basic research and applied research. The percentage is relatively large while those engaged in developmental research are fewer.

As a developing socialist nation, we should put more emphasis on applied research and developmental research. Because of the results of separate management of scientific research agencies by the supervisory system, a close link among the three types of research in our nation, basic research, applied research and developmental research is lacking.

/4. The Structure of the S&T Professions Is Irrational./

In developed nations, generally the development of S&T and the change in the S&T structure bring about changes in the economic structure. In Japan, this is called "sophistication of the economic structure." Changes in our S&T structure has for many years followed changes in the economic structure. After 1958, the national economic structure formed an irrational economic structure consisting of heavy industry, light industry and agriculture. The

structure of S&T professions also changed to a structure of heavy industry, light industry and agriculture. During the cultural revolution, sabotage by the gang of four caused heavy industry to become heavier, light industry to become lighter, and agriculture to become more unsuitable to the needs of the whole national economic development. Under this situation, "five emphases and five de-emphases" in the structure of the S&T professions also emerged:

(1) Between industry and agriculture, industry was emphasized and agriculture was de-emphasized;
(2) Within industry, heavy industry was emphasized and light industry was de-emphasized;
(3) Between pioneering S&T and general S&T, pioneering S&T as emphasized and general S&T was de-emphasized;
(4) Between military S&T and civilian S&T, military S&T as emphasized and civilian S&T as de-emphasized;
(5) Between inland scientific research and coastal scientific research agencies, coastal research facilities were emphasized and inland research facilities were de-emphasized.

The existence of this kind of S&T structure for a long time has caused a lopsided development in our nation's economy and S&T. On the one hand, the atomic bomb and the hydrogen bomb were detonated, an artificial satellite was sent into space, artificial bovine insulin was synthesized, the output of steel surpassed 30 million tons. These, of course, are sufficient to show the outstanding achievements of our nation's S&T, but on the other hand, we still cannot design and manufacture all large equipment that is technologically complex, and the technological level of agriculture and light industry is still very low. Food, clothing, utensils for our nation's people are still in short supply. These all reflect the irrational structure of our nation's S&T professions.

/5. Among Science, Technology and the Economy, Technology Is Even More Backward./

Technology (belonging to the realm of applied research and developmental research) has a clear goal. It utilizes the knowledge of natural science to control nature. In other words, technology is the utilization of scientific knowledge to actually benefit mankind. In this sense, the development of technology is closely related to society and the economy, and the development of technology can also push forward the development of science by providing modern technical equipment. Therefore, among science, technology and the economy, technology is decisively important. Developed countries such as Japan and Britain have realized entirely different economic results by whether they emphasized technological development or not. Japan's S&T is characterized by less unique scientific inventions but a high technological standard. It has a superior ability to actually develop and to study and develop new products and new technologies that are internationally applicable. This has served a great function in developing

Japan's economy and in increasing Japan's strength. Britain has historically been known for its scientific research. But during the recent decade, it has neglected technological development. The competitive ability of British industrial products in the domestic and international markets has deteriorated.

Our nation's science lags behind developed nations and our technology is even more backward. Technology, compared to science, is more incapable of adapting to the needs of national economic development.

Our nation's technological backwardness is outstandingly manifested by the old and outdated technical equipment of most industrial enterprises. The equipment is generally at the level of the 1950's and 1960's, and some are even of the 1940's. Take Shanghai City, which has a developed light industry and textile industry, as an example. Among the 87,000 units of equipment of the light industry sector, only 10 percent of the equipment is of the period after the 1950's. About 50 percent of industrial machine tools have a useful life of more than 10 years, but many have been used for 20 to 30 years. Requirements for product precision cannot be met. Upgrading and replacement of light industry products and textiles are slow because the products are limited by the technological conditions of the equipment. Some products have been produced for several decades and do not have any competitive ability in the international market. They create little foreign exchange and some have been eliminated.

Among the entire group of S&T personel, more people work in scientific research agencies and relatively fewer people are engaged in actual technical work on the frontline of production. Within the realm of industrial production, again there are more people on top and fewer at the bottom. Within industrial enterprises, there is almost no good S&T personnel, funds for scientific research are scarce, and this has greatly limited the development of technology. Among the S&T teams, there is especially a lack of mid-level technical backbone personnel. This of course is the direct result of 10 years of upheaval. But, in assigning graduates from higher scientific and engineering colleges and universities, the best are still assigned first to the industrial ministries, the universities and the research institutes and then to the enterprises as cadres, and lastly to the worksites of enterprises. This is also a hindrance to developing technology.

/6. The Application and Popularization of Scientific and Technological Achievements Are the Weakest Links in the S&T Structure./

We say science is a productive force. This does not mean scientific achievements themselves are productive forces. For scientific achievements to become productive forces, there still must be a transition process at a fairly high cost. Scientific achievements can only become productive forces if they are actually used in production, and popularized in society to continue to produce new products for society and to continue to improve hardware-type production methods and software-type organization and management methods. Developed nations have implemented a series of policies and

measures to apply and popularize S&T achievements. Some people say that the cost they pay is often a hundred times the cost of basic research and applied research. Japan has established a "new technology development group" in addition to its patent agencies throughout the nation to apply and popularize S&T achievements. The group specializes in pushing forward the application of S&T achievements.

The application and popularization of S&T achievements in our nation have been very poor for a long time. According to incomplete statistics, between 1963 and 1966, only a few of the 10,189 S&T achievements (not including military projects) were truly applied and popularized. The reason was primarily that commodity prices, taxes and other policies and the economic system were unsuited to the application and popularization of S&T achievements. For example, our nation's scientific research subjects are generally proposed by research agencies and the upper echelon leadership. The material conditions needed are all provided by the state. All S&T achievements belong to the whole people and they can be used by any unit. After the research task is completed and new products have been test produced, the state does not make plans and the needed investment is not given, there are no sources of raw and processed materials, sometimes the price is too high, there is no market, all of the profits from the new products are submitted, and the enterprises have no intention of starting production. Therefore, as a result, new products and new technologies often are not applied and popularized. Second, there are no channels for application and popularization. Under this situation, some research agencies, such as the Changchun Applied Chemistry Institute, which had solved the synthesis of isomyl rubber many years ago and achieved success in small-scale experiments, could not further expand the effort because it involved chemical equipment and auxiliary automatic control and testing systems. Because the achievement could not be immediately popularized, consideration was given later to purchasing patent rights of use from abroad. There are many other research agencies that have for a long time been pursuing the singular goal of realizing research achievements, exerted much effort to produce outstanding achievements, as tributes to the state, and equated the achievements of the laboratory to foreign industrial products. They believed that as long as a test product had been produced, the work was considered done.

/7. The Relationship Between Domestic Research and the Introduction of Technology Was Improper./

In the 1960's and 1970's, we were almost isolated from the world. Although this was due to the blockade by imperialism and social imperialism, at the same time, it was also related to our unilateral emphasis on self-reliance. It is impossible for any nation, including the most developed countries, to be advanced in everything. It must learn from other nations. One of the reasons Japan, West Germany and such nations enjoyed a relatively fast economic development is that they actively and selectively imported every nation's new technology. In post-war Japan, domestic scientific research work mostly involved digesting and improving imported technology. In the 1950's, 50 percent of the scientific research funds of the whole nation were used for the introduction and digestion of technology. At the

beginning of the 1960's, this percentage reached 70 percent and it dropped to 10 percent only within the last few years. Japan used a total of more than $7 billion after the war to introduce technology. If these technologies were researched and developed by itself, some Japanese estimate, they would have required about $200 to $300 billion and there was no guarantee that they would be successful.

In the past 2 years, we imported many complete sets of equipment and technologies, but we have not conducted an overall study of how they can be combined with the plans for the development of our nation's S&T. As a result, introduced technology is detached from domestic research. Up to now, most of our introduced technology has consisted of imported complete sets of equipment. Postwar Japan rarely did so. Its largest technological import was the nylon production technology from the U.S. Dupont Co. The cost was only 1 percent of the cost of importing our Baoshan Steel Mill.

We imported complete sets of equipment, but we did not conduct a full-scale technical and economic evaluation and feasibility study beforehand, and we even did not consider our own nation's resources. The importation of 20 sets of chemical facilities is an obvious example. Because of a lack of raw materials, the facilities could not realize normal production after they were installed. This created a great waste.

Also, after importing such facilities, we rarely prepared necessary research strength to study, digest and improve them. As a result, the same technology and equipment were introduced again and again, creating waste.

In general, we have not yet entered the stage of introducing technology in its true sense, i.e., purchasing patent rights of use and technical secrets of success from abroad to be digested and improved by ourselves and to make them our nation's own technology for popularization on an overall basis.

/8. The Present Situation of S&T Personnel and the Requirements of Economic Construction Are Not Suited to Each Other./

A comparison between 1978 and 1965 shows that the total number of workers of the system of ownership by the whole people throughout the nation increased 96 percent while the number of scientific research personnel increased only 68 percent (the number of non-S&T personnel in research agencies increased 93 percent). The number of scientific research personnel as a percentage of the total number of workers of scientific research agencies dropped from 40 to 30 percent. In 1965, more than 80 percent of the scientific research personnel were university graduates or higher, and now they constitute 73 percent. In addition, among the total of 5,962 research agencies, 2,975 agencies belong to the counties, and few qualified scientific research personnel have been assigned to them. They have done unpresentable research and they are research agencies in name only.

The above situation is not suited to the requirements of present economic construction.

First, problems exist in the whole series of systems of management, use and training of S&T personnel. Mobility of S&T personnel is difficult. Only a movement of personnel can benefit mutual supplement and mutual exchange. Some of our iniversities have "four generations under the same roof." The movement of scientific personnel in our production, scientific research and educational departments, is very difficult.

Second, the leading personnel of scientific research agencies are still "science blind" or "half blind about science," and they cannot forcefully organize and manage scientific research work.

Third, middle-aged S&T personnel have a poor basic knowledge because the educational system of the past had shortcomings, therefore they encounter greater difficulties in absorbing new knowledge and thus opening up new fields.

Fourth, there are even fewer scientific management personnel. Our scientific management is very backward.

The eight aspects above cited the imbalances in our nation's structure at present. There are many reasons for the imbalance. They can be generalized into two categories: reasons of the system and reasons of understanding. In the latter category, the most important one is that for a long time in scientific research management, like other efforts, we did not emphasize economic principles, and we did not pay attention to economic results. We advocated only considering political aspects, not economic aspects, and whoever emphasized considering the economic aspects was regarded as practicing revisionism. We did not admit that productive materials are commodities and we only cared about the useful value of products, not the value and cost, and we did not emphasize economic accounting. All of this is reflected in our S&T work, and many problems have remained unsolved for a long time.

IV. Appropriately Handled Several Relationships

To readjust the S&T structure well, we should start from the fundamentals and grasp the following key links:

/1. Correctly Handle the Relationship Between the Development of the Economy and the Development of S&T./

Our nation's industrial and agricultural production already has a fairly large scale, but the elevation of the technological standard is very slow, the economic results are poor, and the elevation of the people's living standards is also very slow. The key reason is that S&T are detached from the economy. There are three ways to handle the relationship between economic development and S&T development well:

(1) Technological progress must be taken as an important means to develop the economy. Plans for socioeconomic development must fully take into consideration S&T achievements. In the national economy, suggestions about S&T achievements that have major economic significance should be used in time. S&T achievements and advanced experience should be more widely used in production, and the organic relationship between plans for social and economic development and S&T achievements should be strengthened.

(2) S&T must serve economic construction well. The determination of key S&T projects must not only take into consideration the level and trend of development of S&T abroad, more importantly, it must also consider the actual needs of domestic social and economic development. S&T should contribute to economic development and they should solve the key technical topics in economic development timely and effectively.

(3) Economic development and S&T development must be considered as a whole, uniformly planned and arranged, organizally combined and linked together. S&T must be truly included in economic development plans. When departments, localities and enterprises draw up production plans and capital construction plans, they must also draw up technical reform plans and S&T development plans. Planning departments must comprehensively balance and uniformly plan and arrange all of these aspects.

/2. Correctly Handle the Relationship Between Science and Technology./

Science and technology are linked and are different. Within a relatively long time, technology must be placed foremost so that it can contribute to economic development.

(1) The history of S&T development shows that science and technology each has its own side of independent development and also a side of mutual promotion. Science and technology do not have a necessary cause and effect relationship but they are mutually complimentary. Therefore, the development of science and technology should be closely combined and neither can be done away with.

(2) Technology is the link and the bridge between science and production. Only through technological development can science be transformed into a direct productive force and develop its function in the buildup of production.

(3) Technology is a great driving force that pushes industry forward. If technology is not developed, industry cannot possibly progress. We must strengthen the development of production technology that has a broad influence upon economic buildup.

Therefore, we must appropriately combine science and technology, and place technology foremost, emphasize technology and greatly develop technology.

/3. Correctly Handle the Relationship Among Advanced Technology, Intermediate Technology and Traditional Handicraft Technology./

Our nation is expansive, and development is very imbalanced. We should implement a technology policy that allows the simultaneous existence of many types of technologies according to our nation's actual situation and characteristics. This is to use more intermediate technologies that require less investment and that can provide more employment opportunities while using advanced technology and maintain and develop handicraft technologies that have a good tradition.

(1) Advanced technologies have good economic effects, and they can increase labor productivity by a large scale. And especially some industrial departments founded on S&T, such as metallurgy, chemical industry, electronics, machinery, aviation industry and such industrial sectors, must broadly use advanced technology to promote high-speed development of production.

(2) Based on the characteristics of our nation which has a large population and a weak foundation, we should develop more labor-intensive intermediate technologies in the broad number of rural areas and in the industrial sectors of construction, mining, textile manufacturing and light industry so as to expand employment opportunities, conserve capital and resources and fully satisfy the people's needs.

(3) Our nation's good traditional handicraft technologies reflect our nation's ancient culture and the wisdom of the laboring people. They are our nation's superiority and advantages. Handicraft technologies use more live labor and less material labor, the production value of the products is high, and they do not occupy too much in fixed assets. Therefore, developing traditional handicraft technologies is to develop our advantages.

/4. Correctly Handle the Relationship Among Basic Research, Applied Research and Developmental Research./

An important principle to promote S&T development is to closely combine S&T with the needs of economic construction and also to be prepared so that they can lead production. In arranging research projects, we must combine the short-term and the long-term with emphasis on near-term projects. The unified planning and arrangement of basic, applied and developmental research should place emphasis on applied and developmental research. We should especially strengthen developmental research and technical services which have great significance in national economic development. Basic research must be placed at a more important position and the principle of relative stability must be implemented. We must, with emphasis and step by step, organize research in new fields that have important S&T significance with appropriate emphasis, step by step according to the principle of taking of both the present and the future, strengthen the application and popularization of scientific research achievements so that S&T can quickly be transformed into direct productive forces.

/5. Correctly Handle the Relationship Among All Realms./

We should organize forces of all sectors to form a scientific research system that has a division of labor and that involves cooperative efforts,

"concentrate strength, carry out overall planning, divide the work and responsibility, cooperate in a big way" so that manpower, materials and money can be most effectively utilized.

(1) Civilian and military S&T development plans must all be included in the state S&T development plans so that they can be arranged on an overall basis, so that the key points can be brought out, and so that they can be linked together to reduce redundancy. Under unified planning, appropriate division of labor and cooperation should be implemented among the Chinese Academy of Sciences, higher educational institutions, the economic sector, the national defense sector and regional research forces. Between the military and the civilian projects, S&T that can be used by both must all involve joint military and civilian efforts.

(2) Under the state's unified principles and policies, unified planning and unified arrangement, each ministerial committee, each province, city and autonomous region must be responsible for drawing up their own S&T plans.

(3) The Chinese Academy of Sciences should emphasize basic research, emphasize the study of new theory and new technology, and serve an important guiding function in elevating the academic standards of the whole nation. Higher educational institutions should engage in basic and applied research based on their own strong points to develop the function as dual centers of research. We should urge enterprises to conduct scientific research so that scientific research and production can be linked directly so as to gradually establish scientific research centers in the economic field in production bases and to serve technical reforms and technical renovation of enterprises.

(4) Major research projects that can satisfy many needs, or major subjects that span academic departments and disciplines, and major projects related to several new technologies should be carried out cooperatively with the state uniformly organizing all forces throughout the nation.

/6. Correctly Handle the Relationship Between the Development of Our Nation's Scientific Research and Learning from Abroad./

To elevate our nation's S&T, we must greatly develop our nation's scientific research. We must develop the advantages and make up for the shortcomings based on our nation's actual situation and characteristics. Learning and studying foreign S&T achievements must also be based on our own nation's scientific research.

Introduction of technology is an effective way for scientifically and technologically backward nations to catch up with the advanced in science and technology and in economic development. It must be emphasized.

The introduction of technology must also be combined with our nation's own scientific research work. Scientific research work must be developed

around the introduction of technology. We must organize forces to digest, absorb, improve imported technologies and create new ones so that they can become technologies suited to our nation's characteristics. Already imported projects must be categorized and put in priority rank, concrete tasks of digesting and absorbing them must be determined, and the economic effects of imported technologies must be fully developed to elevate our nation's technological standards.

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Chapter XXII

REGIONAL ECONOMIC STRUCTURE

By Chen Jiyuan [7115 0679 0337]; original text pp 653-687; portions between slantlines in boldface in original text

[Text]

I. Changes in the Regional Economic Structure Over the Past 30 Years.

The regional economic structure is an important aspect of the national economic structure. Regional economic structure refers to the spatial distribution of productive forces and the relationship of mutual limitations between regional economies. A major strategic problem that is long-term and overall in nature is arranging the spatial distribution of productive forces and coordinating the relationships between regional economies. Whether this problem is solved well affects whether socialist construction can achieve greater, faster, better and more economical development. Our nation has had successful experience and also lessons of failure in arranging the regional economic structure. It is necessary to conscientiously summarize this experience and the lessons by combining theory and practice to gradually change the irrational aspects of our nation's regional economic structure and to establish a regional economic structure that can develop superiority and realize good economic results.

In old China under the rule of imperialism, feudalism and bureaucratic capitalism, the regional economic structure was very irrational. Before liberation, over three-fourths of our nation's industries were concentrated in the eastern coastal regions. In the broad interior, especially the border regions of minority nationalities, there was very little or absolutely no modern industry. Industries in the coastal regions were also concentrated in a few cities such as Shanghai, Tianjin and Guangzhou. This situation has caused industrial production to be seriously disconnected from regions producing raw materials and fuel and from regions of consumption, and it has created the irrational situation of long-distance and duplicative transport of raw materials, fuel and finished products. On the other hand, it also hindered the full development and utilization of various types of abundant inland resources, the economy could not effectively develop, and

the people's life could not improve as it should. At the same time, industry was concentrated in the few coastal cities and this was unfavorable for national defense.

After the establishment of the socialist system of public ownership of our nation's productive materials, and after implementing a planned economy, our nation possessed the fundamental condition for the rational distribution of productive forces within the whole nation. Engels said: "Only a society that arranges its productive forces in a coordinated way according to a uniform and general plan can allow industry to be distributed throughout the nation according to the principle of development that is most suitable for itself and for retaining or developing other important elements of production."[1] In socialist construction, the party and government placed much emphasis on changing the irrational regional economic structure left by old China and on establishing a rational regional economic structure. While paying attention to fully developing the function of the coastal industrial bases, they gradually shifted the key points of industrial buildup inland and such efforts brought about a profound change in our nation's regional economic structure.

On the one hand, the existing industrial foundation in the coastal regions was strengthened and developed and it made important contributions to socialist construction.

As our nation's socialist construction began, the Central Committee clearly stated the principle of handling the relationship between coastal industries and inland industries. It was to fully utilize the coastal industrial base while greatly developing inland industries. Comrade Mao Zedong explained the relationship between coastal industry and inland industry well. He said: "By utilizing and developing the old foundation of coastal industry well, we will have strength to develop and support inland industry. If we have a passive attitude, it will hinder the rapid development of inland industry. Therefore, this is also a question of whether we want to sincerely develop inland industry or not. If we are sincere, not insincere, we must utilize and develop coastal industry more, especially light industry."[2] Under the guidance of this correct principle, our nation's coastal industries developed greatly over the past 30 years to become an important base to further socialist construction and the coastal industries made important contributions in manpower (mainly technical strength), materials and money to socialist construction. The prosperous development of the economy in Liaoning Province and Shanghai Municipality and their status and function in our national economy clearly explained this point.

Before Liberation, four-fifths of the industries in the northeast were concentrated in Liaoning Province but the province was strongly colonial and it mainly served the plundering of resources and the waging of the war

1 "Selected Works of Marx and Engels," Vol 3, p 335.
2 "Selected Works of Mao Zedong," Vol 5, p 270.

of aggression by Japanese imperialism. After Liberation, the party and state took Liaoning as one of the key regions to revive and develop the nation's industry. Beginning from the First 5-Year Plan, a large-scale industrial buildup centered around Anshan Steel Mill was carried out, and a series of modern, large-scale backbone enterprises and many medium and small factories were established to produce steel, machinery, coal, electric power and chemicals. Anshan, Shenyang, Fushun, Dalian, Benxi, Fuxin, Jinzhou, Jinxi, Dandong were built up into important industrial and mining regions and industrial centers, and Liaoning became one of our nation's strong comprehensive industrial bases. Liaoning now has 33.95 billion yuan of fixed industrial assets of the system of ownership by the whole people, ranking first in the nation. In 1978, its total industrial production value was 39.25 billion yuan, and it submitted 6.29 billion yuan in profits and taxes to the state, ranking second nationwide following Shanghai. Among the 80 categories of important products included in state statistics, Liaoning produces the most throughout the nation in 24 categories of important products included in state statistics, Liaoning produces the most throughout the nation in 24 categories. From 1957 to 1978, Liaoning exported a total of 20,57 million tons of pig iron, 31.7 million tons of steel materials, 518,000 tons of aluminum, 21.59 million tons of cement, 4.58 million tons of sodium carbonate, and 920,000 tons of caustic soda. During the 29 years prior to 1978, the machinery industry of Liaoning produced 353,000 metal-cutting machine tools, 340,000 industrial pumps, 390,000 tons of heavy metallurgical equipment, 770,000 tons of mining equipment, transformers totaling 170 million kilovolt-amperes in capacity, 170,000 KM of electrical cable. In 1978 alone, it exported 9,648 units of machine tools and transformers totaling 11.61 million kilovolt-amperes in capacity. In addition, Liaoning also sent out nearly 60,000 technical workers, engineers and technicians and managerial personnel to support the buildup in other provinces and cities and construction of the three sectors.

In the past, Shanghai was a commercial port under the control of imperialism and bureaucratic capitalism. It was an industrial city of mainly light industry and textile industry. After 30 years of buildup, Shanghai has become our nation's largest comprehensive industrial city. It has developed from being a city of mainly light industry and textile industry to a city consisting of an equal share of light industry and heavy industry, and such industries as metallurgy, machinery, shipbuilding, chemical industry, and new industries such as electronics, instruments, petrochemical industry, new raw and processed materials industries were established. The population of Shanghai constitutes only 1 percent of the national population, its area is less than 1/1,500 of the total area of the nation but its total industrial production value constitutes one-eighth of the national total. Industrial and consumer goods shipped to other provinces and cities constitute 45 percent of the total shipped between provinces and cities throughout the nation. The volume of exports from the port of Shanghai constitutes one-third the total exports of the whole nation (products produced locally in Shanghai constitute 60 percent). Shanghai's public revenue constitutes one-sixth of the national total. Of the public expenditure of the central government, one-fourth is provided by Shanghai. Many products of Shanghai occupy a very important place throughout the nation. The production value

of its chemical industry amounts to one-seventh the national total, the total production value of the textile industry and the amount of exports both constitute one-fifth of the national totals. Shanghai produces one-half of the television sets nationwide, two-thirds of the tape recorders, one-fourth of the radios, one-third of the computers, one-half of the integrated circuits, one-fifth of the automated instruments, one-fourth of the electrical meters, and its output of watches constitutes almost one-half of the national total, and it produces one-third of the bicycles and sewing machines. In addition, Shanghai has also developed its function as a base of science and technology, provided technical achievements and data to other places, popularized new technological processes and trained personnel, and sent out technicians and managerial personnel to help enterprises at other places to develop their potential, to renovate and to restructure.

On the other hand, inland industries developed prosperously and new industrial bases formed rapidly.

Beginning from the First 5-Year Plan, the state gradually shifted the key points of industrial buildup to the broad inland areas where industry was backward. During the First 5-Year Plan, major strengths were concentrated to build the new industrial bases at Wuhan, Baotao, Sian and Taiyuan. Later, emphasis was placed on building up the industrial bases of the great third line in the southwest, northwest, western Hunan, western Hubei and western Henan. The total industrial production value of the regions of minority nationalities including Guangxi, Ningxia, Nei Monggol, Xingjiang increased respectively by more than 10 times, several dozen times and even a hundred times over that before Liberation. The establishment of new industrial bases inland fundamentally changed the irrational and lopsided situation of a concentration of industry in the coastal regions in old China. The rich inland resources were utilized, the economic standards of the regions of minority nationalities were elevated, and these all have great significance in hastening our nation's socialist buildup, promoting unity among the nationalities and in strengthening war preparedness.

For example, Sichuan Province is a large province with 570,000 sq km of land, a population of 97 million, abundant resources and a strategic location. Before Liberation, its industry was very weak, other than several armament factories and textile factories, the main industry was the foodstuff industry. Transportation was very inconvenient, there were very few highways, nnd there were no railroads. It was indeed the "land of Shu which was difficult to reach, even more difficult than ascending the sky." For 30 years, the state invested massive amounts of materials and money to carry out large-scale construction. From 1956 to 1978, capital construction with 46.9 billion yuan of investment was completed, constituting 7.8 percent of the total investment for capital construction throughout the nation, and ranking first nationwide. A total of 416 large and medium projects were newly built and expanded, and fixed assets of 27.2 billion yuan were newly added. Now, Sichuan has established the following industrial regions: including the Chongqing and Jiangjin Industrial Regions which have a machinery industry, nonferrous metals processing, chemical industry, light industry and textile industry; the Chengdu and Mianyang Industrial Regions

centered around heavy machinery and special steel materials manufacturing; Dujiangkou Industrial Region centered around the steel industry; Zigong and Yibin Industrial Regions centered around the chemical industry. In 1978, their productive capability to produce major industrial products included the production of: 3.25 million tons of steel, 2.27 million tons of rolled steel, 3.6 million kW of installed capacity for power generation 31.7 million tons of coal, 1.33 million tons of synthetic ammonia, 630,000 tons of sulfuric acid, 300,000 tons of machinemade paper, 162,000 units of machine tools, and 680,000 spindles of cotton yarn. In addition, five railroad trunk lines, the Bao-Cheng Railroad, the Cheng-Yu Railroad, the Xiang-Yu Railroad, the Cheng-Kun Railroad and the Chuan-Qian Railroad were built. Sichuan has already become an important strategic rear base of our nation's socialist economic buildup, and in the course of realizing the four modernizations, it is serving a greater and greater function.

On the basis of developing the coastal industries and inland industries, we established throughout the nation an independent and relatively complete industrial system and a national economic system. Our nation's steel, elect electric power, petroleum, coal, chemical, machinery and industries, and light industry and textile industry and such sectors have been greatly strengthened, and many new industrial sectors developed from nothing and from a small scale to a large scale. This has established a relatively strong material foundation for our nation to realize the glorious goal of modernization and a reliable position from which to march forward.

II. The Major Problems in the Regional Economic Structure

While our nation's regional economic structure underwent profound changes, there were also some problems. During the mid-1950's, a tendency of not paying sufficient attention to the utilization and development of the coastal industries emerged once. In 1955, industrial investment in Shanghai and Tianjin was only equivalent to 76 percent and 108 percent of depreciation. In that year, the growth rate of industry in the coastal regions was only 4.5 percent, and the rate of industrial growth nationwide was only 5.5 percent. This was the only year during the first decade following the founding of the nation in which the industrial growth rate was below 10 percent. Beginning from the Second 5-Year Plan, the whole nation developed steel, and industry blossomed everywhere. Regional planning necessary to the rational arrangement of the regional economic structure was in fact negated. During the Third and Fourth 5-Year Plans, large-scale third-line construction in the inland areas was carried out. From the long-term strategic viewpoint and in consideration of readjusting the whole nation's arrangement of industry and helping the economic development of backward regions, the development of third-line construction was necessary. But there were also many problems in third-line construction. First, the guiding ideology for construction of the three sectors was based on the idea that World War III would be fought early and on a large scale, therefore considerations of construction were not comprehensive, preparations were insufficient and projects began in a hurry. Second, the scale of

construction was too large, the demands were too hasty, and without an overall idea and arrangement, projects were decided and launched along the way, the construction period of some projects were prolonged again and again, and the loss and waste were great. Third, under the guidance of this mistaken principle of "go into the mountains, scatter, and inhabit tunnels," the distribution of industry was overly scattered, and even one factory was taken apart and scattered throughout several dozen mountain valleys within an area of several hundred kilometers. Water supply, power supply, and the transportation of fuel and raw and processed materials were too distant, investment and costs greatly increased, technological cooperation could not be rationally arranged, and at the same time, great difficulties were brought about in the life of workers. Fourth, there were too many heavy industrial projects and military projects, the projects were not matched, only major engineering projects were arranged and there were too few auxiliary and subsidiary projects, therefore, some projects have still not formed a comprehensive productive capability, and many livelihood problems of workers were not solved well.

Besides the above problems, the main problems in our nation's regional economic structure were as follows. The arrangement of the regional economic structure at each locality did not start out from the actual situation of each locality by taking into consideration the differences among the natural conditions and the historical conditions of the localities and by implementing different policies. Policies of arbitrary uniformity following the guiding principle of "the theory of equilibrium" required all localities to "take food grains as the key link," "to take steel as the key link," and to establish complete and independent regional economic systems which included all sectors. Because this principle violated the laws of nature and economic laws, and because it was forcefully implemented, serious consequences were brought about in the development of local economy, and also seriously hindered the development of our nation's national economy.

In the regional agricultural structure, regardless of the differences in such natural conditions as soil, climate, seasons, temperature and rainfall, and regardless of the historical traditions in regional agricultural production, all localities were required to take "food grains as the key link" and to realize "self-sufficiency in food grains." This destroyed the regional agricultural economic structure formed throughout history in each region, planting pushed away forestry, livestock production, sideline production and fishery, and food grains pushed away economic crops, destroyed the ecological balance, reduced the income of farmers, and the development of food grains production was very slow. This seriously affected the development of the agricultural economy. In some provinces and regions, this problem was very pronounced.

For example, our nation's northwest has 1.5 billion mu of natural grasslands that can be utilized. They constitute 33 percent of the area of that region and 7.5 times the area of farmland. The climate is cold here, the temperature differences are large and the frostless period is short. The area is unfavorable to the growth of agricultural crops, but grazing grasses grow prosperously, conditions for developing livestock and animal husbandry

are good, it has traditionally been a region of animal husbandry and the scenes of prosperity of "cattle and horses at street corners and herds of goats blocking the streets" were once common. But, in these few years, uncontrolled reclamation and planting of food grains destroyed the forestry and animal husbandry enterprises here, caused harmful results including soil erosion, and the desert expanded and extended southward. Since the founding of the nation, more than 100 million mu of grassland were "reclaimed" and this caused the grassland to become deserts. In the Yikezhao League in Nei Mongool, 6 million mu of grassland have already become deserts and this has caused another 12 million mu of grasslands to become desert.

Also, for example, Heilongjiang Province has abundant natural agricultural resources. The whole province now has 127 million mu of cultivated land, the terrain is level, the cultivated land is concentrated, the soil is fertile, forest resources are abundant and the percentage of coverage reaches 38.5 percent. There are 76 million mu of grasslands and grassland slopes on unclaimed mountains, and there is a water surface of 30.8 million mu. There are also 60 million mu of unclaimed grassland. But for a long time, the province planted food grains in isolation and neglected the development of forestry, animal husbandry, sideline production and fishery. The superior natural conditions were not fully utilized. Because forests and grasslands were destroyed for reclamation, soil erosion was serious, the organic content of the soil dropped, wind damage worsened and drought worsened. The total agricultural production showed that the agricultural production (planting) value rose from 63.2 percent of the total agricultural production value in 1949 to about 80 percent in the 1970's. Except for the percentage of the production value of forestry which was slightly higher than that of the whole nation, the percentages of livestock production, sideline production and fishery were all lower than those of the whole nation. In planting, emphasis was placed solely on food grains and economic crops were shunned. The soybeans, beets and flax of Heilongjiang have always ranked first in the nation, but during the past decade, they have not progressed and have even decreased. The exports of soybean have gradually dropped over the years. The highest export volume reached 800,000 tons in 1959, but in 1978, only 167,000 tons were exported. The sowing area of flax dropped from 750,000 mu in 1968 to 480,000 mu in 1978. During the same period, total output dropped from 144,000 tons to 78,000 tons, almost decreasing by half.

Also, for example, although the rate of growth of food grains production was fast and the major agricultural products of cotton, oil crops and live hogs developed fairly rapidly in Jiangsu Province's agriculture over the past 20 years and more, there were also unilateral emphasis on food grains production, crowding out of some economic crops and weakening development in forestry, animal husbandry, sideline production and fishery. Jiangsu Province has the largest freshwater surface area in the nation. In the past, aquatic products of Jiangsu ranked second in volume among the 10 coastal provinces and cities. Now it has dropped to sixth place. The production value of fishery as a percentage of total agricultural production value dropped from 3.3 percent in 1952 to 1.4 percent now. The country of fish

and rice of the past today has rice but few fish. The production value of forestry in Jiangsu as a percentage of the total agricultural production value dropped almost a half. This worsened the conflict between the supply and demand for timber, and made it easier for agricultural crops to be attacked and damaged by such natural disasters as typhoons. Because sideline production was criticized as capitalism, sideline production was seriously damaged. For example, Wuxian which was famous in the past for its water chestnut, water shield, lotus root starch, and reed, now basically has no more of them. The production value of Jiangsu's livestock production as a percentage of total agricultural production value is not only small, it is dropping. The number of head of large livestock in 1978 was more than 350,000 head less than in 1952. The high sandy soil area along the north bank of the Chang Jiang in Jiangsu Province used to have a rather rational agricultural economic structure, but it has been destroyed because of the unilateral emphasis on food grain production. In the past, this region's masses established an agricultural economic structure of "hogs, edible oil crops and wine" based on local characteristics. They planted peanuts, sorghum, then pressed the peanuts for oil, used the sorghum to make wine, used the cakes to feed the hogs, used hog manure to fertilize the fields, and sold hogs, oil and wine to increase income, then bought food grain rations from neighboring regions to make up the shortage in food grain rations. After forcing the implementation of "taking food grains as the key link," this region's output of "hogs, oil, wine" dropped, and the output of food grains was low and unstable, the income of the production teams and commune members was very low, and they could not even afford to buy chemical fertilizers under the state's distribution plans, farm machinery and tools. The development of agricultural production was seriously affected.

Also, for example, Guangdong Province is situated in the subtropical and the tropical zones. It should greatly develop tropical and subtropical crops which have a very high economic value, such as rubber, coconut, pepper, cocoa, oil palm, sugar cane, southern herbs, aromatic plants, and fruits. But in these few years, the agricultural plans of most regions actually only emphasized food grains, and insisted on planting three crops a year (rice, rice, wheat). The multiple planting index continued to enlarge, local consumption was large, nutrition in the soil eroded away in large amounts and the soil's fertility dropped. To solve the food grains problem, many regions destroyed forests and reclaimed wasteland, reclaimed grassland slopes, cut down fruit trees to plant food grain crops and destroyed mulberry trees to plant food grains. The planting of economic crops was greatly weakened and the ecological balance was seriously destroyed. The cumulative reserve of timber in the forests dropped from 170 million M^3 to over 60 million m^3. Compared to the output of 1.5 million dan of silkworm cocoons in 1922, the present output is less than one-third that. Because the production of economic crops was limited and destroyed, the local economic strength in Guangdong is relatively weak, the development of the commune and brigade economy is slow, the life of the masses is relatively poor, and it is truly "holding a golden bowl but living a poor life."

The arrangement of regional industries disregarded the mineral resources of each locality, the technical strength, the tradition in production and the transportation conditions. It required all localities to implement the principle of "taking steel as the key link," insisted that seizing coal production and maintaining steel production were the overwhelming tasks, and "establishing independent industrial systems" became the motto in guiding local industrial development. This guiding principle caused local industries to develop abnormally, heavy industry crowded out light industry, economic results were greatly reduced and the people's needs were seriously affected. This can be clearly seen in the problems in the industrial structures of Jiangsu and Guangdong provinces.

