交通运输经济管理专业英语

郗恩崇　杨　琦　编译
周国光　　　　　审校

陕西人民教育出版社

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内 容 提 要

本书涉及的基本内容有运输财务会计、成本效益分析、运输项目可行性论证及发达国家交通运输管理体制、运输管理结构、运输管理法规等。还介绍了集装箱运输、运输代理、联运等代表先进技术水平的运输方式。本书每课分为四个部分：原文阅读理解、词组和专业词汇、课文注释及参考译文。

本书可作为交通运输管理、运输财务会计、计划统计及交通工程等专业的大学本、专科及中等专业技术学校的必修或选修教材。

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郗恩崇 杨 琦 编译

周国光 审校

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前　　言

随着改革开放和对外交流范围的不断扩大，国外交通运输经济管理方面的一些先进技术和成功经验亟待我们学习与借鉴。因此，培养和造就一批既懂专业又懂专业英语的交通运输经济管理方面的专门人才，就显得极为重要和迫切。

但是，一个较长时期，我国尚没有统一的交通运输经济管理专业英语教材，为了适应教学与科研的需要，在陕西人民教育出版社的大力支持下，我们组织编译了国内第一部《交通运输经济管理专业英语》教材。

全书共23课。课文内容都是从国外运输专家撰写的关于运输管理、运输经济及运输政策分析的科研论文、教科书及工作报告中精选出来的，其中一些课文是从世界银行运输专家对我国进行数月实地考察之后撰写的报告中节选的，不乏对我国交通运输发展的真知灼见。课文涉及的基本内容有：运输财务会计、成本效益分析、运输项目可行性论证及发达国家交通运输管理体制、运输管理结构、运输管理法规等。同时，还介绍了集装箱运输、甩挂运输、运输代理及联运等代表先进技术水平的运输方式。

本书每课分为四个部分：原文阅读理解（*Reading Comprehension*）、词组和专业词汇(*Phrases and Expressions*)、课文注释(*Test Notes*)和参考译文(*Reference Translation*)。在词组和专业词汇部分，重点列出了在一般英文字典中较难查到的运输专业词汇和表达方法，词汇的顺序是按在课文中出现的先后排列的，以便于查阅与记忆；课文注释是对课文中出现的，从内容理解上或从语法现象上比较困难的句子或句子成分做出的解释与说明，便于读者自学或课后理解难点；参考译文可帮助读者在阅读原文基础上更正确地理解原意，提高翻译水平。

本书可作为交通运输管理、运输财务会计、计划统计及交通工程等专业的大学本、专科及中等专业技术学校的必修或选修教材。对从事交通运输行业管理、企业管理和财务会计、计划统计工作的工程技术人员、科研人员及干部也有一定的学习和参考价值。对从事国际集装箱运输业务或其它涉外运输业务的工作人员尤其是一本难得的教科书。

本书在翻译过程中，曾得到交通部情报科学研究所、西安公路学院等单位的大力支持与帮助，谨致以衷心的感谢。

由于编译者水平有限，书中难免还有错误和不妥之处，敬请专家和广大读者随时批评指正。

编译者

1991年6月

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Lesson one

Part 1
TRANSPORT INDICATORS: CHINA AND THE INTERNATIONAL EXPERIENCE

i. Part I compares China's transport indicators with those of other countries and explores prospects for future development of transport in China [1]. The first chapter outlines the share of transport in the economy. Chapters 2 and 3 detail freight and passenger transport, their growth over time and in relation to GNP, their intensity, average distance and modal split. The fourth chapter discusses investments in the sector.

ii International comparisons of transport indicators are difficult since transport is country specific. The size and shape of the country, the extent of its coast line, the navigability of its lakes and rivers, the location of natural resources and population, the mature and composition of the economy all affect transport, particularly the movement of freight. Therefore, we have limited our systematic analysis to large countries, namely US, USSR, India, Brazil and Japan, with occasional reference to other countries on particular topics.

