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CAN THE EXPORT-LED GROWTH MODEL BE
APPLIED TO LARGE DEVELOPING COUNTRIES?

CHINA'S CASE

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Abstract

The Export-led Growth Model (EGM) has been so successful in New industrialized Countries and areas (NICs) that some economists suggest all Less-Developed Countries (LDCs) emulate it. But other economists disagree with them and against to apply the EGM to large developing countries. Can the export-led growth model be applied to most developing countries, especially large developing countries ? According to my study about China, the answer is " Yes ", since China is the largest developing country and has been successful in getting rapid economic development by economic reform and export promotion. During period 1981-90, China's annual growth rate of export was 13.3%, resulting in an 11.4% annual growth rate of GDP; Since 1987, China has been carrying out the strategy of export promotion and gotten some successes. In 1988, China's share of export and import in GNP reached 28.9%, trade ratio reached 15.8%, much higher than the United States' and near to Japan's; In 1989, China's share of export in total world export reached 1.8%, ranked China the fourteenth largest trade country. At the same time, China's GNP value ranked the seventh in the world. China's case shows that it is possible for large developing countries to achieve accelerating economic growth by following the Export-led Growth Model.

Some Arguments On The Export-led Growth Model

In developing economies, trade strategy has been evolved over three periods. First period, 1940's -1970's: The inward oriented strategy of Import Substitution. Second period, 1960's to 1970's: The outward oriented strategy of Export Substitution. Third period, from 1980's to the present: the strongly

outward oriented trade strategy or The Export-led Growth Strategy. In recent years, by comparing development experiences of LDCs, some studies show that the Export-led Growth Strategy is more efficient and successful than other models or strategies. In 1987, economists in the World Bank divided trade strategies into four types: (1) Strongly Inward Oriented Strategy. (2) Moderately Inward Oriented Strategy. (3) Strongly Outward Oriented Strategy. (4) Moderately Outward Oriented Strategy.¹ They found, according to their studies about 41 nations' experiences since the 1960's, that the nations which practiced outward oriented policy had better performance in economic development than those which had inward oriented policy; The nations which had good performance not only did much better with most indicators of development than any other nations but also weathered better the shocks to the world economy.² The best example are NICs-- Hong Kong, Singapore, South Korea and Taiwan etc.. In recent years, Thailand, Malaysia and Indonesia are becoming New Industrializing Countries. So development economists are becoming more and more interested in NICs' experience and called this kind of export promotion strategy " The Export-led Growth Model " (EGM), and suggest all LDCs emulate the model.

But some development economists disagree the above. They believe that the success of NICs had been based on cheap labor force and the vast markets of America and Europe. However, NICs have been losing their advantages of low wage and their export growth has been slowing down because the labor price in NICs has been going up very rapidly by the influence of international price since the second half of 1980's; On the other hand, trade protectionism is recovering in

¹ See World Bank: World Development Report 1987, pp 82-85.

² See T.N.Srinivasan, International Trade and Factor Movement in Development Theory, Policy, and Experience. In G.Ranis and P.Schultz edited: The State of Development Economics, 1987.

western countries for America's huge trade deficits, continuous recession and the formation of United European Market and North America Free Trade Zone. In this case, it will become more and more difficult for LDCs, even for NICs, to export their product to American and European markets. Another argument is whether large developing countries can follow the export-led growth model. Some economists stress the differences between large nations and small nations. They argue that only some small countries and areas met with success by the EGM, but still no case shows that large country can win success by following the model. They stress especially that the EGM can not be applied to very large countries or the "Giants", such as China and India. Why? We can explain these questions with the features of "Giants".