Jiangsu Province invested much manpower, materials and money in the industrial sectors of coal and steel production in order to establish an independent and complete industrial system centered around heavy industry. The cumulative investment from 1949 to 1978 was 1,381,000,000 yuan in the coal industry, 1,139,000,000 yuan in metallurgy, but only 526 million yuan in the textile industry, and only 762 million yuan in other light industries. The investment ratio between heavy industry and light industry was 6.25:1. But Jiangsu lacks the resources to develop coal and steel. Large investment in these aspects is spending efforts on one's own weaknesses, therefore the economic results were very unsatisfactory. Jiangsu's coal resources are mainly concentrated in the Xuzhou region, but some years ago, coal from the north was shipped to the south forcefully, and the view that there is no coal south of Chang Jiang was greatly criticized. Large investments were made in the southern Jiangsu areas without clearly understanding the coal resources. Many low-quality, low-yield mines were build and some were completely abandoned. This created a great loss. Twentyfour mines were abandoned at a loss of 234 million yuan. Even though so much effort was used, self-sufficiency in coal in present Jiangsu is still only 70 percent, and each year, large quantities of coal have to be shipped in from other provinces. The reserve of iron ore in Jiangsu is small, the quality is low, the industrial reserve retained by the major producing mines is only 25 million tons. From 1957 to the end of 1978, the annual productive capability formed by Jiangsu's metallurgical industry included 4 million tons of iron ore, 2 million tons of selected ore, 960,000 tons of sintering ore, 1 million tons of coke, 900,000 tons of smelted iron, more than 500,000 tons of smelted steel, 1.3 million tons of rolled materials (blanks), and a comprehensive capability of mining and selecting 350,000 tons of nonferrous minerals. But, because of insufficient resources for mineral ore and coking coal and because of the imbalances within the metallurgical industry, coke and sintering did not meet the needs of smelting, and mining was especially weak. The level of completeness of the equipment of key enterprises was low, and the productive capability could not be developed. Iron ore still had to be imported from other provinces or from abroad. At the same time, the development of Jiangsu's light industry and textile industry was hindered. Jiangsu's light industry and textile industry have a good foundation, there are many professions, the varieties are complete, the supply of raw and processed materials is guaranteed, and the technical strength is relatively strong. But because of the pressure from heavy industry, investment in light industry was too little, and this seriously

affected the development of light industry. From 1949 to 1978, light industry grew at an annual average of only 9.4 percent while heavy industry grew at a high rate reaching 20.4 percent, greater than the difference between the average rate of development of heavy industry and light industry throughout the nation. Because of the little investment in light industry and because the production tasks were very heavy, some old enterprises practiced the method of killing the chicken to take out the eggs. It was difficult to renovate equipment and there were even no guarantees for maintenance of facilities and basic worker welfare benefits. Now, the varieties of light industrial products and textile products are simple, processing in not done well, packaging is outdated, and they cannot meet the needs of domestic and foreign markets.

The original industrial structure of Guangdong Province was based mainly on light industry. This suited the natural resources of the locality and historical tradition. Guangdong's light industry and textile industry had a long history. The "sundry products of Beijing and Guangdong" were famous throughout the world. Tropical and subtropical economic crops provided sources of abundant raw materials for the development of light industry and textile industry. But since the movement to "develop steel in a big way" began in 1958, and especially since 1970, Guangdong placed its main efforts on developing steel and coal. Except for the three steel mills at Shaoguan, Guangzou and Beijiang under the jurisdiction of the province, small steel plants have been established in more than 30 counties and cities. The steel industry is a profession that consumes much energy, plus the steel-coke ratio in small steel mills is over 1 ton, and the output of steel from electrical furnaces constitutes almost half of the total output of steel of the whole province. Guangdong traditionally had a shortage of energy resources, therefore the unilateral development of the steel industry further worsened the shortage of energy supply and imbalance. Guangdong does not have abundant coal resources. The known reserves (including the Hunan Meitian coal mine) amount to only 840 million tons of which 370 million tons have already been utilized. Its coal is mainly anthracite and there is a lack of coking coal. But in the past, the province proposed the principle of "turning the shipment of northern coal to the south around, besides bituminous coal, the province should basically realize self-sufficiency in fuel." The quality of coal mined at some coal mines was poor, the consumption of pit props was large, the coast was high, the loss was great, and this was uneconomical. For example, at the Lufeng Coal Mine, the thickness of the coal seam is only 0.3 meter, and to produce 10,000 tons of coal, 500 M^3 of pit props have to be used. The cost of 1 ton of coal reached over 100 yuan. The coal excavated at some coal mines had a thermal value per kilogram of only 100 to 200 kilocalories. The thermal energy of the coal produced was not even sufficient to make up for the energy consumed by the coal mine itself. Because capital was mainly used to develop steel and coal and such industrial sectors, investment in light industry was overly small, and the growth rate of light industry continued to drop. It was 15.4 percent during the first 5-Year Plan, 8.7 percent during the Third 5-Year Plan, 7 percent during the Fourth 5-Year Plan, and 6 percent from 1976 to 1978. Now, light industry in Guangdong has old equipment, old

facilities, old technological processes, old products, and they seriously limit the increase in product variety and quality improvement. Some traditional name brand products of the past like "Tiger Head" flash lights, steel locks, lighters, have gradually lost their competitive ability because their varieties and patterns are outdated, they have not been improved for several decades, and their international market is continuing to shrink.

In general, because of the implementation of the policy of arbitrary uniformity in the past, some regions could not fully develop their own superiority, they did not develop their advantages and avoid shortcomings, instead they suppressed their advantages and attacked the shortcomings, thus losing their own superiority and even making their superiority into disadvantages. The lopsided development of some regional economies and the drop in economic results caused a proportional imbalance between industry and agriculture throughout the nation. The proportional relationship between heavy industry and light industry, was imbalanced, the proportions among light industry, heavy industry and the sectors within agriculture were imbalanced, etc. On the basis of this irrational regional economic structure, an irrational national economic structure was formed.

III. Developing the Advantages and Avoiding the Shortcomings, and Developing Superiority Are the Fundamental Guiding Principles in Establishing the Regional Economic Structure

Rationally arranging regional economic structure, or rationally arranging the regional distribution of production, is a decisive link in rationally arranging the distribution of production of the entire national economy. At the same time, it is also the prerequisite for rationally arranging the establishment of production and factory sites within a region.

As the degree of socialization of production is increased day by day and with the conditions of a socialist commercial economy, regional division of labor is objectively needed and is possible to implement. Negating the regional division of labor and implementing "large and complete," "small and complete" independent economic systems everywhere are contrary to objective laws.

The regional division of labor and the division of labor by sectors are two different economic categories that are different but also linked. Division of labor by sector refers to the course of formation and separation of different production sectors. Regional division of labor refers to "each region specializing in the production of a certain product, sometimes a certain type of product and even a certain part of a product."[3] The regional division of labor is formed on the basis of specialization of regional production. The level of regional division of labor is decided by the development of productivity. The improvement in social productivity

3 "Collected Works of Lenin," Vol 3 p 389

stimulates the development of the regional division of labor in depth and in broadness, and the development of regional division of labor becomes an important factor in stimulating the improvement of social productivity.

In a socialist society, regional division of labor is not spontaneously formed. Planning and guidance serve important functions. Our nation is a large nation, the economic levels of the regions vary and the development is very uneven because of historical, natural and other reasons. Regional economic planning must start out from this imbalance, recognize imbalance, utilize imbalance, implement the principle of developing the advantages and avoiding shortcomings and developing superiority. This is the only correct guiding principle in establishing a rational regional economic structure. It is a basic experience acquired at great cost in past economic buildup.

The development of superiority mentioned here refers to developing economic superiority. Economic superiority mainly includes two aspects. One is the advantages or superiorities determined by natural conditions and manifested economically, such as soil and climatic conditions suitable for certain types of agricultural production, certain superior geographic positions and relatively rich natural resources suitable for industrial production, etc. The other is advantages and superiorities determined by historical conditions and manifested economically, such as specialized regions of agricultural production formed in history, the special techniques and management experience of the local people in producing certain types of agricultural products, certain regions with relatively developed industries formed historically, with a better technical foundation and where there are more engineers, technical personnel and technical workers, regions where conditions for cooperation in socialized production, transportation conditions and power supply conditions are better, regions where the commercial economy formed historically is more developed and where there are traditional channels of economic ties with various places, where there are more people who know the market, who are good at organizing and managing socialized large-scale production and who have accumulated relatively rich experience in organizing the production of commercial products and the circulation of commercial products, etc. Therefore, while rationally arranging regional economic structures, developing superiority, generally speaking, is mainly developing the superiority of natural resources, the superiority of geographic positions, the superiority of facilities and technology and the superiority of business and management.

First, let us see how we can develop advantages and avoid shortcomings and develop superiority by planning the regions for agricultural production. The object of agricultural production is living things. The production process is the unification of biological and environmental factors. The cultivation of crops, the planting of trees and afforestation, the raising of livestock and fowl, and aquatic culture all possess a strong regional character. Our nation is large, the differences in natural conditions in the east, west, south, north and central regions are very great. Even within one province and one county, there are differences between the different positions, plains and hilly regions and mountains, and some of

the differences are very large. Rationally utilizing natural agricultural resources, determining the distribution of crops by suiting measures to local circumstances, fully utilizing light energy, temperature, moisture, soil conditions according to regional differences in the conditions for agricultural production have an especially important meaning in developing agriculture. Even though historically the level of our nation's agricultural production has not been high, manual labor has for a long time played the major role, yet, as social division of labor deepens and as the production of commercial products develops, people have adapted to the different natural conditions and have developed within a definite area specialized agricultural production. For example, planting has been concentrated in the sericultural region in the Suzhou and Hangzhou area, peanut farms in the Yantai area, tobacco plantations in the Xuchang area, sugarcane fields in the Zhu Jiang River Delta, etc. There is a long history, and a rich experience in planting and business management has been accumulated. Therefore, in developing superiority, special attention must be paid to developing the superiority of natural resources, the superiority of geographical position and the superiority of business management in the distribution of agriculture.

The rational arrangement of the regional economic structure in agriculture must take into consideration the overall situation, and the most appropriate arrangement for agricultural production at each locality must be determined according to regional differences in agriculture on the basis of the natural agricultural resources of each locality (soil, water, climatic and biological resources) and the agricultural economic conditions (population, labor force, animal force, industry for processing agricultural products, agricultural technology and equipment, transportation conditions and business management experience).

Recently, the State Council decided to greatly develop agricultural mechanization in the northeast to hasten the buildup of the bases of commercial food grains consisting mainly of food grains and soybeans. This is an important measure to fully utilize the three provinces of the northeast, especially the favorable conditions to develop commercial food grains in Heilongjiang and Jilin, and it is an important measure to increase the production of commercial food grains and to develop our nation's agricultural economy. The Song-Liao Plain in the northeast is the largest of our nation's three great plains. Fertile land extends thousands of li here, the resources are abundant, the area of cultivated land constitutes one-sixth of the nation's total, and each worker has an average of 24 mu of cultivated land, equivalent to 5 times the national average. In addition, there are many areas of unclaimed plains suitable for agriculture that can be reclaimed. Because there is more land and fewer people, the potential for increasing agricultural output is very great. There are suitable natural conditions, and the people of the northeast have rich experience in planting food grains, especially soybeans, therefore, the northeast has a superiority not possessed by other regions of the nation for developing the production of commercial food grains. The investment is small, the gains are large and the results are quick. Planting more food grains and soybeans in the northeast can support other regions suitable for producing

cotton and sugarcane and for developing sericulture, and it can support the other regions in planting more economic crops. This is favorable to developing the superiority of each region throughout the nation to the maximum degree.

Hebei, Shandong and Henan are our nation's traditional key cotton-producing regions. The characteristic of these three provinces is that the duration of sunshine is long and the per capita average area of cultivated land is much larger than that in some southern provinces. The broad masses of farmers have been accustomed to planting cotton for a long time, they have relatively rich experience in planting techniques and in management of cotton fields. Also the unit-area yield of cotton in Hebei, Shandong and Henan is high, and the unit-area yield of food grains is low, therefore, in some key cotton-producing regions, producing 1 jin of cotton costs only 7 to 8 jin of food grains. But, in some regions, producing 1 jin of cotton costs 13 jin of food grains. Therefore, developing the superiority of Hebei, Shandong and Henan in planting cotton is very favorable economically.

The plains and the hilly regions on the coast south of Min Jiang in Fujian and the region of the Zhu Jiang Delta in Guangdong are situated in the subtropical zone, the climate is mild, rainfall is abundant and the frostless period lasts for more than 300 days. They are regions in our nation most suitable for planting sugarcane. In Fujian, an average of 2 mu of sugarcane can produce 1 ton of sugar and in Guangdong, an average of 3 mu of sugarcane can produce 1 ton of sugar, but in Zhejiang and Yunnan, 4 mu are required, and in Guangxi and Sichuan, 5 mu are required. In Hunan, 6 mu of sugarcane are needed to produce 1 ton of sugar. In the past, self-sufficiency in food grains was overly emphasized in the regions suitable for planting sugarcane in Fujian and Guangdong, and sugarcane was cut to plant food grains. In some regions and provinces unsuitable for planting sugarcane, self-sufficiency in sugar was overly emphasized. This mistaken method of suppressing the advantages and attacking the shortcomings has greatly reduced the economic results. The natural conditions in our nation for planting sugarcane are similar to those in Australia. Now, our nation plants 9 million mu of sugarcane a year and produces 2 million tons of sugar. Australia only plants 5 million mu of sugarcane a year but produces as much as 3 million tons of sugar, therefore, the potential of cane sugar production in our nation is still very great. As long as we implement the principle of developing superiority by suiting measures to local circumstances, our nation's sugarcane production can change its present backward situation and realize high output and quick results in less area.

Some regions in our nation have a mild climate and are suitable for planting mulberry trees and developing sericulture. They are the places of origin of sericulture. The four provinces of Sichuan, Zhejiang, Jiangsu and Guangdong are the major serviculture producing regions in our nation. The output constitutes 86 percent of the whole nation. Sichuan Province engaged in sericulture as the backbone sideline. In 1978, the output of silkworm cocoons showed an increase of nearly 10 times from the beginning period of Liberation. The output of silk increased 130 times from the beginning period of Liberation. In the other provinces, the competition

between food grains and mulberry trees for land caused the mulberry fields to decrease continually in area. At the beginning period after the founding of the nation, Zhejiang's area of mulberry gardens covered 1.7 million mu. But in 1978, the actual area was less than 1.27 mu. At the beginning of Liberation, Zhejiang Province claimed to have 1 million mu of mulberry gardens. Now the area is less than 780,000 mu. In the winter of 1978 and the spring of 1979, nearly 60,000 mu of mulberry fields were destroyed in the three prefectures of Suzhou, Yangzhou and Zhengjiang. In Guangdong, the season for picking mulberry trees is from March to November; in 1 year, 7 to 8 crops of silkworms can be cultivated, and the highest annual output of cocoons can reach over 1.2 million dan. In 1979, the output was only 400,000 dan. In the future, as long as we correct our guiding ideology, implement the principle of developing superiority, Zhejiang, Jiangsu and Guangdong can be like Sichuan, sericulture production can be rapidly revived and can surpass the highest level in the past.

It can be clearly seen from the cases of the several regions pointed out above that to rationalize the regional economic structure of agriculture, we must start out from the actual situation, suit measures to local circumstances, implement the principle of developing advantages, avoiding shortcomings and developing superiority.

Second, let us look at how we can develop advantages and avoid shortcomings and develop superiority in the regional arrangement of industrial production.

The creator of Marxism once advocated that one of the important tasks after the proletariat seizes political power is to distribute evenly as much as possible the large industries throughout the nation and to eliminate the conditions separating the cities and the rural areas. But, because of various conditions, especially the limitations of the economic levels, the distribution of large industries evenly as much as possible within the nation is a long-term goal that can only be gradually realized over a very long period. Like the past, taking it as the concrete principle at present to distribute industry is not practical and is not possible to realize. The development of the regional economy in any country always progresses from imbalance to balance and then from balance to imbalance. This is a pattern. For example, the regional economy in the United States underwent an undulating course of development. The northeast along the coast of the Atlantic produced the earliest manufacturing industry in the United States, and it is the most important economic heartland of the United States. Since the middle of the 19th century, the manufacturing industry in the northeast began to gradually move toward the various states on the shores of the Great Lakes in the midwest. The midwest has abundant coal, iron, copper and such mineral resources and large forests, and it also has a transportation system connected to the Great Lakes. The wave of the westward movement of the manufacturing industry reached a peak in the 20th century in the 1920's. The midwest gradually developed into a strong comprehensive industrial hub, and in particular, it became the center of heavy machinery

4 See Engels: "Anti-Duehring," pp 292-293.

manufacturing. Later, the northeast and the midwest joined together to become a highly industrialized and unified entity, i.e., the northern industrial belt. From after the Civil War to the beginning of World War II, about from 1870 to 1940, the northern industrial belt always maintained a visable economic superiority. Later, because the south had rich industrial raw materials, fuel and power sources, especially the discovery of large oilfields, and with a low tax rate and cheap labor, large companies in the north gradually moved to the south. At the end of the 19th century and the beginning of the 20th century, a wave of moving south occurred in the sectors of the textile industry in the northeast. During World War II and after the end of the war, science and technology developed and many large enterprises and large banks rushed to the south and established a series of new technical industries and sectors, including aviation, radio, rocket, atomic energy, synthetic chemicals. In this way, the newly emerging industrial sectors in the north formed a regional division of labor. At present, the level of economic development in the south still lags behind the northern industrial belt but the rate of economic development in the south is much faster than that in the north, and the trend is that the level of economic development of the south and the north will approach each other and will balance each other. Of course, from the long-term view, another imbalance will emerge.

Therefore, when arranging the distribution of industrial production, we must recognize and utilize the imbalance in economic development, and start out from the actual situation of the imbalance, implement measures to develop advantages and avoid shortcomings, and develop superiority.

In implementing the principle of developing advantaged, avoiding shortcomings and developing superiority, we must first fully develop the superiority of the resources each region has. Objectively, the distribution of natural resources is not balanced. Industrial resources can be divided in general into two categories, one is mineral resources, the other is raw and processed materials provided by agriculture. The regional distribution of industrial production can only be economically rational if different industrial sectors are established according to the differences in the natural resources of each locality so that the economic structure of each locality has its particular emphasis.

Mineral resources objectively exist and cannot be changed. Generally speaking, the type od mineral resources determines what type of mining industry and processing industry should be correspondingly developed. An economically rational principle in the distribution of industry is to let industrial production be near the regions producing the raw materials and fuel. The distribution of metallurgical production of any country is always imbalanced, and nobody went about stupidly establishing it all over the country and distributing it evenly. In the United States, all of the black metallurgical production capability and 90 percent of the steel- and iron-processing industry are concentrated in 20 states, and among them, the 9 states of Pennsylvania, Ohio, Indiana, Illinois, New York, Maryland, Alabama, Michigan, West Virginia possess 90 percent of the total production

capability. The output of pig iron of the middle and eastern regions of the United States constitutes 70 percent of the national total. The main reason is that this region has the rich iron ore of Lake Superior and the rich coalfields of the Appalachian. Over 90 percent of the pig iron produced in France is from the eastern and northern border regions rich in coal and iron resources and reserves. Most of the metallurgical factories of West Germany are distributed in the northern Rhine--the Ruhr in West Westphalia. West Germany utilized the rich coal and iron resources there, and the output of pig iron, steel and steel materials constitutes over 80 percent of the total output of West Germany. The experience in the distribution of industrial production in the several countries described above is worthy of studying and learning.

In our nation, there are also regions especially rich in coal and iron resources. We should rationally arrange the distribution of industrial production in these regions according to the principle of suiting measures to local circumstances. For example, the coal resources in Shanxi Province and the conditions to develop the coal industry are the best in the whole nation. One is that the reserve is large. The long-term reserve is 900 billion tons, and the known reserve is 200 billion tons, constituting one-third of the national total. The second is that the types of coal are complete, main coking coal, gas coal, rich coal, lean coal, superior quality power coal, anthracite are all very abundant. Coking coal and anthracite constitute about one-half of the reserves of similar types of coal of the whole nation. The third is that the quality is good. The coal is mostly hard coal, the ash content is low, the sulfur content is small, and the caloric output is high. The caloric output of 1 ton of coal is over 7,000 kilocalories, equivalent to 2 to 3 times the output of 1 ton of coal from south of Chang Jiang. The fourth is that the coal is easier to mine. The coal seams are at a shallow depth, generally only 300 to 400 meters. The coal seams are thick and level, and they are easy for mechanized mining. The geological structure is simple, faults, shifting sand and underground surges of water are few, therefore the economic results are good, and the investment per ton of coal is only 62 yuan, lower than the national average by half. A newly built mine with an annual output capacity of 1 million tons can reach the designed capacity 2 to 3 years after production begins, and all the investment can be recovered in 6 to 7 years. The mining cost per ton is about 13 yuan, lower than the national average of 16.3 yuan by 18 percent and lower than the cost of a ton of coal in Hunan, Hubei, Zhejiang by one-half to three-fourths. The fifth is that Shanxi's geographical position is appropriate and it is easy to ship coal to all regions of the nation. The sixth is that the history of developing coal is long, the technical strength is strong and the technical equipment is also better.

To develop the superiority of the resources in Shanxi, we should quickly build Shanxi into a strong energy base centered around the development and the comprehensive utilization of coal. The development of Shanxi coal requires regional planning and the implementation of specialized production. For example, large coking coal bases can be established in the Linfen and Luliang areas. Large anthracite bases can be established in southeastern

Shanxi and Yangquan, and the eastern part of central Shanxi. The Yanbei Datong area can be built into a large power coal base. On the basis of a steady and persistent development of coal production, we can first consider developing various types of power stations at the mouths of coal pits. In this way, we can reduce the pressure on railroad transportation and also export a great deal of electric power to other provinces, improve the shortage of power supply in north, central and even northeastern and eastern China. Second, we should develop the industry of coal chemistry, increase the percentage of light industry using chemical products as raw materials. At present, we can first develop a chemical fertilizer industry using coal as the raw material to stimulate agricultural development and at the same time actively develop the coking industry and other chemical raw materials industries and synthetic fiber industry and synthetic rubber industry using coal as raw material. Third, we can correspondingly develop and utilize Shanxi's copper, aluminum and iron and such natural resources along with the development of coal and electricity, fully utilize cheap electric power to produce more electrolytic aluminum, electrolytic copper, alloy steel and special steel. Fourth, we can reorganize the machinery industry along the direction of the economic structure centered around the development of coal and its comprehensive utilization. Besides strengthening support for agriculture, we should establish the direction of serving coal, electric power, chemical industry, metallurgy, transportation and the people's standard of living. Fifth, we need to greatly develop railroad transportation and highway transportation to coordinate with the development of the coal industry.

The superiority in industrial resources is manifested in the mineral resources and also the differences in the raw and processed materials that can be provided by the agriculture of different regions. A rational arrangement of the distribution of industrial production must also take into consideration these differences, and fully develop the superiority in these aspects. For example, in the regions where cotton production is concentrated, we can develop the textile industry more. In regions where tobacco production is concentrated, we can develop the tobacco industry more. In regions where sugar crops (cane and beets) are concentrated, we can develop the sugar-refining industry more, etc. In the past, some regions did not realize this. For example, in the past, Heilongjiang Province did not pay enough attention to the province's superior resources in developing light industry and textile industry, it blindly developed the production of such products as watches, sewing machines, bicycles. Over 80 percent of the spare parts needed by these products had to be supplied from other places, the production cost was high and the quality was poor. It could not compete with Beijing, Tianjin and Shanghai and even could not compete against the products from Liaoning and Jilin. Since last year, attention began to be paid to developing the province's own superior resources. Heilongjiang is our nation's timber base. It is also the key producing region of such economic crops as beets, flax and reed. Its developed livestock and animal husbandry production provide large quantities of fresh milk and skins, and the output from silk extraction is also abundant. In addition, the Daqing Oilfield also provides large quantities of petroleum byproducts. It has been decided now to fully utilize the province's favorable resources and greatly develop the 10 major products of sugar, paper, flax, wool, leather,

silk, chemical fiber, wood products, dairy products and potato products. Better economic results have already begun to be realized.

In the rational arrangement of the regional distribution of industrial production, besides paying attention to developing the superiority of the resources, we must also pay attention to developing the superiority of the original technical foundation and business management.

For example, Shanghai is the largest industrial city and commercial port that was developed the earliest in our nation. It has all types of industries and a relatively developed technical foundation. It has a strong team of scientific and technical personnel and business management personnel. Therefore, the same capital and equipment can develop a greater function in Shanghai and realize greater economic results. The labor production rate of all industrial workers in Shanghai is 1.5 times higher than the average level of the whole nation. The production value created by each 100 yuan of fixed assets is 1.6 times higher than the national average. The profits provided by each 100 yuan of production value is 50 percent higher than the national average. In some concrete sectors, the economic results are also much higher than the national averages. The production value of the chemical industry in Shanghai constitutes one-seventh the national total while the profits constitute one-third. The labor production rate is 3.7 times the national average. The total production value of the textile industry of Shanghai and the amount of exports both constitute one-fifth of the national totals. In recent years, the capacity of the production equipment has continued to drop but the accumulation and foreign exchange revenue earned for the state still constituted nearly one-third of the nation's textile industry. The number of people in the electronics industry in Shanghai constitutes one-tenth of the national total, and the production value constitutes one-fifth, and the profits constitute two-fifths. It can be seen from this that fully developing Shanghai's superior technical foundation and business management has great significance in developing Shanghai's economy and even the national economy.

Also, for example, the superior conditions formed historically in Jiangsu Province are mainly manifested by the light and textile industries. The textile industry in Jiangsu has a long history. Suzhou, Yangzhou, Wuxi, Zhengjiang, Shengze began to plant mulberry trees, raise silkworms and make silk as early as the Jin dynasty and the silk weaving handicraft industry developed. The damask silk of Yangzhou, the silk and satin of Suzhou, the jindi crape, the sheng fang silk of Shengze, Nanjing's yunjin, the dan chou silk of Danyang, the jiang chou silk of Zhengjiang have been popular in domestic and foreign markets for a long time and they enjoy an international reputation. The cotton weaving industry in Jiangsu also developed very early. At the beginning of the Yuan dynasty, Huang Daopo taught the technique of cotton weaving in Jiangsu. By the 13th century, the Suzhou area alone had more than 450 cotton dyeing and weaving shops. At the end of the 19th century, Jiangsu's textile industry entered a new era of mechanized production, and a number of weaving factories and silk reeling mills were established. After World War I, the textile industry underwent an even greater development. By 1949, there were already more than 60

large and small cotton weaving factories, 640,000 spindles, 25,000 weaving machines, more than 80 silk reeling factories, 6,420 silk reelers, and 14,836 silk weaving machines. In addition, after the founding of the nation, the machinery (mainly machinery repair and light machinery manufacturing) and electronics industry developed in Jiangsu. At the same time, Jiangsu was also one of the earliest provinces to accept Western industrial technology and science and culture. Education and scientific research are developed, the cultural and technical standards of the residents are generally high, and since ancient times, it has produced many talents, and it has a large technical force and managerial personnel with a great deal of training. The above superiority formed historically has provided very favorable conditions for Jiangsu to develop light and textile industries and to develop precision processing industries of higher technical requirements. Good economic results that conserve investment, that cost less and that have a high quality can be realized.

To develop the superiority of the original technical foundation and business management, we should not only pay attention to the superiority of one region, we should also pay attention to the development of the superiority of the regions where traditionally the production of certain famous brand name products have been concentrated. Our nation's handicraft industry has historically formed many regions where traditionally the production of unique brand name products was concentrated. These products have superior quality, they are durable, they are finely made and they are inexpensive. For example, the purple sand tea pot made in Yixing in Jiangsu has a unique form, the taste of the tea does not escape, and stored tea leaves do not change color. The rice paper of Jing Xian in Anhui has a cotton texture to it, the ink stays clear and clean on the paper, and the paper is known as the "thousand year paper." The yellow rice wine of Shaoxing in Zhejiang is fragrant and it becomes more fragrant as it ages. Hetian Prefecture in Xinjiang uses its superior quality sheep wool as raw material to produce rugs with a strong local characteristic. The inkstone of aqueous rock from Zaoqing in Guangdong is artistically sculpted to become the famous Cuanxi inkstone. The inkstone is soft as jade, it does not make any sound when using the ink stick and the ink is produced without damaging the brush. These regions producing traditional products generally have their own special superior conditions. One is that there is the foundation for production formed historically and the traditional technical processes. The second is that there are unique natural resources. The third is that they have traditional marketing channels and convenient transportation conditions. Therefore, developing the superiority of traditional regions with concentrated production is showing respect for the accumulated experience of the laboring people through the ages, showing respect for the original law of production and marketing, and showing respect for the habits of consumption and livelihood needs of the broad number of people. They can realize economic results that cannot be realized by other regions.

Finally, the principle of developing advantages and avoiding shortcomings and developing superiority is also the correct principle to hasten the economic development of backward regions, especially regions of minority nationalities. The work of building up the regions of minority

nationalities and gradually changing the economic and cultural backwardness of the regions of minority nationalities has always been the policy of the Central Committee. But because of the serious destruction of the party's nationalities', economic, religious and united front policies, and policies toward cadres by the leftist line of the past, the backward situation of the regions of minority nationalities in our nation was not fundamentally changed. In the future, we should not only continue to give a great deal of financial and material support to the regions of minority nationalities, strengthen the training of cadres of minority nationalities and further implement economic policies, we should also implement the principle of suiting measures to local circumstances and develop superiority by starting out from the actual situation in the regions of minority nationalities. This has decisive significance in rapidly changing the backwardness of the regions of minority nationalities. Now the several major regions where our nation's minority nationalities live have begun to do this.

The Xizang Autonomous Region has 1.2 million sq km, constituting one-eighth of the total area of the nation. The resources in Xizang are rich. Natural conditions are basically good. Xizang does not have a purely agricultural region. In natural conditions, some regions are farming and animal husbandry regions, some are forestry and animal husbandry regions, some are purely animal husbandry regions. Therefore, carrying out only agriculture in Xizang is against the laws of nature, and there is no future. The Central Committee has already decided that in the future, we should fully respect the autonomy of the production brigades according to the needs of the masses of the locality and the natural conditions, relax policy, start out from the actual situation, and build a unified, rich and civilized Xizang.

The Nei Monggol Autonomous Region has decided to fully develop its own superiority according to local natural conditions, economic resources, economic structure and national characteristics, and it has firmly decided to implement the principle of building up production centered around animal husbandry. In the future, it will emphasize livestock production and animal husbandry, the production of beets, oil crops and forestry, and light and textile industries based on the animal products of skin, wool and meats. In the organization of production and in economic planning, it has decided to frimly start out from the actual situation and adopt measures suiting the local circumstances.

The Xinjiang Uyghur Autonomous Region has continued to relax economic policy according to the region's national characteristics and has raised the limit on raising private animals. Unclaimed land and unclaimed slopes with water sources have been distributed to commune members to plant trees and grass and whoever plants keeps the harvest. It has also decided to give each commune member family 3 to 5 fen of feed ground, and it has encouraged commune members to plant grass feed and develop private livestock. To allow Xinjiang to become rich more quickly, it is drawing up plans to strengthen the buildup of bases for cotton and beets and to hasten the development of animal husbandry according to the natural characteristics of the locality. Related industrial sectors are also drawing up plans for the development

of such vocations as textile weaving, sugar manufacturing, paper manufacturing and leather tanning according to local resources.

The Guangxi Zhuang Autonomous Region recently held a working conference of eight autonomous counties of minority nationalities to study how to implement and relax rural economic policy, to mobilize all active elements to develop the superiority of each autonomous county, and hasten economic buildup so that the people of the minority nationalities can become rich quickly. The common characteristics of these autonomous counties are as follows: They have many mountains suitable for developing forestry and local and special products. There is much vegetation suitable for developing animal husbandry. Hydraulic resources are rich, suitable for developing small-scale hydroelectricity. The conference decided that in the future, each autonomous country should insist on starting out from the actual situation and establish a planting system for each county according to its own characteristics. Where it is suitable for afforestation, afforestation should be carried out, where it is suitable for animal husbandry, animal husbandry should be carried out, where it is suitable for planting food grains, food grains should be planted, where it is suitable for fishery, fishery should be developed. Localities suitable for planting food grains must also emphasize increasing unit output, and the destruction of forests for reclamation is strictly prohibited. Forestry and local and special products must be developed in a big way, and the raising of cattle, sheep, horses and such herbivorous animals must be developed in a big way. Hydraulic resources must be fully utilized to develop small-scale hydroelectricity and processing of agricultural sideline products.

Ningxia is our nation's only Hui autonomous region. Of the population of more than 3.6 million of the entire region, the Hui people constitute one-third. Natural resources are abundant here, there are good conditions to develop agriculture, forestry and animal husbandry. Ningxia has diverted the water from the irrigated areas of the Huang He and has always been known as "the rich country outside of the Great Wall." There is plenty of cultivated land, water conservancy resources are rich, the degree of agricultural mechanization is high, and the collective economy is more firmly established. We must quickly make this entire region which diverts water from the irrigated region of the Huang He into a commercial food grain base, and build bases for the production of Chinese wolfberry fruit, beets, fruits and vegetables. Although rainfall in the southern mountain region is scarce, drought is severe, natural conditions are poor, there are many unclaimed mountains and grass slopes. The potential to develop forestry, animal husbandry and oil-bearing crops is great. With effort, a base for the production of livestock, forestry and oil-bearing crops can be established.

The state should provide financial, material and technical support in a key way to those other economically backward regions in our nation and old revolutionary bases in remote mountain regions which still face great economic difficulties. The principle of developing superiority must also be implemented. This is the only feasible way to hasten the economic development of these regions and to quickly bring them out from poverty.

For example, Guizhou Province has for a long time not started out from the natural conditions of having "eight mountains, one river and one fen of farmland" in production policies and in policy measures to develop agriculture on an overall basis. It focused on food grains alone and the proportional development within agriculture was seriously imbalanced. After nearly 30 years, the whole province's per mu yield of food grains in 1978 averaged only 314 jin, the per capita output of food grains was 480 jin, the average food grains ration was only 351 jin, and cash distribution to each person was only 46.4 yuan. It is a province with the lowest average per capita income of the agricultural population throughout the nation. Guizhou is situated in the subtropical zone. It does not have any severely hot summers and it does not have any severely cold winters. The frostless period is long, mountains are covered with prosperous vegetation that remains green throughout the seasons, and the area suitable for animal husbandry constitutes one-third of the province's land area, constituting threefold the area of available cultivated land. But, up to now, this precious natural resource is still emerging and perishing by itself. According to surveys, the whole province now has more than 5.8 million head of cattle and sheep, and basically they only consume the green grass on corner land beside the farm villages while large expanses of grasslands are left unused. The rise and fall of agriculture and animal husbandry in Guizhou in the past showed that starting out from the actual situation in Guizhou to implement a combination of agriculture and animal husbandry is a law of high-speed development of Guizhou's agriculture. From 1952 to 1957, the annual average growth of the whole province's livestock was 9.6 percent. Food grains increased an annual average of 9.1 percent. From 1958 to 1962, livestock decreased an average of 11.5 percent a year, and food grains decreased an average of 7.3 percent a year. During the 10 years following 1966, livestock remained at about 10 million head, and food grains also remained at around 10 billion jin. Historical experience shows irrefutably that implementing the policy of using animal husbandry to stimulate agriculture in Guizhou is indeed a way to make agriculture and animal husbandry prosperous and to make the nation and people rich. Now, Guizhou Province has decided to break away from the unilateral view "that agriculture is food grains" and "animal husbandry is raising pigs" of many years, it has decided to fully utilize the favorable natural conditions in Guizhou, and it has decided to promote the favorable and avoid the harmful, develop agriculture and animal husbandry simultaneously and strive for overall development. If this road is followed, Guizhou known as "a province where people do not even have 3 fen of money to their name" can gradually become rich.

In general, only when all localities implement the principle of developing advantages, avoiding shortcomings and developing superiority can a rational economic structure be established throughout the nation and the whole nation's economic superiority be fully developed. The national economic structure is founded on the regional economic structure. Our nation is large and wealthy, the population is large, therefore it should be possible to establish a relatively complete independent and autonomous industrial system and a national economic system. But, we cannot require every region to do this. In the past, each locality attempted to establish a complete

economic system around "taking food grains as the key link" and "taking steel as the key link." The result was that this goal was not realized and, on the contrary, they seriously affected the healthy development of the economy of each region and the whole nation. Everyone is understanding this point more clearly now. But now some comrades have also pointed out that each locality should establish an economic system with a coordinated development of agriculture, light industry and heavy industry. Because of the past lesson of each region unilaterally developing food grains and steel, each region is asked to develop agriculture and industry on an overall basis as much as possible. This is correct and necessary. But to overcome one-sidedness, it is not practical to ask each locality to uniformly achieve coordinated development in agriculture, light industry and heavy industry. This is only another way of advocating the idea of asking each locality to establish a relatively complete and independent and whole economic system under new historical conditions. The theory is still based on that idea of the natural economic view of self-sufficiency. The difference is that in the past, it advocated "taking food grains as the key link" and "taking steel as the key link" while now it advocates coordination among agriculture, light industry and heavy industry. Actually, asking each locality to develop advantages, avoid shortcomings and develop superiority is completely consistent with the policy of establishing a relatively complete economic system. The superiorities formed by natural and historical conditions in each region in our nation are extremely different. If each region can suit measures to local circumstances in establishing a regional economic structure that can develop its superiority, then, the national economic structure established on this foundation will surely have many economic sectors that can develop superiority. Such an economic structure will surely be the best economic structure that will be able to realize the best economic structure.

IV. Create Conditions for Developing Regional Economic Superiority

A regional economic structure must have definite conditions to develop advantages, avoid shortcomings and develop superiority. Without definite conditions, the superiority will not be able to develop, and developing advantages and avoiding shortcomings will be empty talk. Historical experience shows that the following measures should be implemented to create conditions.