1. TRANSPORT IN THE ECONOMY

1.01 The share of transport in the net material product of China (NMP) has been stable around 4% since 1952. This share in gross domestic product (GDP) in 1981 is estimated to have been no more than 4.1% even with adjustment of distorted prices [2]. This is lower than the share in other countries used in our comparison:

Table 1.1: TRANSPORT AS PERCENTAGE OF GDP

	1950–60	1960–70	1970–77
India	4.9	5.0	5.3
Korea	4.1	5.9	6.5
Brazil	6.0	5.6	5.2
US	6.6	6.4	6.4
Japan	8.1	7.4	6.3

Source: World Tables, The Second Edition (1980), World Bank 1980.

From the above table it appears that the transport share of GDP increases in countries at low levels of income (India, Korea) and decreases when income exceeds a certain level (Brazil, Japan, US). It is surprising that the share of transport in NMP has remained constant in China since transport has been growing faster than NMP (Figure 1.1). From 1952 to 1981, NMP at constant prices increased over five times while freight tonnage increased over seven times and freight ton km over 11 times [3]. Passenger traffic also increased more than 10 times. This would indicate that transport costs have decreased in relation to other costs, which may be explained by the high intensity with which the network and the rolling stock is used (see para. 4.02).

1.02 China's transport sector is characterized by an unusually high freight intensity, higher than in any country except the USSR. Passenger intensity is more in line with other countries, but low relative to India and Brazil. The table below relates freight and passenger traffic to GNP in 1980–81 for the various countries of our sample:

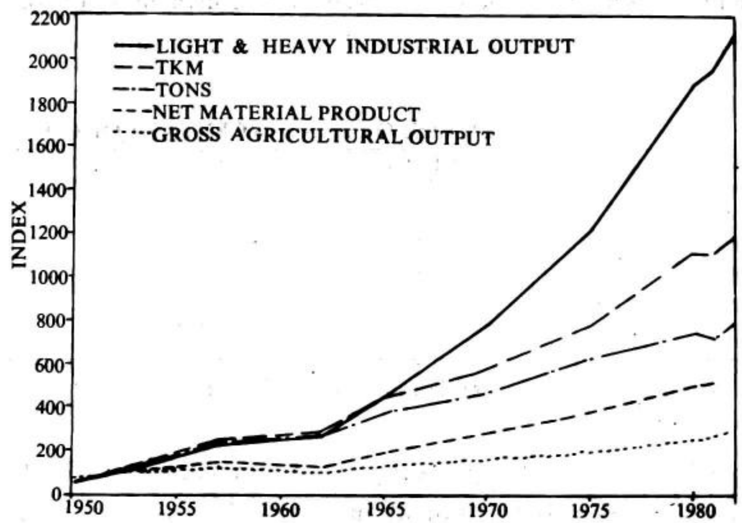
Table 1.2 FREIGHT AND PASSENGER TRANSPORT INTENSITY

	Tkm bln	Pkm bln	GNP bln US $	Tkm / $ GNP	Pkm / $ GNP	Traffic unit / $ GNP a/
China (81)	852	250	275	3.10	0.91	4.01
USSR (80)	6,021	891	1,393	4.32	0.64	4.96
US (81)	4,766	2,572	2,635	1.81	0.98	2.79
India (81)	266	542	159	1.67	3.41	5.08
Brazil (81)	343	450	245	1.40	1.84	3.24
Korea (81)	29	53	61	0.47	0.87	1.34
Japan (81)	439	634	1,071	0.41	0.59	1.00

a/ Traffic unit = tkm + pkm.

Source: Appendix Tables B.2 and B.21

Figure 1.1 COMPARATIVE GROWTH OF NET MATERIAL PRODUCT, OUTPUT OF AGRICULTURE AND INDUSTRY AND TRANSPORT IN TONS AND TONKM (INDEX 1952 = 100)



SOURCES: 1. STATISTICAL YEARBOOK OF CHINA, 1983.
2. CHINA: RECENT ECONOMIC TRENDS AND POLICY DEVELOPMENT ANNEX 2, TABLE 2.3.