The "Giant" means very large country which has very large size, and the size is so large that it can influence every aspect of its economy. The size refers to population, GNP values and the share of trade in GNP according to professor D.Perkins and M. Syrquin's definition.¹ I use the word "Giant" here with three particular meanings: population size, geographical area, total GNP values. In numbers, I take the giant as a nation which has population above 100 millions, geographical areas above 2 million square kilometers, GNP value above 300 billion US dollars. The nation which has any one of these features can be treated as a "Giant". Under this definition, there are about fifteen giants in the world. Among these giants, China and India are the two largest giants in the third world, and are the greatest giants in terms of population. The population in China and India are more than 2,000 millions, counted for two-fifth

¹ See D.H.Perkins and M.Syrquin, Large Countries: The Influence of Size. In H.Chenery and T.N.Srinivasan edited, Handbook of Development Economics, Volume 2, 1989.

of total world population.²

The size has many influences on economic development. But what is its influence on international trade ? First, the great population in the giants determined that the most important thing is to feed their people. This means agriculture is basic sector and government's prior strategic choice is to develop agriculture and satisfy huge demand for food instead of developing foreign trade. Second, large nation can achieve efficient scales of production without need of expanding foreign trade because there is a huge domestic market and great demand for home products. The large the country, the less necessary it is to traverse nation border in order to get economic efficiency. Third, large country can not satisfy their people with abundant commodities for the huge demand and serious shortage of necessary commodities. At the same time, in planning economies, there is no enough incentives to encourage to compete in the world market because they can sell all of product to huge domestic market without any risk. Their profit is so high that they hesitate to take international risk. Fourth, general speaking, large country has various natural resources. The rich resources made the nation's economy diversified so that they can produce most commodities their people needed and rely themselves highly on self-sufficient economy. At this circumstance, large country has no serious shortage problems of resource , they can produce necessary commodity for their people with their own resource without need of exchanging items or resources with other country. The result is, some economists pointed out, very low trade ratio in large

² Sources: World Bank: World Development Report, 1990,1991.
IMF: International Financial Statistics, 1990.

countries.¹

By summing the above arguments, the main questions are: (1) Can export-led growth continue in the 1990's ? (2) Can other Non-NICs have chance to emulate the EGM ? (3) Can large country achieve accelerating economic growth by export promotion strategy ? (4) Can the export-led growth model be applied to very large country or Giant ? (5) Can developing country achieve success in export promotion without American market ? These are main questions I will discuss in this paper.

At first, I would like to give a brief answers: (1) Export-led growth can be continue in 1990's. But there are some necessary conditions, for example: some NICs are promoting export productivity by reducing labor cost and transferring some labor intensive, low technological and high energy consuming industries to poor countries while developing their high technological product. By this means, NICs can adjust their export structure and produce new product in order to create new world market. (2) It is possible for other non-NICs to apply the EGM. Non-NICs can develop its export by using cheaper labor force and occupying the world market left by NICs. China, Malaysia, Thailand and Chile are some of the successful cases. In order to get rapid export growth, the most important step, in my opinion, is to expanding foreign trade between LDCs and organizing regional trade group or organizing regional free trade zones. By this way, LDCs can reduce their dependence on American and European market, and diversify their export destinations. In other words, there are two options for LDCs to develop export: one is to adjust export structure and strategy: produce new, high level, high value-added, high technological manufactured product, and, create new

¹ See R.E. Feinberg etc. edited: Economic Reform in The Three Giants, 1990, pp 8.

international market by competition with other advanced countries with cheaper cost and price of high tech-product; An other option for most LDCs is, to produce and export products, especially manufactured products with much cheaper price and higher quality.

Question (3), (4) and (5) are the main topics in my paper, I will discuss them with the case of China.

Chinese Model: The Application of the Export-led Growth Model in Large Developing Countries

China is the largest developing country with the most population, the third largest geographical area, the seventh ranking of GNP value and the fourteenth largest trade nation in the world. Before 1978, China's average annual GNP growth rate was about 5.5% and export value only had less than 100 million US dollars, ranked the twenty-eighth in total world export. But since 1978, China has been carrying out the open door and reform policy, and getting very rapid economic growth. The sources of China's rapid economic growth are varied, but export expanding plays a very important role. I think, according to my study, China has been becoming outward oriented economy since 1987; China's rapid economic growth is mainly led by export.