First, developing a commercial economy and strengthening the economic links between regions are important prerequisites to develop regional economic superiority. One important reason for establishing independent "large and complete" and "small and complete" economic systems in the past was the influence of the natural economic view believing that a commercial economy was not compatible with the socialist economy. Therefore, to shatter the "large and complete" and "small and complete" systems in each region so that each region can develop advantages, avoid shortcomings and develop superiority, we must first purge the poison of the natural economic view from our thought, and develop a commercial economy in a big way. Only

after establishing smooth channels for the circulation of commercial products can the products which have been produced by each locality and which are superior in quality and in quantity be smoothly marketed domestically and abroad, and at the same time, enable each locality to obtain other needed products through exchange. If the channels for the circulation of commercial products are plugged, products cannot be marketed, needed products cannot be imported and the development of regional superiority will be hindered.

The development of a commercial economy and improving the percentage of commercial products are complementary to establishing a good regional distribution of production. When a commercial economy is developed, it can stimulate the rational distribution of regional production and the specialization of production, in other words, the implementation of specialization in production can further increase the percentage of commercial products. Our nation's commercial economy is very undeveloped at present. The percentage of commercial agricultural products is still very low. The percentage of commercial food grains is still less than 20 percent, and the percentages of other commercial agricultural and sideline products are also not high. In the future, as a commercial economy develops and as the percentage of commercial agricultural products increases, the agricultural superiority of each region will be increasingly and more fully developed. For example, the commercial food grains base in the Liaohe Plain in Liaoning Province starts in Changtu County in the north and reaches Liaodong Bay in the south, including 17 counties (prefectures). In 1979, the total output of food grains and soybeans was 11.45 billion jin, constituting 47.9 percent of the total output of food grains of the whole province. It submitted 4.58 billion jin of commercial food grains and soybeans, constituting 62.5 percent of the total amount of commercial food grains submitted by the province. The percentage of commercial food grains increased to 40 percent, and the superiority of this region which has a flat terrain, fertile soil, suitable climate, abundant rainfall and rich water conservancy resources was fully developed.

To develop superiority, we must break regional isolation and develop competition. At present, some regions are still engaged in establishing feudalistic regional "separate regimes." They do not export their own products and do not allow products of other regions to be sold in their own region. Some regions have imported needed products from other regions but they monopolize business, the channel of flow of commercial products is singular, and they artificially limit price fluctuations, and do not allow competition between regions. These methods, to describe them nicely, are to protect the local economy, but actually, they are protecting backwardness and hindering the development of regional superiority. As economic reforms are carried out, some regions have begun to break through regional isolation, developed competition and realized very good results. Now, Jiangsu, Shanghai, Zhejiang, Anhui provinces and cities have already broke away from the monoply by state-run commercial enterprises. Commercial products on the market now do not come from one region, one channel, and products on display and marketed not only include daily industrial products but also productive materials. In the marketplace in Shanghai in the past, there

were basically only local products. Now, products from Jiangsu and Zhejiang can be purchased and products from Guangzou, Xinjiang, Nei Monggol and Qinghai can be purchased. In Hangzhou, products from Suzhou and Wuxi which have not been available for many years have emerged. Many localities in Jiangsu are holding exhibition sales of Shanghai products. Hefei and Bangpu in Anhui have opened up small commercial markets selling local products and products of every other place in the nation. Circulation has a great reaction upon production. Prosperous exchange of commercial products of Shanghai and Jiangsu not only favors the development of local superiority and economic prosperity, it has also created favorable conditions for developing superiority of other regions and stimulating the development of the national economy. For example, in 1979, the total industrial production value of Shanghai Municipality was 59 billion yuan, and 5 billion yuan of this resulted from the increased production of salable products and from the solution of the problems in the supply of raw and processed materials via market regulation. Thus Shanghai's superior technology and business management were more fully developed. At the same time, because Shanghai's products were sold to other provinces, these regions were able to free their hands and produce other products that could develop their own superiority.

The implementation of economic union which spans regions and provinces and cities is also necessary to develop regional superiority. Under conditions of a commercial economy, competition will surely lead to union, because competition can better develop superiority and improve the competitive ability only in joint efforts. Therefore, the superiority possessed by both parties of a union is the prerequisite to creating the union, and the result of the union can also stimulate better development of the superiority of each. Now, many forms have already emerged in the economic union between regions in our nation, including domestic compensatory trade, joint investment and operation, technical cooperation, processing of incoming materials, etc. For example, the Shanghai Municipality Handicrafts Bureau has separately signed nine "compensatory trade" contracts with the paper manufacturing plants, bone glue factories, wood products factories, porcelainware factories, in the provinces and regions of Zhejiang, Jiangxi, Jiangsu, Hunan and Guangxi. The contracts stipulated that Shanghai will provide 7 million yuan worth of equipment to these provinces and the other parties will supply Shanghai with more than 7,000 tons of paper and especially thick paper boards, 100 tons of bone glue, 1,000 sets of wooden furniture and artistic porcelain each year for a 10-year period. Also for example, Tianjin and Xinjiang recently decided to jointly invest in a rug factory producing 50,000 to 100,000 m^2 a year. Tianjin will provide the technical equipment and Xinjiang will provide the raw material wool, labor and plant facilities. Both sides will share the products and profits proportionally. Also for example, the Shenyang Monosodium Glutamate Plant has sent technical personnel to the Zhumadian Monosodium Glutamate Plant in Henan and the Shanghai 11th Wool Spinning Plant to provide guidance in production techniques and to improve the latter's standard of production techniques. The latter will provide the former a part of the increased profit as compensation. Also, for example, the Changchun First Automobile Plant has taken up processing of incoming materials under the prerequisite of guaranteeing

the completion of state plans, and now it has signed agreements with more than 90 regions, departments and units. These units would provide materials and the First Automobile Plant would provide automobiles. The various types of joint ventures described above have a common characteristic. That is, the industrially developed regions or enterprises have developed their own superiority in technology, equipment or capital while the regions or enterprises that are relatively backward economically have developed the superiority of their own raw materials. In this way, the shortage of raw materials in some regions is solved, and the problem of some regions lacking certain technical equipment and having a low technical standard is solved. Thus the goal of jointly elevating the economic standard is reached.

In developing a commercial economy, and in the course of developing regional economic superiority, it is very important to pay attention to reviving and developing the function of economic centers formed in history. To change the past abnormal situation of using administrative zones to separate economic activity and to organize economic activity between regions according to the laws of movement of the commercial economy and socialized mass production require developing the function of economic centers of such large cities as Shanghai, Tianjin, Guangzhou, Chongqing, Hankou, and Xian. For example, Tianjin is our nation's northern economic center, but for a long period, Tianjin did not fully develop its function as such. Tianjin has many superiorities, and its superiority in developing a commercial economy is an important aspect. Tianjin is the largest commercial port in the northern part of our nation. It is an important traffic hub. Ocean shipping, inland rivers, railroads, highways and airlines can reach everywhere from here. Tianjin, as an important export base, has a broad hinterland, including the entire part of northern China, most of the northwest, a part of Shandong and northern Henan. Historically it had been involved mainly in the business of exporting agricultural and sideline products of these regions, and as a transfer, collection and distribution center of industrial products. In the highest years of import and export volume, the import and export volume of Tianjin once reached over 25 percent of the total import and export volume of the whole nation. At present, the port of Tianjin already has trade relations with 148 nations and regions of the world. The full development of the function of this economic center of Tianjin, the establishment and development of its broad economic relations, economic cooperation and economic exchange between Tianjin and medium and small cities and between the broad number of towns and rural areas will undoubtedly be a necessary and favorable condition for the development of the superiority of Tianjin itself and the superiority of each region and for the establishment of a rational regional economic structure.

Second, the principle of material benefits must be strictly implemented when handling the economic relations between the central authority and the localities and between localities, and the benefits of all sides must be taken into consideration before the regional economic superiority can be better developed. Under socialist conditions, there are differences in benefits even with the prerequisite that the fundamental benefits between the central authority and the localities and between localities are content. Therefore, when organizing the economic relations among them, we must

follow the principles of mutual benefits. This requires necessary reforms in the materiel system, the foreign trade system, the financial system, and necessary readjustment of economic policies regarding prices and tax revenue to guarantee that the more products a region exports by developing superiority, the more material benefits it receives, otherwise the enthusiasm of these regions in producing and exporting products will be dampened and the development of superiority will be affected.

For example, Liaoning Province has a great superiority in heavy industry. The sectors of metallurgy, machinery, chemicals, coal and petroleum occupy a very important position throughout the nation. Each year, it exports much steel, machinery equipment, nonferrous metals, cement, soda, sulfuric acid and such products to support socialist construction of the whole nation. During the 4 years from 1975 to 1978, Liaoning exported a net worth of 21.22 billion yuan of first-category products, and the growth rate of the net export value of first-category products was faster than the growth rate of the production value. According to the theory of social reproduction, a definite quantity of second-category products must be imported correspondingly when there is a large net export of first-category products to guarantee that the proportional relationship between the two major categories and that among agriculture, light industry and heavy industry, and that between production and livelihood are coordinated. And especially in Liaoning where the growth rate of second-category products have always been unable to catch up with that of first-category products, and where self-sufficiency in second-category products has not existed for a long time, it is even more necessary. But, cumulatively, during the same period, there was no net import of second-category products (in 1978, the net import was 130 million yuan), on the contrary, there was a net export of 600 million. This worsened the shortage in the supply of consumer products in recent years in Liaoning Province. Therefore, the import and export ratio of Liaoning Province should be appropriately adjusted so that Liaoning will have the necessary materials and money to guarantee that the proportional relationships in the national economy are coordinated. This is the only way to mobilize the enthusiasm of Liaoning and develop its superiority in heavy industry.

Also for example, the superiority of Heilongjiang is mainly in raw and processed materials. Heilongjiang is our nation's large agricultural base and heavy industrial base. From after Liberation to the end of 1978, it cumulatively exported 64.7 billion jin of food grains, 425 million tons of crude oil, more than 300 million m^3 of timber, and 585 million tons of coal. But, because related departments of the state only took from Heilongjiang and did not give, or took more and gave less, did not pay enough attention to local construction, the regional finances of Heilongjiang have been short of 80 million yuan for construction each year, thus productive conditions worsened and the province had to rely on its own capital to get by. Agricultural construction was weak, agricultural resources were destroyed significantly, natural disasters increased, soil erosion was serious, land fertility dropped. In the mining industry, the ratio between production and construction was imbalanced, extraction and excavation were imbalanced,

extraction and reserves were imbalanced, and extraction and nurturing were imbalanced. To develop the superiority of Heilongjiang in raw and processed materials, it needed the state to provide assistance and care in key ways. For example, in the system of material distribution, it is possible to implement the system of allowing the localities to appropriately retain a percentage of the products of coal, timber and oil and change the irrational situation of a serious shortage of local coal, timber and oil. In the foreign trade system, it is possible to increase the percentage share of foreign exchange for the region so as to change the abnormal situation in which the provincial foreign trade company is suffering losses while the Foreign Trade Ministry is gaining a profit, and to encourage the exportation of products that can realize a high foreign exchange, such as soybeans. In the pricing system, it is posiible to reform the system appropriately to benefit production and to encourage the advanced enterprises. Now, Heilongjiang suffers a deficit of about 3 fen for every jin of food grains submitted to the state. The central authority has specified that 1.35 fen is subsidized for each jin, and the region still has a deficit of about 1.5 fen. For example, in 1979, Heilongjiang submitted 1 billion jin of food grains to the state, suffering a loss of 15 million yuan, and the more it submits to the state the greater the loss. Obviously, if this situation does not change, Heilongjiang's superiority in producing food grains will not be developed.

Now, a conflict exists between the processing regions and those producing raw and processed materials. That is, some technically advanced enterprises do not have sufficient raw and processed materials while regions producing raw and processed materials are blindly building small factories and worsening the shortage in the supply of raw and processed materials. To develop the technical superiority of processing regions and to produce products that consume less materials, that have low cost and high quality, we should, as much as possible, guarantee the raw and processed materials they need. For this, we should not only implement necessary administrative measures, we must also correspondingly implement economic measures. This is because the conflict between the processing regions and those producing raw and processed materials is in fact still a problem of material benefits, i.e., the profits from processing are too large and the prices of raw and processed materials are too low. If the prices of raw and processed materials can be appropriately increased, or if the regions producing raw and processed materials and the processing regions can implement economic union and proportionally distribute the profits from processing, then this conflict between the processing regions and those producing raw and processed materials existing at present can be solved without much difficulty. If we can separately guarantee and take care of the material benefits of the processing regions and those producing raw and processed materials, then the superiority of each can be fully developed. At the second meeting of the Fifth National People's Congress, the delegates of the Tujia and Miao Autonomous Prefecture in western Hunan reflected that the natural superiority of tung oil, tea oil and timber in western Hunan cannot be fully developed. One important reason is the problem of pricing policy. When exporting raw and processed materials, the mountain regions suffer a loss while the other

regions make a profit. For example, the procurement price for 1 jin of tea is over 1 yuan. After being shipped to other places and processed a little, it is 7 to 8 yuan with a high reaching more than 10 yuan a jin. The procurement price per cubic meter of timber is only 38 yuan. After being shipped to other places and processed, it becomes several hundred yuan and even up to 1,000 yuan. Not only is there a conflict between the region producing raw and processed materials and the processing region, there is also a conflict between the producer and the businessman. According to surveys conducted in Yongshun County in Hunan, in local procurement and marketing of timber, the procurement price per cubic meter is 41.23 yuan while the marketing price is 95.57 yuan. The businessman issues a check, changes hands and receives over 50 yuan. These conflicts in benefits will surely affect the development of the superiority of the raw and processed materials producing regions.

To truly realize mutual benefits, develop advantages and avoid shortcomings, realize close cooperation and joint development, we need to study and draw up appropriate policies to encourage the regions producing raw materials to actively increase production and export raw materials. For example, Zhejiang recently issued a rule concerning the problem of tea. It took the state procurement figure of 1978 as the base figure. Commune brigades are allowed to process the surplus. The profits from the tea not processed by the commune brigades but given to state-run tea factories for processing are split into 30 percent and 70 percent, i.e., 70 percent of the profits are returned to the commune brigades. The tea processed by the tea-refining factories newly established by the commune brigades must be included in the state plans. After completing the tasks of the plan, the surplus can be marketed with proper proof from the supply and marketing cooperative. At the same time, Zhejiang Province is also studying concrete policies to solve these problems for such important raw materials as silkworm cocoons, tobacco and mao bamboo. It seems that as long as necessary care is given to the material benefits of the regions producing raw and processed materials, the sharp conflict now existing in raw and processed materials can be solved without much difficulty. The superiorities of the regions producing raw and processed materials and the processing regions can all be fully developed.

Third, we must create and provide necessary conditions for materials, technology and cadres to develop superiority.

In material conditions, the main question is how to solve the food grain rations of the farmers well in developing the superiority of the regional economy in agriculture. A foremost condition is to fully utilize favorable natural conditions, plant economic crops, develop diversification of forestry, animal husbandry, sideline production and fishery, and guarantee the food grain rations of farmers. Experience shows that if farmers worry about their meals, economic crops and diversification cannot be developed. For example, for some years, our nation's cotton production did not progress. Lingering and decreasing output occurred. One important reason was that there was a shortage of food grain rations for cotton farmers. The Central Committee has decided to implement the policy of food grain rations for cotton farmers well to develop cotton production in the future and implement

necessary measures, including allocation of food grains by the state and the province to the cotton-producing regions, provide more chemical fertilizers to cotton farmers to increase food grains production, and concretely change the shortage of food grains rations for cotton farmers. This is an important measure to mobilize the enthusiasm of the cotton farmers to plant cotton and to quickly change the backward situation in our nation's cotton production. Also, for example, in recent years, Fujian Province implemented the policy of "linking sugarcane and food grains." On the basis of the originally specified base figure, the sugarcane farmer is subsidized 250 jin of unprocessed food grains per ton of unprocessed sugarcane submitted. Therefore the enthusiasm of the sugarcane farmers was greatly mobilized, and sugarcane production increased by a large scale year after year. During the 1979-1980 pressing season, the whole province produced 371,000 tons of sugar, a more than twofold increase from the 110,000 tons 4 years ago. The per mu average yield of sugar was 1,107 jin, greatly surpassing the average unit yield of the whole nation. Also, for example, to quickly develop the superiority of Hainan Island, situated in the damp tropical zone, the State Council recently decided that the central authority and Guangdong Province will ship 450 million jin of food grains to Hainan Island each year starting in 1981 for 5 years without change so that Hainan Island can have a free hand to greatly develop high-value tropical crops and precious forest wood, and gradually establish a new ecological balance and agricultural structure suitable to the characteristics of Hainan Island, and to gradually build Hainan Island into our nation's base for producing tropical economic crops and valuable forest wood.

To enable regional economic superiority to develop, we also need to establish other necessary material conditions, including solving the problems in materials and technical equipment, energy sources and transportation. For example, after our nation's broad number of grassland regions developed animal husbandry as the main effort, some necessary construction must be carried out according to plan to solve the problems of irrigation of the grassland, application of fertilizers, growing grazing grass, improving livestock and living facilities for herdsmen. At the same time, as animal husbandry develops, refrigeration, processing, energy and transportation should catch up correspondingly. Otherwise, large quantities of dairy products and meats produced will not have a place for cold storage and processing and will not be able to be shipped out, causing great losses. Or else, because the animals cannot defend themselves against natural disasters, large numbers of livestock will die. Also, for example, our nation's mulberry planting and sericulture lack modern scientific technology and management, tools for bunching (tool for silkworms to spin silk and form cocoons) are backward, there are not many superior species of silkworm cocoons, the cocoons are poor in quality and the unit yield is low, and the superiority to develop sericulture in some regions cannot be fully developed. Our nation has about 6 million mu of mulberry gardens, threefold that of Japan, but each year, the amount of cocoons produced is only over twofold that of Japan, the average amount of cocoons produced per mu of mulberry garden is more than 20 jin below that in Japan. The difference between the quality of the cocoons is great. In Japan, 17 to 18 jin of silk can be reeled from every 100 jin of fresh cocoons but in our nation, only 10 to 11

can be produced. In 1978, our nation harvested 3.4 million dan of cocoons and produced 19,000 tons of raw silk, but Japan harvested 1.5 million dan of silk and produced 16,000 tons of silk. In the future, as long as our nation can improve the technical conditions and management of planting mulberry trees, raising silkworms, bunching, roasting cocoons to the present level in Japan, we can increase the output of raw silk by 10,000 tons without increasing the area of mulberry gardens. This is equivalent to adding $300 million in foreign exchange revenue.

The development of regional economic superiority must also correspondingly cultivate special talent who can develop the superiority. This is an important task in the education front. Under uniform state planning, the educational departments of each locality should train related special talent according to the need to develop the locality's economic superiority. Guangxi recently made clear that local higher educational institutions must establish special academic fields related to the development of the economic superiority of Guangxi. The establishment of such special fields as nonferrous metals, building materials, light industry and agriculture must be especially strengthened to quickly adapt to and satisfy the need for special talent related to Guangxi's economic construction.

Fourth, the development of economic superiority requires strengthening planning and guidance and realizing comprehensive balance well. In the course of fully developing the economic superiority of each locality, planning and guidance by the state and the implementation of comprehensive balance are entirely necessary. Only in this way can the economic superiority of each locality develop better and only in this way can the best economic results be realized throughout the nation.

Which superiority of a region should be developed, of course, is mainly determined by the natural and economic conditions of the locality. But in making a determination, we must also consider the whole nation, consider the supply and marketing of products, raw materials, energy sources, transportation and many such aspects, implement comprehensive balance, and measure advantages and disadvantages. In this way, we can prevent blind development which creates waste. For example, the chemical industry in Jiangsu seems to have a better foundation in materials and technology and it also has conditions to expand production further. But Jiangsu Province lacks anthracite resources, and petroleum must also be supplied by other regions. Therefore, to what scale the chemical industry in Jiangsu should develop must be determined according to the balance between the one-time energy sources in the nation and the ability to process chemicals. If the scale is blindly enlarged, losses will be created because raw material supplies cannot be guaranteed. Also, for example, the Qianguo Oil Refinery in Jilin has raw materials to produce lubricating oil. The original plan called for building another shop with an annual capacity to produce 20,000 tons of lubricating oil. After investigation it was found that Daqing had already built a large lubricating oil plant and at present the sale of lubricating oil in the international market is not good, therefore related departments decided to cancel the original plan.

In developing superiority, comprehensive balance should be implemented not only within the whole nation but also in a region. In a region possessing a certain superiority, the economic development is similarly not balanced, therefore, in the course of developing superiority, the principle of selecting the best among the best should be implemented under the guidance of plans to obtain the best possible economic results. Facts show that if planning and guidance are abandoned, if comprehensive balance is not implemented, regional superiority will not be able to develop. For example, Zhangjiakou is our nation's famous "skin capital." It has a history of producing fur and skin products. At present, Zhangjiakou has fur- and skin-producing equipment which is relatively advanced in the nation, and unique techniques for tanning, degreasing, dyeing, mixing materials and postproduction processing. The varieties of products number more than 500 kinds. At the same time, the Zhangjiakou area has abundant fur and skin resources, and it is one of our nation's export bases for fur and skin products. But, in recent years, the production of fur and skins at Zhangjiakou has not developed. It is plagued by difficulties and is facing demise. One important reason is that comprehensive balance was not done well. The Zhangjiakou area produces about 5.5 million raw skin materials a year. The annual processing capacity of the five key fur- and skin-processing factories is 8.5 million pieces. The raw material supplies and the processing capabilities are very imbalanced. But during the past 2 to 3 years, Zhangjiakou again blindly built more than 320 fur- and skin-processing factories and processing points. Small factories and large factories compete for raw materials and this has caused serious loss and waste. The advanced fur- and skin-processing equipment of many large factories cannot operate normally, large numbers of technically skilled workers cannot work normally. Small factories with simple equipment, backward processing technical processes and workers with low technical caliber frequently use good raw materials to make inferior-quality products. To change this situation, we must implement the principle of selecting the best from among the best, strengthen planning and guidance, carry out comprehensive balance well, rationally arrange the distribution of the fur and skin factories and processing points in the Zhangjiakou area well. Advanced factories that produce traditional brand name products, products that are good in quality, that have a low labor-consumption rate should be supplied with raw and processed materials first and should be given production tasks first. Some backward factories that produce high-priced and inferior-quality products should be readjusted. Some should serve to assist large factories, some should process leftover pieces of large factories, some should change their products or shut down. In this way, the superiority of fur and skin production of Zhangjiakou can be developed.

Administrative means to implement comprehensive balance and to change blind construction of factories are necessary. Even a capitalist country like France passed laws to strictly limit the continued concentration of the population and industries in the large industrial regions in the east and the north and in the three large areas of Paris, Lyon and Marseille when implementing the policy of "scattering industry." Heavy fines and other penalties were levied on those who built new factories in those regions or

expanded their factories. This is done even in capitalist nations, therefore there is no doubt it can be done in our socialist nation. But, simply relying on administrative order cannot possibly be completely effective. We must implement appropriate economic measures, and utilize and develop the function of such economic means as pricing and taxation. Under socialist conditions, it is necessary for the state to make readjustments via appropriate administrative means when blind development of production emerges. Yet administrative means must be combined with economic means to utilize the market mechanism and comprehensive balance so that things can be done with half the effort. By utilizing the function of price patterns, allowing price fluctuations and competition, those backward factories which produce inferior quality and high priced products and have developed blindly will be eliminated and the superiority possessed by the advanced factories will be able to develop fully. Regulating the production of flint by adjusting the price is one very convincing case. Because the price of flint produced was too high, and because the industrial profit margin and the commercial profit margin were also too high, therefore, more than 40 factories were established throughout the nation. The annual output was 500 tons of flint, but sales in the market were generally only 200 tons. There was a surplus of 300 tons. But because of the two protective measures of unified pricing and local control, all flint-producing factories, whether good or bad, operated at half capacity. The factories that were technically advanced, that produced high-quality, low-cost products were forced to reduce output and even cease production. At the beginning of last year, the Shanghai Yaolong Chemical Plant negotiated with the commercial department and asked to reduce the manufacturer's price, the wholesale price and the retail price of flint to adapt to the current supply and demand in the market and in consideration of the benefits to both industry and commerce but it met with opposition from other factories in the same profession. The reason was: "If the manufacturer's price is lowered, it can only protect that one factory in Shanghai. Profits should be shared by all!" After concerned departments studied the problem, it was decided to allow the localities to determine the price of flint. Shanghai lowered the manufacturer's price of the Sunflower brand flint produced by that factory and rapidly opened up sales. In domestic sales, the 100 stations in Shanghai city not only bought all of the original order of 40 tons according to plan, they also purchased an additional 20 tons over the plan. In foreign trade, the foreign trade department not only bought the 50 tons stipulated in the plan at the original price rapidly half a year ahead of time, it also bought an additional 63 tons at the new price. The Yaolong Chemical Factory suddenly changed from "not having enough to eat and worrying about having its sustenance terminated" to "having too much to eat and operating at full capacity." This case clearly shows that doing things according to price rules, combining planned regulation and market regulation can effectively realize comprehensive balance, protect the advanced, and develop superiority. Otherwise, the advanced will be harmed and the backward will be protected.

In addition, to realize comprehensive balance, the state planning agencies and related agencies still need to survey market needs, make short-, medium- and long-term economic forecasts, and issue relevant forecasts in time to guide the development of the economy of each region and to reduce blindness as much as possible.

To develop regional superiority, necessary conditions in other aspects must be created. For example, surveying natural resources well to serve as a scientific reference for economic zoning, implementing economic policies, mobilizing the enthusiasm of all sectors, etc. All of these are necessary to better develop superiority in each region.

In general, establishing a regional economic structure that can develop superiority, develop advantages and avoid shortcomings is a major problem that must be solved well in our nation's modernization, and it is also a key to whether modernization will be successful or not. Now, the study of this problem has just begun, there are many important questions that must be continually explored by combining theory and practice.

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CHAPTER XXIII

ENTERPRISE SIZE STRUCTURE

By Chen Shengchang [7115 5116 2490] and Li Yue [2621 1878]; original text pp 688-723, portions between slantlines in boldface in original text.

[Text] Enterprise size structure[1] is a component of the entire economic structure.

One of the main reasons for the relatively poor economic results of our 30-year economic construction has been the blindness and anarchy existing in the enterprise size structure. Thus, an in-depth analysis of the size of our enterprises, a summing up of the historical experience of the past 30 years and a study of the law of the development of enterprise size structure are, for a long-term point of view, of great significance in achieving better macroeconomic results and accelerating the building of the four modernizations, and are, at present, of even more imperative and immediate significance in our implementation of the four-point policy of "readjusting, restructuring, consolidating and improving."

This chapter will mainly analyze the history and current situation of our industrial enterprise size structure and make initial inquiries into the avenues and ways to improve the size structure of our enterprises.

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1 At present the standards to determine the sizes of enterprises are not the same in every country. Countries, in general, class enterprises in two ways: one is according to the number of workers, such as 1-3 workers, 4-10 workers,...over 5,000 workers, etc.; the other is according to business income of enterprises (some also use output value), for example, annual income under $50,000, $51,000-100,000, etc. We determine the size of an enterprise by its production capacity, for example, in iron and steel industry, large enterprises are ones with over 1 million ton annual output, medium-sized enterprises are ones with 100,000-990,000 ton annual output, and small enterprises are ones with under 100,000 ton annual output, etc. Furthermore, each country's classification standards are adjusted from time to time. Despite the different standards to determine enterprise sizes, enterprises can be classed roughly in large, medium and small three sizes, and can be compared in the light of the trend of their evolution.

I. The Evolution of Enterprises' Size Structure Since the Founding of Our People's Republic

The economy in old China consisted of a boundless ocean of small peasant economy, on the one hand, and industry and commerce mainly with small scattered and backward enterprises, on the other. The control of bureaucratic capitalists and imperialists over the national economy relied mainly on the reactionary regime's power, and not on the small number of relatively large enterprises. Furthermore, regardless of the sizes of the enterprises, large, medium or small, the levels of their technology and management were all very low. Since the Liberation, as the result of four 5-year plans, our country has built up a large number of fairly advanced large and medium enterprises and many small ones as well, which are basically able to manufacture products to satisfy the needs of our people and in the development of production and national defence. Also, the average size of our enterprises has been growing. The change in enterprises size reflects, on the one hand, the concentration of production and the development of productive forces, and on the other hand, is closely connected with the change of policies on economic construction. Taking a broad and extensive look at this evolution process, we may divide it roughly into four phases.

The first phase, 1949-1957. During this phase enterprise size changed from dispersion to concentration.

Prior to 1952, bureaucratic capital was confiscated and state-run enterprises were set up. At the same time, we supported and stabilized the national capitalist industry and commerce which were tottering on the eve of the Liberation. The overwhelming majority, with the exception of a very few relatively large ones, were small industrial and commercial enterprises employing several to several dozen workers. According to 1952 statistics, factories employing fewer than 50 workers made up 96 percent of the total privately run factories of our country.[2] There were approximately 150,000 privately run industrial enterprises that employed more than 4 persons, with a total of 2.23 million workers. Among them there were fewer than 20,000 enterprises that owned power plants and employed more than 16 workers, or employed more than 31 workers, but without power plants. The number of their workers made up 51 percent of the total number of employees in privately run industry. Their output value made up 68 percent of private industry's total output value. In commerce, there were 4.3 million local, itinerant traders and street peddlars in cities in 1952, engaging 6.7 million people. Of the 4 million or so businesses the majority, that is, street peddlars and part of local and itinerant traders, were of the nature of individual economy and small proprietors.[3] In other words, before 1953, the size of our enterprises was small, our economy was backward, and commercial and service trades enterprises overwhelmingly

2 Xue Muqiao [5641 2550 2890]: "Zhongguo Guomin Jingji de Shehuizhuyi Gaizao" [Socialist Transformation of China's National Economy], RENMIN CHUBANSHE, 1959, p 113.

3 Xu Dixin [6079 3321 2450]: "Zhongguo Guodu Shiqi Guomin Jingji de Fenxi" [Analysis of China's National Economy During the Transition Period], KEXUE CHUBANSHE, 1959, pp 45-46.

exceeded industrial ones both in the number of employees and in the number of enterprises.

During the First 5-Year Plan which began in 1953 a series of large and medium key enterprises were first set up, among them 921 were above-norm industrial projects (mostly large and medium extensions and new projects) actually under construction and 537 were completed. After the completion of the First 5-Year Plan, fixed assets increased by 4.11 billion yuan, 2.14 billion yuan of which represented industrial fixed assets which were more than the total industrial fixed assets accumulated throughout the past 100 years in old China.[4] That fundamentally improved old China's irrational economic structure and formed a series of key enterprises in our national economy.

Also starting in 1953, the socialist transformation of capitalist industry and commerce began gradually and teached high tide by 1956. Thereafter, wherever socialist transformation in the whole trade had been completed, the reorganization of these enterprises began. As mentioned above, capitalist industry and commerce originally were very scattered and backward, mainly consisting of small enterprises of fewer than 10 employees. The quality of their products being poor and the quantity being small, they were unsuitable to the needs of the state's construction or to improve the lives of the people. Without appropriate reorganization of these small enterprises and necessary mergers and eliminations (under capitalist conditions, it would have been with annexation and bankruptcy), the state's financial and material resources would only be wasted. Naturally, this reorganization was not only necessary, but also possible. First of all, joint state-private ownership had already been implemented within industries by 1956, which made the reorganization in each industry possible. Secondly, the establishment of a number of large and medium key enterprises as the core of economic activities had prepared for a planned reorganization. Large numbers of small enterprises were reorganized by trade. For example, by 1978, Shanghai's 20,000 or so large and medium enterprises and more than 40,000 individual handcraftsmen were reorganized into 7,962 industrial enterprises. The average size of enterprises was also expanding steadily. According to the relevant statistical data of the Ministry of Textile Industry, the average size of cotton mills grew from 20,200 pindles in 1949 to 43,600 in 1957. The proportion of small mills of fewer than 30,000 spindles to the total number of the cotton mills dropped from 74.8 percent in 1949 to 39 percent in 1957. And the proportion of the spindles in these mills to the total number of spindles dropped from 35.2 percent to 12.7 percent. At the same time, the number of large mills with more than 60,000 spindles increased from 28.8 percent in 1949 to 42.2 percent in 1957.

In summary, the merging and reorganization of industrial and commercial enterprises prior to 1957 were in accordance with the demands to develop productive forces. However, they were disrupted by the "left" ideology, with blind merging of large numbers of commercial and service trade network outlets, which caused certain difficulties in the people's lives.

4 Xue Muqiao: "Zhongguo Guomin Jingji de Shehuizhuyi Gaizao" [Socialist Transformation of China's National Economy], p 54.

The Second Phase, 1958-1966. This was a phase when first (prior to 1961) large, medium and small enterprises were simultaneously and blindly developed, but later on a rational readjustment of enterprise sizes was made.

Beginning in 1958, our enterprise sizes underwent changes along two lines, that is, on the one hand, those already merged and reorganized former capitalist industrial and commercial enterprises were further merged and reorganized; on the other hand, however, large numbers of enterprises were constructed feverishly and blindly, especially large numbers of small enterprises were built up "with local methods" under slogans, such as the great leap, use of both traditional and modern methods, and the great steel-smelting, etc. In 1958, there were 1,587 projects of large and medium enterprises under construction, a 60 percent increase, compared to 1957. During the entrie period of the Second 5-Year Plan, large and medium construction projects totaled 2,884, a 1.08 time increase compared to the number during the period of the First 5-Year Plan. In 1958, the total number of our country's industrial and commercial enterprises reached 263,000, 54.7 percent more than in 1957. The number reached 318,000 in 1959, 87 percent more than in 1957. Among these enterprises, medium and small ones increased correspondingly by 80 percent. In fact,only a few large enterprises were completed and put into operation.

Starting in 1961, in the light of the four-point policy, a large-scale readjustment was carried out in those enterprises that were set up blindly. By 1962, the situation had begun to change. Many small enterprises set up with "local methods" and other economically irrational medium and small enterprises were appropriately readjusted through "closing, suspending, merging and transferring." According to the statistics of the National Statistical Bureau, as of the end of 1962, of the gross output value of the seven coal, ferrous metal, nonferrous metal, metal-processing, chemicals, papermaking and textile industries, large, medium and small enterprises each made up about one-third. (See Table 1)

Table 1. The Makeup of Large, Medium and Small Enterprises in Coal, Ferrous Metal, etc., Seven Industries at the End of 1962

Size/Item	Proportion in output value (%)	Proportion of employees at the end of year (%)	Proportion in fixed assets value (%)	Proportion of the total number of Enterprises (%)
Large	37.6	34.3	54.1	2.4
Medium	28.7	31.1	27.1	10.5
Small	33.7	34.6	18.8	87.1

In 1963, the total number of industrial enterprises dropped to 170,000, back to the level of 1957.

The Third Phase, 1967-1976. During the period of the 10-year turmoil of the cultural revolution, due to the disruption caused by Lin Biao and the gang of four, an abnormal state prevailed in the whole economic organism. The structure of enterprise size was also abnormal.

In terms of the situation of enterprise size structure, due to the influence of the "left" ideological trend, small enterprises of collective ownership in cities and towns could not grow because of various restrictions. Compared to 1965, the year of 1970 showed a 7 percent drop (7,000 enterprises). As for individual craftsmen in cities and towns they were either "cut off" as the "tail" of capitalism, or went "underground." However, other kinds of small industrial and commercial enterprises were on the rise, such as instruction factories, institution stores, "family-member companies," and "five smalls," etc. According to the data of a 1980 general survey of the industrial enterprises in Jilin, while the enterprises run by institutional bodies and other nonindustrial organs made up 12.6 percent of industrial output value and 9.5 percent of the province's profits and taxes, their losses made up 16.4 percent of the total losses of the province. Thus, we can see that among the various enterprises incurring losses, such enterprises suffered the heaviest. What was even more serious was that in 1970 the "five small" industries and the modernization of agriculture were pushed. Large numbers of small tractor factories, small chemical fertilizer and agricultural machinery plants, small steelmills and cement factories, etc., were built up in all parts of the country. However, by and large, enterprise size had maintained the level at the beginning of the cultural revolution (see Table 3). For example, the proportion of output value of Shanghai's medium and small enterprises to the gross industrial output value was 73.5 percent in 1965, 72 percent in 1971 and 69.1 percent in 1975 (see Table 2).

The Fourth Phase, 1977-1980. This phase was characteristic of unchecked development of communal and brigade enterprises.

After the smashing of the gang of four, small enterprises, mainly communal, brigade, city and town enterprises of collective ownership, have been developed at an alarming rate. The proportion of the output value of our small industries to the gross industrial output value increased from 49 percent in 1975 to 50.3 percent in 1977, and to 56.7 percent in 1978, a 7.7 percent increase compared to 1975. (See Table 3.)

According to the 1978 findings, the medium and small enterprises made up 99.65 percent of our entire enterprises and their output value made up 74.9 percent of the total output value. (See Table 4.)