The apparent contradiction between the high freight transport intensity of the Chinese economy and the low contribution of transport to GDP can be explained by the dominance of rail transport in China (see para. 2.16). Rail transport is much less labor intensive than road transport and therefore has a much lower value added per ton km than road transport [4]. In China road freight is seven times more labor intensive than rail while the value added is about three times that of rail. In the US road is about five times more labor intensive. The two following chapters analyze in more detail freight and passenger transport in China and other countries of our sample.

2. FREIGHT TRAFFIC

A. Freight Growth

2.01 Domestic freight transported in 1984 reached almost 1,100 billion ton–km(tkm) a 15–fold increase since 1952, or an average annual growth rate of almost 9%. This makes China the third largest country in the world in terms of freight transport (tkm) after the USSR and the US.

Table 2.1: FREIGHT TRAFFIC VOLUME **(billion ton–km)**

Year	Rail	Road /a	Domestic waterway /b	Pipelines	Givil aviation	Total	Ocean Shipping
1952	60.2	1.4	11.8	–	–	73.4	2.8
Modal split (%)	82.0	2	16	–	–	100	–
1977	456.8	25.1	102.1	38.7	0.1	622.8	174.1
1978	534.5	27.4	129.2	43.0	0.1	734.2	248.7
1979	559.8	74.5	139.0	47.6	0.1	821.0	317.4
1980	1571.7	76.4	152.3	49.1	0.1	849.6	353.2
1981	571.2	78.0	150.7	49.9	0.2	850.0	364.3
1982	612.0	94.9	170.8	50.1	0.2	928.0	376.9
1983	664.6	108.4	181.1	52.4	0.2	1,006.1	397.7
1984	724.7	118 /c	198 /c	57.2	0.3	1,098.2 /c	435 /c
Modal split (%)	66	11	18	5	–	100	–

/a *From 1979 includes all road transport not only that done by road transport departments* [5].

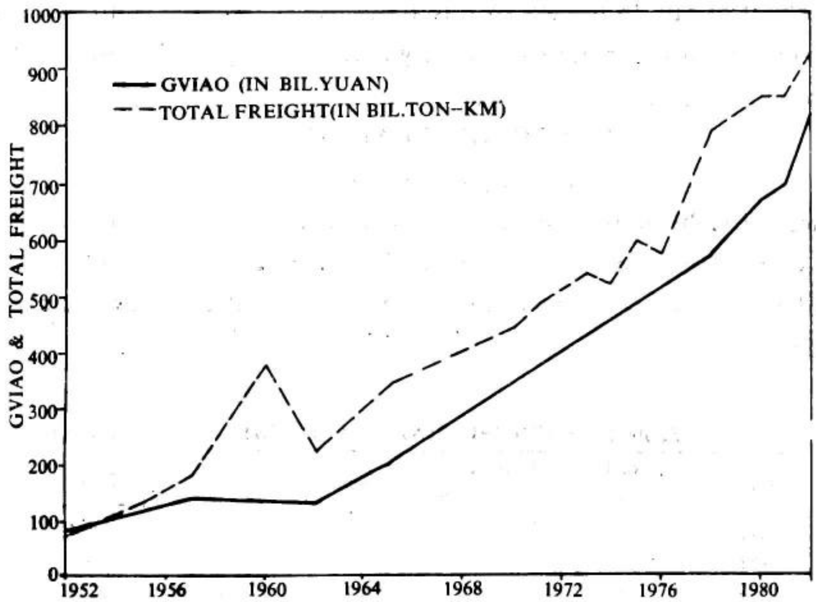
/b *Excludes ocean going transport which is often included in Chinese statistics. In 1979, coastal shipping accounted for 85 billion tkm and inland waterways for 54 billion tkm. The figures for 1982 were respectively 106 and 65 billion tkm.*

/c *Estimates.*

Note: These data exclude transport by traditional means which is certainly sizeable in terms of tonnage but mostly on short distance.