1. China has become one of the leading trade countries in the world

China's foreign trade has been growing very rapid since 1981. We can see from Table 1, 2, 3, in 1980, China's total value of trade was just 40 billions

of US dollars, trade ratio was 8.2%, trade share as percentage of GNP was about 14%; Its export value was 18 billions dollars, weighted about 1% share in total world export, ranked the twenty-eighth in the whole export countries. But this picture changed rapidly. By 1989, China's total value of foreign trade reached 110 billion dollars, trade ratio reached nearly 14%,¹ the share of export and import as percentage of GNP reached about 29%; At same time, China's export value was 52.5 billion dollars, doubled than that of 1981's. China's export share reached 1.8% and ranked the fourteenth in the world export.

There would be nobody doubt that China is a large trade country if we count on these data. Table 4 shows that, by comparing China with other large trade countries, China's trade ratio is 15.8%, much higher than the United States' 11.7%, near to Japan's 17.7%. The answer is very clear: China has already become a large trade country, if we admit Japan and the United States are large trade countries.

2. China's economy has become an moderately outward oriented economy

In the classification of the trade strategies, one of the most interesting type is Moderately Outward Oriented economy. We can easily find some of characters of the type in China's economy: (1) Higher trade ratio and higher trade share in GNP. By comparing, China's trade ratio and trade share in GNP are about the same as, or higher than these which had been treated as outward oriented economies, such as Brazil, Kenya, Chile, Malaysia, Thailand, Turkey. (2)

¹ The term of Trade Ratio is defined, in economic statistics, as the ratio of average value of export and import divided by GDP value. But someone uses trade ratio as an ratio of export value over GDP value or, total trade value over GDP or GNP by their own methods. I use the first definition but some times use other definition in order to compare trade ratios with that of other countries' in the same terms.

The terms of trade has been improved. China has been proving its terms of trade since 1981. In 1989, export terms of trade was 104 (1987=100), import terms of trade was 97. It's much better than other LDCs'. (3) Effective protection rate is toward neutral. China has been successful in keeping balance on effective protection rates of import and export since 1987. In 1988, China reformed its trade system and practiced the " Export Contract Responsibility System ", loosened central government's control over export and import. Under this policy, firms and individuals have more rights to decide what is the price of their product and how many product they should produce. From the beginning 1991, China released subsidies on export and practiced new trade policy which wants trading companies to response their own costs and benefits. At this circumstance, China's effective protection rate to export will be reduced and the total effective protection rate will be, in my opinion, neutral. That just is a obvious feature of strongly outward oriented economy. (4) Trade liberalization is an important policy toward outward oriented economy. China's international trade became more and more liberalized in recent years since the reform of trading system. Started from 1987, China practiced export promotion strategy and sharply reduced central government's control over foreign trade. The most important steps of the reform are: reduction of the decision right on import and export, reduction of the subsidies on export, giving firms more right of pricing in order to compete with international market price, allowing export firms to leave certain percentage of foreign exchanges, demanding firms to response their costs and benefits by themselves, releasing some import quotas or reducing some custom duties, etc. These are some of those important policies NICs had experienced during their trade liberalization and are important features of outward oriented economy. These stories answered the question of incentives in

export sector under planning economic system-- if government had a good policy and gave firms more decision rights, firms and individuals could do very well on export, as Taiwan did during 1960's-1980's. (5) Extent depreciation of foreign exchange. China has devalued its foreign exchange for many times since 1981. For example (See Table 12), the ratio of US dollar to Chinese renminbi yuan, is 1 dollar to 1.53 yuan in 1980, 1 dollar to 5.29 yuan in May of 1991. The depreciation rate is 136.5% in total and 13.7% on average annual rate. (6) Higher share of foreign trade in GNP. China's share of foreign trade value as percentage of GNP value, reached 29% in 1989. That means, foreign trade value counted for nearly a-third of GNP. Economic indicators in Table 9 show that, export growth rate and GNP growth rate are highly correlated during 1981-1990. The average coefficient of the correlation between export growth and GDP growth (the ratio of the logarithms of import growth rate or export growth rate divided by the logarithm of GNP growth rate) is 1.22. This is a very high coefficient. It means export growth made a great contribution to GNP growth. For example, in 1988, export growth rate was 20.1%, resulted in an 11.2% GNP growth rate; In 1989, export growth rate went down to 8.6%, while GDP growth rate reduced to 3.9%. If we concern about other sources of economic growth, then the contribution of export to GDP growth is about one-fourth, in another words, about every 4 points percentage of export growth rate can generate 1 point percentage GDP growth rate.¹