Beginning in 1979, small enterprises, with communal and brigade ones in dominance, grew at an ever greater rate. According to the data gathered during a general survey conducted in the first half of 1980 in Heilongjiang Province, the number of the industrial enterprises encompassed by provincial statistics (excluding several large engerprises, such as Daqing, etc.) was

Table 2. Changes in the Output Value of Shanghai's Large, Medium and Small Industrial Enterprises Between 1957-1978

Year	Total (in hundred million)	Large Enterprises Output (in hundred million)	Large Enterprises Proportion (%)	Medium Enterprises Output (in hundred million)	Medium Enterprises Proportion (%)	Small Enterprises Output (in hundred million)	Small Enterprises Proportion (%)
1957	114.05	14.48	12.7	26.08	22.9	73.49	64.4
1965	252.62	66.94	26.5	76.04	30.1	109.64	43.4
1971	450.33	125.99	28.0	117.57	26.1	206.77	45.9
The above figures are based on the constant price of 1957. The following ones are based on that of 1970.							
1971	338.93	100.65	29.7	87.66	25.9	150.62	44.4
1975	441.87	136.46	30.9	123.32	27.9	182.09	41.2
1977	489.72	152.36	31.1	147.09	30.0	190.27	38.9
1978	543.66	146,79	27.0	124.50	22.9	272.37	50.1

Table 3. Changes in the Proportion of the Output and Output Value of the Small Industrial Enterprises of the Entire Country (Percentage in the Gross Industrial Output Value or Each Industry's Output)

Item/Year	1973	1974	1975	1977	1978
Percentage of small enterprise output value in gross industrial output value	48.2	49.2	49.0	50.3	56.7
Small steelmills output	8.4	7.3	6.8	7.6	9.7
Small ironworks output	8.8	9.4	10.0	12.0	14.4
Small coalpits output	36.8	36.6	37.1	38.2	43.7
Electric energy production of small power stations	9.2	8.7	8.7	8.9	12.6
Small cement plants output	52.6	57.5	58.2	65.7	65.2
Small synthetic ammonia plants output	54.5	54.2	58.3	56.1	55.7
Small chemical fertilizer plants output	66.4	66.2	69.0	65.0	59.4

Table 4. Size Structure of Large, Medium and Small Enterprises of Our Country in 1978

Size/Item	Gross Industrial Output Value		Number of Industrial Enterprises	
	Hundred Million	%	Number	%
Large	1,060.33	25.1	1,222	0.35
Medium	773.87	18.1	3,160	0.91
Small	2,396.55	56.8	344,065	98.74
Total	4,230.75	100	348,447	100

28.935 in 1979, that is, 15,414 more than the Provincial Bureau of Statistics originally listed (13,521), 1.14 times more than the previously existing enterprises. Of the newly added enterprises, with the exception of a few unreported ones set up a few years ago, most were developed in the last 3 years. Among them, those owned by the whole people increased 15.4 percent, collectively owned ones in cities and towns increased 18.7 percent. However, communal and brigade enterprises had a 291.4 percent increase, that is, close to a threefold increase. This situation was widespread in the country. Since 1977, just as in Heilongjiang, small enterprises have also been set up rapidly within a short time in other provinces. The overwhelming majority of these newly built enterprises were communal and brigade enterprises, which are characterized by blindness to a great extent in the direction of their production, scope and products. Nevertheless, in general, the average enterprise size has been growing. For example, in Jilin the average industrial enterprises size was 76 workers in 1963, with an average capital of 550,000 yuan, and by 1979 was 116 workers in average, with an average capital of 1.13 million yuan.

II. The Place and Role of Large Enterprises in the National Economy

/1. The Broadening of Enterprise Scope Is an Inexorable Trend in Economic Development./

The history of the industrial development in various countries indicates that the scope of industrial enterprises is increasingly growing, and the proportion of large enterprise output value in gross industrial output value is constantly rising. Concentration of production in ever-growing enterprises has become an objective trend in industrial development. Marx wrote that "the broadening of the scope of industrial enterprises has become everywhere the starting point for organizing more widely overall labor for many people, for developing more extensively the material motive force of this kind of labor, in other words, it is the starting point for changing the scattered and

habitual production process into one that is integrated with the society and is scientific."[5] What Marx pointed out here is: in some production sectors concentration of production and broadening of scope were not the results of the enormous unit capacity of certain machinery, equipment or buildings, but the results of large numbers of machinery of the same kinds installed that created the basis for handling the production process scientifically, thus enabling the comprehensive economic results to surpass any economic result a single machine can achieve. In clothing industry plants equipped with similar types of sewing machines, the differences between large factories with more machinery and assembly lines and small ones with one or few machines are especially evident.

The more important reason for the constant growth of the enterprise scope is the development of science and technology. This can be dated back to the time prior to the appearance of large machine-manufacturing industries, however, the acceleration of the development took place only after the appearance of modern industries. Especially in our present time with the development and use of modern science and technology, symbolized mainly by atomic energy, electronic and space technology, industrial production is experiencing a great revolution. One of the significant characteristics of the development of modern technology in production is the development of high and superhigh parameters, that is, the rapid development of equipment with the highest and lowest temperature, pressure, frequency, speed, stress, ultra-high precision, extra-large power, and extra-large capacity. Let us take a look at the situation of the developed industrial countries. In the middle and late 50's the largest volume of a blast furnace in the steel industry was only 1,700-2,000 M^3. During the 60's it increased to 2,000-3,000 M^3 and 5,000 or so by the 70's. The volume of the Soviet Union's largest blast furnace is 5,000 M^3; that of its largest open-hearth furnace is 900 tons, and that of the largest converter is 300 tons. The Soviet Union is designing a 5,500 M^3 blast furnace, and is planning to build a superlarge blast furnace with a 6,500 M^3 capacity in 1980. The largest ethylene-producing facility in the petrochemical industry was 24,000 tons in the late 1950's, and now has reached over 600,000 tons. The unit capacity of a generator in the engineering industry has increased from 50,000 kW and 100,000 kW to 200,000-300,000 kW, and to 600,000-1,000,000 kW in the 70's. Its largest oil tanker in the 50's was 38,000 tons, now it has 500,000-1,000,000 supertankers. With the gradual growth in scope of these installations, there is need for more and more detailed division of labor and broader extent of coordination and as the level of socialization of production is further enhanced, the level of concentration of production will inevitably rise, and the scope of enterprises will further grow.

Though the level of our country's productive forces is low, the sizes of our enterprises (average size and the size of our large enterprises) are also smaller than those of the developed countries. With the development of productive forces, however, the process of production concentration is unavoidable. During the early post-Liberation period, the proportion of our modern industry in gross industrial and agricultural output value was 17 percent (in 1949). It increased to 26.7 percent in 1952, still a small proportion. Our

5 "Collected Works of Marx and Engels" Vol 23, p 688.

heavy industry accounted for 28.8 percent of gross industrial output value in 1949, and 41.5 percent in 1952.[6] The victory of the people's revolutionary war and the imperialists' economic blockade at that time made it even more important to build up rapidly a series of large and medium key enterprises. The situation of our capitalist industrial and commercial enterprises also decided for us that if we wanted to develop our productive forces, we had to reorganize production concentration. At the beginning of our transition period, the gross capitalist industrial output value, that made up 63.3 percent of our entire industrial output value (excluding the handicraft industry), was the main force in our economy. However, these capitalist enterprises were basically light industries, producing 81.5 percent means of subsistence and only 18.5 percent means of production, among them only 1.4 percent being machine-manufacturing. In addition, a very large part of machinery and raw material needed by these enterprises was dependent on foreign imports. Moreover, these industries were scattered and backward, with small enterprises in the majority. They were overwhelmingly small plants with simple and crude equipment and fewer than 50 workers in each plant. Some of them did not even have power plants. There still existed large numbers of handicraft workshops.[7] Obviously, we must also accelerate the process of production concentration and carry out reorganization in these previously capitalist industrial and commercial enterprises.

There have been approximately four reorganizations in our country. For example, in Shanghai, the first reorganization took place after joint state-private ownership was introduced in all industries in 1956. More than 26,000 capitalist-managed medium and small factories were merged by type, following the principle of classifying them by their products and combining them to the needs, and were adjusted to 16,000. At the same time eight speicalized companies making screws, bicycles, etc., were set up. The second reorganization took place, between 1958 and 1962, mainly by branching off, expanding some factories, on the basis of existing industrial units, and establishing new companies, such as electronics, metallurgy and national defense, and specialized ones, such as electronic instrument, tractors and automobiles, etc. The third reorganization took place around 1964, during the national drive for test organizing industrial "trusts." Shanghai tried out branch companies of pharmaceutics, tobacco, rubber, textile machinery and standardized elements, and some local specialized companies, a total of 36. Later, due to the obstruction and disruption by Lin Biao and the gang of four, some companies were dissolved, some existed in name only. The level of their specialization dropped notably. The fourth reorganization has been carried on to date since 1978. Under the guidance of "30 points in industry" the industrial reorganization has again been started, following the principle of specialization and cooperation. In addition to the establishment of managing bureaus of building materials, shipbuilding and agricultural machinery, etc., the existing specialized companies were readjusted. For example, the Bureau of Chemical

6 Xue Muqiao: "Zhongguo Guomin Jingji de Shehuizhuyi Gaizao," [Socialist Reform of China's National Economy] p 45.

7 Ibid, pp 112-113.

Industry has organized and established separately dye, paint and plastic companies. A television set manufacturing company was formed, etc.

These companies have organized the numerous scattered, out-dated small and medium plants, vigorously brought about progress in production, and achieved fairly good economic results. For example, in machinery and energy industries there were 4,600 plants right after the Liberation, with 70 percent of them employing fewer than 10 workers. They had 6,200 or so metal-cutting machine tools. The value of their entire fixed assets was only 4.9 million yuan. The gross annual output value did not even reach 100 million yuan. After several reorganizations, by the end of 1978, the number of these enterprises was adjusted to 394. With the exception of 4 directly affiliated plants, the enterprises are under the administration of 10 specialized corporations by their specialization. Now they have 55,000 metal cutting machine tools, more than 7,000 forging presses, and the value of their fixed assets has reached almost 3 billion yuan, with a gross annual output value of more than 6 billion yuan.

During the 30 years since the founding of the People's Republic, due to the reorganizations of existing enterprises and a series of newly built and extended large and medium key enterprises, the entire economic and industrial structure has distinctly improved. The average scope of enterprises has greatly broadened. A fairly comprehensive industrial complex has been formed which can produce complete sets of equipment, airplanes, automobiles and ships.

/2. The Place and Role of Large Enterprises in Our Economy./

Large enterprises (including a small number of advanced medium enterprises) are the very core of our national economy:

First, large enterprises amass advanced technological equipment and skilled technical workers. They have the advantages of developing large, precise and sophisticated new products, which medium and small enterprises do not have. For example, only an enterprise equipped with 10,000-ton hydraulic press can produce products like rockets, blast furnace casings, steamers, etc. Also, only large enterprises with advanced technological equipment can produce main parts for highly sophisticated products, such as special-purpose atomic energy facilities, manmade satellites, etc. Because we have now a number of large key enterprises, we are able to make achievements in research and production of atomic energy, airplanes, ships and generating sets, etc.

Second, large enterprises with large output are the main strength of our national economy to satisfy the needs and demands for products in large quantities. Especially in steel and coal production, without large enterprises we cannot satisfy demands for products both quantitatively and qualitatively.

Third, large enterprises are the main strength to equip, reform and improve medium and small enterprises.

/3. The Economic Advantages of Large Enterprises, and the Unfavorable Factors./

The economic advantages of large enterprises play a significant role in enhancing the results of our national economy. They are shown as follows?

First, large enterprises help economize on and utilize effectively production facilities. Though large enterprises use machinery of great power, the power and the value of the machinery do not increase at the same rate. The rate of increase in power is higher than that of value. The consumption of coal, electricity and ore in a 3,000 M^3 blast furnace and the cost of each ton of pig iron are much lower than those in medium or small blast furnaces of less than 1,000 M^3. In thermal power facilities, a 200,000 kW generating set consumes less coal and requires less cost than a set of less than 100,000 kW. In addition, large enterprises carry on production in large batches; their machinery and production sites have fairly high load capacity, thus the utilization rate of machinery and production sites is also higher.

Second, though the total amount of investments of large enterprises is large, they can save investments per unit production capacity.

According to the estimates of a relevant designing institute, the installation of a 300,000 kW generating set does not take more time than that of a 100,000 kW set, but its generated energy capacity is twice more. It can also save investment and reduce fuel consumption, and the cost per unit kW is 10-20 percent lower. For each kWh, it can save 40 grams in coal consumption. The size of power stations varies from 50,000 to 200,000 kW. The investment per unit capacity can be saved by 50 percent. The unit-time factor for building a 100,000 kW turbine generator is 25 percent less than for building four 25,000 kW ones. Compared to a 2,000 M^3 blast furnace, a 5,000 M^3 furnace can raise productivity by 60 percent, with 12 percent less investment per unit capacity. Compared to a 100-ton open-hearth furnace, the building of a 270-ton open-hearth furnace can save 30-50 percent of investment per ton of steel, and reduce 20-30 percent of fuel consumption, but the productivity will double. If the scope of a cotton mill is expanded from 15,000 to 54,000 spindles, the investment per unit capacity can be saved by 11.2 percent. If its scope is expanded from 60,000 to 120,000 spindles, then the investment per unit capacity can be saved by 9.8 percent, and so on.

Third, large enterprises help increase labor productivity. Large enterprises have advanced equipment, relatively sufficient funds, and because of their large production scale, it is easy to carry out rational division of labor and specialization, and use advanced technological methods and organizational forms in production.

These all help speed up labor productivity. According to the statistics, even in 1962, in seven of our industries, such as coal, ferrous metal, textile, etc., average labor productivity (according to average sum total of worker output value) in large enterprises was 35 percent higher than that in small enterprises. Labor productivity in medium enterprises was 11 percent higher than in small ones.

Fourth, large enterprises help reduce the cost of products. As large enterprises use advanced technology and technological methods in their production, they are able to reduce the quota of raw material and fuel consumption per unit product. They can also organize more rationally the production of by-products and more effectively utilize waste material, economizing on the use of raw material and fuel. With centralized management, large enterprises can also reduce the administrative expenses that are shared by unit products.

Five, it is easy for large enterprises to set up organizations and facilities for scientific research, intermediate testing, designing, technology and experiments. They can renew in time their equipment and designs of products, and thus help raise the quality of products, lower costs and find themselves in an advantageous position in competition.

As large enterprises can utilize more effectively and more economically all the main key production factors--machinery, raw material and labor force--they can achieve higher labor productivity and lower cost, and thus are able to achieve more economic results with less labor consumption. This is especially evident in the steel and chemical industries. According to the 1978 statistics, the profit rate of funds was 20.5 percent in the country's 33 priority steel enterprises, among them 10 large steel and iron bases did not have any losses. However, the profit rate on funds in 51 medium steel enterprises was 0.65 percent, with 33 of them, that is 65 percent, having incurred losses. As for small steel enterprises, all had losses almost without exception. Another example is the production of chemical fertilizer. In 1978, the 300,000-ton synthetic ammonia facility imported by a chemical fertilizer plant in Sichuan had 3 times higher productivity than a 180,000-ton plant, and its profit was 9.8 times more. The cost per ton of synthetic ammonia was 42.5 percent lower. Its electricity consumption was only about 1 to 2 percent of some of our medium or small synthetic ammonia plant's, and its total energy consumption was about half of a medium plant's and one-third of a small one's.

Large enterprises occupy an important place in our national economy, with their distinct advantages, but this does not mean that the larger the scope, the better. Lenin said once that "even in industry it is not that absolute, that simple as the people sometimes imagine about the law of large enterprise superiority. In industry, only when 'other conditions' are the same (which never occur too often in real life), can this law guarantee its absolute applicability."[8] The unfavorable factors in developing large enterprises are: 1) they need a large amount of funds, the construction period is longer, and the results of investments come about more slowly; 2) the equipment is advanced and complicated, with high technological requirements, thus more skilled labor force is needed; 3) they also have higher requirements for resources and raw materials as well as for more modernized transportation conditions. Without resolving these matters well, the rational use of resources will be affected, and irrational transportation, cost increase and increased transportation burden will occur; 4) because large enterprises have many workers, who are more concentrated, there is need for better living and supplying conditions.

8 "Complete Works of Lenin", Vol 4, p 101.

III. The Place and Role of Medium and Small Enterprises in National Economy.

/1. Reasons for the Existence of Medium and Small Enterprises./

As in most countries of the world, we have always had many medium and small enterprises, which play an important role in our national economy.[9] In Japan, in 1975, medium enterprises made up 99.5 percent of its total enterprises, with 70.7 percent of its total employees, and 56.9 percent of the added value (equivalent to our national income, but includes the income of service trades). In the United States, in 1973, small enterprises with earnings under $1 million made up 98.1 percent of its total enterprises, and 22.6 percent of its total business income. In West Germany, in 1975, 86.1 percent of the enterprises were small industrial ones with fewer than 100 employees, with their employees making up 19.7 percent of its total employed; and the medium and small enterprises employing fewer than 500 people made up 97.3 percent of its total enterprises with 48.3 percent of its total employed. In England, 77 percent of the enterprises are small ones with fewer than 100 employees, and their workers made up 20 percent of England's total employed. Its medium and small enterprises with fewer than 500 employees make up a total of 96 percent, with 52 percent of the total employees.[10] Only in the Soviet Union is the situation different. There the proportion of the medium and small enterprises, and that of their employees and income in the national economy are fairly small. In different types of countries there exist similarly large numbers of medium and small enterprises, which shows that their presence is an objective need in the development of productive forces. Naturally, different countries with different social systems have their different reasons.

The main reasons for the existence of medium and small enterprises in our country are three:

(1) The technical and economic characteristics of some industries and sectors have decided that it is economically more rational to develop medium and small enterprises. This is especially evident in light industry (food, textile, clothing, timber-processing, furniture, printing, publishing, leather, ceramics, etc.), handicraft industry, commerce and service trades. Engineering

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9 People used to group medium and small enterprises together at their investigation of enterprise structures. In fact, the situation of our medium enterprises is a little complicated. Among the medium enterprises, some equipped with advanced technology and in relatively large size have always played together with large enterprises, a key role in our national economy. Such enterprises are not dealt with separately in the statistical data, however, their nature, position and role are explained in Chapter II of this work, together with those of the large enterprises. This section deals mainly with small enterprises and nonkey medium enterprises.

10 See "Guowai Jingji Tongji Ziliao (1949-1976)" [World Economic Statistical Data (1949-1976)], p 557, 564.

and building industries are also areas where it is suitable to develop medium and small enterprises. The monopoly of large enterprises in these sectors would be unsuitable. West Germany is an economically developed country, yet, in recent years, the growth rate of handicrafts has surpassed that of industry and commerce. In 1979, the number of handicraftsmen reached more than 500,000, employing 16.4 percent of West Germany's total employed. Those mostly are small enterprises with a few workers. Generally speaking, certain circumstances are suitable for the presence of medium and small enterprises: the nature of production and technology is suitable for medium and small enterprises, such as traditional folk artistry; resources are not concentrated enough; needs and demands are scattered; transport is cumbersome; saving by large enterprise production would be offset by the expenses of long-distance transport, etc. The effect of the dispersion of needs and demands is more evident in commerce and service trades. In the United States, where supermarkets were first started, there are still large numbers of small shops run by husband and wife, offering convenient and good service. The fact that several mergers in our commerce and service trades have brough much inconvenience to our people's lives and that now, with the negative experience, we are again readjusting the outlets of our service network has proved this point.

(2) When productive forces develop to a certain high level, they require not only the broadening of enterprise scope, but also the establishment of a cooperation system with division of labor according to specialization, with large enterprises as the core, yet including medium and small enterprises. In Japan, this process is called "systematization," that is, medium and small enterprises were brought into the "big system" of the large monopoly enterprises through the extensive cooperation system. In the economically developed countries, to bring medium and small enterprises into a cooperation system, a phenomenon that has been an inevitable outcome of the deepening social division of labor, is one of the patterns to organize the coordination of modern industrial production, and one of the forms to actually socialize industrial production. In the past in studying political economy, we only knew that the trend of capitalist production growth is concentration. Now, we know that though this process is still present, there also exists "scattered" production. This is because many modern products, such as airplanes, guided missiles, submarines, etc., have become more and more complicated. For example, the production of airplanes must take place in a fairly large modernized manufacturing factory. However, an ordinary airplane has about 15,000 spare parts; to organize the production of all these spare parts within one enterprise is difficult to accomplish technically and in management, in the first place, because of the excessive scope. Even if it were technically possible, the small-batch process of certain spare parts (as often only a few dozen civil aircraft are manufactured a year) is not worthwhile economically for a large enterprise. Thus under the circumstances of increasing modernization of production, the chance for small enterprise growth arises. Naturally, these small enterprises that were brought into the "big system" of the modernized large enterprises" cooperation have already lost the nature of the independent ones in the early period of industrialization.

(3) Some products of large enterprises, due to unbalanced growth of production, cannot satisfy the entire needs of the society. If medium and small

enterprises with backward equipment and management can make these products, in spite of higher cost, they can still find a market and make profit. This is, again, a significant reason for the existence of large numbers of medium and small enterprises.

The process of production modernization always starts first in one sector or one part of enterprises, so it is impossible to have balanced development of modernized production. Thus, in the capitalist system, such as in Japan, there has emerged the so-called "twofold structure," that is, a small number of extremely large-scoped modernized large enterprises, on the one side, and large numbers of scattered and technologically and economically comparatively backward medium and small enterprises, on the other side. One of the examples in China is the existence of medium and small building material enterprises, such as cement plants and brickyards, etc. in outlying areas and areas without sufficient transport facilities.

Naturally, besides these common reasons, there are several special reasons for the existence of medium and small enterprises in our country.

(1) China has rich manpower and resources. Each year there is an addition of about 20 million in new labor force. There are large numbers of people waiting for employment. Therefore, we must develop more industries with densely concentrated labor force, including handicraft industry, commerce and service trades, which means that we must develop more medium and small enterprises. Furthermore, it is estimated that after the mechanization in our rural areas is realized, out of the present 360 million labor force, 250 million will become surplus (500 million if their families are included). If we base our estimate on the level of the present large and medium industrial enterprises with 10,000 yuan as the average investment per person, and calculate the labor force to enter the industrial enterprises at the rate of three-fifths, then we would need 1.5 trillion yuan of investments. Even if the 250 million people were to be shifted gradually in 20 years, the amount of investments needed each year would still be considerable. Thus, only the development of more small enterprises that require less investments but accommodate more labor force can help solve the employment problem of such an enormous population.

(2) Our funds for construction are insufficient. As of now each year we can raise only about 50 billion yuan funds for capital construction. If these investments were all used for the construction of large enterprises, based on our estimate of 10,000 yuan of investment per person, we could absorb only 5 million or so labor force each year. If we used all the investment on projects, like the 1.7-meter rolling mills in Baoshan and Wuhan steel mills, we could only solve the employment problem of some 10,000 people at most. Investments in medium or small enterprises in general require an average of a thousand, several hundred or even tens of yuan per person. Handicraft enterprises require even less. This obviously had decided that the growth of China's national economy will, for a considerably long time, rely, to a great extent, on building and restructuring medium and small enterprises.

(3) The relations between our commodities and currency are underdeveloped; the channels of commodity circulation are not flowing; and the network of

communications and transportation is imperfect and backward. Thus, small enterprises with higher cost and more consumption of energy and raw material will exist for a considerably long time, in order to satisfy local needs. These small enterprises are backward and are self-sufficient in nature.

Because of the above-mentioned general laws of the growth of productive forces and the concrete situations in our country, medium and small enterprises will inevitably remain in our country for a long time.

/2. The Advantages of Medium and Small Enterprises./

Compared to large enterprises, medium and small enterprises have their own advantages which are as follows:

a) they need less investment. With the same amount of investment they can absorb several times more labor force than large enterprises;

b) their construction period is short, so the investments can achieve results within a fairly short time;

c) they can rationally and fully utilize medium and small amounts of economically valuable natural resources, and thus help the development of comprehensive local economy;

d) they have greater flexibility, production can easily be readjusted, and timely changes in product varieties, standards and models can be geared to the needs of the consumers;

e) on the principle of specialization they can share out work and cooperate with large enterprises, produce spares and parts, offering service to large enterprises and ease the pressure on large enterprises in technology and management.

Thus, we can see, in developing our industry and other economic sectors, we must take into full consideration the respective technological and economic characteristics of large enterprises as well as medium and small ones, so that they may divide the work rationally, complement each other, and bring into full play the economic advantages of enterprises of different sizes.

In order to enhance the positive role of medium and small enterprises in an economically rational way, we must pay attention to overcoming their weaknesses, such as backwardness in production technology, instability of their products and production. Under the ideological guidance of paying full attention to economic results, we must bring our medium and small enterprises into the great cooperative system of specialized production and gradually implement the technical restructuring of these enterprises.

/3. The Place and Role of Medium and Small Enterprises in Our National Economy./

The significance of medium and small enterprises in our national economy is far greater than that in other countries. According to the 1978 statistics,

our medium and small enterprises employed 80 percent of the total employed and produced 75 percent of industrial output value--with small enterprises accounting for more than 56.7 percent--while Japanese medium and small manufacturing enterprises only accounted for 50 percent of its industrial output value.[11] In other developed countries the proportion is even smaller. Furthermore, most consumer goods of our people's daily life are produced by our medium and small enterprises. Some spares and parts of heavy industrial products are also produced in large numbers by medium and small enterprises. Our present medium and small steel works produce approximately 6 million tons of steel, 11 million tons of iron, and 8 million tons of steel products, which make up, respectively, one-fifth, one-third and one-third of the gross national outputs.

Not only in industry, but also in the areas of commerce and service trades that serve directly the people's daily life, medium and small enterprises still occupy an important place.

In addition, of China's 1978 export products, goods of light and textile industries made up 46.9 percent, agricultural and sideline products made up 27.6 percent, for a total of 74.5 percent. Most of these two large categories of products by far are made and processed by medium and small enterprises.

Medium and small enterprises are the indispensable complementary and supplementary forces to the production of large enterprises. For many years, many of our modern industrial products and highly sophisticated products of national defense have had a number of medium and small enterprises carry on completion of sets of up-to-standard spares and parts.

Medium and small industrial and agricultural enterprises have provided large quantities of products and services to satisfy the needs in the people's life, have enriched our people's economic life and stimulated the market.

In recent years medium and small enterprises of collective ownership in cities and towns have played an important role in solving the employment problem of city residents waiting for employment. Communal and brigade enterprises in rural areas have also played an important role in absorbing agricultural labor force surplus, developing agricultural production and accumulating funds. According to the statistics of the departments concerned, in 1979 there were approximately 1.48 million communal and brigade enterprises in the entire country, absorbing a labor force of 29 million and earning a total income of 49.1 billion yuan, which made up 29.9 percent of the total income of the people's communes' third-level economy. The enterprises' profit was 10.4 billion yuan and the taxes delivered to the state reached 2.26 billion yuan. In the last 3 years, communal and brigade enterprises have provided 6.7 billion yuan of funds to the agricultural production and capital construction of our rural areas, at an average of 2.2 billion yuan each year.

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11 "Zhong Xiao Qiye Baipishu" [White Paper on Medium and Small Enterprises], compiled by Office of Medium and Small Enterprises [Japanese], 1973 edition, Appendix Table 7.

Development and changes in medium and small enterprises have also produced an important impact on the evolution of the structure of our national economy. During the period of the First 5-Year Plan, the rational reorganization on the principle of specialization of the extremely scattered and backward medium and small enterprises left over from old China and the priority construction of a number of large and medium key enterprises to improve the irrational economic structure of old China also changed the situation in industry with light industry in absolute predominance and some raw materials and equipment of light industry in total reliance on imports. In 1957, labor productivity in industrial enterprises increased, 52 percent, compared to 1952, with an annual average increase of 8.7 percent. The acceleration of labor productivity is inseparable from the reorganization of the medium and small enterprises and the rational integration of these enterprises with large ones.

IV. The Main Manifestations of and the Reasons for the Irrational Enterprise Sizes and Structures

/1. The Main Manifestations of the Irrational Scopes and Structures of Enterprises./

(1) Changes in the sizes of our enterprises bear the imprint of a high degree of blindness. Twice before we restructured and consolidated enterprises structures nationwide, not including the present program. The first time, around 1956, aimed at the large numbers of small scattered enterprises left over from old China. The second time was around 1962 during the readjustment period of our national economy. One of the important readjustments was to consolidate all kinds of large, medium and small enterprises that had been set up unchecked since 1958. However, the blind growth of various enterprises did not stop thereupon. It continued during the cultural revolution, which led to the need to carry out now another consolidation.

In different countries, there are different starting points of economic growth, with different natural resources, energy resources, raw materials, labor force, and different enterprise structures. The enterprise structures in most developed countries help economic growth, but the process of their evolution has been gradual. For example in Japan, in the early 1960's the proportion of medium and small manufacturing enterprises in the gross national output value was smaller than that in the 1950's, but rose again in the mid-1960's. However, the difference between 1970 and 1955 was only 4.1 percent. The number of small enterprises in the United States dropped during the 1920's and 1930's, but with the deepening of social labor division, a number of small enterprises was formed, in cooperation with large enterprises, and the number began to rise in the 1950's. During 1958-1972, the proportion of enterprises with fewer than 100 workers did not change greatly (from 89.5 to 89 percent), but the number of enterprises with fewer than 20 workers almost doubled (from 31.4 to 64.8 percent). Although it was a broad change, it was a gradual development taking more than 10 years.[12] China, in the last 20 years, twice has

12 "Shijie Jingji Yu Guoji Guangxi", [World Economy and International Relations] [Soviet Union], 1980 No 1.

undergone cutbacks and twice has had unchecked growth. And suddenly, in 1979, after the four-point policy with readjustment as the central task, medium and small enterprises, especially those run by communes and brigades, have expanded; and the scope of the change was far wider than in other countries of the world. It is almost unavoidable that the ups and downs in the evolution of the enterprise structures bring suffering to the economy and cause numerous severe problems in our national economy. For example:

Some newly built large enterprises are unable to play their key role in the national economy, thus a situation of low productivity and bad economic results has arisen. China imported 13 sets of large chemical fertilizer-producing equipment which have high efficiency, low energy consumption and low cost, however, due to insufficient raw materials and power and such reasons, etc., only half of their production capacity was utilized. Also, after spending several billion yuan on the 1.7-meter rolling mill at Wuhan Steel, after being put into operation, the mill could not utilize even half of its production capacity because of incomplete auxiliary facilities, insufficient raw materials and energy resource media (water, electricity, oil, gas, wind), thus it so happens that despite the advanced equipment the mill has had low output and high cost. Not only is it unable to enter the international market, but it has a very narrow domestic market as well. In the machinery industry, the 1978 output value per worker of the total personnel of large and medium enterprises was 8,603 yuan, while that of its small enterprises was 9.725 yuan, 13 percent higher, that is, the labor productivity of the large and medium enterprises was lower than that of the small enterprises. This kind of situation is rare in other countries. In 1970, the labor productivity of Japanese pharmaceutical enterprises with fewer than 300 workers was only 77 percent of that of the large enterprises, while the labor productivity of the small enterprises of fewer than 100, 20, 10 and 3 workers, respectively, were 70, 63, 47 and 17 percent of the productivity of the large enterprises.[13] In 1969, the employees in Japanese medium and small manufacturing enterprises made up 69 percent of Japan's total employed, however their output value was only 48.9 percent.[14] In the United States, the level of mechanical equipment in the medium and small industrial processing enterprises is very high, even surpasses that of the large ones, but the productivity in large enterprises of 1,000 and more workers is about 39 percent higher than that in the medium and small enterprises.[15] This situation indicates that we have not made the most of the advantages of large and medium machine works in our country.

Moreover, the blind growth of medium and small enterprises has led to some extremely irrational economic phenomena. In some areas, locally badly needed products or products suitable for local production are not being produced, while those that are not suitable for small local enterprises are being

13 "Zhong Xiao Qiye Baipishu" [White Paper on Medium and Small Enterprises], Appendix Table 10.

14 Ibid., Appendix Table 7.

15 "Shijie Jingji Yu Guoji Guanxi" [World Economy and International Relations] [Soviet Union], 1980 No 1.

produced in large quantities. Small machine works, tobacco, printing, pharmaceutical enterprises, etc., with products in abundant supply continue to increase, and the number of enterprises that compete with large enterprises for raw materials also continues to grow.

(2) The technical and economic characteristics and local economic advantages were not taken into consideration in selecting enterprise sizes. Generally speaking, large-scale production is suitable for products needed in large quantities and with simple specifications, such as mining, steel, industrial chemicals, electric energy production, etc. However, for products with a great variety and in small-lot sizes, such as certain light industrial products, enterprises of medium and small size are more suitable. Nevertheless, the development of our industrial enterprise structures shows just the opposite: Where large enterprises should have been developed, small ones were set up. For example, small steel mills, chemical fertilizer plants, coalpits, hydropower stations and small cement plants (the so-called "five smalls") grew rapidly, and they made up a very large proportion of the gross output (See Table 3). The result was: the "five small" industries suffered severe losses and became a big burden on our economic construction. According to the estimate made by the departments concerned, since the large-scale growth of the "five smalls" the losses in small steel mills alone has exceeded 10 billion yuan. In 1978, our industrial enterprises had a total of 4 billion yuan of losses, 2.2 billion yuan of which was incurred by the "five smalls," of that amount 900 million yuan incurred by small steel mills, 800 million by small chemical fertilizer plants. This year, there were 186 enterprises with over 8 million yuan of losses, 109 of them in the metallurgic industry which basically is represented by small steel mills. There are 1,400 or so small nitrogenous fertilizer plants in the entire country and 75 percent of them suffered losses. A few years back the city of Guangzhou used continuously its light and textile enterprises' (mainly medium and small enterprises) retained profits and depreciation charge to subsidize and develop Guangzhou Steel Mill. Yet the steel mill suffered losses year after year, and in 1978 they reached 10.7 million yuan. The profit rate on every hundred yuan of funds was -7.4 yuan. This has caused the city a severe fund shortage for adjusting and restructuring the city's large numbers of medium and small enterprises, has slowed down the development of production, and accidents occur frequently.

For many years no attention has been paid to fully utilizing the local economic advantages to develop medium and small enterprises. Gaoyou County of Jiangsu is an area known for its traditional handicraft, however, for many years the machine-building industry (36 percent of that country's industry) was developed blindly. Compared to 1965, its 1979 industrial output value increased 21 times, while that of the handicrafts increased only 1.36 times. In 1965 there were 27 kinds of handicrafts and 255 standards, by now they are reduced to 8 products and 58 standards. Guangdong Province has traditional techniques to develop light industry and has industrial crop resources in large quantities. For many years, it has relied on outside supply for its energy, which requires long-distance transport, large transportation expenses. Instead of developing more light and textile industries and handicraft which consume less energy, Guangdong Province has done its utmost for many years to develop small

steel mills and small "coal" mines the calorific value of whose output is lower than 2,000 kilocalories (in fact, it is more like gangue). The result has been loss and holding back the whole economy.

(3) The specialization level of large, medium and small enterprises is very low, with self-sufficient production, in a "large and all-embracing" or "small but all-embracing" way. In 1978, there were 130 motor vehicles plants that belonged to 7 different large systems, such as the First Ministry of Machine-Building, the Ministry of Communications, the Ministry of Petroleum Industry, even the reform-through-labor system. As for their locations, these plants are located in 26 provinces and cities. Their annual output, however, is only 150,000 motor vehicles. The French Citroen alone produces 800,000 motor vehicles; and in Japan Toyota Motor produces 2.84 million cars a year. In Great Britain, the United States, Japan, France, West Germany, etc., the specialization degree of motor vehicle production is around 95 percent, while in our country it is only 30 percent. One striking example of "small but all-embracing" production is the bicycle industry. In Shanghai, specialized bicycle companies were formed in 1957; 496 small bicycle factories were merged into 27; at present, readjustment is being carried out in 2 complete factories and 8 specialized plants of spares and parts, as well as a material-remaking plant, in a total of 11 factories. The 1978 annual output was 3.18 million, making up 37.2 percent of the gross national output, with a 12.8 times increase compared to the output of 230,000 in 1956. But in factories of other localities, in "small but all-embracing" production, the extent of losses reached 58 percent. The labor productivity of Shanghai's bicycle factories is 10 times higher than the average productivity of other factories, and the cost is only 25-64 percent of that of those other factories. According to the 1976 statistics, of the 6,100 or so above-county-level enterprises under the First Ministry of Machine-Building, 80 percent was "all-round factories." And among the 1,400 or so main machine plants, 1,100 are "all-round plants." Most of more than 4,000 factories producing complete sets and spare parts are "medium but all-embracing" or "small but all-embracing." In Nantong of Jiangsu there are as many as 36 electroplating plants and sites, covering a total space of 12,100 M^2. The city has only 19 meter plants, but they have 10 electroplating sites. Due to scatteredness and backwardness, some plants are still using the old technical process, which has caused pollution of the environment.

(4) Selection of unsuitable enterprise sizes and irrational structures have caused severe social waste.

Waste of funds: One of the main reasons for the excessively long frontline of capital construction was too many large-scale projects and long construction period. And after the completion of the projects they could not go into normal operation. The operation rate of our country's large and medium construction projects was 43 percent during the First 5-Year Plan and was only 25 percent during the Fourth 5-Year Plan, thus a large amount of construction funds lay idle.

Waste of resources: Some small enterprises do not utilize the scattered resources that are suitable for developing both medium and small enterprises.