2.02 For the period 1952 to 1982 in China, the growth of freight transport has been somewhat higher than the growth in the gross value of industrial and agricultural output (GVIAO) (see Figure 2.1 Freight transport rose sharply between 1952 and 1960, slowed down from 1960 to 1975, and accelerated again after 1976. For the purpose of international comparison freight growth has been related to GNP in constant terms, a more commonly available measure than GVIAO. A regression analysis has been carried out with GNP in constant 1979–81 US $ as the independent variable and freight tkm as the dependent variable (Appendix Table B.1).

Figure 2.1 GVIAO AND TOTAL FREIGHT GROWTH TREND 1952–1982



2.03 Expected freight elasticity is generally higher in the earlier stages of development; from 1960 to 1981, both Brazil and Korea had elasticities over 1, while the US and Japan were below 1 (Figure 2.2) [6]. Table below shows freight elasticities relative to GNP in various countries. The very high elasticity for the USSR reflects the emphasis placed on development of resources in the country's far eastern region which greatly increased average transport distances, at a time of slower overall economic growth.

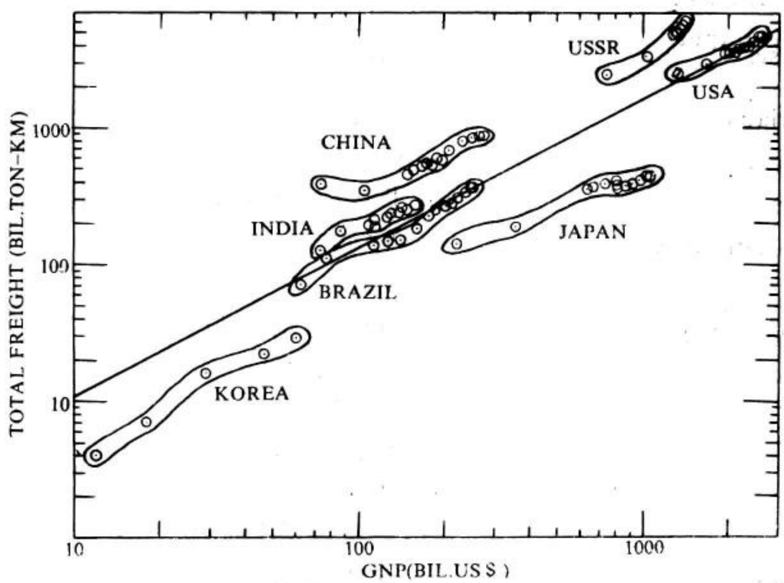
Table 2.2: TOTAL FREIGHT (Bil. tkm)AND GNP (US $ Bil.): A CROSS–COUNTRY COMPARISON

	Years	Elasticity
China	1965–1981	1.034
US	1960–1981	0.941
USSR	1965–1980	1.427
India	1960–1981	0.921
Brazil	1960–1981	1.109
Japan	1960–1980	0.756
Korea	1961–1981	1.218

Note: *The multicountry regression of feight transport (tkm) and GNP ($) gives the following equation: log of Freingt Transport = −0.45+1.085 log of GNP (r square = 0.795) (see figure 2.2). Further details are given in Appendix Table B.1 together with analyses of sub–periods within the 20 year spans.*

2.04 It is difficult to predict freight elasticities for China. The attempt to deemphasize heavy industry combined with the campaign for industrial energy savings point toward lower freight elasticity. On the other hand, rationalization of industry, which may mean larger plants in some sectors and less regional self–sufficiency, could lead to higher freight elasticities.