The economic performance in period 1981-1990 proved, that China has been provided with some obvious features of outward oriented economy, even with some

¹ See A.Maizel, Export and Economic Growth of Developing Countries. Cambridge University Press, 1968; D. Healey, Foreign Capital and Export in Economic Development: The Experiences of Eight Asian Countries. Economic Record, September, 1973.

characteristics of strongly outward oriented economy. I can conclude now, based on the above analysis, that China has become a outward oriented economy. But there are still some differences between China and other strongly outward oriented economies, such as South Korea and Singapore (see Table 4): Singapore's trade ratio was 195%, Taiwan's trade ratio was 51.8%, South Korea's trade ratio was 36.6% in 1988, much higher than China's. So China is not a strongly outward oriented economy but a Moderately Outward Oriented Economy.

Another important conclusion I would like to make is, China not only is a moderately outward oriented economy, but also a export-led economy. According to trade statistics, China's trade ratio reached 15.8% in 1988, about 17% in 1990 (estimated). This ratio is very near to Japan's 17.7% (See Table 4); China's export share as percentage of total world export was 1.8% and ranked fourteenth in 1989.¹ Even in 1988, China's export share reached 1.32%, ranked sixteenth in all trade countries, just followed Singapore (1.41%, number fifteenth) and South Korea (1.99, number eleventh); China's annual growth rate of export from 1981 to 1990 is 15%, much higher than that of Japan, Singapore, South Korea. These are three main indicators for identifying whether a country is or is not a export-led economy. So, I believe that China is a export-led economy, if we think Japan, Singapore, Taiwan, South Korea are export-led economies.

3. China successfully practiced export-led economic growth

China's economic growth rate, mainly GNP or average annual growth rate, was 5.5% from 1965-1979. At the same time, export growth rate was about 6%. These

¹ IMF: Direction of Trade Statistics, April, 1991.
People's Daily, Jan.7, Feb. 23, 1991.

indicators doubled in recent years. From 1981-1990, China's annual growth rate of GNP reached 11.4%, annual growth rate of export reached 15%. Table 9 shows that the coefficient of export growth rate and GNP growth rate is much higher than the coefficient of import growth rate and GNP growth rate ($1.22 > 0.5$). This means export growth rate has higher correlation with GNP growth rate than that of import growth rate with GNP growth rate. We can see clearly this kind of correlation: GNP growth rate would be higher if export growth rate was higher; GNP growth rate would be lower if export growth rate was lower. Even in 1990, China suffered economic breakdown, GNP growth rate is 5.1%, much lower than 1988's 11.2%, but export growth rate is still very high-- 18.1%. It would be worse if export did not have an 18.1% growth rate.

Export-led growth is much obvious in some Special Economic Zones and Coastal Cities along south-east sea of China. We can see from Table 10, 11, both growth rates of export and Gross Industrial Product (GIP) are much higher than average level of national. In 1990, the export growth rate is 23.4%, by comparing to an 18.1% of national level; The import growth rate is 11.1%, contrary to an 9.8% growth rate of national. Also in these areas, GIP growth rate is much higher than average growth rate of total GNP.