Instead, they compete with large enterprises for resources and raw materials, causing severe waste of and even damage to resources. Some communal and brigade enterprises opened up, in the close vicinity of large coal mines, small coalpits using local methods with only a 10 percent recovery rate, 40 percent lower than that of large coal mines. Large coal mines could not carry on mining in certain sections because of these small coalpits, which led to a waste of large amounts of resources. In the Riqiyou Mining Area at Helanshan, Ningxia [Hui Autonomous Region], it has been proven that there are 670 million tons of deposits of top-quality anthracite. The state invested more than 200 million yuan and built 2 shaft mines and one open-pit, one after another. However, in recent years, 22 communes and 5 production brigades in the 4 neighboring counties have dug 65 small coalpits, which not only have only a 10 percent resource recovery rate but have also destroyed the overall arrangement of the mining area. Because the production mode in these small coalpits is primitive, there are often accidents which also threaten the security of the large mines. The same situation prevails in Henan, Hebei, Hunan, Helongjiang, Nei Monggol and Xinjiang. Another example is that in some provinces south of the Ghangjiang River communal and brigade enterprises went in for small reeling mills in a big way. The result was that large modernized mills did not have enough to produce. The reeling rate of these small mills is only 70 percent that of a large mill, thus silkworm cocoons are wasted.

Waste of energy resources: The "five small" industries, especially small steel mills and small chemical fertilizer plants, are all "coal tigers" and "electricity tigers," that is, big consumers of energy resources. In our steel and iron industrial sector the proportion of medium and small iron refineries is fairly large. Their consumption of energy resources is great. For example, in 1978, the key enterprises' coke-consuming ratio was 562 kg. With fuel oil injection and coal powder injection, the composite coke ratio was 623 kg. Medium and small enterprises use coke only in iron refining. The coke ratio of medium enterprises was 763 kg; the average coke ratio of small iron refineries was 950 kg, using a lot of coarse coke. The pig iron output of our medium and small enterprises makes up 28.3 percent of the entire country's output, yet their use of coke in refining iron makes up 43.6 percent of the total use. The amount of energy consumption by small chemical fertilizer plants is also very large. Take the example of energy consumption in the production of synthetic ammonia per ton. The standard consumption of a 300,000-ton large synthetic ammonia-producing facility abroad and at home is 10-12 million kilocalories, however, our small chemical fertilizer plants consume 22 million kilocalories. In short, the energy consumption of small chemical fertilizer plants is 1-2 times more than that of large plants. Yet at present nearly one-third of the production capacity in our industry cannot be brought into play because of lack of energy resources.

Furthermore, there also exists severe waste of raw materials and labor force.

/2. Causes of Irrational Enterprise Scopes and Structures./

(1) The "left" guiding thoughts and policies in economic construction were the main reasons for the irrational enterprises scopes and structures.

For many years we have implemented the policy of "with steel as the key link," giving priority to the development of heavy industry in our economic construction. Each province was required to set up an independent and comprehensive industrial system with a complete range of variety, with undue emphasis on accelerating economy, and so on. Under the guidance of these "left" policies, the relationships of large, medium and small enterprises had to serve the needs of the development of steel and heavy industries. Thus, it is impossible for such construction to achieve good economic results; and the situation of irrationality in enterprise scopes and structures has become more and more acute. On the one hand, there is the blind striving for largeness, for advancement, by setting up blindly a number of large enterprises; on the other hand, large numbers of "five small" industries were initiated unchecked.

(2) Defects in the economic management system.

The nature of our economic management system, that has been implemented for a long time since the Liberation, is high-degree centralization in management, with centralized revenues and expenditures in finance, and strict directive plans in planning. The enterprises do not have decisionmaking power. All this has caused problems in four areas, which are detrimental to the rationalization of enterprise scopes and structures:

First, the enterprises owned by the whole people all want to expand their scopes, scramble for investments, go for "large and all-embracing" or "small but all-embracing," giving consideration only to their own convenience, but disregarding economic results.

Second, an economic system as such encourages the thinking of "eating from the big pot." Enterprises do not have enthusiasm to make readjustments on their irrational structure. On the contrary, they let it further grow. Since enterprises that incur losses are given subsidies, they do not have to worry about the danger of bankruptcy. This is the main reason why the "five small" industries that are irrational both economically and technologically can exist for a long time.

Third, along with such a system there is inevitably an irrational price system which provides the possibility of the existence of some irrational small enterprises. In China, 1 ton of petroleum in terms of heat quantity amounts to 2 tons of standard coal, but the oil price is 4-5 times as much as the coal price. Therefore, while the whole coal industry line suffers losses, the average profit rate of oil enterprises reaches as high as 73 percent. Small oil refineries at some places have had considerable profits despite their inability to comprehensively utilize crude oil, thus causing waste of resources, and they continue to exist. Furthermore, the price scissors of industrial and agricultural products are too wide. For example, the purchasing price for each ton of silkworm cocoons is 274.5 yuan, the producer price after reeling is 507 yuan. The profit rate after the deduction for cost reaches as high as 30-40 percent. So some communal and brigade-run small reeling mills are still making considerable profit in spite of the fact that their silk reeling rate is much lower than that of large modernized enterprises. This is the main reason why some communes and brigades go for small enterprises in a big way to compete with large modernized enterprises for raw material.

Fourth, the present system controls goods and materials too rigidly, so some localities, where steel, iron, chemical fertilizer are needed, have spared no expense to develop small steel mills and small chemical fertilizer plants. For example, in the city of Benxi, there are three steel mills, large, medium and small. Because the products of Benxi Steel Mill are distributed centrally by the state, the province established the medium-sized Fuxin Steel Mill in order to satisfy its own needs. The city, to satisfy the city's needs, established the small Dongling Steel Mill. This year some products of the large aluminum factory in the northeast area have been appropriately distributed to the local areas, so the small local aluminium factory with high consumption of electricity was closed down. This way the controversy over electricity was solved.

(3) The level of production capacity is low, the commodity/money relationships are undeveloped.

China has, on the one hand, areas with very backward production, on the other hand, areas with advanced industries, such as Shanghai, etc., that are not inferior to the medium-level developed countries. Between these two is the vast intermediate zone where enterprises of different levels are set up. This has made it possible for the existence of numerous small enterprises with excessive energy and raw material consumption and low efficiency. Furthermore, the underdeveloped means of commodity exchange (backward communications and transportation) and underdeveloped commodity exchange relationships have made the possibility of these small enterprises' existence a reality. For example, frying pans made in Shanghai use only one-half the iron used in other places. Their price, however, is much lower. But most areas have taken administrative measures to protect their less developed local products. In addition, the transport service has for many years placed a priority on the transportation of ore, raw material and steel ingot, following the principle of "with steel as the key link," so it had no time to attend to other matters. Therefore, the existence of backward "five small" industries became necessary. Another example is the large cement plant in Tongchuan City of Shaanxi. The producer-price of its cement is 50 yuan per ton, while the cost of cement produced by the small cement plants, set up locally in Yanan with big energy consumption and high cost, is 100 yuan per ton. But as the transport service in this area is very backward, by the time the Tongchuan cement is transported to Yanan, its price reaches around 150 yuan a ton. Expensive transportation has economically rationalized the local production of cement with high cost and energy consumption (the cost, compared to Gongchuan Cement Plant, is 100 percent higher). Thus, backward means of commodity exchange and underdeveloped commodity exchange relationships, on the one hand, prevent us from making the most of local advantages, forcing local areas to develop self-sufficient economy; and on the other hand, hinder specialization and cooperation, thus making it possible for "large and all-embracing" and "small but all-embracing" to exist and grow.

V. Reform Enterprise Scopes and Structures, Taking China's Characteristics Into Consideration

In order to readjust China's irrational economic structures and restructure enterprise scopes we must proceed from China's characteristics, otherwise it would be difficult to achieve the desired results. Based on China's present characteristics we may consider the following ways to readjust and restructure our enterprise sco pes and structures:

/1. Under the Relatively Backward Economic Circumstances at Present, Major Efforts Must Be Devoted To Developing Labor-concentrated Medium and Small Enterprises, Build Less, or Build No New Large Capital-concentrated Enterprises for a Short Period of Time./

China has an enormous population, with an acute employment problem, a poor foundation and insufficient capital, which necessitates the change of the disadvantages of the enormous number of people waiting for employment into advantages, as well as the development of more labor-concentrated sectors, especially light industry and handicraft.

/2. Large Enterprises With Intermediary Technology Should Be Appropriately Developed. Backward Medium and Small Enterprises Must Be Upgraded./

For many years in building large enterprises we have been pursuing more and foreign, and one-sidedly the "advanced standard of the seventies," which has led to poor economic results. By choosing intermediary technology, we not only can avoid taking up large amounts of funds, but more importantly we can make the new technology suit China's overall economic and technical standards.

Meanwhile we must make efforts to transform the large numbers of medium and small enterprises withoutdated equipment and backward technology into technically advanced ones. In Japan, in order to give full play to the role of its medium and small enterprises and help them accomplish their modernization, the "National Income Doubling Plan (1961-1970)" was put forward so that medium and small enterprises could be upgraded by large enterprises' providing equipment, technical personnel and by the government's granting credits. This merits our reference.

There are also examples of successful technical upgrading of medium and small enterprises. The medium and small enterprises in Shanghai have been developing toward "small and excellent" through technical upgrading. The Shanghai Piston Ring Plant was a simply and crudely equipped small factory in the old days. It was later reorganized into a specialized spare parts plant and 90 percent of its equipment was transformed into highly efficient equipment for special purposes. It was able to rapidly produce the piston rings that the Hudong Shipyard with its 10,000 workers could not produce. So it is evident that the old view that the technology of small enterprises definitely lags behind that of large enterprises is not entirely true. The technical requirements of some products are not complicated, with production specialization, medium and small enterprises can easily be put into mechanized and automated production, often with higher quality of products and productivity

than those "large and all-embracing" enterprises. According to the statistics of the First Bureau of Electric Machines, under which there are enterprises in all sizes, the labor productivity, the per capita profit and profit on every 100 yuan output value in those medium and small enterprises where the specialization level is high and the technical upgrading is successful are all higher than those in the large enterprises.

The level of mechanization and automation in the medium and small enterprises in Shanghai has greatly risen through technical upgrading. In 1978, Shanghai Bureau of Statistics carried out a survey of the city's 12 industrial bureaus and 2,429 enterprises, according to which there were 9,085 automatic single machines and 171 automated production lines. In Shanghai's textile industry, many medium and small enterprises have been widely using new technology and new technical processes, such as bale pluckers, rapier looms, fully automatic threading looms, narrow-fabric needle looms and green body cold dyeing, etc. No 9 Woolen Sweater Factory set the record by initiating electronic program control. In the glove factory, the 120 automatic machines making designed nylon gloves are already controlled by computer cluster. Many medium and small enterprises of medical apparatus and electronic instruments are increasingly developing toward the newest technology, such as infrared, nuclear, and fiber optics, etc. With the rise of the technical basis, medium and small enterprises have in recent years been constantly creating various high-grade, finest and best products, such as the "high-precision reference resistor" made by Shanghai Electric Meter Plant that has broken the monopoly of the British (Dingsley's ?). The performance of the"current comparator potentiometers" also designed by the same plant has surpassed the Canadian products. The speed of the high-speed cold reaming machines manufactured by No 5 Nut Plant is faster than that of the Japanese machines.

In short, the result of technical upgrading implemented in the medium and small enterprises has been good. If we organize them, their upgrading in technology and in funds is conceivable.

/3. We Must Consolidate and Reorganize the Medium and Small Enterprises in the Principle of Specialization and Cooperation./

Generally speaking, our medium and small enterprises are technically backward and their labor productivity is low. To change this situation, we must reorganize them following the principle of specialization, carry out a wide-ranged cooperation between enterprises and industries, and change the situation of "small but all-embracing." Only in this way can we organize production rationally and liberate the productive forces. Beijing, Ohanghai, Tianjin and Liaoning Province have, since 1978, implemented reorganization following the principle of specialization and cooperation, within the present management system, which has played a favorable role in the development of production. The sewing machine industry in Beijing and the television industry in Shanghai have combined specialization and cooperation with rational distribution of enterprises in large, medium and small sizes. The rational reorganization of the existing enterprises was carried out without increasing equipment, investments or manpower. Their production capacity has increased 20-30 percent or even more. Shanghai's standardized elements-producing

industry has divided production according to the specifications and variety of products, specialized production, increased production lot size and applied advanced technical processes and high-efficiency equipment. The result was: The number of staff and workers is reduced 30 percent, output is increased 10 times, productivity has risen 19 times, the utilization ratio of steel products is increased 45 percent, cost has dropped 76 percent, and there has been distinct improvement in quality. Changzhou City organized a coordinated production process producing walking tractors, with the participation of 26 units. Productivity is 50-60 percent higher, while cost is 30-40 percent lower than in the "all-round factories."

One of the other important ways to achieve the modernization of medium and small enterprises in Japan in its "National Income Doubling Plan" was to develop vigorously, following the principle of "economic rationality," the medium and small enterprises into "satellite factories" of large enterprises, that is, to establish a "serial" relationship of labor division and cooperation. This relationship is confirmed by economic contracts, with each cooperating factory having its independent business accounting. Large enterprises do not go for "large and all-embracing," and small enterprises do not go for "small but all-embracing." Each small factory produces, in general, only one or two spare parts. This way, productivity has risen; social wealth has been accumulated, and the number of employed has increased. Right at this moment Japan has turned round from a labor force surplus to a labor force shortage.

Since the Third Plenum of the 11th party Central Committee, the state has closed down those medium and small enterprises that had losses over a long period of time, produced poor-quality and high-price products, had no guaranteed raw materials, and could not be reorganized and upgraded. Areas and sectors that have persistently implemented the method of developing the good and eliminating the bad have all achieved distinct results. Since late 1978, Hebei Province has shut down 18 of the 28 small blast furnaces which did not have enough raw materials or consumed too much raw material, or whose production was abnormal, with efforts concentrated on ensuring the production of the other 10 blast furnaces. As a result, Hebei Province's gross output has basically maintained the level prior to the readjustment. In addition, coke consumption for each ton of iron has dropped from 1,080 kg to 883 kg. Gansu Province, motivated by practical and realistic spirit, discontinued and shut down nine small local iron mills with insufficient resources and with losses over a long period of time, kept only three iron mills where resources are guaranteed and fairly good smelting technology is available. Thus, it has ended the passive situation of losses in every factory every year. Jilin Province has 22 locally managed medium and small nitrogenous fertilizer plants. With the exception of a few that are able to fulfill fairly well the main technical and economic targets, most of them have problems of enormous consumption, high cost and heavy losses. In 1978, the losses of the province's small nitrogenous fertilizer plants reached more than 24 million yuan. Later Jilin discontinued the construction of three small nitrogenous fertilizer plants in Huichun, Antu and Shuangliao, concentrating its manpower, financial and material resources on the innovation, upgrading and tapping potentialities of the existing medium and small nitrogenous fertilizer plants. It

is estimated that if the present medium and small nitrogenous fertilizer plants of the whole province were to undergo a technical upgrading, their productive capacity in synthetic ammonia would increase from 85,000 to 140,000 tons, an equivalent to the production of 11 newly built small nitrogenous fertilizer plants and one-half or one-third of the construction funds for new plants of the same size could be saved.

VI. Select Rational Enterprise Scopes in Accordance With the Technical and Economic Characteristics of Each Economic Sector

/1. General Characteristics of Enterprise Scopes and Structures in the Main Industrial Sectors Here at Home and Abroad./

(1) Static analysis of the main industrial sectors in foreign countries.

Iron and steel industry: In general it is mostly large in scope in those countries. In the present production capacity, the proportion of the Soviet Union's large enterprises of over 1 million-ton annual steel output is about 94 percent. Its iron and steel combine enterprises that make up one-third of the Soviet Union's total iron and steel industry, however, produce 95.3 percent of pig iron, 86.6 percent of steel, and 85 percent of steel products of the entire country. The Maanshan Steel Mill alone produces 11 percent of the Soviet Union's pig iron, 12 percent of its steel and more than 13 percent of its steel products. In Japan, at present there are five large iron and steel companies that monopolize the production of 99 percent of pig iron, 80 percent of raw steel, 81 percent of general steel products, and 62 percent of special steel. Generally speaking, the smelting of special steel and the finishing and reworking of steel products are done mainly by medium and small enterprises.

Nonferrous metal industry: In most countries the mines are mainly of large size. For example, 90 percent of the copper mining enterprises in the Soviet Union and the United States are of large size. The smelting of nonferrous metal in all countries relies mainly on large enterprises. The scope of Japan's current eight main copper-smelting mills is over 10,000 tons.

Power industry: The socpe of power stations in every country is in a growing trend. In the Soviet Union, the proportion of energy generated by large power stations of 100,000 kW or more in the total generated energy was 82.5 percent in 1960. The installed capacity of all the units of over 150,000 kW made up 28 percent of the Soviet Union's total installed capacity. In 1970 the total installed capacity of the units of over 150,000 kW in the thermal power stations made up 39 percent of the total thermal power. At the end of 1975, hydropower stations of over 1 million kW represent half of the total capacity of the entire country's hydropower stations. Thermal power stations of over 150,000 kW made up 51 percent of the total thermal power capacity. The Soviet Union also plans, during the 10th 5-Year Plan, to develop the units of all types of power stations in operation, with 85 percent of the total capacity, into units of 200,000-1.2 million kW. In the United States, the scope of

the newly built power plants is, in general, about 1 million kW. In Japan, the scope of power plants is, in general, above 200,000 kW and at present, their electricity is generated and provided by nine electric power companies.

Oil industry: The scope of oil refineries in these countries is mostly large with enterprises of 1 million tons annual production. In the Soviet Union, all the oil refineries built during the period of the Seventh 5-Year Plan are over 6 million tons, with the largest being 18 million tons. In the United States, Japan and West Germany, etc., the average scope of the refineries is 1-2 million tons.

Chemical industry: Basic chemical enterprises, that is, enterprises that produce large quantities of raw materials, are mainly of large size in all these countries, or are expanding into multiple-producing combine enterprises. In the United States, Great Britain and West Germany, 70-80 percent of the caustic soda plants are large plants with an annual output of over 50,000 tons. Chemical fertilizer plants are also mostly large. The proportion of medium and small enterprises in the chemical industry is also large, but they do not belong to the basic chemical industry as mentioned above. They are in the so-called precise chemical industry, dealing with medicine, cosmetics and interfacial active substances, etc. Such enterprises have a variety of products, their installation cannot be large, and they require high technology and a high degree of labor concentration. Medium and small enterprises are more suitable to handle these products.

Machine-building industry: In the Soviet Union they are almost all multiple-producing large enterprises. Countries, such as the United States and Japan, etc., rely mainly on a small number of large enterprises, along with the cooperation of large numbers of medium and small enterprises. The workers of large enterprises of over 1,000 employees make up, in general, less than 50 percent of the employees of the entire industry. Most of machine tool plants are medium and small with less than 200-300 workers.

Aircraft industry: Aircraft manufacturing in the United States is greatly concentrated. In France, it is more decentralized, only 10 or so of the 200 companies and factories are large ones of 4,000 or more employees.

Motor vehicle industry: All the countries rely mostly on large enterprises, with large numbers of specialized cooperating medium and small enterprises as subsidiaries. According to a report in DAGONGBAO of Hong Kong, in the 1979 output of the world's 10 large automobile companies, the highest number was made by the U.S. General Motors with 6.44 million cars, and the lowest is Japan's Toyota with 970,000 cars. Of the 10 largest automobile companies, 3 are American, 3 Japanese, 2 French, 1 West German and 1 Italian.

Light industry: In the Soviet Union, the scope of the light industrial enterprises is much smaller than that of heavy industry. According to the 1972 statistics, its large enterprises of over 1,000 workers made up 11.7 percent of the total light industrial enterprises and 64.7 percent of the gross light industrial output value. Generally speaking, light industry in industrially developed countries is comparatively scattered, and mainly of medium and small

sizes. Enterprises of textile, food, leather, ceramics and other industries are mostly of medium and small sizes. However, tobacco industry is more concentrated. In general, the scope of sugar refineries in countries mainly producing sugar is large.

In addition, commercial and service trade enterprises in all the countries are mostly medium and small. For example, in Japan, in 1969, 49.4 percent of the medium and small enterprises are medium and small trading firms and stores and 21.1 percent service trade enterprises, for a total of 70.5 percent.

(2) Dynamic analysis of the main industrial sectors in foreign countries

Our dynamic study has proved that if medium and small enterprise managements is unfavorable, such as to heavy and chemical industries, the proportion of the output value will decline. Where medium and small enterprise management is useful, such as in light and textile industries and in handicraft, the proportion of the output value will increase.

Statistics show that in Japan the proportion of the output value of medium and small enterprises in chemical industry is decreasing. In 1960, it was 42 percent, by 1970 it was 35.2 percent. At the same time, the proportion of large enterprises in chemical industry is a steady rising trend. In 1960 the proportion was 58 percent and by 1970 it was 64.8 percent. Contrary to this, the proportion of the output value of medium and small light industrial enterprises is rising, while that of large enterprises is in a constant decline. The proportion of the medium and small enterprises' output value of the gross output value of light industry was 64.1 percent in 1960, 68 percent in 1965 and 71.6 percent in 1970; while that of large enterprises was 35.9 percent in 1960, 32 percent in 1965 and 28.4 percent in 1970.

(3) Shanghai's enterprise scopes and structures are similar to the general situation abroad, and the results are fairly good.

The scopes and structures of Shanghai's enterprises are basically rational. According to the 1978 statistics, more than 96 percent of the light, textile and handicraft industries of Shanghai are medium and small enterprises, among them 85 percent small ones. In meter machinery, the enterprises are basically all medium and small sized. In machinery and electrical equipment, large, medium and small enterprises are integrated, with medium and small ones in dominance. Large enterprises make up 4.8, medium enterprises make up 15, and small enterprises make up 80.2 percent. In metallurgical and chemical industries, there are relatively few medium and small enterprises. (See Table 5.)

Medium and small enterprises in different industries can have sharply different economic results. Those under Shanghai's Bureau of Light Industry have provided the state 27 billion yuan in profits and tax revenues since the founding of the People's Republic, and in 1978 turned over 1,486,000,000 yuan, which was 1.26 times what the large enterprises in the same sector did. However, 11 small chemical fertilizer plants under Shanghai's Bureau of Chemical Industry had losses over a long period of time since the operation until 1978 when the situation of loss was corrected.

Table 5. Proportion of Large, Medium and Small Enterprises of Shanghai in Distribution of Industries in 1978

	Total Number	Large Enterprises Number	Large Enterprises Proportion %	Medium Enterprises Number	Medium Enterprises Proportion %	Small Enterprises Number	Small Enterprises Proportion %
Metallurgy	52	8	15.4	16	30.7	28	53.9
Chemical industry	191	13	6.8	26	13.6	152	79.6
Mechano-electronics	399	19	4.8	59	14.8	321	80.4
Instrument & meter	257	0	0	34	13.2	223	86.8
Light industry	334	13	3.9	31	9.3	290	86.8
Textile	467	17	3.6	38	8.2	412	88.2
Handicraft	655	4	0.6	3	0.5	648	98.9

Therefore, when we discuss the role and advantages of medium and small enterprises, we cannot proceed only from the proportions of large, medium and small enterprises; we must also investigate the characteristics in production and technology which determine an enterprise's scope and economic results.

/2. The Relationship Between the Scope of an Industrial Enterprise and Its Technical and Economic Results./

The characteristics of production and technology of different industrial sectors exert a great influence on the scope of enterprises. However, besides the characteristics of an industrial sector's production and technology, various other factors determine an enterprise's size, such as the conditions of resources, methods of production and organizaton, strengths of the existing industrial bases, the level of technology and the extent of market capacity, etc. For example, the size of a mining enterprise depends mainly on ore reserves and geological conditions; that of a forestry processing enterprise depends mainly on the forest reserves and the distribution of forestry industry; that of an agricultural products processing enterprises depends mainly on the size of agricultural product-producing areas and the selling range of the processed products. The size of an electric power enterprise depends mainly on the unit size of electrical machinery and the degree of loading capacity; that of enterprises in metallurgical and oil-refining industrial sectors depends mainly on the size of sequence machines and buildings; that of an enterprise in machine-building sectors, such as electrical machinery, radio, etc., or light industry sectors, such as textile, leather, etc., depends mainly on the capability of the machine setup, the degree of bearing capacity, etc.

Because an enterprise's size depends on various factors, some industrial sectors in some countries rely mostly on large enterprises, in other countries mostly on medium and small ones. The role of multivariate factors is, however, reflected particularly in the all-round technical and economic results of an enterprise.

Through the examination of the relationship between an enterprise's scope and the all-round technical and economic results, we can put the industrial sectors largely into 3 groups:

(1) Mining Industry: The scope of mining enterprises depends, first of all, on the geological conditions of the mines. Because these units consume large amounts of investments in capital construction, indices, such as the unit investment amount, utilization of fixed assets, etc., are most important to them. For example, in coal and iron mining, etc., industries, wages make up the largest proportion in the cost of products. Reduction of the cost, the key factor, can be ensured only on the basis of the improvement of labor productivity, but the level of labor productivity in mining industrial enterprises is largely determined by enterprise size.

(2) Nonferrous metallurgical industry, power, plants, basic chemistry, etc. The broadening of the scope is decided directly by the efficiency of the dominant equipment and the improvement of productivity. In these industrial sectors, difference among enterprises is not so much in the amount of equipment of a kind, but in the efficiency of the units and productivity. The difference between a large power plant and a medium one, or a large smelting furnace and a medium one, is, first of all, the difference between the efficiency of the boiler and that of the turbine generator and the difference between the volume of the blast furnace and that of the open-hearth furnace. Thus, in large enterprises of this kind of industry production processes which are being perfected constantly and can ensure the full capacity of the equipment are applied. Generally speaking, there is an interdependent relationship existing in these industries, so the larger an enterprise's scope is, the better all its technical and economic indices of construction and production. Though the use of capital construction investments in this kind of industry is heavy, the amount of investment in specific capacity will drop with the increase of set efficiency and productivity. The higher the set efficiency is, the less the consumption of raw materials and fuel per unit product will be, thus the lower the cost of the products will be.

Some machine-building industries that produce complicated products with multiple spare parts, such as shipbuilding, aircraft industry and heavy-duty machine-building, etc., have a similar situation, which is characterized by large drain on capital construction investments, large proportions made up by wages and miscellaneous expenses in the composition of the product cost. However, these proportions will drop with the broadening of enterprise scope.

(3) Machine-building sectors for textile, tannery, shoemaking, sewing, machine tools and electronic industry. Their technical development is reflected in the use of automatic machinery and equipment that are being perfected constantly in structure. The broadening of enterprise scope in such industrial branches is

not mainly due to the efficiency of the equipment and the improvement of productivity, but is decided by the quantity of the equipment of the same kind. The difference between large and medium and small textile mills or large and medium and small shoemaking factories is the difference in the amount of the equipment of the same kind, such as looms, spindles, sewing flow production lines, etc. Enterprises of different sizes can have the same manufacturing process. Furthermore, the production quota on the equipment and the quota of raw material consumption do not change with the change of an enterprise's size. These sectors consume large amounts of raw materials, but the proportion of wages and miscellaneous expenses in production cost is fairly small. The reduction of the cost of products depends, first of all, on economizating on raw materials and other materials, but such economizing, in fact, is not affected by the change of enterprise scope. Thus, the broadening of an enterprise's scope will not reflect the reduction of its administrative expenses.

Therefore it can be seen that when we make a choice of scopes of enterprises in various industrial sectors, we must methodologically pay full attention to the influence each sector's technical and economic characteristics have on the scope of enterprises.

/3. Principles To Be Followed in Selecting Scope of Enterprises./

To achieve the rationalization of the scope and structure of enterprises, we must consider gaining the best economic results as our objective and acting according to the economic laws as our main means. In the selection of an enterprise's structure, acting according to each economic sector's technical and economic characteristics and requirements is the minimum requirement of acting according to the economic laws. In the light of the experience of foreign countries, in accordance with our economic characteristics and our past experience and lessons, we conclude that the selection of scopes of enterprises must go by the following principles:

(1) Basic principles:

The relationship of large, medium and small enterprises is a close one, thus in general, large, medium and small enterprises must abide by the following principle of division of labor: Large enterprises are to be engaged in production of raw materials and raw and semifinished materials; large commercial enterprises are to manage staple commodities; medium and small enterprises are to be engaged mainly in processing raw and semifinished materials, and in commerce and service trades in large numbers that handle everyday use bits and pieces.

One must understand that the production of basic raw materials and energy resources, such as iron and steel, petroleum, electric power, etc., is an industry with capital densely concentrated and with high technical makeup. If large-scale production is not developed, not only the cost will be high, but also it will be difficult to carry on smooth production. Thus, in industries, such as iron and steel, chemistry, coal mining, synthetic fibre, etc., in order to achieve low prices for products and good economic results, the level of

technology and equipment must be set higher. Thus, generally speaking, medium and small enterprises are not appropriate in these industrial sectors. Steel materials made by large iron and steel enterprises need medium and small enterprises to further process them into various kinds of products to satisfy the consumption needs of the masses. It is often useful to have medium and small enterprises produce certain steel materials. In the petrochemical industry, the raw and semifinished materials produced by large enterprises also have to go through medium and small ones to be made into all kinds of everyday use items and fibres. In the textile industry, the large amount of cotton material produced by large enterprises is designed and processed by small enterprises. In short, the large amount of raw and semifinished materials produced by large enterprises in general, reaches the consumers through the processing and circulation activities of medium and small enterprises.

This division of work is rational in terms of economic results because the existence of small enterprises can be ensured only when large enterprises can produce cheap raw and semifinished materials and energy resources. If we let small enterprises produce raw materials, just as the facts in the recent years indicated, they would produce products of high price and poor quality. Such irrational enterprises of medium and small sizes were able to remain only because subsidies were given, means of production were rationed and there was lack of competition.

To maintain the rational division of work among large, medium and small enterprises, we must rely on economic measures. The rational division of work among the large, medium and small enterprises can be ensured only by defining the cooperation relationship of enterprises through economic contracts, by commodity exchange and rational competition.

(2) Principles of selection large enterprises:

First, for single variety products, that is, basically to produce products of one standard. For example, metal and building materials, basic industrial chemical, staple light industry materials (grey cloth, sugar, newspring), etc. Large enterprises can carry out centralized production of this kind of products, achieve higher labor productivity with lower cost.

Second, for processing products in large output. Large enterprises can batch produce (such as cars, chemical fertilizer), or when the products are so enormous that each process needs to be centralized in one enterprise (such as shipbuilding). In such cases large enterprise production is needed. Otherwise, not only will cost be exorbitant, but also it will be difficult to manufacture some products.

(3) Principles of selecting medium and small enterprises:

First, for complicated product mix with various product standards. The machine industry belongs to this group. With a small number of large enterprises as the center, medium and small enterprises are mainly to be developed on the basis of specialization and cooperation. In this way we can achieve the best economic results.

Second, for products for which the market needs change rapidly, with various demands for product designs, colors and variety. Textile and everyday use light industries belong to this group. Production of medium and small enterprises has mobility, flexibility and strong adaptability.

Third, for products which various manufacturing processes and the processing of spares and parts are not necessarily to be carried out in one enterprise, but can be carried out by organizing the cooperation of enterprises. For example, the processes of spinning, weaving, knitting, printing and dyeing in the textile industry, or casting, forging, metal cutting and processing of various spares and parts in the machine industry can be done by several or many enterprises by sharing out the work and cooperation among each other. (Naturally it can be done also by a small number of large combine enterprises.) Under these circumstances, we can rely mainly on medium and small etnerprises, with each enterprise undertaking only one process, or producing only certain spares and parts. This not only helps concentrate our efforts on technological improvement, implementation of new technology, and raising labor productivity and lowering cost, but also helps raise the quality of our products, achieve standardization, serialization and universalization of products, economize on investments, and accelerate the production and construction rate.

Fourth, where raw materials are scattered and the transportation of end products is not convenient. For example, papermaking, ceramics, beverage industry, etc., are such. Results of the on-site production of these industrial sectors are the best, thus medium and small enterprises should mainly be developed.

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CHAPTER XXIV

ANALYSIS OF ECONOMIC RESULTS IN ECONOMIC STRUCTURE

By Zhang Shuguang [1728 2562 0342]; original text pp 724-759; portions between slantlines in boldface in original text.

[Text] The main thrust of our current pursuit of economic restructuring is to establish a rational economic structure. This is a prerequisite for realizing our four modernizations.

A rational economic structure, or the best economic structure, is one which can achieve maximum economic effectiveness. Notwithstanding the fact that it changes continually, it is still subject to the impact of time, place, and specific conditions. At any rate, a rational economic structure should be fit to achieve two specific goals. In the first place, it should be able to marshall the economic superiorities of various economic factors to speed up technological progress and ensure speedy development of those departments, localities, and productive enterprises which have registered comparatively better economic effectiveness. In the second place, it should be able to keep various economic factors in balanced coordination and well proportioned readjustment, and bring about benignant recycling of economic activities to ensure steady and sustained development of the whole national economy. Mutually related and interacting, these two finally converge to work in concert to raise the effectiveness of the national economy, to save labor and to satisfy the needs of society. Marx sat that to save time and to schedule the working time of various productive sectors is the foremost economic law of a society founded on collective production, the law for raising economic effectiveness. Since timesaving is a decisive factor in the ratios of reproduction by society, a well-proportioned distribution of labor is an important means to save time. Premised on saving time, a well-planned distribution of the working time of the production department based on the need and capacity of society would be the best way to attain the most desirable ratios and economic structure, and the best combination of the pace and ratios of the socialist economic development. It is also the way to maximize the effectiveness of the national economy. In other words, whether labor is appropriately distributed, whether the resources for production are fully utilized, whether the superior-

ities of the economy have been fully tapped, whether the economic structure is rational, whether the ratios are most desirable, and whether the pace is right depend on whether the national economy has reached its maximum effectiveness. While the goal to improve the economic structure is to raise economic effectiveness, an improved economic structure is an important vehicle for raising economic effectiveness. The following are explanations of the relationship between economic structure and economic effectiveness as shown by the impact of the changes in the economic structure of China in the last 30 years on economic effectiveness, and the law of raising economic effectiveness by improving the economic structure.

I. Changes in the Economic Effectiveness of Production in the Last 30 Years.

The socialist national economy is an organic entity consisting of many economic departments, economic regions, economic organizations, and economic units. Each social economic activity requires the input and consumption of a specific amount of labor (animate and inanimate labor) to produce specific results or provide specific social services. Consequently, a comparison between input and output, between consumption and its fruition, and between expenditure and services may be used to assess the economic results of the productive activities of society. A comprehensive assessment of the economic results of the whole process of social production and reproduction based on a comparison between the fruition or services of social production and expenditure for creating such results represents the effectiveness of the national economy, or the macroeconomic effectiveness which should be distinguished from the microeconomic effectiveness, or the specifice economic effectiveness. Like the whole national economic structure, the economic effectiveness of social production and reproduction is a system or aggregate of many units, levels and sectors. Any specific or or local effectiveness may be regarded as a minor system or aggregate, while the effectiveness of the national economy is a major system or a total aggregate consisting of all the minor systems or aggregates. Consequently, an assessment of the economic impact of the changes of the national economic structure requires a systematic analysis based on a macroeconomic explanation of the mutually related quotas of the comprehensive effectiveness as well as an analysis of the quotas of the economic effectiveness of the different systems, levels and sectors.

The following is an analysis of the changes in the effectiveness of the national economy based on the national income in terms of the increases of the accumulated funds of the various units.

Table 1 shows marked effectiveness of the accumulated fund during the First 5-Year Plan and the 3 years of readjustment when the increase of the national income per 100 yuan of accumulated fund reached an average of 20 yuan, and the maximum was as much as 60-70 yuan. Consequently, the national economy developed at a faster pace. The economic structure of China became comparatively rational in these two periods, the former representing a

complete change of the incoordinate and backward economic structure of the old China, and the latter a change of the distorted rations of the Second 5-Year Plan. This, however, is not true of all the other periods. The effectiveness of the accumulated fund was very poor and unstable during the Second 5-Year Plan, and that of the Fourth 5-Year Plan was less than one-half of that of the First 5-Year Plan. The accumulated funds of those years immediately preceding and after 6 different years (60, 61, 62, 67, 68, 76) were rather substantial, but the national income dropped to 53.9 billion yuan instead of registering any increases, and there were even deficits in 2 or 3 consecutive years. The increase in the national income was smaller than the increase in the accumulated funds in a number of years. Leaving aside the special conditions of the 3 years of readjustment, the overall capital accumulation went downward. We will analyze the losses and causes of the downward trend.

Table 1.