Figure 2.2 TOTAL FREIGHT AND GNP FOR SELECTED COUNTRIES, 1960–1981



Phrases and Expressions:

transport indicators	运输(生产量)指标
freight transport	货物运输
passenger transport	旅客运输
GNP(Gross National Product)	国民生产总值
international comparison	国际比较
transport modal split	运输方式的分工
the mauigability of lakes and rivers	湖泊和河流的适航性
the composition of national economy	国民经济构成
NMP(Net Material Product)	净物质产品
GDP(Gross Domestic Product)	国内总产值
distorted price	扭曲价格
freight tonnage	货物吨位,货运量
freight ton km	货物吨公里,货物周转量
the network of railway	铁路运输网

rolling stock	(铁路或汽车公司的)全部车辆
freight intensity	货物运输强度
passenger intensity	旅客运输强度
labour intensive	劳动密集的
in terms of freight transport	在货物运输方面
in line with ···	与···一致
traditional transport means	传统的运输方式
GVIAO (Gross Value of Industrial and Agricultural Output)	工农业生产总值
regression analysis	回归分析
independent variable	自变量
dependent variable	因变量
freight elasticity	货运量(对国民产值的)弹性
average transport distance	平均运距
log(logarithm)	对数
regional self-sufficiency	地区的自给自足
passenger traffic	旅客周转量
freight traffic	货物周转量
road freight	公路货运量
constant terms	不变价格
at a time	一度,在某个时刻
point toward ···	表明,说明

Text Notes (注释):

〔1〕explore prospects for future development of transport in China. 句中 explore 是探究，探索，考察的意思。prospects 是复数，专用来表示前景、前程、前途的意思，例如，光辉的前途应译为 brilliant prospects, 而不能用单数 prospect. 上面可译为: “探讨中国交通运输未来的发展前景.”

〔2〕distorted prices 译为扭曲价格. 这是一个经济学的概念. 通常指由于市场的不完全性，如垄断，政府的某些干预造成的某些商品和劳务的价格不能反映其真实的价值或资源的消耗. 本文主要指国家计划价格与价值相背离的情况. 与它对应的另一个概念是影子价格，即 shadow price, 则是不为人为干扰，在完全竞争条件下市场上只被供求法则所支配的价格，它能反映商品或劳务的真实价值.

〔3〕······while freight tonnage increased over seven times and freight ton km over 11 times. 句中 freight tonnage 译成货运量，而 freight ton km 则译为货物周转量. 在英语中没有专门的一个英语单词表示周转量；货物周转量的表示方法除 freight ton km 之外，有时也有 freight traffic 或者 freight traffic mileage. 旅客周转量则只要把 frieght 换成 passenger 就行了，它们是 passenger km，passenger traffic 或 passenger traffic mileage。另外，在句子后半部分的 freight ton km 和 over 11 times 之间省略了动词 increased，这是因为它的结构与上半部分相同，为了避免重复。

原句译为："同期货运量增加超过 7 倍，货物周转量增加超过 11 倍"。

〔4〕:Rail transport is much less labour intensive than road transport and trerefore has a much lower value added per ton km than road transport. 这里所谓的货物运输的劳动密集 (labour intensive) 是由各不同运输方式生产千吨公里货物周转量平均所需要的劳动来衡量的。这方面公路比铁路高 7 倍左右。句中的 value added 译为加值，指完成一个吨公里的周转量所需要的物化劳动和活劳动消耗的总和，通常它必须加进所运商品的最终销售价格里。

原句译为："铁路运输比公路运输劳动密集程序要少得多，所以生产每吨公里的加值比公路运输要低得多。"

〔5〕: From 1979 includes all road transport not only that done by road transport departments. 这个句子的主语是表 2.1 中的运输方式 Road 所完成的货物周转量，在这里被省略了。road transport department 是公路运输部门，指中国由政府公路交通部门主管的公路运输企业。句中讲到总公路运输量中还有其它部门车辆完成的数字，一般把其它部门汽车称为"企事业单位社会车辆"。句中的代词 that 代表由公路运输部门完成的货物周转量。

全句译为："从 1979 年起，不仅包括公路运输部门完成的运量，也计入其它部门社会车辆的公路运量。"

〔6〕: Expected freight elasticity is generally higher in the earlier stages of development; from 1960 to 1981, both Brazil and Korea had elasticities over 1, while the US and Japan were below 1.