Accelerating export changed China's economic structure. China's structures of industry, agriculture, service and other sectors have been changing rapidly since 1980. In 1982, China's share of agriculture product value as percentage of total National Income was about 40%; But in 1989, agriculture share reduced to 32%, the share of industry and others (construction and service) as percentage of NI reached 68%.¹ Another change is sector structure. In rural area, peasants produce more and more agriculture goods to export under the Family

¹ Statistical Yearbook of China, Beijing, 1990, pp 37.

Production Responsibility System; Rural or village industries produced about a third export products; In urban area, firms are innovating management and production methods with advanced foreign technology or new equipments; In export sector, firms transformed their primary manufacturing to high technology, high quality, high value-added manufacturing. The things happened in China in recent years is just as what Professor L.R.Klein said in his recently published paper:

" It is clear that large-scale manufacturing transport a country to an advanced stage of economic development, and only in extraordinary cases will it be possible for countries to make the best economic advancement through a concentration on primary commodity markets. Manufacturing production and some (sophisticated) services must be produced in quantities large enough for export in order for the country to become an economy that deliver a high standard of living for its citizens ".

Klein thinks, the necessary condition of transforming a country from low income agriculture economy to a high income industrial economy , is the shift from agriculture economy to industrial economy. Then, the adequate condition for an export-led growth economy is the shift from " mainstream large-scale manufacturing " to " large-scale high quality manufacturing ".¹

Here Klein divided manufacturing into two kinds: large-scale Quantity Manufacturing and large-scale High Quality Manufacturing. Following the idea, I think, a country can achieve rapid economic development and improve its living standard only when its export contents become mainly Manufactured Goods; A country can become a great trade country only its exports mainly become High

¹ Larence R. Klein, Can Export-led Growth Continue Indefinitely ? An Asian-Pacific Perspective. Journal of Asian Economics, Vol.1, 1990.

Quality Manufactured Goods. At this circumstance, we can identify the country the " Export-led Growth Model ".

China's economy can be identified as a Export-led Growth Model. We can see from Table 6 and Figure 3 that China's export structure is quit reasonable in 1989: the total export of primary product reduced to 28%, and the total export of manufactured goods reached 71%. At the same time, see Table 7, total import of primary product reduced to 20%, total import of manufactured goods (mainly machineries and transport equipments) reached 80%. Needless to say, China is followed the export-led growth model; China's economy is a typical export-led growth economy.

4. Export expanded China's domestic demand and market

Export growth plays a very important role in China's economic development. One important role is to encourage saving and capitol accumulation. As we know, export can create foreign exchange. We can increase our domestic saving and accelerate capitol formation if we use the foreign exchange to import capitol goods from abroad. The capability of expanding saving scale and capitol formation level is depended on the scale of export. Another function of export is to create the potential economic growth. Exports supply new materials and production equipments to firms, generate more production ability. So exports make it possible to achieve higher economic growth rate in the future.

Export also generated huge domestic demand for new product and better living standard. China is a great country in terms of population. Export did not decrease but increased new demands because export created foreign exchange and made Chinese possible to get more necessary products. At the same time, export changed the structure of Chinese' living, so that Chinese can reduced the

consumption of traditional commodities and increased the consumption of new products. This change released the shortage of some traditional necessary products. China's case shows that export-led growth can create new domestic demand and market rather than restrict them.

Rapid export also improved Chinese living standard. China's per capita GNP increased from 290 US dollars in 1980 to 350 US dollars in 1989. Concerning about depreciation of exchange rate, the difference of real purchasing power, price difference, subsidies, different consumption contents and other reasons, China has made some progress in living standard since its reform and opening. This achievement not only is the rapid GNP growth rate, but also is the great improvement in some social indicators. For example, China's Human Development Index (HDI) is 0.716, ranked it number 62th in the world by 1990. China's GNP growth rate ranked number 1 in 1988.¹

Some Theoretical Analysis About Chinese Model and International Trade Theory

China's case shows that the export-led growth model can apply to large or even giant developing countries. But this means not that all developing country or all giant can meet with success by following the EGM. China's experience also shows that this model must be accompanied by some necessary conditions or policy reform.