(1)
表 1 1952—1978 年积累效果的变化

	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
(2) 积累总额(亿元)	130	168	195	185	217	233	379	558	501	195	99
(3) 比上年增加的国民收入(亿元)	92	120	39	40	94	60	210	104	−2	−224	−72
(4) 百元积累增加的国民收入(元)	71	71	20	22	43	26	55	19	−0.4	−115	−73
	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
(5) 积累总额(亿元)	183	263	365	470	304	298	357	618	684	648	741
(6) 比上年增加的国民收入(亿元)	76	166	221	199	−99	−72	202	309	156	58	186
(7) 百元积累增加的国民收入(元)	42	63	61	42	−33	−24	57	50	23	9	25
	1974	1975	1976	1977	1978	(8) "一五"平均	(9) "二五"平均	(10) 63—65平均	(11) "三五"平均	(12) "四五"平均	(13) 76—78平均
(14) 积累总额(亿元)	741	830	756	832	1,083	200	346	270	409	729	890
(15) 比上年增加的国民收入(亿元)	25	154	−70	224	352	71	3	154	108	116	169
(16) 百元积累增加的国民收入(元)	3	19	−9	27	33	35	1	57	26	16	19

[Key on following page]

[Key to table on previous page]

Key:

1. /Changes in Effectiveness of Accumulated Capital 1952-1978/
2. Total amount of accumulation (100 million yuan)
3. Increase of national income over that of the preceding year (100 million yuan)
4. Increase of national income per 100 yuan of accumulation (yuan)
5. Total amount of accumulation (100 million yuan)
6. Increase of national income over that of the preceding year (100 million yuan)
7. Increase of national income per 100 yuan of accumulation (yuan)
8. First 5-Year Plan average
9. Second 5-Year Plan
10. 1963-63 Average
11. Third 5-Year Plan Average
12. Fourth 5-Year Plan Average
13. 1976-78 Average
14. Total amount of accumulation (100 million yuan)
15. Increase of national income over that of the preceding year (100 million yuan)
16. Increase of national income per 100 yuan of accumulation (yuan)

The changes in the effectiveness of the national economy may also be gauged from the changes in the economic effectiveness of the various systems, levels and sectors. The major factors are the animate labor productivity, the productive ratio of capital, and productive ratio of resources as reflected in the effectiveness of the animate labor utilization, the effectiveness of the utilization of the funds for production, and the effectiveness of the utilization of resources. The following represents our observations of the changes in the effectivness of the national economy in terms of the animate labor productivity based on the net industrial and agricultural output value, the tax and profit actually realized per 100 yuan, and the amount of energy consumed for 100 million yuan of output value (Table 2).

Judged by the effectiveness of the utilization of animate labor, the average animate labor productivity based on the net output value in 1976-1968 was a little more than double that of the First 5-Year Plan. There was an annual increase of 4 percent for 18 years, even though a decline was registered in 5 of these years. The 1962 level was lower than that of 1957, while that of 1969 was lower than that of 1965. The trend becomes even more pronounced when we derive from the gross output value the total labor productivity of the industries owned by the whole people and the agricultural labor productivity.

Table 2.

(1) 表2 各个时期工农业活劳动生产率、百元资金实现的税利和亿元产值能耗指标

	(2) 工农业活劳动生产率(元/人)	全民所有制企业百元资金实现的税利（元） (3)	亿元产值能耗（万吨）* (4)
(5) "一五"时期平均	304	27.1	6.42
(6) "二五"时期平均	400	26.5	12.97
(7) 63—65时期平均	399	16.2	10.13
(8) "三五"时期平均	462	18.3	8.99
(9) "四五"时期平均	579	17.8	9.99
(10) 76—78时期平均	657	15.4	10.21
(11)			

Key:

1. /Industrial and Agricultural Animate Labor Productivity, Tax and Profit Realized per 100 yuan of Capital, and Engergy Consumption per 100 Million yuan of Output Value/
2. Industrial and agricultural animate labor productivity (yuan/person)
3. Tax and profit realized per 100 yuan of capital (yuan)
4. Energy consumption per 100 million yuan of output value (10,000 tons)
5. First 5-Year Plan average
6. Second 5-Year Plan average
7. 1963-65 average
8. Third 5-Year Plan average
9. Fourth 5-year Plan average
10. 1976-78 average

The total labor productivity of the industries owned by the whole people increased in 16 out of a total of 27 years between 1952 and 1978, but declined in the remaining 11 years, and the decline outstripped the increase in magnitude. Judged by the different periods, continued annual increases occurred only in the First 5-Year Plan and the 3 years of readjustment. This is due to the rational development of China's social production and economic structure, but the quota declined and fluctuated in the 7 years between 1957 and 1963 and in the 13 years between 1966 and 1978. These two periods were marred by seriously distorted ratios as the economic structure of China drifted toward irrational expansions. The total labor productivity which reached 10,115 yuan in 1966 remained below that level for more than a decade except in 1970, 1975 and 1978. This demonstrates the serious irrationality of China's economic structure at that time.

Increased labor productivity was responsible for 60 percent of the rise in the gross output value of the industries owned by the whole people in the First 5-Year Plan. During the 3 years of readjustment, the gross output value of the industries owned by the whole people registered an increase of 43.2 billion yuan, notwithstanding the reduction of the number of staff and workers. On the contrary, when the labor productivity declined or remained stagnant in the Third 5-Year Plan and the Fourth 5-Year Plan periods, the only way to raise output value was to hire more people.

The productivity of agricultural labor was even worse, but we will get to that later.

Judged by the effectiveness of the utilization of capital, the amount of tax and profit per 100 yuan showed a general downward trend. In the First 5-Year Plan, the funds for production were used quite effectively. The tax and profit per 100 yuan reached an annual rate of more than 25 yuan, and the fluctuations were within a moderate range between 26.4 and 34.4 yuan. But the fluctuations became very violent in the Second 5-Year Plan ranging between 45.7 yuan and 13 yuan, the lowest ever in those 27 years. The level reached in the Fourth 5-Year Plan was only 65 percent of that of the First 5-Year Plan, while the annual average between 1976 and 1978 was less than 57 percent of the First 5-Year Plan. There were 14 years with an average of 20 yuan or less, and 4 of the 14 years scored an average below 15 yuan.

The declining effectiveness of fund utilization has caused tremendous losses to society. If the ratio of tax and profit per 100 yuan realized in the First 5-Year Plan were retained, the realizable profit of 1978 would be 175.17 billion yuan instead of 105.42 billion yuan. This is an annual loss of 70 billion yuan, approximately the amount of investment in fixed assets in 1978.

Judged by the effectiveness of energy utilization, the amount of energy consumed per unit of output value between 1953 and 1978 increased continually, rising about 50 percent. The changes in this quota are identifiable with the changes in the economic structure. The level of energy consumption per unit of output value was comparatively low and stable in the First 5-Year Plan. "Geared primarily for steel production," the "imbalance of a single priority outdistancing everything else" in the Second 5-Year Plan increased the energy consumption per unit of output value so much that it was more than double that of the First 5-Year Plan. The readjustments pursued between 1963 and 1965 which made the economic structure and the relative ratios more rational helped cut back energy consumption per unit of output value. The return of distorted ratios since the Third 5-Year Plan forced the consumption of energy per unit of output value to rise continually. This is a major cause of the current shortage of energy supply. The coefficient of energy consumption (the average annual increase of the relative value between the gross national output value and the total amount of energy consumed) in China in the last 20 years is 1:1.44, while that of Japan is 1:0.63, and that of the United States 1:0.49. We have sustained a tremendous loss in social wealth due

to declining effectiveness of energy utilization. If the energy consumption level of the First 5-Year Plan were retained, we would need no more than 365,298,000 tons of standard coal to achieve the output value of 1978. But it actually took 568.71 million tons, and excess of 203.41 million tons or 36 percent overconsumption. In other words, the amount of energy actually consumed in 1978 should be sufficient to achieve an output value of 885.84 billion yuan, a surplus of 316.84 billion yuan or an increase of production by 56 percent.

The aforesaid analysis shows that in spite of the rapid development of China's national economy in the last 30 years, much of the development was attained by increasing the consumption of both animate and inanimate labor and extensive expansion of reproduction. Furthermore, a tremendous amount of material wealth was lost in the process of production due to declining economic effectiveness. Judged by the value and volume of the output, the pace of growth is by no means slow, but the economic strength of the state and the people's standard of living have not been raised substantially. The per capita national income which stood at 102 yuan in 1962 rose to 314 yuan in 1978. It doubled during the first 17 years but rose by only 50 percent in the latter 10 years. The average annual increase is 3-4 percent. The per capital consumption fund which stood at 83 yuan in 1952 rose to 188 yuan in 1978, a 1.2 times increase in 27 years, and the average annual increase is only 2-3 percent. The pace of increase of the two is quite slow. The problem becomes even more clear when we examine the changes in the ratios between the total amount of products, the national income and the consumption fund. In spite of the relative increase of the total amount of products as compared to the national income at the beginning of the industrialization and the first stage of technological progress, the ratios of actual national income and the consumption funds had dropped quite fast. If the gross industrial and agricultural output value is represented by numeral 1, the ratios between gross industrial and agricultural output value, the national income and the consumption fund were 1:0.74:0.57 in the First 5-Year Plan, but only 1:0.58:0.37 in the Fourth 5-Year Plan. This is the result of excessive consumption of raw materials and very little increase in finished products; exceedingly fast increase of intermediate products and exceedingly slow increase of finished consumer goods. All these are sufficient to reveal a true picture of the lack of rationality in the social production economic structure and the decline of the effectiveness of the national economy. The aforesaid analysis demonstrates clearly that the changes in the economic effectiveness of China's social production and the changes in the structure of the national economy are closely related. In the last 30 years, as the structure of China's national economy evolved from irrationality to substantial rationality and then to a new irrationality at a new level, the economic effectiveness of China's social production went up and then declined accordingly. When the economic structure became rational, the rise of the economic effectiveness of social production was comparatively marked and uninterrupted, the economy developed at a comparatively faster pace, and the standard of living of the people showed considerable improvement. When the economic structure became less than rational and the ratios of the national economy were seriously distorted, the economic effectiveness tended to become unsatisfactory or

even declined, the economy developed comparatively slower or even fell back, and the standard of living of the people became affected or even deteriorated. Consequently, the readjustment of the structure of the national economy is a crucial link to ensure the greater economic effectiveness and steady progress of the national economy.

II. Changes in Economic Structure and Economic Effectiveness

The economic effectiveness of production and reproduction of the whole society, the composite result of the actual operation of the entire national economy, is subject to the impace of various structural and nonstructural factors. Furthermore, the impace of the structural factors on economic effectiveness comes directly or indirectly through the operation of the nonstructural factors. By the same token, the roles of these nonstructural factors are ultimately tied to all the changes in the economic structure. It indeed is a complicated matter to determine the impace of economic structure on economic effectiveness.

The following analyses cover a number of areas, including a balanced coordination of the national economy, the agricultural basis of the national economic structure, the changes in the ratio between the various economic factors of different effectiveness, the role of the advanced sectors, the regional superiorities, and a comparison of the different forms of production and construction.

/1. Balanced Coordination and Economic Effectiveness/

The major indicators of the irrational economic structure of China are the loss of balance and coordination of the various economic factors which led to excessive supply, acute shortages, overemphasis on heavy industry, and undue neglect of light industry. Excessive supply breeds overstocking, acute shortages entail inadequacies, overemphasis on heavy industry leads to unlimited expansions for exceeding actual need and capability, and undue neglect of light industry leaves it barely able to survive and satisfy the needs of society. Marx said: "Machinery not put to use is not capital. Unexploited labor equals loss of production. Idle raw materials not put to use is not capital. Unused buildings (newly manufactured machines) or buildings left unfinished, and goods which deteriorate in warehouses are all lost capital. All these indicate a stagnation of the reproduction process, and the failure of the existing production conditions to play their roles and bring into play their effectiveness. Such being the case, their use value and exchange value have completely vanished."[1] Except for the

1. "Collected works of Marx and Engels" Vol 26, Book 2 p 565

capitalist implications of the statement, the general principle it contains is perfectly applicable to the socialist economy. As a matter of fact, no matter whether it be excessive supply, acute shortage, neglect of light industry or overemphasis on heavy industry, they represent a stagnation, delay and interruption of the social reproduction process and the failure of the production conditions to play their roles effectively. These are a tremendous waste and loss to the national economy, a direct cause of the decline in the economic effectiveness of social production.

The phenomena of excessive supply, acute shortage, overemphasis on heavy industry and undue neglect of light industry are quite prevalent in the development and structural changes of China's national economy, especially in the following two areas: excessive high rate and large scale of accumulation with resultant decline of the people's consumption, on the one hand, and the backwardness of the basic industries which mine and provide raw and processed materials, especially energy shortage, with concomitant expansion of the processing industry, on the other.

The ratio between accumulation and consumption in China during the First 5-Year Plan was comparatively well coordinated. The accumulation rate was quite appropriate, and the year to year differences ranged from the lowest at 22.9 percent up to the highest at 25.5 percent, with less than 3 percent of fluctuation. The scale of accumulation, compatible with the growth of the national economy and the ability to provide for the standard of living of the people, worked comparatively well with the two sectors of social production, and fitted appropriately in relation to agriculture, light industry and heavy industry. At the same time, the people's standard of living improved as accumulation increased, and all accumulated funds satisfactorily realized were immediately put to use to increase reproduction. The accumulation was effectively administered. Guided by the ideology of "gearing up primarily for steel" and the high quotas, the rate of accumulation during the Second 5-Year Plan, especially its first 3 years, went over not just 30 percent but 40 percent, leading to serious distortion of the ration between accumulation and consumption. But it dropped in the remaining 2 of the 5 years from 43.8 percent peak down to 10.4 percent, a drop of 33 percent. This was responsible for 3 consecutive years of loss in national income and declining efficiency of the accumulation which was rehabilitated a bit in the 3 years of readjustment. In 1965, the level in certain areas was still below that of 1957. However, we did not learn from the experience of this particular period. The accumulation rate began to soar under abnormal production conditions in the latter part of the Third 5-Year Plan, and it remained over 30 percent in the Fourth 5-Year Plan, confronting the national economy with a second wave of seriously distorted ratios and deteriorating efficiency of accumulation.

The impact of the distorted ratios between accumulation and consumption and excessive scale of accumulation on the effectiveness of accumulation and the entire national economy is felt sharply in the following specific areas.

First of all, excessive accumulation leads to excessive capital construction. We all know the accumulation fund is for investment in capital construction, allocation of extra circulation funds and increase of social reserves. Generally speaking, the capital construction investment used for acquiring fixed assets accounts for the biggest percentage of the accumulated fund. It was comparatively small, only 62.3 percent, in the First 5-Year Plan. It peaked in the Second 5-Year Plan and between 1976-78, registering 74.7 percent and 75 percent, respectively. As the two are mutually causative and escalating, uncontrolled accumulation, especially accumulation used for heavy industry, invariably leads to a vicious cycle of high rate of accumulation--large-scale capital construction--still higher rate of accumulation. But the realization of accumulation and capital construction requires comparable means of production and subsistence means. Excessively large-scale accumulation and capital construction without adequate material backing is either unattainable or falling behind schedule. Take the supply of the three basic materials for capital construction for example. Every 10,000 yuan of investment in capital construction requires 1.2-1.5 tons of steel, 2-3M^3 of lumber, and 5-6 tons of cement. But the quotas of allocation in recent years have been 53-67 percent, 40-60 percent, and 58-70 percent respectively, of the amounts required, and the amount finally available might be even less. Since the supply of materials is uncertain and yet everybody wants to get ahead, the result is that nobody can get enough to proceed at full speed. The following are the ultimate results: 1) The number of projects being constructed increased so much that there are intermittent construction activities all over the country. The projects being constructed in 1979 were more than double the amount of investment of that year, an increase of 100 percent over that of the First 5-Year Plan. 2) Worsening extension of construction time. The time required to construct a 600,000-900,000-ton coal mine pit was extended a few years ago from 2-4 years to 6-7 years. The construction of a machine factory worth 40-50 million yuan of investment used to take 3-4 years, but it takes 7-8 years now. Construction on the whole has about doubled. 3) There has been a continued drop in the coefficient of the utilization of the fixed assets which was 83.9 percent in the First 5-Year Plan, but slipped to 71.4 percent in the Second 5-Year Plan, and further down to 59.9 percent in the Third 5-Year Plan and the Fourth 5-Year Plan. 4) The quality of construction has declined, but the per unit investment and cost have gone up. For instance, the investment for per ton of steel was 1,342 yuan in the First 5-Year Plan. It went up to 2,452 yuan in the Fourth 5-Year Plan, and up again to 3,497 yuan in 1976-1978. The overall investment for per ton of coal went up from about 56 yuan in the First 5-Year Plan to 119 yuan and even as high as 350 yuan in some cases during the Fourth 5-Year Plan, all of which have contributed to make both investment and accumulation less effective. China's total investment in capital construction in the last 30 years was 600 billion yuan which yielded 400 billion yuan worth of fixed assets, about 70 percent of the investment. The value of the fixed assets which are operational is 250 billion yuan, only 40 percent of the investment.

Secondly, according to Marx's theory of social reproduction, the means of production turned out by the first sector of production are used to replenish the means of production consumed in production and provide the

means of production for the expansion of reproduction. Since these two interact and condition one another, excessively large-scale accumulation and capital construction often encroach upon the means of production and the labor force required for current production, setting in motion encroachment upon replenishment funds by accumulation funds, and the encroachment upon simple reproduction by expanded reproduction. In the end, both expanded reproduction and simple reproduction become uncertain and hard to survive. Once the foundation of simple reproduction is depleted, it becomes necessary to draw on the expanded parts of reproduction to replenish the trimmed parts of reproduction, and depress the economic effectiveness of the entire social production. This is brought about by overemphasizing new constructions and extensions, neglecting the renewal and upgrading of the existing enterprises, and indiscriminate duplication of production and construction. In recent years, we have run into numerous cases in our actual economic life where we built new factories and closed down old ones; set up small factories and suspended large ones; and preserved technologically inferior factories and elbowed aside factories of high technological capabilities. In a word, we promoted inefficient factories and pulled down highly efficient ones. That is why high rate of accumulation has not led to high speed.

Furthermore, excessively large-scale accumulation entails massive reduction of the consumption fund. This means accumulation elbows aside consumption, while production and construction encroach upon the standard of living of the people. Once the impact of this reaches labor productivity, it would directly affect the economic effectiveness of social production. This is demonstrated clearly in the relationship between market supply and changes of labor productivity. A high rate of accumulation, especially a high rate of accumulation for heavy industry, has brought about not only shortages of the means of production but also retardation of the production of consumer goods. Consequently, expanded reproduction is beset by the lack of the means of production and consumer goods. Shortages of market supply arrest the improvement and even cut back the people's standard of living. For instance, the shortage of market supply caused by the great leap forward and the high rate of accumulation in 1958 was accompanied by a decline of the people's standard of living and a drop in labor productivity of 8.5 percent in 1958, another drop of 7.5 percent in 1959, and still another drop of 28.8 percent in 1961. When the market supply began to improve in 1962, the people's standard of living improved and labor productivity rose continually, up by 15.5 percent in 1962, up again by 26.7 percent in 1963, and up again by 20.1 percent and 22.5 percent in 1964 and 1965 respectively. The situation in the Third 5-Year Plan and the Fourth 5-Year Plan periods followed practically the same pattern.

In reality, it is contrary to the purpose of socialist production and shortsighted to expand the scale of accumulation and stimulate economic growth at the expense of the people's consumption. In spite of certain degrees of temporary increase of production in some particular year brought about by a high rate of accumulation and expanded production, the long-term consequence would still be disastrous because the distorted ratios caused by high rate of accumulation have rendered the accumulation ineffective. What we need is

to root for minimum consumption to achieve sustained stable social production and maximum long-term accumulation of the people's consumption fund. A high rate of accumulation is a method which kills the goose that lays golden eggs because it seeks temporary increases to the detriment of sustained stable growth, and pays no attention to maximum long-term accumulation of the people's consumption fund.

If we had a proper rate of accumulation to maintain a rational ratio between accumulation and consumption, the effectiveness of the accumulation would be much more satisfactory. From a long-term viewpoint, that would increase the scale of accumulation and would not force it down below that level when the rate of accumulation was high. It would also raise the people's standard of living to generate a motivating force to enhance the development of production. That would enable our social production and economic effectiveness to take on a new look and rise to a new level. Now let us figure out how this works.

Historical experience shows that the rate of accumulation in China should stay at about the 25 percent level. If we retained in the last 20 years or so the 25 percent accumulation and effectiveness of the First 5-Year Plan and increased the national income earned per 100 yuan of accumulation to 35 yuan, then, according to the formula that the pace of the increase of national income = accumulation rate x accumulation effectiveness, the annual average increase of our national income would roughly equal the 8.9 percent level attained during the First 5-Year Plan. The annual average increase of our national income would still reach 7 percent had we maintained a 20 percent accumulation rate and the accumulation effectiveness of the First 5-Year Plan period. Had we done so, the economic development of China would be as follows:

Table 3.

(1)
表 3 按 25% 的积累率和“一五”时期积累效果以及按 20% 的积累率和“一五”时期积累效果分别计算的国民收入、积累额和消费额(亿元)

	(2) 按 25% 积累率和“一五”时期积累效果计算			(3) 按 20% 积累率和“一五”时期积累效果计算		
	(4) 国民收入	(5) 积累额	(6) 消费额	(7) 国民收入	(8) 积累额	(9) 消费额
1957	935	233	702	935	233	702
1958	1,018	260	758	1,000	200	800
1959	1,109	277	832	1,070	214	856
1960	1,208	302	906	1,145	229	916
1961	1,316	329	987	1,225	245	980
1962	1,433	358	1,075	1,311	262	1,049
1963	1,561	390	1,170	1,403	281	1,122
1964	1,700	425	1,275	1,501	300	1,201
1965	1,851	463	1,388	1,606	321	1,285
1966	2,016	504	1,512	1,718	344	1,374
1967	2,195	549	1,646	1,838	368	1,470
1968	2,390	598	1,792	1,965	393	1,572
1969	2,603	651	1,952	2,103	421	1,682
1970	2,835	709	2,126	2,250	450	1,800
1971	3,087	772	2,315	2,408	482	1,926
1972	3,362	840	2,522	2,577	515	2,062
1973	3,661	915	2,746	2,757	551	2,206
1974	3,987	997	2,990	2,950	590	2,360
1975	4,342	1,085	3,257	3,157	631	2,526
1976	4,728	1,182	3,546	3,378	676	2,702
1977	5,149	1,287	3,862	3,614	723	2,891
1978	5,607	1,402	4,205	3,867	773	3,094

Key:

1. /The National Income, the amount of Accumulation and the Amount of Consumption Arrived at Separately in Terms of a 25 Percent Accumulation Rate and the Effectiveness of Accumulation of the Five 5-Year Plan, and in Terms of a 20 Percent Accumulation Rate and the Effectiveness of Accumulation of the First 5-Year Plan (in 100 million yuan)/
2. At a 25 percent accumulation rate and the effectiveness of accumulation of the First 5-Year Plan
3. At a 20 percent accumulation rate and the effectiveness of accumulation of the First 5-Year Plan
4. National income
5. Amount of accumulation
6. Amount of consumption
7. National income
8. Amount of accumulation
9. Amount of consumption

Table 4 contains comparisons of the figures given above and the actual figures of the various periods.

Table 4.

表 4 (1)两种假设方案同实际情况的比较(亿元)

		(2)国民收入		(3)积累额		(4)消费额	
		Ⅰ	Ⅱ	Ⅰ	Ⅱ	Ⅰ	Ⅱ
(5)一五时期		4,122	4,122	998	998	3,124	3,124
(6)二五时期	实际数(7)	5,616	5,616	1,732	1,732	3,884	3,884
	计算数(8)	6,084	5,751	1,527	1,150	4,557	4,601
	差额(9)	−468	−135	205	582	−673	−717
(10)63年65年时期	实际数(11)	3,578	3,578	811	811	2,767	2,767
	计算数(12)	5,112	4,510	1,278	902	3,834	3,608
	差额(13)	−1,534	−932	−467	−91	−1,067	−841
(14)三五时期	实际数(15)	7,785	7,785	2,047	2,047	5,738	5,738
	计算数(16)	12,039	9,874	3,011	2,276	9,028	7,898
	差额(17)	−4,254	−2,089	−964	−229	−3,290	−2,160
(18)四五时期	实际数(19)	11,054	11,054	3,644	3,644	7,410	7,410
	计算数(20)	16,439	13,819	4,609	2,769	11,830	11,080
	差额(21)	−5,385	−2,765	−965	875	−4,420	−3,670
(22)76年78年时期	实际数(23)	7,965	7,965	2,671	2,671	5,294	5,294
	计算数(24)	15,484	10,859	3,871	2,172	11,613	8,687
	差额(25)	−7,519	−2,894	−1,200	499	−6,319	−3,393
(26)总计	实际数(27)	40,120	40,120	11,903	11,903	28,217	28,217
	计算数(28)	59,280	48,934	15,294	9,269	43,986	39,665
	差额(29)	−19,160	−8,814	−3,391	2,634	−15,769	−11,448

Key:

1. /Two Projections and the Figures Compared (in 100 million yuan)/
2. National income
3. Amount of accumulation
4. Amount of consumption
5. First 5-Year Plan
6. Second 5-Year Plan
7. Actual figures
8. Projected figures
9. Difference
10. 1963-65
11. Actual figures
12. Projected figures
13. Difference
14. Third 5-Year Plan
15. Actual figures
16. Projected figures
17. Difference
18. Fourth 5-Year Plan
19. Actual figures
20. Projected figures
21. Difference
22. 1976-78
23. Actual figures
24. Projected figures
25. Difference
26. Total
27. Actual figures
28. Projected figures
29. Difference

These comparisions demonstrate that had we begun with the Second 5-Year Plan by keeping thereafter a reasonable ratio between accumulation and consumption and maintaining the accumulation effectiveness attained in the First 5-Year Plan instead of plunging into high rate and excessive accumulation, the amount of accumulation fund, according to projection I, would never have been forced down by lower rates of accumulation both during the latter years of the Second 5-Year Plan and the entire 26 years, except the first 3 years of that period where the amount of accumulation fund was less than the actual figures. As a matter of fact, higher accumulation effectiveness actually helped the national income to register an increase of 339.1 billion yuan, a one-third increase, which is 134.4 billion yuan more than the total accumulation of the entire Third 5-Year Plan period. At the same time, the projected total national income is 5.928 trillion yuan while the actual amount was 4.012 trillion yuan. That is say, the low accumulation effectiveness brought about by an excessively high rate of accumulation is responsible for a loss of 1.916 trillion yuan in 21 years. What a shame! But that is not all. As shown by this projection, the amount of consumption fund would begin at the inception of the Second 5-Year Plan to rise at a pace faster than what actually took place to a total of 4,398,600,000,000 yuan in 26 years, a 55.85 percent increase. Even if we go by projection II, notwithstanding the lower-than-real accumulation rate and that the projected accumulation is 22 percent lower than the actual figures, greater accumulation effectiveness can still push the national income up by 881.4 billion yuan, a 22 percent increase, and hike up the consumption fund by 1,144,800,000,000 yuan, a 40 percent increase.[2]

Given the aforesaid projections, if we maintained a reasonable ratio because accumulation and consumption and achieved greater accumulation effectiveness, the average annual per capita national income of 1978 in China would be 585 yuan (projection I) and 404 yuan (projection II), or 86.3 percent and 28.6 percent respectively, over the actual amount of 314 yuan. The per capita consumption fund would be 439 yuan (projection I) and 323 yuan (projection II), or 133.5 percent and 71.8 percent, respectively, over the actual amount of 188 yuan. That is to say, had we done so, we would have attained in terms of projection I the 1978 average annual per capita national income level in 1968-1969, and the 1978 average annual per capita consumption level in 1964-1965. And we would have attained in terms of projection II the 1978 average annual per capita national income level in 1973-1974, and the 1978 average annual per capita consumption level in 1966-1967. This means we wasted 10-15 or 5-10 years. So a rational structure of accumulation and consumption, and greater accumulation effectiveness are vitally important to a sustained stable development of the national economy.

Let us turn to the shortages. Inadequate supply of energy has been the greatest impediment to the development of the national economy and higher economic effectiveness. The shortage of energy has forced many enterprises to remain only partially operative, and the production in many localities

2. These two projections are based on the 1957 price. The actual figures are adjusted to price changes, i.e., inflation, otherwise, the difference between the two would be much greater.

simply could not pick up speed, even though they are capable. According to the findings of Liaoning Province of March 1979, there were 1,120, or 16.9 percent, out of a total of 6,618 enterprises at the provincial and county level that had stopped production completely. The losses due to complete or partial stoppage of production sustained by those enterprises with nationwide interests are very difficult to assess. For instance, when the Dandong Chemical Fiber Plant stopped production for a quarter in 1979, the production of 160 factories in the whole country were affected. If we say the energy shortage confronting industrial production is bad enough, the energy shortage facing the villages and agricultural production is even worse. In 1978 about 10 million tons of coal, or less than 2 percent of the total amount of coal consumed, were allocated for production in the villages while the villagers had to use grain stalks, animal dung and straw for household fuel. This acts directly to impede the rise of economic effectiveness of agricultural production, perpetuate the backwardness of China's agriculture and cause tremendous hardships to the villages. According to the estimate of the authorities concerned, the annual shortage of coal, petroleum, and generating equipment add up to a total of 50-60 million tons of standard coal. Figured in terms of the 1978 ratio of 99,900 tons of coal to every 100 million yuan of agricultural and industrial output value, the amount of the output value thus lost is as much as 50-60 billion yuan, or over 10 percent of the output value of 1978.

/2. Agricultural Foundation and Economic Effectiveness/

A backward and weak agriculture has been for a long time one of the irrational aspects of the structure of China's national economy. The changes in the development of China's social production and its economic effectiveness is closely related to the state of its agricultural production.

Judging by the progress of the industrialization of the world's advanced countries, the diminishing ratio of agriculture in the national economy is a legitimate process of development, an important symbol of the progressive changes in the structure of the social production sector. In view of the overall direction of these changes, the structure of China's social production is heading in that direction. The ratio of gross agricultural output value in gross agricultural and industrial output value dropped from the 61.7 percent level of the period of rehabilitation to 47.9 percent during the First 5-Year Plan, and again down to 29.9 percent during the Fourth 5-Year Plan. The ratio of net agricultural output value in net agricultural and industrial output value dropped from the 78.5 percent level of the rehabilitation period to 67.6 percent during the First 5-Year Plan, and down again to 48 percent during the Fourth 5-Year Plan. A realistic analysis of the content of these changes and their impact on economic effectiveness will reveal many irrational changes and traces of backwardness hidden behind such progressive trends.

First of all, the changes of the ratio of agriculture in the national economy have had recurrent relapses and turns. The drop of the ratio of agriculture in the First 5-Year Plan occurred in a rather coodinated step-by-step manner. The drop from 58.8 percent in 1952 to 43.5 percent in 1957 represents a drop of 15 percent in 5 years, or an average annual drop of 3 percent. But the drop of the ratio of agriculture in the Second 5-Year Plan, especially

its first 3 years, was extremely great, from 43.5 percent in 1957 down to 20.1 percent in 1960, a drop of 23.2 (sic) percent in 3 years, or an average annual drop of 7.7 percent. Heavy industry, which had expanded at the expense of agriculture, rose from 26.6 percent to 53.3 percent in ratio, a 26.7 percent rise in 3 years. These sharp drops and expansions demonstrate precisely the irrational nature of the changes in the structure of China's national economy. It then became necessary to raise the ratio of agriculture from 20.1 percent to over 30 percent in the latter part of the Second 5-Year Plan and the 3 years of readjustment. When the cycle of changes returned during the Third 5-Year Plan and the Fourth 5-Year Plan periods, the ratio of agriculture dropped sharply to about 20 percent in 1970-1971 but went up again to about 30 percent. The structural changes in China's national economy are accountable for the changes in the economic effectiveness of its agricultural production and its entire national economy.

Secondly, the irrational changes in China's social production structure manifest themselves in the decline of the labor productivity and economic effectiveness of agricultural production. Generally speaking, the drop of the ratio of agriculture during the progress of industrialization in the advanced countries is due to higher agricultural labor productivity and continued increase of the absolute gross agricultural output value. The two mutually interacting factors that highlight the change are the continued increase of agricultural labor productivity and absolute reduction of the number of agricultural workers. But they have not yet manifested themselves in China.

Judging by Table 5, China's agricultural labor productivity in the Second 5-Year Plan, in 1963-1965, and in the Third 5-Year Plan was lower than the average of the First 5-Year Plan, no matter how it is figured out, whether by gross output value, net output value or amount of grain production. It was not until the Fourth 5-Year Plan that it began, step by step to approach, equal and finally exceed the level attained in the First 5-Year Plan in terms of output value. The productivity of the animate labor, in terms of grain production, did not reach that level until 1978. That is to say, the development of agriculture in the two decades since the First 5-Year Plan depended entirely on increasing the number of agricultural workers. Consequently, when the number of agricultural workers went down, China's agricultural reproduction declined so much that even simple reproduction found it hard to survive. As a result, the number of agricultural workers and the rural population increased at an average annual rate of 2 percent, and the size of the absolute increase far exceeds the number of workers increased by the nonagricultural sectors.

Marx said: "The increase of labor productivity implies a reduction of animate labor and an increase of the labor already spent, and a resultant reduction of the total amount of labor incorporated in commodities. Consequently, the amount of animate labor reduced exceeds the increase of the labor already spent."[3] Even though the level of China's agricultural modernization is low and even though agricultural production depends largely on manual labor,

3. "Collected Works of Marx and Engels", Vol 25, p 290.

Table 5.

(1)
表 5　按总产值、净产值和粮食产量分别计算的农业劳动生产率

		(2) “一五”时期	(3) “二五”时期	(4) 1963—1965年时期	(5) “三五”时期	(6) “四五”时期	(7) 1976—1978年时期
(8)	农业劳动者（期末数、万人）	19,310	21,278	23,398	27,814	29,414	29,426
(9)	*农业总产值（合计数，亿元）	2,451	2,276	1,615	3,285	3,974	2,787
(10)	每一农业劳动者年平均（元/人）	263	253	235	252	276	315
(11)	*农业净产值（合计数，亿元）	2,013	1,692	1,181	2,380	4,356	2,976
(12)	每一农业劳动者年平均（元/人）	215.6	188.4	169.5	182.4	302.1	337.9
(13)	粮食总产量（合计数，万斤）	18,162	16,420	11,140	21,835	26,307	17,477
(14)	每一农业劳动者年平均（斤/人）	1,945.7	1,828.3	1,598.9	1,673.6	1,824.4	1,984.2

(15) * 农业总产值按 1957 年不变价格计算，农业净产值按当年价格计算。

Key:

1. /Agricultural Labor Productivity in Terms of Gross Output Value, Net Output Value and Grain Production/
2. First 5-Year Plan
3. Second 5-Year Plan
4. 1963-1965
5. Third 5-Year Plan
6. Fourth 5-Year Plan
7. 1976-1978
8. Agricultural workers (number by the end of the period, in 10,000 persons)
9. *Gross agricultural output value (total in 100 million yuan)
10. Annual average per agricultural worker (yuan/person)
11. *Net agricultural output value (total in 100 million yuan)
12. Annual average per agricultural worker (yuan/person)
13. Total grain production (total in 10,000 jin)
14. Annual average per agricultural worker (jin/person)
15. *The gross agricultural output value is based on fixed prices of 1957, and the net agricultural output value is based on the prevailing prices of the year in question.

its agricultural equipment and funding have improved considerably in the last 30 years. For instance, the number of tractors used in 1978 was 950 times more than those used in 1952, and still 38 times more than those used in 1957. The amount of chemical fertilizer applied in 1978 was 148 times more than of 1952, and 24 times more than that of 1957. The rural consumption of electricity in 1978 was over 500 times and over 180 times more than that used in 1952 and 1957, respectively. The fixed assets for agricultural production in 1978 accounted for a total of 80.9 billion yuan, an increase of 3.5 times over that of 1957. These, however, did not help cut back the consumption of animate labor. For instance, the total amount of grain produced in 1978 was 86 percent more than that of 1962, but the number of agricultural workers for the same period also increased by 70 percent. Both went up at practically the same speed. If we take into account the labor spent by several hundred million peasants who worked under heavy pressure to meet the per unit grain production quotas, the amount of animate labor thus involved must have increased rather than reduced. The area of land cultivated by each agricultural worker should increase as agricultural technology and equipment improved. But it has gone down in China. If we say that each agricultural worker had 9.35 mu of land in 1952, he had only 5.07 mu in 1978, just a little over one-half of what he had in 1952. This illustrates even more clearly that the economic effectiveness of China's agricultural production has declined. The continued rise of agricultural production cost (almost the same as the procurement price of agricultural produce) has cut down collective and individual income, making the efficient production teams poorer and denying additional income to those who produced more. These are the manifestations of the decline of economic effectiveness of agricultural production, and the major causes of rural backwardness and poverty in China.

The changes in the labor productivity and economic effectiveness of agricultural production are closely related to the internal structure of agriculture. The experience of the developed country shows that comprehensive development of agriculture, forestry, and animal husbandry plays a positive role in maintaining ecological balance, improving agricultural production and raising the economic effectiveness of agricultural production. Consequently, they all push vigorously for the development of forestry and animal husbandry. In many countries the ratio of animal husbandry in agriculture is over 50 percent. In 1976, it was 60 percent in the United States, 66 percent in Great Britain, 57 percent in France and 74 percent in West Germany. The structure of China's agriculture underwent certain changes in the last 30 years, and the ratio of agriculture dropped from an average of 82 percent in the First 5-Year Plan down to 67.8 percent in 1978. But the backward single-item structure still persists. Except for the development of industry and sideline enterprises, the ratio of forestry and fishery was only 3 percent and 1.4 percent, respectively, in gross agricultural output value, pitifully small, and that of animal husbandry has remained at 13-15 percent since 1963. The crop-growing enterprise is still heavily influenced by the single-item concept. Grain production has remained at about 70 percent, while the ratio of economic crops, including cotton, has dropped in the last few years. Under such conditions, the following two factors have cut back the economic effectiveness of agricultural production. First, when the area of arable land and agricultural technology remain unchanged, the amount of labor and capital invested should remain within a rational limit. At this point, the economic effectiveness of investment in any unit should reach a maximum.