这个句子可以译为："在国民经济早期发展阶段，货运弹性一般较充足；从 1960 年到 1981 年，巴西和南朝鲜的货运弹性都超过 1，而同期美国和日本则小于 1。"这里的货运弹性(freight elasticity) 指计算期内货物周转量的变化率与同期国民生产总值的变化率之比，计算式为：

$\frac{\Delta Q}{Q} / \frac{\Delta GNP}{GNP}$,还可以简化成$\frac{\Delta Q}{\Delta GNP} / \frac{GNP}{Q}$。

其中 ΔQ 和 ΔGNP 分别为该期间货物周转量与国民生产总值的增量，而 Q 和 GNP 分别为相应的货物周转量和国民生产总值。如果计算结果绝对值大于 1，则弹性充足，若小于 1，则弹性不充足。

Lesson Two

B. Freight Intensity

2.05 At first sight China's economy appears highly intensive in freight transport. Expressed in ton–km of freight per dollar of GNP, China's economy is almost twice as intensive as the US, India and Brazil and eight times as intensive as Japan and Korea, both smaller size countries. High transport intensity appears in most socialist economies; the intensity in the USSR is about 40% higher than that of China. There are a number of factors affecting transport intensity: country size, location of resources and population, composition of GNP, the level of processing of raw materials such as ores, lumber, agricultural products, and the degree of vertical integration of industry. The effect of each factor is discussed below on the basis of the international comparison. An analysis of provincial transport intensity in China is also added at the end of this section.

Table 2.3: FREIGHT INTENSITY, 1980

Country	TKM / $ GNP
China	3.17
USSR	4.32
US	1.87
India	1.67
Brazil	1.40
Korea	0.47
Japan	0.41

Note: *See Appendix Table B.2 for details, time series and sources.*

2.06 Country Size and Resource Location. Country size is an obvious factor affecting transport intensity measured in ton–km. This can be illustrated by comparing freight transport in Japan versus that in the US for 1980 [1].

Table 2.4 TOTAL FREIGHT, 1980

	Country area (million km²)	Tons (millions)	Ton–km (billions)	Average distance (km)
Japan	0.38	5,985	439	73
US	9.36	5,501	4,827	877
China	9.60	5,457	850	156

While Japan moves a higher tonnage than the US, the average distance is less than one–tenth, reflecting not only Japan's relatively small size but also the concentration of its population along a limited portion of the eastern seaboard. Size and resource location are certainly factors in the high intensity of Soviet transport. While average distance for total Soviet freight transport is not available, the average distance for rail freight has increased from 800 km in 1965 to some 925 km in 1980; reflecting the need to exploit more distant resources in Siberia and further east particularly for coal, ores and timber.

2.07 The implications for China are again somewhat balanced [2]. While the country is as large as the US, the population is far more concentrated. Over 70% of the population lives east of a Beijing–Guangzhou line, while in the US both the east and west coasts are highly developed. For China, this would imply generally moderate transport distances within its densely populated areas, with a smaller proportion of freight moving to and from the distant western parts of the country. Regarding resources, the most common, such as coal, are spread throughout the country. However, the conditions for coal exploitation in the Shanxi–Nei Monggol area are more favorable than in the Northeast and Southwest. Concentrating on these resources will increase transport intensity more than would the development of local production closer to demand areas or the development of industry close to primary resources. The trade–offs are between higher mining costs and lower transport costs of regional mines [3]. The same applies to feed grains and meat production. The former are produced more efficiently in the Northeast; the latter is produced more intensively in the South. The trade–offs are between shipping grain from north to south versus shifting some of the meat production to the north.

2.08 composition of GNP. This is probably the major factor affecting transport intensity. Heavy industry is more transport intensive than light industry which in turn is more intensive than services [4]. Therefore it should be expected that, all other things being equal as an economy diversifies, transport intensity decreases. Such a decrease is very noticeable in Japan where freight intensity decreased fron 0.62 tkm / $ GNP in 1960 to 0.41 in 1980 while the service sector increased from 42% to 53% of GNP. The case is somewhat less clear in the US where a long——term decrease from 1.91 in 1960 to 1.69 in 1977 was somewhat reversed in 1981 (1.81). This can be explained by the very small changes which occurred in the sectoral composition of the US economy between 1960 and 1980. The table below gives the broad sectoral distribution of GDP in the countries of our sample.