This is known as the feasibility of investment or expenditure. Any additional investment over and above this point would lead to diminishing returns and declining effectiveness. Second, single-item operations and single-crop structure would leave no room to proliferate agricultural production, utilize the resources in nature and bring into play the economic advantages of the various localities. With several hundred million agricultural workers herded on 1.5 billion mu of land and leaving the vast mountainous regions, grasslands and bodies of water untapped, surplus labor force and unemployment would ensue as the number of agricultural workers had gone over the feasibility point long ago. If the area of land cultivated by each agricultural worker remained at the 1952 level, then the total number of agricultural workers needed in 1978 would be no more than 159,448,000. If 10-15 percent of the existing agricultural labor force were diverted to run industries and sideline enterprises, China would still have on hand about 100 million surplus agricultural workers. Such being the case, how can it be possible to raise the labor productivity and economic effectiveness of agricultural production?

The number of agricultural workers in China represents the largest percentage, about 70-85 percent except some particular areas in the total number of industrial and agricultural workers, and the entire social work force. In 1978, the absolute number of agricultural workers reached 290 million, but labor productivity was very low. In terms of net output value, the productivity of the industrial labor force in 1978 was 7.71 times that of agricultural labor. If the productivity of the agricultural labor were raised 5-10 percent a year, the additional output value would reach 4-10 billion yuan.

High agricultural labor productivity, working through changes in the employment structure and industrial structure, would be a tremendous contribution to the effectiveness of the national economy. If agricultural labor productivity did not increase, it would be impossible to speed up the development of agriculture, neither would it be possible to improve the structure of the national economy and ensure its speedy and steady development. We have been striving to gain speed, but speed always breeds problems. An important lesson we learned by experience is that the national economy has been held back by a backward agriculture and poor agricultural labor productivity.

/3. The Ratio Between Light and Heavy Industries and Economic Effectiveness./

In terms of structure, the effectiveness of the national economy depends on the economic effectiveness of the various economic elements (such as the different sectors, localities, enterprises and products) and the ratio of the various economic elements in the entire national economy. Any change in the effectiveness of the national economy is the composite of the changes of two factors. If the production by the economically efficient departments is relatively small in ratio while the production by the less economically efficient departments is quite large in ratio, the effectiveness of social production and reproduction as a whole cannot be very high. Otherwise, the effectiveness of the national economy would be high. If the ratio of the economically efficient departments and their products increase at a higher speed and if the economic effectiveness of these departments and their

products which constitute a larger ratio in the social production increase at a higher speed, the effectiveness of the national economy would rise faster, and vice versa. The ineffectiveness of China's social production is closely tied to the small and declining ratio of the economically more efficient light industry, on the one hand, and the large and rapidly rising ratio of the less efficient heavy industry, on the other.

Viewed superficially, the ratio of light industry in both the gross and net industrial output value looks rather stable, ranging between 28-36 percent and 16-23 percent, respectively, since the First 5-Year Plan except some particular years. However, the rapid development of heavy industry has cut back the ratio of light industry in industrial output value; its ratio in gross output value dropped from 64.4 percent in 1952 down to 42.7 percent in 1978, and its ratio in net output value dropped from 57.4 percent down to 38.8 percent. The ratio of heavy industry rose rapidly. Its ratio in gross industrial and agricultural output value rose from 14.8 percent in 1952 up to 42.6 percent in 1978, and its ratio in net outuput value rose from 10.77 percent to 34.75 percent. Its ratio in gross industrial output value rose from 35.6 percent in 1952 up to 56.3 percent in 1978, and its ratio in net industrial output value from 42.6 percent up to 61.2 percent. The excessive drop of the ratio of light industry and rapid rise of the ratio of heavy industry are due mainly to the irrational ratio of national economic investment. Since investments attract both the labor force and resources, the capacity and scale of production of any place where investments went would increase and expand. In the 26 years from 1952 to 1978, the investment in light industry averaged only 9 percent and the lowest ever was only 6 percent. This is far below the level in Romania, Yugoslovia, and also the Soviet Union. The investment in heavy industry, however, was as high as 91 percent, or 10 times the investment in light industry. Too much investment in heavy industry and too little investment in light industry, which upset the ratio between light and heavy industries and that between the two large sectors, affect the economic effectiveness of social production. Too little investment in light industry retards the renewal of its equipment and the upgrading of its technology and cuts down its effectiveness of production. Moreover, since its economic effectiveness is generally higher than that of heavy industry, a backward light industry with very little investment would directly affect the national economic effectiveness of overall social production. The impact of this is clearly seen in the following areas: First, the output value, tax revenue and profit yielded per 100 yuan of fixed light industry assets are more than heavy industry can earn. Take the output value derived per 100 yuan of the fixed assets of all the industries owned by the whole people in 1965, 1975 and 1978, for example. The amounts derived from light industry were 321.33 yuan, 388.11 yuan, and 265.03 yuan, respectively, while that derived from heavy industry were 61.60 yuan, 88.24 yuan, and 73.86 yuan, respectively. So the output value of light industry is 5.22 times, 4.4 times, and 3.59 times, respectively, more than that of heavy industry. As for the tax revenue and profit earned in those years per 100 yuan of fixed assets, light industry registered 75.46 yuan, 62.69 yuan, and 63.57 yuan, respectively, while heavy industry registered 22.24 yuan, 17.29 yuan, and 17.93 yuan, respectively. The tax and profit earned by light industry was 3.39 times, 3.63 times, and 3.55 times, respectively, more than that by heavy industry.

If the ratio of investment in light industry could reach the 11.15 percent level of the First 5-Year Plan or increase to 15 percent, the results would be what appears in Table 6.

Table 6.

(1)

表 6 轻重工业投资的增减及其所实现税利的变化 单位：亿元

		(2) 轻工业投资	(3) 重工业投资	(4) 轻工业投资增加额	(5) 轻工业增加固定资产	(6) 轻工业增加的产值	(7) 重工业减少的产值	(8) 轻工业增加的税利	(9) 重工业减少的税利
(10) 1965	按"一五"水平计	10.49	83.58	3.33	3.16	+10.15	−1.95	+2.39	−0.73
(11)	按15%计算	14.11	79.96	6.95	6.6	+21.20	−4.7	+4.98	−1.47
(12) 1975	按"一五"水平计								
(13)	按15%计算	35.65	202	0.93	0.59	+2.29	−0.52	+0.37	−0.1
(14) 1978	按"一五"水平计	32.76	261.04	5.38	3.76	+9.97	−2.78	+2.39	−0.67
(15)	按15%计算	44.7	249.1	12.09	8.97	+32.04	−8.94	+7.69	−2.17

Key:

1. /The Impact of Varying Amounts of Investment in Light and Heavy Industries on Tax and Profit Returns/ Unit: in 100 million yuan
2. Investment in light industry
3. Investment in heavy industry
4. Increase in investment in light industry
5. Additional fixed assets acquired by light industry
6. Increased output value of light industry
7. Reduced output value of heavy industry
8. Increased tax and profit returns of light industry
9. Reduced tax and profit returns of heavy industry
10. In terms of the First 5-Year Plan level
11. Figured at a rate of 15 percent
12. In terms of the First 5-Year Plan level
13. Figured at a rate of 15 percent
14. In terms of the First 5-Year Plan
15. Figured at a rate of 15 percent

Compared to heavy industry, light industry generally requires less investments, can be constructed much faster and recouped sooner. For instance, a medium large textile plant which requires 30-40 million of investment can be built in about 2 years and the entire investment can be recouped in another 2 years. A 300,000-ton steel plant which requires 300-400 million yuan of investment takes 4-5 years to build, and even many more years to recoup the investment. So, what is required to build the steel plant is enough to build 10 such textile plants, and the steel plant would not be ready for production until the textile plant was built, went into production and recouped all the investments. By the time the steel plant recouped its investment, the textile plant would have provided the state with several billion yuan of accumulation fund which may be used either to develop light industry or build heavy industry. In the end, there would be more instead of less investment for heavy industry. This will contribute to more extensive and more efficient development of social production as a whole.

Third, heavy industry consumes much more energy than light industry. For instance, the amount of electricity required to run the 1.7-meter rolling mill of the Wuhan Steel Plant is two to three times more than the Hubei electrical networks can provide, and the amount of electricity it consumes in its normal production is much more than the electricity consumed by the light industries of all of Wuhan City. Take another example. In 1978, light industry consumed 32.23 billion kW of electricity, averaging 0.18 kW/yuan for each unit of its output value. Heavy industry consumed 133.86 billion kW of electricity, averaging 0.55 kW/yuan for each unit of its output value. Heavy industry consumed three times more electricity than light industry. If heavy industry were to consume 10 percent less electricity, there would be 40 percent more electricity for light industry. With an adequate supply of electric power, light industry can increase its output value and profit by as much as 74.37 billion yuan and 12.49 billion yuan, respectively. After deducting the power reduction by heavy industry, its net increase would be 50.12 billion yuan and 7.62 billion yuan, respectively. Thus, the pace of overall industrial production would increase by more than 10 percent, and the electricity consumed per unit of industrial output value would be 10 percent less.

Fourth, light industry requires less technical equipment and funding than heavy industry. According to the figures supplied by the concerned departments, the fixed assets per worker of all the enterprises owned by the whole people amount to an average of 10,000 yuan, and light industry's average is 6,200 yuan while that of heavy industry is 12,000 yuan, twice as much as that of light industry. If we reduce the investment in heavy industry by 5 percent and invest it in light industry, we can provide 200,000 more jobs per year. Furthermore, according to data gathered all these years, except for the petrochemical industry, the labor productivity of such light industries as textile, papermaking and food processing is higher than that of the metallurgical, coal mining, machine-building, building materials and forest industries, and practically on a par with the chemical and electrical power industries. Consequently, excessive investments in heavy industry affect the employment structure and labor productivity and jeopardize the economic effectiveness of overall social production.

/4. The Impact of the Advanced Sectors on Economic Effectiveness/

Heavy industry departments such as machine-building, steel, and heavy chemical industries are the advanced sectors supposed to serve as the foundation or pilot of technological advancement and upgrading of the entire national economy. Troubled by crudeness, superficiality, sub-standard technology, inferior product quality and lack of product variety, these advanced sectors have not been able to play the pioneering role. These definitely preclude the national economy from reaching a higher level in equipment and economic effectiveness.

Take the machine-building industry for example. It is a major department to provide the working tools, and the material and technical bases of the four modernizations rest primarily on modernized working tools. This means the machine-building industry must produce enough modern standard machines to equip China's industry, agriculture, communication and transportation. It should also provide the broad masses of residents with an increasing variety of household machine products, and products for export. China's existing machine-building industry is far from being ready to meet the challenge. In 1978, China had more than 10,000 machine-building enterprises which account for one-third of all the industrial enterprises, numerically quite impressive. Every department, province, municipality, region, county, and even commune had its own machine factory. Due to lack of tight organization, there were duplications of independent small-scale single-item plants of all sizes, which are inefficient. For instance, there were 130 automobile manufacturing plants and centers scattered in 26 provinces and municipalities capable of making 180,000 cars, though they can only turn out 140,000 cars. There were 640 automobile bearing plants capable of making 160 million sets, less than the output of a single Japanese plant. At present, China has 2.68 million machine tools, and only about 1 million of these are quality tools, while the rest are crude and inferior in quality. Furthermore, there are many more ordinary machine tools than specialized, high-precision and high-efficiency ones. Many of more than 20,000 products turned out by the machine-building industry are like those made in other countries during the 1950's and 1960's, backward in structure, inefficient, inferior in quality and durability, but high in cost. As a result, the enormous tooling capability of the machines and the low operating pace of the machine-building industry have forced many enterprises either to stop or operate far below capacity. Key industries have been operating at 50-60 percent of their capacity, while nonessential industries have been operating only at 30-40 percent of their capacity. Moreover, there has been a tremendous overstocking of machine and electrical products which grows from year to year, and has reached a total of more than 64 billion yuan. And yet there is not enough advanced equipment. In the last few years, we spent an annual average of $1.85 billion to import mechanical and electrical instruments and equipment. In 1978, we exported $260 million worth of machine products, or 1 percent of China's total export, or one-fifth of the machine products exported by South Korea and Hong Kong. This state of the machine-building industry is not only a terrible waste but also the failure of the industry to play the pilot role in the technological transformation of the whole national economy. Such being the case, how can it be possible to raise the technological level of China's industrial production and the economic effectiveness of social production?

Let us take a look at the steel industry. Guided by the idea of "gearing up primarily for steel," overemphasis on quantity and speed, and undue neglect of quality and variety, the 30 million tons of steel produced do not offer enough variety to meet needs, and there is more ordinary steel than alloy steel, especially high-grade alloy steel; and more thick steel plates than thin plates and sectional material. As a result, there was overstocking of steel which by the end of 1979 reached 19.6 million tons, more than one-half of the steel produced in China. Since the industry cannot meet the need of the production and construction enterprises in China, we had to spend a huge amount of foreign exchange to import steel. In the last 30 years, China imported 56 million tons of steel, costing $13.6 billion in foreign exchange. The annual average steel import during the First 5-Year Plan was 800,000 tons, and it increased tremendously in the 1970's. The annual average steel import was 4 million tons in 1973-1975, 5 million tons in 1976-1977, and 8.64 million tons in 1978--an equivalent of 27 percent of the steel produced in China or one-quarter of China's total import. The vicious cycle thus formed is the greater the production, the greater the overstocking and the greater the import. The quality and performance of domestic steel trails far behind that produced in foreign countries. The life of an automobile bearing made in China is 100,000 km, while that made in foreign countries is 200,000-300,000 km. It takes two to three cars to do the work of one foreign car. The life of airplane landing gear made in China is 500 times, while that made in foreign countries is 10,000 times, a 20:1 ratio. The smelting of nonferrous metals is even worse. The state of the industry, also a tremendous waste, is in no position to produce enough quantity and variety of high-quality steel to boost the technological upgrading and economic effectiveness of the national economy. It must be noted, however, that to raise the production level of such advanced sectors as machine-building, steel and heavy chemical industries is conducive to the development of new technology, new skills, new materials and new energy resources. In a word, it can improve the quality and efficiency of the means of production, bring about a fundamental technological change in China's economy, help raise the level and speed of the intensification and socialization of production, capitalize on the role of quality in economic growth, and increase the economic effectiveness of social production.

/5. The Impact of Regional Advantages on Economic Effectiveness/

To utilize the regional economic advantages is to maximize the superiority of socialized large-scale production and to develop interregional division of labor, cooperation in production and economic exchanges. As this involves the basic problem of making the regional economic structure more rational and getting the national economy better organized and tightened up, it might boost the economic effectiveness of social production.

The advantages and specialties of a region depend on its natural environment, geography, natural resources, economic and technical attributes and cultural and historical background. In a word, it has its most economically efficient enterprises or the potential to achieve the greatest degree of economic effectiveness. If all the regions were to develop those enterprises which

are compatible with their respective production capability and conducive to the attainment of maximum economic effectiveness, and proceeded from that base to help organizing the economy of the whole country through nation-wide production cooperation, economic alliance and commodity exchange, they would be able to capitalize on their own advantages to compensate their disadvantages, and raise the economic effectiveness of social production as a whole. The way to capitalize one's own advantages to attain greater efficiency is to compare and assess them, find out what they are, and study and master how to bring them into full play. Due to the impact of a naturalist economic outlook and small-scale production, we once acted contrary to a requirement of socialized large-scale production by refusing to recognize the commodity economic formulations in the socialist economy and overlooking the role of division of labor and commodity exchange. Unmindful of the principle of economic rationality and subscribing to the propostion of "banking primarily on grain" and self-sufficiency, every region strived to build its own self-contained independent industrial system. This led to indiscriminate duplications of production and construction all over the country. As a result, those regions fit for growing cotton refused to do so; those fit for animal husbandry refused to raise cattle; those fit for coal mining refused to produce coal; and those fit for high technology focused instead on raw material industries. In the end, it depressed its advantages to save its shortcomings rather than capitalizing on its advantages to compensate for its shortcomings. Instead of bringing its advantages into play, it magnified its weaknesses, leading to wanton waste of its labor force and natural resources, and sharp decline of the economic effectiveness of social production.

For instance, the coal of Shanxi, abundant in deposits (one-third of China's known deposits) and variety, and easy to mine, is indeed an excellent resource. Having been mined for so long, it has a contingent of people with the know-how of coal mining and construction, and excellent technical equipment. In terms of the mechanization of mining programming, tunneling and transporting, it ranks fourth in China. Its labor productivity in mining is high (its real labor productivity is 1,262 tons, the foremost in China). Its investment effectiveness is excellent (its per ton composite investment was 25.7 percent less than the national average during the First 5-Year Pland, and 41.6 percent less during the Fourth 5-Year Plan), and per-ton costs are low (13.4 yuan in 1978, 16.9 percent lower than the national average). In 1978, its tax and profit returns per 100 yuan of funding were 13.58 yuan, 3.75 times the national average. The number of years required to recoup the investment is only one-quarter of the national average. However, due an erroneous policy to discourage shipping north China coal to south China, the focus switched to compensating the inadequacy of the south China coal supply instead of maximizing the advantages of the north China coal resources (including the coal of Shanxi). During the Third 5-Year Plan and the Fourth 5-Year Plan, over one-half of the coal mining investment was used to exploit coal fields south of the Chang Jiang-fields which have no or very little coal. The economic effectiveness of the investment has been very poor. For instance, the investment per ton of coal produced in Hunan, Hubei, and Guangdong is one to seven times higher than that in Shanxi, and the cost of producing per ton of coal is one to three times higher thatn

that in Shanxi. The money actually went down the drain. At the same time, the raw coal output of the northeast is about 20 percent of the national total, but it received only 7.2 percent of the investment during the Third 5-Year Plan. By the same token, only 5 percent of the investment went to Shanxi during the Third 5-Year Plan even though the raw coal output of Shanxi was 17 percent of the national total. Instead of arresting the movement of north China coal to the south, it jeopardized the exploitation of coal in north China, depressed the economic effectiveness of coal production, aggravated the shortage of energy supply, and retarded the economic effectiveness of social production as a whole.

It must be noted that more is involved in capitalizing on regional economic advantages and organizing rational interregional division of labor than a one-track operation because it entrails a comprehensive development of the regional economy. Unlike an independent entity which is self-contained and self-reliant, a comprehensive development brings regional advantages into full play and use them as a vehicle to achieve the right kind of cooperation and coordination. There is a saying that it takes green leaves to help a red flower stand out. If we say regional advantages are a red flower, comprehensive development is the green leaves. That is the proper way to fully utilize regional advantages, an indispensable condition for raising the economic effectiveness of social production. Let us take Shanxi coal again as an example. In the past, when the focus was on developing a self-contained regional economic system, the coal industry was on a one-track operation, limited to mining, and very little was done to make comprehensive use of coal. The amount of raw coal it cleaned was only 7 percent of its output, lower than the 18 percent national average, and hardly significant enough to compare with the 90 percent level in Japan, America, Great Britain, France, Hungary, Czechoslovakia, Belgium, and Romania, and there was hardly any coal chemical industry to speak of. That was a tremendous degradation of the economic effectiveness of social production. It is estimated that if the value of 100 jin of bituminous coal were 1, it would increase by 50 percent if the coal were turned into coke. The value would increase 10 times if it were used for tar, 50 times if it were used to extract alcohol, and 1,500 times if it were used for synthetic fibers. The value derived from the consumption of 1 ton of coal is $1,600 in West Germany and $1,100 in Japan, but only $360 in China, or 22.5 percent and 32.7 percent of that of West Germany and Japan, respectively. This is illustrated by our own experience. Fushun, a coal mine center which has been running a comprehensive coal exploitation program for 45 years, registered an industrial output value of 4.45 billion yuan in 1978. Yangquan, Shanxi, a large mining region with an annual yield of 10 million tons which has been a one-track operation for 40 years, registered in 1978 only 560 million yuan in industrial output value, one-ninth of that of Fushun. If we could construct a comprehensive coal mine base which includes coal mining and processing (coal cleaning, coking, pulverization, and manufacture of brickettes), coal chemical industry, and pitside power generation, and develop, in light of the local geographic and economic conditions, a number of other economic enterprises (agriculture, light industry, etc.) affiliated with the comprehensive exploitation of coal to support the whole system, it would contribute extensively to raising the economic effectiveness of the entire national economy. This should be the way to capitalize on the superiority of Shanxi coal.

The relationship between the coastal and inland regions is also a major problem to cope with as we strive to raise the effectiveness of the national economy by capitalizing on regional economic advantages and upgrading the regional economic structure. A tremendous amount of work has been done in the last 30 years to use the original coastal industrial base to develop inland industry. Having completely changed the irrational allocation by old China of most industries in a few coastal provinces and cities, inland industry has grown immensely. Its output value went from about 10 billion yuan in 1952 up to 150 billion yuan in 1978, and its ratio in the gross industrial output value went from 29.9 percent in 1952 up to 36.5 percent in 1978. Many new industrial cities and centers have emerged. All these have played a major role in bringing about the exploitation of inland resources, the development of the inland economy, a rational allocation of the nation's productive forces, and a balanced development of the nation's economy.

However, the fact that we emphasized political and military considerations more than economic and practical consequences in dealing with the relationship between the coastal and inland regions has led to errors and detours which affect the development of the national economy and the economic effectiveness of social production. The general tendency is represented by overemphasis on national defense and security, on the one hand, and a balanced development of the national economy, on the other, plus unwarranted drive to speed up the development of inland industry, and overuse but very little development of coastal industry. This took place as early as the First 5-Year Plan. At that time, the ratio of the investment in inland industry in the total industrial investment rose suddenly from 38.4 percent in 1953 up to 53.1 percent in 1956. In summing up the lesson to be drawn from our experience, Comrade Mao Zedong discussed the problem in his article "On Ten Great Relationships." But theory did not keep pace with practice. Due to a mistaken assessment of the threat of war, we began in 1965 to push for third-line construction, leading to a sharp increase of investment for the construction of inland industry, especially third-line construction. The former rose from 53.6 percent in 1964 up to 69 percent in 1976, and latter up from 33.4 percent in 1964 to 53.1 percent in 1967. This not only aggravated the distorted relationship between the coastal and inland regions but also made the ratios within the coastal and inland regions more irrational. Generally speaking, the coastal regions, with the industrial strength they have, are superior to the inland regions in technology, economic strength, cultural and historical heritage, and the economic effectiveness of investment and production. Inland industrial construction did not have such favorable conditions to fall back on. Starting from scratch, they had to invest in communication and transportation because there were no serviceable roads. They had to invest in nonproductive capital constructions to provide urban facilities which had been nonexistent. Labor productivity and the utilization rate of facilities, held back by low cultural and technological levels, and economic effectiveness are all quite low. For instance, the investment for per ton of steel is about 1,000 yuan in the coastal region, but 3,000 yuan inland. The increase in the output value per 100 yuan of investment in the coastal region has been for years more than twice that of the inland regions. Due to lack of funding brought about by insufficient investment in the coastal regions, many enterprises are unable to renew and transform their equipment, and speed up the development of the essential projects. This has arrested the utilization of the production potential of the coastal region industry and the economic effectiveness of social production.

Judging by the state of inland construction, the heavy investment and crushing speed of three sector construction have gone beyond the capability of the inland economy. The ratio of investment, somewhat irrational, favors heavy and military industry. Between 1965 and 1975, the investment in heavy and military industry and capital railroad construction in Sichuan was 80 percent of all the capital construction investment of the whole province, while that for light industry and agriculture was 4.4 percent and 4.7 percent respectively, far below the national average. This, especially the thrust of three sector construction, aggravated the distorted ratio within the inland regions. The failure to tackle such basic construction as roads and energy, and to comply with the procedure of capital construction have made it practically impossible to ship equipment, raw and processed materials to the completed factories, nor can the products be shipped out, nor can the installed machinery go into operation as there is not enough electric power. Although the focus of state construction has shifted since 1975 to the first and second sectors, the problem created by three sector construction are still unresolved, leaving the constructions half-done.

Secondly, if we say the distribution of the coastal industries is so concentrated in such big cities as Beijing, Tianjin and Shanghai as to cause serious social and economic problems, the distribution of industries in the inland regions, especially during the progress of third-line construction, is unduly scattered. Guided by the policy of "decentralization, taking cover, going underground," certain mutually dependent production lines have been arbitrarily scattered over several valleys tens of miles apart. This means more investment, more consumption and higher cost--a protracted irrational situation.

In a word, these are the reasons why so many enterprises which have spent 7, 8 or even 10 years to build are still unable to get ready for operation, while others already built are operating irregularly and loosing money. So, the 10 years of third-line construction at a tremendous cost of manpower, material resources and money have wound up with a large number of projects many of which retard the development of the national economy instead of creating material wealth for society. This is another major cause of declining economic effectiveness of investment and production.

/6. Methods of Construction and Economic Effectiveness/

New construction and extension, on the one hand, and renewal and upgrading on the other, are two different methods of construction which play different roles and have different advantages. The difference in the ratio of investment for these two methods of construction contribute heavily to the changes in economic effectiveness.

Facts abound to show that the renewal and upgrading of existing enterprises are speedier and more efficient methods of construction which require less investment. For instance, by converting its three reverberatory open-hearth furnaces of the 1940's into top-blown oxgen furnaces or converters, the Second Rolling Mill of the Anshan Steel Complex has been able to cut down the smelting time of a furnace of steel from the original average of 10 hours to 4 hours, and produce every year an additional amount of 550,000 tons of steel over the record before upgrading. This works as if it has built an additional medium-size steel plant although the cost, including the money

spent for previous extensive repairs and 330,000 yuan of additional investment, is only one-twentieth of what is needed to build such a new plant. Its labor productivity has increased 60.7 percent, production cost per ton has gone down more than 1,000 yuan, and time spent to upgrade the open-hearth furnaces and that previously spent for the extensive repairs is about equal. Under normal circumstances, investment can be cut by two-thirds and construction time cut in half. Consequently, to speed up the upgrading of the equipment of existing enterprises is a sure way to raise the economic effectiveness of social production.

In the past, we had to resort to new construction and extensions to build up our production because China's industrial base was weak, and if we did not do it, there was no way to establish an independent and comparatively adequate system of industry and national economy. But many people have become so used to regarding new construction and extensions as the only way to expand reproduction that whenever there is a need to expand reproduction, they push for more people, more equipment and instruments, more new enterprises and more new projects. The fact that people prefer new construction and extensions to renewal and upgrading of existing of enterprises is due to the low rate of depreciation, whose national average is 4-5 percent, and the lowest is only 2-3 percent. The depreciation allowance is not enough to meet the cost of equipment renewal because it takes 20-30 years to do it once. Moreover, a large part of the depreciation fund is controlled by the concerned departments and finance departments which use it for new construction and extensions. For instance, in 1978, the central government departments collected 2-3 billion yuan of depreciation fund but allocated only 15 percent of it for renewal and upgrading of equipment. That is inadequate. If we say there is not enough materials for new construction and extensions, the shortage of materials for renewal and upgrading is even worse. Most of the imported items of the last few years were for new construction and extentions, and that is why many enterprises had to retain their old, technical inefficient and workout equipment of the 1940's, 1950's and even the 1920's and 1930's. This is one of the major causes of ineffective social production.

In 1979, we had 355,000 industrial enterprises (4,500 of which are large and medium in size) with fixed assets worth more than 600 billion yuan. There is a need as well as a possibility to shift the priority from new construction and extensions to renewal and upgrading. These existing enterprises are the base and staging ground of China's four modernizations. If we could really bring about such a shift of priority and commit a large amount of investment to the renewal and upgrading of existing enterprises, provide adequate materials required for renewal and upgrading, and incorporate the imported technology in the renewal and upgrading of existing enterprises, the economic effectiveness of China's social production would improve immensely. Furthermore, the realization of the change will work through the following channels to accelerate the improvement of the economic effectiveness of social production.

First of all, speedy renewal and upgrading of existing enterprises will save energy and improve economic effectiveness. As energy is a key to the development of production in China today, there are two solutions to the energy

problem, namely, to develop new sources of energy, on the one hand, and to economize the use of energy and increase the efficiency of energy consumption, on the other. China's high rate of energy consumption is due mainly to outmoded and energy-inefficient equipment. For instance, the metallurgical industry accounts for 12.9 percent of the energy consumed in China. The old process of ingot casting and open-hearth furnace smelting consume twice the amount of energy required for continuous ingot casting and top-blown oxygen converters. There could be a three-fourths saving if gas were recaptured from top-blown oxygen converters. Continuous ingot casting is used by 47 percent of the mills in Japan, which has practically eliminated open-hearth furnaces and installed recapture devices on top-blown oxygen converters. In 1978, continuous casting of ingots accounts for 3.5 percent of China's steel, open-hearth furnace steel accounts for 39 percent, and top-blown oxygen converter steel accounts for one-third, but without recapture devices. In 1978, the energy consumed per ton of steel was 2.5 tons, which is 2.5 times that of the United States and 3 times that of Japan. China has 180,000 industrial furnaces most of which are products of the 1940's and 1950's, known as "coal guzzlers," "gas guzzlers" and "electricity guzzlers." They burn 200 million tons of coal a year because their heat efficiency is only 20-30 percent (which is 80-90 percent in the advanced countries). If concerted efforts were made to upgrade them step by step and increase their heat efficiency by 10 percent, it would amount to a saving of 20 million tons of coal annually, an equivalent of the output of 30 coal mines each with an annual output of 600,000 tons. This would contribute immensely toward raising economic effectiveness and speeding up economic development.

Secondly, speedy upgrading of the technology of existing enterprises can enhance the development of the machine-building industry and raise its rate of equipment utilization. At present, China's machine-building industry is not operating at full capacity, and its equipment utilization rate has been quite low. The output of the machine-building industry would increase measureably if its equipment were renewed and the industry itself were upgraded. According to the estimate of the authorities concerned, the total value of the equipment and tools of the enterprises owned by the whole people was 270-280 billion yuan in 1978. If they were renewed completely within 10-15 years, the annual renewal would be 27-28 billion yuan, or 18-19 billion yuan, about 15-23 percent of the output value of the machine-building industry in 1978. This would help the machine-building industry improve its rate equipment utilization and raise the economic effectiveness of social production.

Furthermore, speedy upgrading of the technology of existing enterprises will change the production structure and effectiveness of the steel industry. Since China's iron mines produce only lean ores, it takes two times more ores than the foreign countries to get 1 ton of pig iron, while 43 percent of the investment in the steel industry and 69 percent of the composite energy per ton of steel are used for mining, ore dressing, coking and smelting. In 1978, the ratio between iron and steel, an indicator of the strucutre of the products of the steel industry was 1.1:1 in China; 0.68:1 in the United States, and 0.81:1 in Japan. Speedy upgrading of the technology and renewal of the equipment of the existing enterprises would provide a huge source of scrap steel. According to estimates, the total amount of equipment in China today is about 140 million tons. If it were completely renewed in 10 years, there would be 14 million tons of scrap steel per year, or 8 million tons per year if the renewal took 15 years. This means a great saving in investment and energy, and higher economic effectiveness in social production.

III. Readjustment of Economic Structure to Raise Economic Effectiveness

The aforesaid analysis not only explains how the changes of China's national economy in the last 30 years from irrationality to substantial rationality and then to a new state of irrationality lowered the economic effectiveness of social production, but also points out the way for further improvement of the economic structure and economic effectiveness. In a word, the crux of the matter is to uphold the principle of balanced coordination and utilization of all favorable situations to restructure and make rational use of the existing productive forces, on the one hand, and to change the direction of investment distribution and establish rational investment structure, on the other.

To reorganize and make rational use of existing productive forces is the main theme of the readjustment of the national economy and a vehicle for improving its economic effectiveness. It is, therefore, necessary to draw on the strength of each to offset the weaknesses of the other and fill the gaps in order to turn the existing productive forces into a comprehensive productive force. Both economic and administrative measures should be used to readjust and restructure the existing enterprises and projects still under construction in order to make the economic structure more rational and economical by upgrading those which should be upgraded; suspending those which should be suspended; speeding up those which should be sped up; postponing those which should be postponed; expanding those which should be expanded; and changing the lines of production of those which need change, such as turning heavy industry into light industry, turning military industry into civilian industry, suspending and restructuring duplications of production, and readjusting the production priorities so as to redirect the priorities of China's economic work from quantity and speed to quality and effectiveness.

To change the direction and readjust the structure of investment is an important measure to improve economic effectiveness. Consequently, we must strive to change the policy of economic development and investment distribution. This means to nourish instead of depleting agriculture, protect instead of elbowing aside light industry, restructure heavy industry, and place equal emphasis on production and subsistence to ensure coordinated development of agriculture, light and heavy industry. Do not take too much from the peasants directly or indirectly, and give them an opportunity to recuperate so that the collective and individual income may increase. The investment for light industry should increase from year to year to ensure its development as a priority during the readjustment. Keep its investment at a proper level even after the completion of the readjustment, because China is a populous country with a low standard of living. The investment for heavy industry should, first of all, be used to provide adequate energy and transportation, and secondly, to ensure the development of those projects which serve agriculture and light industry. And, arrangements should be made to guaranty the funding and materials needed for industrial renewal and upgrading. Strive to realize technological upgrading and structural readjustment to save energy. First, make priority arrangements for the renewal and upgrading of outmoded light industries, equipment and processes. Second, be sure to tackle the technological upgrading of enterprises, equipment and furnaces which

consume too much energy, and make comprehensive use of recycled energy in order to increase energy efficiency. Third, be sure that those projects already constructed are equipped and do go into production. Fourth, imported technology should be applied to the technological upgrading of existing enterprises and should not be used for large-scale new construction. Finally, set up a two-track industrial and technological structure to provide investment to support and assist the development of labor-intensive industries, unique medium and small enterprises, and collectively owned enterprises which are responsible for their gains and losses.

No matter what we do, whether to restructure and make rational use of the existing productive forces or to change the direction of investment distribution and readjust the investment structure, we should bring into play the mutually substituting and mutually complementing relations between different economic sectors, and capitalize on the superiority and strong points of each region while keeping them well coordinated. This is the most effective way to improve the economic structure and raise economic effectiveness. We still face the problem of the mutually substituting and mutually complementing roles of animate and inanimate labor. While we focus on developing labor-intensive enterprises to capitalize on our superior manpower to compensate for our financial and technological weaknesses, we must also encourage those advanced departments and enterprises to make full use of advanced technology to replace manual labor and backward operations in order to achieve mechanization and automation, and to increase labor productivity. We can no longer resort to extensive manual labor and human-sea tactics in those departments and enterprises. The next problem is the mutually substituting and complementing role of products, such as coal, electricity, oil, hydroelectric power, thermoelectric power, cotton and synthetic fibers. If we can promote comprehensive exploitation and utilization of China's rich coal reserves to substitute for oil and use the oil thus saved for raw materials in order to change the structure of China's raw materials and energy resources, we would increase the efficiency of energy utilization. Furthermore, China abounds in waterpower, and what is being tapped amounts to less than 3 percent of the estimated reserve. Waterpower is an inexhaustible source of energy. If we take into account the cost of mining and shipping fuel, the investment for developing thermoelectric and hydroelectric power is about the same. Well-planned exploitation of waterpower is also conducive to greater economic effectiveness. Then there is the problem of the relationship between domestic sales and foreign trade. In reality, domestic sales and foreign trade involve the exchange or substitution of one product for another. As far as this goes, we must analyze and compare the economic effectiveness in taking advantage of the international division of labor by importing products which cost much more to produce at home but require less foreign exchange to buy, and exporting those products which cost less to produce at home but earn more foreign exchange. This would help raise the economic effectiveness of China's social production.

In conclusion, if we can earnestly study the law of economic structure and apply it to the readjustment of the ratios of the national economy and the upgrading of the economic structure, we would be able to raise the economic effectiveness of China's social production to a new level and help her heading toward sustained stable growth and coordinated development.

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CHAPTER XXVI

THE RELATIONSHIP BETWEEN THE RESTRUCTURING OF THE ECONOMIC SYSTEM AND THE READJUSTMENT OF THE ECONOMIC STRUCTURE

By Wu Jianglian [0702 2417 8834]; original text pp 790-808; portions between slantlines in boldface in original text.

[Text] If we look upon our national economy as an organic whole composed of many sectors and elements, if we view it using systematic and scientific language, and if we look upon it as a large system, when studying it we must first analyze how each sector and element is composed so as to realize its function. From the view of the material substance of production, the problem of the composition between each sector in the national economy and each key element in social reproduction is indeed a problem in our economic structure that we are currently studying. The problem with the system of economic management is also a structural problem, such as the problem with the composition or makeup of the social relationships of production. However, this is another structural problem that is both related to and different from the problem with the economic structure mentioned above. The former is mainly viewed from the perspective of the material substance of production, i.e., productive forces, and the latter is viewed from the perspective of the social form of production, i.e., the relations of production.

An economic system is always mobile in the unified contradiction between productive forces and the relations of production. Face to face with this type of relationship of unified contradiction, both the economic structure and the system of economic management have a mutual influence and interact in the development of our national economy. Currently, we are faced with the two great strategic tasks of carrying out a structural readjustment and realizing a restructuring in the system. In the realization of these two large tasks, a relationship of interdependence and interaction also exists. Thus, in order to smoothly accomplish these two large tasks, we must make a penetrating study of the relationship between the restructuring of the system and readjustment of the structure and the relationship between the economic system and economic structure. Further, we must comprehend the dialectical relationship between them, so that in the course of restructuring and readjustment we can enable them to help each other forward and jointly achieve a quick and complete realization.

I. Defects in the System Are One Important Reason for the Creation of Defects in the Structure

The defects in our economic system have already been sufficiently discussed in this book. To put it briefly, all sectors of the national economy are in disorder, and there are serious disproportionate relationships; agriculture and light industry are seriously backward and are unable to satisfy the demands of the improved level of the people's standard of living; heavy industry is emcumbered and not advancing, and is finding it difficult to fully play a leading role; the basic structure is extremely weak and has hindered the development of industrial and agricultural production; there is a disproportionate relationship between accumulation and consumption, and the scale of capital construction exceeds the amount of financial resources, material resources and manpower that society is able to provide. All together, this has caused the development of the entire national economy to be in an imbalanced situation. It has caused potential, manpower and material resources unable to be tapped, and has caused economic results to be substandard. The question is, what is the main reason for the creation of such a serious defect in the structure of the national economy?

There are many different answers to this question.

One type of answer that is frequently seen is: we often encounter nationwide and extremely serious proportional imbalances, for example, the disproportionate relationship between the basic structure and economic construction, between agriculture and industry, between light industry and heavy industry, and between accumulation and consumption. These disproportionate relationships are a result of the "leftist" thinking that has been received in economic work for a long time. This type of thinking violates objective laws, sets up high targets, and results in arbitrary and irrational directions. When discussing agriculture, only grain is considered; when discussing industry, only steel is considered; and toward the targets for grain and steel the demand always is--the higher the better. The result is that this causes the front of capital construction to become more extended, the economic structure becomes more and more "heavy," and other aspects are always ignored to the point that they are harmed. The result naturally is that the national economy becomes imbalanced.

This type of answer explains that the direction reason for the serious defects that have appeared in China's economic structure is that there is a mistake in the guiding policy of our work. Toward correcting guiding ideology, it would be beneficial to dismiss such "leftist" slogans as "high targets are Marxist, low targets are revisionist," and to promote readjustment work. However, no matter how direct an ideological reason is, it is, after all, a superstructure of a set material existance, it is production and effect under a set economic relationship. Thus it is not the most important reason. After we have found leftist thinking as a direct reason, we must further search for a reason involving a systematic trend of thought regarding production. If we limit this type of "ideological reason," then we will have no way of finding out why in many nations that have adopted management systems similar to China's, almost witout exception in their economic structures deviations appear to varying degrees that are similar to China's. Further, we will especially have no way

of finding out why we have not been able to learn from the mistakes of others. Even if later on we recognize a predecessor's problems, we still repeatedly make the same mistakes others have already made. As early as the eve of the party's Eighth National People's Congress in 1956, when we summarized the experience of the First 5-Year Plan, our party had already recognized the faults of the one-sidedness and absoluteness of Stalin's policy of "emphasizing the development of heavy industry." At that time, Comrade Mao Zedong incisively criticized Stalin's Soviet leadership's "putting undue emphasis upon heavy industry and ignoring agriculture and light industry; thus their market has insufficient goods and their economy is not stable." They do not give consideration to the benefits of the state, the collective and the individual workers. Moreover, they "speak very sarcastically about the workers," and this is "committing a grave error." Mao also pointed out that we must adopt another type of policy "stressing agriculture and light industry, and increasing the development of agriculture and light industry," we must control the ratio between national accumulation and retention by the cooperative/collective, and we must "give consideration to the state, the collective and the individual."[1] However, not long afterward, we ourselves put forward such "leftist" slogans as "use steel as a key," "double targets," and others. We stirred up "equalitarianism and indiscriminate transfer or resources," expropriated the farmers' "communist tendencies," and had the single line of stressing heavy industry, especially the steel industry. We neglected light industry, harmed agriculture and created a serious level of damage toward the structure of the national economy which far outdid that in Stalin's Russia at that time.

First, this type of management system restricts and rejects the effect of the market, because the needs of the people cannot be promptly reflected, and it is hard to avoid production from becoming divorced from needs. The goal of socialist production is to satisfy the needs of the people; but under the conditions of production, the needs of the people can only be accurately reflected through the market. Yet a highly centralized system of economic management causes enterprises to form subsidiaries for each administrative structure, and denies them a fairly independent position, thereby causing the economy to become a natural or seminatural economy. Because the market mechanism is unable to play its regular role, the needs of society and other members cannot be immediately reflected, it will be difficult for the goals of socialist production to be smoothly realized, and the isolation of production from needs will become a common phenomenon. Further, under the circumstances of the isolation of production from needs, it will be difficult to establish a rational economic structure.

Second, this type of management system rejects the market's regulative role. Thus it is difficult to avoid a disproportion between each sector of the national economy. Since a socialist economy is a commodities economy established on the basis of public ownership, it must combine a regulated plan with a regulated market. It can then ensure coordinated development between each sector of the national economy. A highly centralized system of economic

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1 "Selected Works of Mao Zedong,"Vol 5, pp 268-9, 272-4.

management takes its guiding regulated plan of an administrative structure as its feature, and it lacks an automatic regulating mechanism to handle the intricate and indefinitely changing relationships between each sector of the national economy and relationships within each sector. Due to this type of system that manages the economy according to administrative channels and divisions, the system created by each sector and each region also must certainly harm the internal connections and proportionate relationships in the national economy.

Third, this type of management system restricts enterprises and workers from giving free reign to their enthusiasm and initiative. Enterprises eat from "the common pot" and workers hold out "the iron rice bowl." Internally there is no motive force, and externally there is no pressure. Thus they are unable to fully tap their economic potential, they are unable to advance the speedy development of technology, and this is a fundamental reason why the production of some socialist countries is always seriously falling behind the demand, and it is also an important reason for the disproportion in our national economy. For example, due to the implementation of a system of unifying revenues and unifying expenditures, in capital construction, enterprises, on the one hand, are exerting the utmost effort to strive for projects, investments and construction, and, on the other hand, they are not concerned with improving the beneficial results of investments. This must result in an excessively large scale of capital construction and excessively high rate of construction.

It is even more worth noting that under a centralized system, the power to make policy decisions concerning economic development is almost completely concentrated among the party and government leadership bodies, and among the leading bodies the power to make policy decisions is concentrated in the hands of individual leaders. Under this type of system, the following tendencies can appear; a small number of goals and determinations of leaders are in a governing position, but the desires and needs of the working masses never have the opportunity to be voiced. This way, it often happens that we take the goals of the state, such as manifesting the strength of our economy and national defense and strengthening our international influence, etc., and give them first priority, and we excessively stress heavy industry and unduly raise the rate of consumption. But we are neglectful in satisfying the everyday needs of the populace. In addition, under this excessively centralized management system, in the movement of the economy we cannot avoid the appearance of faults in policy decisions concerning all types of violations of objective laws, and the bureaucracy grows, the issuance of confused orders is rampant, work is inefficient, and other such negative phenomena occur. These flaws create a large amount of useless expenditures and waste of manpower, material resources and financial resources, and the simultaneous achievement of high accumulation and high consumption which could have occurred with a bit of effort, never comes about. If it is not done well, all could be lost: both the people's standard of living would not improve daily, and production would not be quickened and increased.

Due to this type of authoritative and excessively centralized management system, not only can the wishes of the working masses not be expressed, the

everyday needs of the workers are often ignored, and the policies of the leading body and leaders are easily flowed. However, the leadership's flawed policy decisions, due to a highly centrlaized authority, definitely harms the democratic system of the people and the state, and this will not be easily or quickly corrected.

Originally, the undertaking of socialist construction was a completely new undertaking in the history of mankind; it was difficult to completely avoid making mistakes. The problem is that although socialism is a collective cause of the broad masses of the people, when we make a mistake we must quickly overcome it with a great collective effort. Because authority is excessively centralized and the dmeocratic system has been harmed, in the 30 years of China's socialist constructin, mistakes in policy by the leading body and leaders have occurred repeatedly. Not only can they not be redressed, but on the contrary the mistakes are growing in intensity, and are an instance that creates serious harm for the development of the national economy. In the "socialist high tide" of 1956, the trend of a few premature advances appeared both in socialist construction and socialist transformatins. The party Central Committee immediately discovered these problems, and at about the time of the Eighth CPC Congress, they adopted a series of measures to overcome this type of "left" tendency. This had an excellent effect on the healthy development of our socialist cause. However, in 1958 the correct measures concerning the "antipremature advances" were considered to be "desolate, wretched and pathetic bourgeois," the Central Committee's leading comrades were labeled as "right" elements and were criticized. Moreover, an erroneous resolution was made that during the period of socialist construction we could only oppose rightists, and could not oppose premature advances. In 1958, a few leading comrades made a resolution requiring a "quadrupling" of that year's steel output to reach 10.7 million metric tons. This was an erroneous decision that was divorced from reality and that was certain to upset the balance of the entire economy. This erroneous decision is similar to other leftist erroneous decisions that resulted in "equalitarianism and indiscriminate transfer of resources." Although it was doubted and opposed by many comrades and the masses, it was still forced to be implemented. In July of 1959, Comrade Peng Dehuai and a few other comrades embraced the correct aspiration of "I rouse and cry out for the people," and in the Eighty Plenum of the Eighth CPC Central Committee, raised a suggestion concerning "left" policies. However, under the circumstances that left errors had already caused clear harm to the lives and property of the people and to China's socialist construction, the correct suggestion of Peng Dehuai and other comrades was not adopted. Contrarily, the comrades with the correct suggestions were treated to a criticism session, and a nationwide "oppose rightist opportunism" campaign was launched. This had disasterous consequences on the development of the national economy.

There is no denying, under the circumstances of preserving a centralized management system, that if the guiding ideology is relatively correct, then it is possible to prevent a disproportionate relationship in the national economy from reaching an excessively serious stage. However, concerning the problem of a management system, asking leadership whose guiding ideology is not so correct to continue being correct for a long time concerning the problem of the economic structure, is, after all, not very realistic. Under special

circumstances, due to the one-sided type of erroneous policy of "putting emphasis upon heavy industry" which is creating danger that is clearly evident, we cannot help but make a fresh start; it is possible that there will be a shift in the economic structure and that we will receive the correct policy of seeking truth from facts. However, if there is no change in the central management system, then the fairly good readjustment of the economic structure will not be stable, because after any changes in the current economic situation, the effect of the system's decisions will be manifest, and this will cause economic construction to once again return to its old erroneous course. Before this readjustment of the national economy, China twice, in 1956 and from 1962 to 1965, carried out a large readjustment of the imbalanced structure of the national economy. At that time we adopted such measures as reducing the front of capital construction, lowering the rate of accumulation and developing agriculture and light industry. We achieved great results, and we tended toward a rational economic structure. However, because the centralized system of this type of structure did not result in any change, not only after the readjustment a new and even larger "premature advances" started, and the result created even larger disproportionate relationships in the national economy, and caused the economic structure to receive renewed harm. Therefore, not long after the first readjustment, a new readjustment had to be made. We must earnestly draw a lesson from this bitter experience.

Historical facts show us that we must maintain a fundamentally rational economic structure, and it is necessary to have a management system that is correct, and that conforms to both socialist principles and China's actual conditions.

II. The Economic Structure's Influence on the Economic System

Above we analyzed the decisive effect that certain economic systems had on establishing any type of economic structure. We must also see that under the circumstances there is another side we cannot ignore: the desire to establish a specially designated economic structure that has a definite counteraction to the economic system. Under China's specific conditions, this type of counteraction illustrates that the high-speed emphasis on the development of heavy industry exacerbated the centralization of our management system.

During its preliminary First 5-Year Plan, China copied from the Soviet Union the policy of putting emphasis on the development of heavy industry. The implementation of this policy, as in the Soviet Union, caused the economic management system to become more and more centralized.

In the Soviet Union's New Economic Policy period from 1921 to 1927, economic relations between industry and agriculture and the city and the countryside were mainly achieved through the market and the relationship between goods and currency. At that time, difficulties existed in using administrative decrees to readjust the economic movements of the many different sectors of the economy. It was both a state-run economy and was run under a market environment, thus the policymaking power of their economic management was, comparatively speaking, fairly weak. Yet after the policy of putting emphasis upon heavy industry was established, a change in the situation gradually took place. We know

that during the New Economic Policy period a debate was held within the Soviet Communist Party concerning the problems of their industrialization policy. At that time, Stalin forcefully denounced the ultraleftists for depending on "the original law of consumption of socialism" to carry out "excessive industrialization," and for using methods of sacrificing agriculture and light industry, lowering the standard of living of the working masses and expropriating peasants in order to advocate the development of heavy industry. However, later on Stalin himself went too far in stressing the development of heavy industry, and implemented the development strategy of "giving priority to the development of heavy industry," and caused the economic structure to develop in the direction of a "heavy-type" structure. The development of heavy industry requires a large amount of funds. Because heavy industry itself has a limited capability to contribute accumulation, light industry, which was capable of contributing fairly large accumulation was ignored, and individual farming became the main source of accumulation. At the same time as this, a quickly developing industry required large amounts of grain and other agricultural products, yet it did not possess enough products from light industries to exchange with the peasants. Therefore, the method of an exchange of unequal values was adopted and was levied on the peasants. Clearly, the two methods above that were relied upon were not an exchange of equal values and market mechanisms, but they could only be administrative decrees and a centralized management system. This produced excesses of compulsory collectivization. In the short period from 1929 to 1934, on the basis of the original productive forces of the peasants, individual peasant households were organized to a large degree into state-owned collective farms. At the same time, due to the disappearance of the free market and also due to the state utilizing all of the collective manpower, material resources and financial resources for targets that they decided upon, it was necessary to change the state-run enterprises' management system which had relative independence, and cause management to become more and more centralized.

The development of China's national economy has a history similar to the Soviet Union's.

During the period of the national economy's recovery in the first few years of the First 5-Year Plan, due to the existence of many different sectors of the economy, as far as the national economy was concerned, the management was not extremely centralized, and the leadership of the state-run economy toward other sectors of the economy also, to a certain extent, adopted the law of value to operate. The economic management of this time was till fairly smooth. However, during the First 5-Year Plan we studied the Soviet Union, and we received the policy of "giving priority to the development of heavy industry." At that time, China's heavy industry constituted only 8 percent of the gross output value of industry and agriculture, and was not able to provide sizable accumulation. Light industry provided relatively more accumulation, but of this a sizable portion was transferred from agriculture through market exchange. Because the development of light industry was ignored, we increasingly relied upon acquiring income from agriculture for the source of funds for the development of heavy industry. At the same time, because heavy industry was developing quickly, the population of the cities increased greatly, there were not enough products from light industry to exchange for agricultural products, and

difficulties began to develop in the supply of grain, cotton cloth and non-staple foods. Therefore, in 1953 and 1954 we successively carried out a state monopoly for the purchase of grain, vegetable oil and cotton. In retrospect, what we proposed was not proceeding from the needs of the development of agriculture itself, but it was proceeding from the needs of socialist industrial development, and we were accelerating the pace of the collectivization of agriculture. The acceleration of the collectivization of agriculture also caused a quickened pace in the disappearance of the entire socialist transformation and free market, and it caused the centralization of all management. Although in 1956 we brought up the problems of carrying out a systematic reform and appropriate distribution of power, yet under the circumstances of high targets, high accumulation and one-sided development of heavy industry, we could not fundamentally change the management system of administrative centralization of power. Conversely, the more prominently one-sided heavy industry is, the more funds and goods and materials become in short supply, and objectively, a need for centralization to a large extent will emerge. Thus, during the period of great blind advances after 1958, China's economic management system had developed to a point that in, for instance, the selection of consumer goods purchased, the range and power of decision that should be in the hands of individual workers was concentrated in the hands of the state. This centralization can be termed extreme. This way, a vicious circle has appeared of "the more problems, the more state control; the more control, the more problems."

From the above two-part analysis, we can see the mutual cause and effect between the management system and the economic structure. The management system of the administrative centralization of power must establish a "heavy-type" economic structure, and conversely, the "heavy-type" economic structure must consolidate and strengthen the management system of the centralization of power. Thus, overcoming the defect of the system, on the one hand, and redressing the drawback of the structure, on the other, are mutually related. Whether we must strengthen the system of administrative centralization in the management system, or whether we must change the situation of a lopsided development in our economic structure, we must adopt measures from both sides and cause them to be smoothly coordinated. Otherwise, if measures are adopted from one side alone, it will be difficult for our work to be successful. From this it is apparent that the party Central Committee classifies readjustment and restructuring as the first two items of the four tasks of the four-point policy, and requires that it is completely correct to complete these two great tasks in the first campaign.

III. The Rough Coordination of Proportionate Relationships Is a Prerequisite for Carrying Out a Fundamental Restructuring of the Economic System

Currently, the people of china are on the point of performing the two great tasks of restructuring the economic management system and readjusting the economic structure. How should these two great tasks be carried out, should it be done in different periods, and should they be emphasized?

Although the most important reason for the appearance of great defects in both the disproportionate national economy and the economic structure is an imperfect

economic management system, then at present do we want to consider the restructuring of the economic management system as the key to implementing the four-point policy? Some comrades truly advocate this. They think that if we do not carry out a thorough restructuring of our management system, then a readjustment cannot be smoothly carried out. Therefore, we must come to the following conclusion: we must first focus on the restructuring of the economic system, and after the economic system is restructured, the problems with the structure will naturally be readily solved. This type of view is reasonable, but it is not comprehensive, because it only covers the point that we cannot solve the structure problems without first solving the system problems: it does not see the other side of the situation: Having such seriously disproportionate relationships, and also not having carried out comprehensively and on a large scale a restructuring of the management system, if we then forcibly carry out a large scale comprehensive restructuring, not only will we not achieve good results, but we will also create bad economic and political consequences.

Why do we say that under the circumstances of serious disproportionate relationships, that a pace in restructuring that is too fast is not only useless, but is even harmful? The reasons roughly lie in the following few points.

First, when there are serious disproportionate relationships, and overall demands are far greater than the overall supply, the market mechanism does not take the initiative regarding production and management.

The key link in the restructuring of the economic management system is to fully bring into play the effect of the market mechanism, and take the economy originally readjusted completely by a guiding plan and transform it into an economy that combines a planned adjustment with a market adjustment, i.e., the commodities economy under the planned economy or under the planned command on the basis of commodity relationships. The so-called fully bringing into play the effect of the market mechanism is to cause the market's relationship between supply and demand to change through the law of value for advanced bonuses, spurring on the backward, supervising and urging an enterprise to improve product design, raise the quality of products, utilize new technology and strengthen economic management, and advocating the function of production to be appropriate for society's needs. If these do not conform to needs, then products of secondary quality and high price will not be sold. Conversely, they would be profitable and in great demand. However, the market mechanism must play this type of role to use supply and marketing regularly as a premise. In a market in which demand is greater than supply and products are seriously out of stock, it is difficult to play this type of role. That is to say, when there are serious disproportionate relationships, and when the overall demand for the means of production and consumer goods is far greater than the overall supply, in a shortage of products, even if quality is seconeary and costs are high, there is no need to worry about selling out. This way, after changing the adjustment of the market under planned guidance, permitting enterprises when purchasing raw materials and selling products to have the power to act on their own, and when canceling fixed prices, to still have the same situation as a state monopoly on purchasing and selling is like "the emperor's daughter need not worry about marriage": We are definitely unable to compel enterprises to improve production and management. Moreover, because we

abolished administrative control, and to no avail increased the chaos of the market and prices, we thus created the phenomenon of rush purchasing, fradulent purchasing and skyrocketing prices. In order to avoid confusion between the market and prices, the state cannot completely cancel such administrative interventions as planned purchasing (state monopoly for purchasing), planned allotment of goods (state monopoly of distribution) and rationing, and the state is also unable to loosen control of the prices of those products in short supply. This also does not enable the market mechanism to truly have an effect. Therefore, from a planned system for allocating and rationing products, in the transition we carry out the exchange and consultation of a fixed price for both supply and marketing through the market, and this can only gradually be realized with the development of production and a readjustment in proportionate relationships. If the circumstances exist for a rough coordination of the needs of the volume of supply and the purchasing power of commodities, and there is somewhat of a surplus, the market mechanism will then be able to effectively play a positive role.

Second, under the circumstances of a seriously disproportionate relationship and irregular supply of goods and materials and energy resources, it is difficult by means of relationships between commodities and currency--such as causing revenues to reduce expenditures and assuming sole responsibility for profits and losses--to accurately carry out a system of rewards and punishment that both examines and is rational for enterprises.

The basic requirement for economic reform in financial management is to turn an enterprise into an independent management body and compel it to assume complete economic responsibility for the results of its own management. Enterprises that are well-managed will have large profits and a high level of income instead of low profits and a low level of income. This way, the level of profits being closely bound to the income of the enterprise workers will have an effect of automatically rewarding and punishing the enterprises' management and administration. However, under the conditions of a serious disproportionate relationship in the national economy, iiregular external conditions in an enterprise's production and management, and difficulties in linking up production, supply and marketing, whether an enterprise's production situation will be good or bad, and the size of its profit level are all too often not controlled by the enterprise itself, but are determined by external factors. For example, because many enterprises are unabel to receive their supplies on time and according to the quality and quantity of raw and processed materials, fuel and electric power, they are thus unable to proceed with regular production, and due to a lack of raw and processed materials and a power outage, they sometimes cannot help but to stop work and production. The result is that they are unable to fulfill their sales contracts. This then causes costs to rise, losses outside of business to increase and profits to decrease. Obviously, this type of reduced profits and increased losses is not the result of the enterprise's management, and the economic responsibility for affairs should not and need not be borne by the enterprise. Under this type of situation, if the authority and responsibility is given to the enterprise, then the difficulties of the enterprise's management can be increased. Moreover, because the objective and subjective factors that influence the level of an enterprises' profits are difficult to differentiate and give rise to the

phenomenon of inequality between bitterness and happiness in enterprises, this causes all accounting and checking work to get bogged down in confusion. In short, through the method of allowing the enterprises themselves to assume responsibility for profits in order to both examine the results of enterprise management and to carry out a system of rewards and punishments toward enterprises, we must roughly use normal macroeconomic conditions for production, supply and marketing as a premise. Under the circumstances of a serious disproportionate relationship, it is very difficult to accomplish serious economic accounting accurate examination of superior and bad, strict material rewards and punishments, etc.

Third, under the circumstances of a serious disproportionate relationship, even if we allow enterprises to have the necessary power to act on their own in management and administration, it is very difficult for an enterprise to effectively use it.

Increasing an enterprise's power to act on its own and recognizing an enterprise's relative independence is the basis of the reform of our entire economic system. Under the objective conditions of an extremely short supply of raw and processed materials and natural resources, and difficulties with the sales of certain products, even if we restrict the power of the enterprise's management to act on its own, the enterprise will still have difficulty achieving the above, and it will be extremely difficult for it to play its proper role. Contrarily, if the state regulation of the national economy was for some reason suddenly not total, if the pace of one part was too fast, it can bring about increased negative consequences such as duplicate distribution, blind construction, using the small to harry the large, etc. This is certainly not saying that we do not want to increase an enterprise's power to make its own decisions in a planned way and with the proper steps, but it is saying that the pace cannot be too fast and too sudden.

Fourth, when income and expenditures are not balanced and reserves are few, to the point that there exist fairly large deficits, readjusting to a large extent the advantageous relationships between the people can meet with great difficulties and resistance.

Economic relationships first appear as advantageous relationships between people. A restructuring of the economy must make a large readjustment toward economic relationships; it must touch upon the advantageous relationships between all social groups. For example, it must carry out a reform of the pricing system and pricing structure, and cause a change in the advantageous relationships between the state, the collective and individuals, between the central and local authorities, and between each region and sector. This change must be discreetly handled. Normally, it creates measures for increased benefits in all respects and achieves good points, and it easily receives the support and endorsement of the people. It is a measure that only increases a portion of the benefits to people, and it can also reduce another portion of benefits, and it is easy to cause friction and meet with fairly large resistance. Thus, although from a long-range view a systematic restructuring would cause increased income for the state, the collective and individual, within a short period of time it could also sometimes reduce a certain portion of income. In order to reduce resistance and ensure increased income

for the state, collective and individual, we often must choose a method that increases the state's revenues. This will be difficult to achieve under the circumstances of disproportionate relationships and short supply of finances. This may have a bad effect on increasing income and conserving expenditures, and will exacerbate the short supply of finances. Moreover, when making a change in beneficial relationships, it would still be difficult to avoid inaccurate and faulty situations that occur in planning; if there were full financial reserves, it would be easy to make up for this type of deficiency. Otherwise, shortages will be created economically and in personal relationships.

To sum up, when the economic structure is seriously irrational and there are serious disproportionate relationships, it is easy to suffer setbacks and reverses when carrying out a comprehensive and basic economic reform. But under the conditions of roughly maintaining the original system (not including making a partial change), we can, through the necessary economic and administrative measures, readjust the economic structure and cause the trend of a serious disproportionate relationship in the national economy to be brough into line. During the period from 1962 to 1965, China experienced this type of success. At that time, China's national economy was suffering from high targets and "communist winds," agriculture and light industry suffered especially serious damage, a serious disproportionate relationship occurred between industries and each sector of the national economy, and production and the people's standard of living decreased to a large extent. However in 1961, at the proposal of Zhou Enlai, Chen Yun, Li Fuchun and other comrades, the party Central Committee decided on a policy of "readjusting, restructuring, consolidating, and improving." Starting in 1962, they adopted resolute and decisive measures to carry out a readjustment of the national economy, including vigorously reducing the front of capital construction, sharply lowering the rate of consumption, and employing the method of close, suspend, merge or retool. It included carrying out a readjustment and consolidation of heavy industry enterprises that were too backward or had no production tasks and production conditions. It included taking 17 million of the over 20 million workers who had been recruited from the countryside since 1958 and returning them to engage in agricultural production. The result was that in that year, we reduced the declining trend of the national economy, in 1963 industrial and agricultural production began to rise, and in 1965 and 1966 the national economy had taken a complete turn for the better, and the people's standard of living was restored to near its 1957 level. The economic reforms of certain countries in this respect also afford us experience and lessons: the comprehensive economic reforms of some countries receive fairly good results after undergoing meticulous and thorough preparations. Among them, one important preparation is to cause a rought coordination of the proportionate relationships of each sector of our national economy. Conversely, there are also countries that will hastily start a project, and under the circumstances of serious disproportionate relationships, rashly carry out a comprehensive reform. The result causes chaos in economic life, and the economic reform is thus left unfinished.

In view of this, when implementing the four-point policy of readjusting, restructuring, consolidating and improving, we must start with readjustment.

In the beginning, we must use readjustment as a key. We must realize that, generally speaking, although we are carrying out readjustment under the circumstances of a more or less unchanging original system, from the experience of many readjustments in the history of China, under these conditions we must cause readjustment to achieve success fairly quickly. We must guarantee the main strengths of adjustment under this type of system--administrative decrees and guiding plans that possess full authority. This then must appropriately centralize, and can then ensure, the speedy implementation of such policies as using limited manpower, material resources and financial resources in the most needed places, and also ensure the central authorities' reducing the front of capital construction. Further, in carrying out a systematic reform, we must demand appropriate decentralization so as to ensure that the individual initiative and enthusiasm of the enterprises and workers are given full play. In the period of using readjustment as the key, we must grasp the following type of principle: when contradictions appear, we must submit to the needs of readjustment. When we adopt a measure to delegate to lower levels, we must fully consider its effect on readjustment work. Restructuring must use readjustment as a basis, and must serve readjustment. The speed and pace of restructuring must use as its principle being advantageous toward and not hindering readjustment.

Otherwise, readjustment work will be drawn out, and restructuring will thus be delayed. We must strive within a short period of time to overcome the situation of a serious imbalance between accumulation and consumption, between industrial departments and between social production and social needs. We must reduce the gap in material supply and clear up deficits. The better that readjustment work is accomplished, the better proportionate relationships will be coordinated, the state's financial resources will be more abundant, and the economic system and opening up of restructuring will have better conditions and a more solid base, and it will be even easier to achieve success.

IV. Using Systematized Restructuring To Advance the Readjustment of the National Economy

We have said that the chief task of our present economic work is to carry out the readjustment of the economic structure, but it is not a fundamental and comprehensive restructuring of the management system, and does not imply that the systematic restructuring is an affair of the distant future. We only must wait for a complete readjustment of the economic structure and a total coordination of proportionate relationships, and we can then set about carrying out a restructuring of the economic system.

The serious disproportionate relationships in our national economy were formed over a very long period of time, thus, proportionate relationships must be completely readjusted. However, this cannot be accomplished in a short time. The restructuring of the economic system is also work that is both extremely complex and that requires a long period of time to bring about. If we do not wait until we are able to start carrying out the complete coordination of proportionate relationships, we might miss an opportunity due to delay, and postpone the realization of China's modernization.

In fact, at the same time that we are energetically carrying out a readjustment of the national economy, there is also much work that immediately needs to be carried out in systematic restructuring. Moreover, we have all the conditions to set about carrying it out.

First, in order to carry out a systematic restructuring, our work in reserves that are in short supply must be started very early. Systematic restructuring involves intricate interrelations among each economic sector, realm, link, and among all economic groups. The restructuring in every respect must be closely coordinated and thoughtfully calculated, otherwise it will be difficult for a new economic system to smoothly get into motion. Further, in order to have the restructuring plan suit actual circumstances and be relatively feasible, we must both carry out a thorough investigation and meticulously design the restructuring plan. Moreover, we must carry out repeated comparisons of each type of plan, and select the most outstanding plan that is both appropriate for China's actual circumstances and is capable of achieving the greatest economic results. For most countries, the preparation period for economic restructuring extends 3 to 4 years. Because we carry out fairly ripe deliberations before a fundamental restructuring and hold repeated discussions in every specialized respect, people are fairly consistent concerning the policy of the restructuring plan and recognition of detail. Moreover, it is easy to prevent the chance occurrence of defects and problems before the fact. It is worth assimilating this type of experience.

In addition, we must carry out experimental work for each type of restructuring measure and establish them on new models that have different policies than the old models. Thus, if we completely renovate policymaking structures, regulating structures, power structures and others, we can then reveal their vitality. However, a new mechanization can be gradually realized through certain measures. Through this type of step-by-step practice, we can also accumulate experience through fundamental restructuring. Before carrying out a large restructuring, there is no harm, under permissible conditions, in carrying out certain small reforms, and we can also acquire set results. For example, in formulating a restructuring, we must take the adjustment of the guiding plan and change it so that it is combined with the adjustment of the market mechanism, and take an economy that mainly relies upon administrative measures for its management and change it to an economy that mainly relies on economic measures for its management. We must also cause an enterprise, under the direction of the national plan, to have independent management and assume responsibility for its own profits and losses. However, when we still do not completely possess the conditions, there is still no harm in taking the first step in this direction, and within a limited scope, in increasing an enterprise's power to act on its own. In 1978, in industry, China started carrying out an experiment to increase its power to act on its own and to implement a portion of the profits; this belongs in the above category of work. At present, this experimental work is being carried out in 6,600 enterprises and is achieving fairly large results. We must persist in this work and cause it to gradually be completed.

Even if the pace of reform is fairly fast, it still cannot be carried out in every sector, every enterprise and in every respect. For example, as

mentioned above, if we adopt an adjusting mechanism that combines a planned adjustment with a market adjustment, we must have fairly regular conditions for supply, production and marketing. At present, for many products, we still do not possess such conditions. However, for some departments that already possess or partially possess such conditions, there is no harm in our carrying out a fairly large experimental restructuring, and cause three departments' products to completely enter the sales market. Currently in China, certain experimental enterprises are carrying out new experiments in "independent accounting, using taxes to replace profits and assuming responsibility for their own profits and losses," and can be categorized as experience in this type of nature.

Arranging an appropriate restructuring when possessing certain restructuring conditions is not only not harmful toward the readjustment of proportionate relationships, it is even beneficial. It has been mentioned above that currently, realizing unified income and expenditures, materially realizing a state monopoly for purchasing and selling, and a ration system, unified wrapping and apportioning in work, "all eating from the common pot," and "the iron rice bowl" in distribution, etc., all create a huge waste in manpower and material resources. This is an unfavorable factor in the readjustment of our national economy's proportionate relationships. Realizing any aspect of restructuring, breaking through the restrictions of a centralized system, and importing a factor of any market adjustment joins together the collective benefits of an enterprise's workers and the results of its management. It increases the production of products "in short supply," economizes on the consumption of material and energy resources, it promotes the balance between supply and demand, and without a doubt can have great advantages.

For example, at present, on one hand certain amounts of important goods and materials are in short supply and, on the other hand, some goods and materials are greatly overstocked. There is a reserve of nearly 20 million metric tons of all types of steel materials, and the cost of mechanical-electric products in reserve has increased to more than 60 billion yuan. In tracing this matter to its source, we find that mainly under the system of a guiding plan and state monopoly for purchasing and selling, the state often disregards needs, neglects variety and quality, and one-sidedly pursues output and yield. Thus the phenomenon appears of disjointed production and marketing, and goods do not satisfy needs. Supply does not meet the demand of goods that consumers need, and yet much goods are produced that they do not need. On one side there is still an unceasing flow of production. If we allow these few products to enter the market using a system of a fixed quota and, based on a supply and marketing contract, work out a plan and allow prices to float within set boundaries, this irregular phenomenon of being overstocked, on one hand, and increasing production, on the other, can then be quickly overcome.

Another example is: in carrying out a "ration system" for funds, under the system of an enterprise not assuming responsibility for profits and losses, an enterprise often gets in the habit of asking the higher levels for help, striving for investments, goods and materials and foreign exchange, and because it budgets liberally and spends sparingly, being overstocked and

wasteful does not harm and is beneficial for the enterprise. Under the circumstances of exercising a compensatory use of funds and total portion of profits, an enterprise must practice careful calculation and strict budgeting in the use of its funds. Thus, this restructuring is advantageous for economizing on both fixed funds and circulating funds, and it is also beneficial in overcoming the contradiction between increasing the consumption of funds and ensuring the necessary accumulation, and in reducing deficits and increasing the financial surplus.

Because at present there definitely exists, from an overall view, a buyer's market, production has had great difficulty directly due to the change and adjustment in market prices. Under these circumstances, we must consider adopting accommodating methods for these products for which supply does not meet demand, for instance, rational prices determined by the state, enthusiastically utilizing tax revenue levers to regulate the level of profits, etc. The factor of ensuring a new management system is capable of working normally, and plays a positive role.

In short, even if it is a time when we take readjustments as a key, we cannot stress only centralization, and try to manage everything to death. In fact, during this period we also must judge the hour and size up the situation, carry out a systematic restructuring of the expansion of enterprise autonomy and bring into play the effect of the market mechanism. This type of necessary and feasible restructuring not only is necessary for achieving readjustment, but it is also necessary for making preparations for future conditions for even greater restructuring. During this period of readjustment as the key, when we are carrying out experimental restructuring and searching for more experience, we can draw up a set of fairly good and comprehensive restructuring plans, and thus ensure the smooth progress of fundamental restructuring.

(October 1980)

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POSTSCRIPT

By Ma Hong and Shu Shangqing; original text pp 807-808.

[Text] In June 1979, the State Council's Financial and Economic Committee, in order to better implement the policy of readjusting, restructuring, consolidating and improving, and in order to promote China's socialist modernization and construction, called a meeting of the responsible people of each financial and economic sector of the central government, economic research organs and the concerned institutes of higher learning. They gave instructions about work in investigating and researching the nation's economic problems. They decided to establish an economic management system, an economic structure, import of technology and modernization of existing enterprises, theory and method, and they separately started work.

The economic structure was organized with the assistance of the concerned departments. They organized more than 400 comrades to engage in actual work and more than 200 comrades to engage in theoretical work. According to sectors, they formed investigative groups, and they also amassed more than 100 people to form the economic structure's comprehensive investigative team. They went to many provinces and cities, and under the leadership of the local party committees, and together with each area's economic workers and economic theory workers, carried out investigations and studies of the problems of economic structures. In May 1980, after 10 months of intense work, they brought the investigative and study work to a close.

Currently, we have asked a few comrades who participated in this investigative and study work of the economic structure to write a series of articles, and we edited and published them in order to promote further inquiry into the problems of China's economic structure. This book, in the course of being compiled, received the support and assistance of each sector concerned, and we especially express our gratitude for this.

The authors who contributed to this work state that in their essays they strive to embody the demands pointed out by the editors, of combining theory, data and policy proposals. However, all of the data used is not necessarily accurate. Their views are merely a few well-considered views of individual authors; there will certainly be some unsatisfactory spots, to the point where there will be errors. We hope that the readers point these out.

Comrades Zhou Shulian [6650 0647 5571], Zhang Zhuoyuan [1728 0587 0337], Zhang Zehou [1728 3419 0624] and Chen Shengmao [7115 516B 0379] also participated in the editing work. This volume was hastily edited. In the editing work it was difficult to avoid faults and errors. We earnestly implore readers to criticize and point out errors.

Ma Hong, Sun Shangqing
November 1980

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END