Table 2.5: PERCENTAGE DISTRIBUTION OF GDP

	Agriculture		Industry		Services	
	1960	1981	1960	1981	1960	1981
China	47	35	33	46	20	20
India	50	37	20	26	30	37
Korea	37	17	20	39	43	44
Brazil	16	13	35	34	49	53
Japan	13	4	45	43	42	53
US	4	3	38	34	58	63

Source: *World development Report 1983, Table 3 p. 152–153.*

China has the smallest service sector and the largest industrial sector among the countries included in Table 2.5. This is certainly a major factor in explaining the high freight intensity. Assuming that the service sector does not generate any freight transport, the freight intensity related to total GNP of a country where the service sector is 20% (China) would be double that of a country where the service sector is 60% (US) with the same intensity of freight for the other sectors (agriculrture and industry) [5]. The freight intensity of China thus smaller than that of US when the service sector is excluded, but still higher than that of

India. The following table shows freight intensity related to the nonservice sectors of the economy.

Table 2.6: FREIGHT INTENSITY, 1980–81

	Tkm / $ GNP	Non–service sectors / GDP (2)	Freight intensity excluding service sector (1 : 2)
China	3.17	0.80	3.96
US	1.87	0.37	5.05
India	1.67	0.63	2.65
Brazil	1.40	0.47	2.98
Korea	0.47	0.56	0.84
Japan	0.41	0.47	0.87

Source: *Tables 2.3 and 2.5.*

2.09 Processing of Raw Materials. Any weight–reducing processing done at the source of raw materials will reduce transport intensity. Coal, which is being transported in huge quantities in China, is a prime candidate for pretransport treatment. The following international comparison speaks for itself.

Table 2.7: COAL PREPARATION IN PERCENTAGE OF RAW COAL

China	Japan	France	Britain	Germany	USSR
18.0	94.7	92.5	88.3	87.4	63.4

Source: *Ways to Improve Economic Benefit of the Coal Industry Enterprises by Li Shaoxun and Ji Zhongsh i in Research on the Economics and Management of Technology No. 4, December 31, 1982, P. 52–56.*

In the case of the USSR, it is said that further coal preparation would save 20–25 million tons of transport per year; (out of a total moved by rail of over 700 million tons) and that excessive humidity and rock content mobilize 200,000 extra rail cars per year. In China a reduction in the volume of coal transported by rail of 5 to 10% would save transporting 20–40 million tons.

2.10 Other examples from the USSR indicate that, every year, 11 million tons of fertilizer are transported which contain only half the normal nutrient level. Also, because scrap steel is not well pressed and packed, it is estimated that 250,000 extra rail cars are needed to move the total volume of 58 million tons. Regarding timber transport, it is estimated that raw logs require 35–40% more rolling stock than would sawn timber. By contrast, the table below indicates that in the US large tonnages of primary forest and wood raw materials move only a very short distance (93 km) while smaller quantities of sawmill products and plywood move distances which, for rail transport, are comparable to those in China and the USSR for timber (which includes both logs and sawn timber). This indicates that in the US processing generally occurs near the production sites. From the US figures above, it can also be seen that the share of rail increases as the average transport distance for the product becomes longer (Modal split is discussed in more detail below).

Table 2.8: TRANSPORT OF TIMBER AND PRODUCTS

	Tons million	% rail	tkm million	Average distance km
US(1977)				
Primary forest and wood raw materials	296		27,638	93
of which by rail	45	15.2	5,235	116
Sawmill products	61		36,346	596
of which by rail	16	26.2	22,302	1,394
Millwork plywood and prefab	26		18,885	726
of which by rail	8.8	33.8	13,933	1,583
China (1981)				
timber by rail	40	–	50,000	1,250
USSR (1979)				
timber by rail	145	–	242,600	1,673

Source: *1977 Census of Transportation, Commodity Transportation Survey Summary, US Department of Commerce, Bureau of the Census, June 1981.*

2.11 The 1982 Almanac of China's economy mentions iron ore and phosphate rock where dressing could save transport. However, since detailed information on raw material processing for products other than coal is lacking, it is not possible to estimate how much total transport demand could be reduced in China by processing and preparing before transport. It is probably safe to say, however, that savings could be substantial.

2.12 Vertical Integration of Industry. It is not clear to what extent this factor affects transport intensity in China, as industries tend to be more integrated than in other countries, that is ,they manufacture all components in–house. If that is true, further rationalization of production may imply more transport per unit of output. For instance, if a refrigerator factory decides to buy its compressors rather than make them, transport will increase. However this may be more economical if the refrigerator factory would otherwise make compressors in uneconomic quantities [6] . In the USSR, it appears that fragmentation in certain industries is leading to excess transport of parts and unfinished heavy steel products. Also the vertical integration within Ministries results in purchases of components without regard for transport distances, i.e.ignoring a source for the product which may be nearer but under a different Ministry.

2.13 Freight Intensity by Province. Freight intensity measured in tkm / yuan GVIAO is above the national average in the North, Northeast and three southern provinces of Hunan, Guizhou and Guangxi (Appendix Table B.3 and Map A18284). While the data on tkm by province include all modes, the road and water transport totals allocated to the provinces amount to only one–third their national totals reported in global figures. For roads, provincial figures cover only the transport bureaus under MOC; for waterways, ti is not clear what is covered, but the provincial distribution probably excludes coastal shipping. If all water and road transport were recorded by province, the transport intensity of provinces in the Yangtze river basin would certainly increase and Jiangxi and Hubei could exceed the national average also.

Table 2.9: FREIGHT TRANSPORT INTENSITY, RAIL NETWORK AND HEAVY / LIGHT INDUSTRY SHARE BY PROVINCE

	Transport intensity tkm / Y GVIAO	Rail per area km / sq km	Density per population km / 000 pop .	Heavy / light industry ratio
North and Northwest				
Hebei	2.14	16.8	0.6	52 / 48
Inner Mongolia	2.39	4.0	2.3	55 / 45
Shanxi	1.32	13.8	0.8	68 / 32
Shaanxi	1.00	9.8	0.6	46 / 54
Gansu	1.66	5.8	1.2	77 / 37
Ningxia	1.99	6.7	1.1	67 / 37
Northeast				
Liaoning	1.26	25.2	1.1	64 / 36
Jilin	1.28	19.3	1.6	57 / 43
Heilongjiang	1.28	10.8	1.5	66 / 34
Central				
Henan	1.50	22.5	0.5	45 / 55
Anhui	1.01	10.0	0.3	45 / 55
Southwest				
Guizhou	1.17	8.1	0.5	57 / 43
Guangxi	1.07	8.9	0.6	37 / 63
Hunan	0.97	12.2	0.5	53 / 40
NATIONAL AVERAGE	0.85	5.6	0.5	49 / 51
Central and South	0.56	11.7	0.2	44 / 55
Shandong	0.44	7.1	0.1	39 / 61
Jiangsu	0.55	8.3	0.2	35 / 65
Zhejiang	0.61	8.6	0.4	37 / 63
Fujian	0.83	8.6	0.4	49 / 51
Hubei	0.74	8.9	0.3	48 / 52
Guangdong	0.36	5.2	0.2	35 / 65
Sichuan	0.48	5.2	0.3	49 / 51

Note: *Further details are given in Appendix Tables B.3 and B.30.*

Source: *Statistical Year book of China 1981.*

2.14 Most provinces with a transport intensity above the national average also have above average rail network density, both in terms of population and area (Map IBRD A18284). The same provinces also tend to have a higher proportion of heavy industry than provinces with lower transport intensity [7] . The table below shows the provinces with above and below average transport intensity along with their rail density and the share of heavy and light industry. Only in Shaanxi, Henan, Anhui and Guangxi is the share of heavy industry lower than average while transport intensity is higher. This can easily be explained