(1) China's Experience: Export-led Growth Without Surplus Product

In early literatures of development economics, H.Myint studied the

¹ See, United Nations Development Program: Human Development Report, 1990, pp 128; The Economist Book of World Vital Statistics, 1990, London.

possibility of expanding international trade between LDCs and Developed Countries (DCs). His model is called " the Vent for Surplus ".¹ Its main idea is, poor country which has the surplus of labor or product can develop international trade with others by its surplus primary products. The poor country can improve its economic growth and welfare by expanding export of surplus product. This theory had some progress by comparing to classical theory of comparative advantage and Hecksher-Ohlin's theory of resource endowment which stress the production specialization and labor division. But Myint's theory can not explain why LDCs can develop foreign trade under the condition of no surplus product or shortage of domestic product. According to his theory, a country cannot develop its export if it has no surplus of product or resources; In this case, it is impossible for a country which has no surplus resource but huge domestic demand, to export its necessary product.

But Chinese model shows that even a country has no surplus product or there has been certain level resource shortage, for example, shortage of oil, machineries, manufactured goods, minerals, the country still can expand its international trade-- export parts of its shortage resources for exchanging more necessary goods which are most needed in some sectors. For example, China has shortage problems of refined oil, high tech-machineries and manufactured goods, some kinds of minerals etc., but China exports great amount of crude oil, manufactured goods (including textile products and electronic products) and machineries to other countries for exchanging more products China most needed in order to achieve rapid economic growth. This kind exchange helped China to strengthen its manufacturing and export sector. The fact is, poor country can,

¹ H.Myint, An Analysis to Economic Backward. Oxford Economic Papers, June, 1954.

by the way of export promotion, accelerate its economic development and make progress in living standard rapidly.

(2) Chinese Trade Pattern: Export of High Technological Labor Intensive Product

Another related international trade theory which is connected with Myint model and should be re-thought is the patterns of trade. In the theory of factor endowment, Hecksher and Ohlin believe that, the base of two countries' trade is their factor endowments: the country which has rich resource should specialized in resource intensive production; The country which has rich capitol should produce capitol intensive product. According to the theory, LDCs should produce primary product or labor intensive product and exchange these goods with developed country's capitol intensive goods. But this theory had been criticized by W. Leontief. He found, according to his study of trade inflows, the United States and some developed countries did not follow the rule: the United States export most labor intensive product and import most capitol intensive product. In the later, many economists proved the Leontif paradox by empirical studies. In my study, I found that China imports most capitol intensive product and exports capitol intensive product such as manufactured goods, high technological labor intensive product. China did not follow the Hecksher-Ohlin rule either. However, the Leontif paradox can not explain China's case either, because China not only imports capitol intensive product but also exports capitol intensive product. We can see from Table 6, 7, that China is a country which has rich natural resource and surplus labor, but China's 71% of export are manufactured goods, only 28% are primary goods; China's 80% of import are manufactured goods and only 20% are primary goods. Among these manufactured goods, some are High

Value Added Manufactured Goods, Capital Intensive Goods or High Technological Labor Intensive Product such as machineries, electronic product (TV, telephone, radio, cassette player, etc.), textile product. Some of these products, especially joint-venture manufactured goods, are produced with cheap labor force and higher technology. This kind of High Technological and Labor Intensive Product is more competitive in international market. That is one of the secrets of China's success in export promotion. Chinese model shows that developing country or large developing country can expand its export with the mixture of cheap labor force and higher technology introduced from industrialized countries. The necessary condition is the production and export of Manufactured Goods of High Value Added, High Technology and Labor Intensive. We can call this kind of model, in the terms of international trade theory, Chinese Model or High Technological Labor Intensive Export Pattern. Based on the above analysis, I think that this model can apply to most developing countries and some large developing countries.

(3) Chinese Model: A Giant with Rapid Export Growth and Economic Development

The arguments about if large developing country can apply export-led growth model are focused on two questions: resources and agriculture. Some economists think that it is difficult to encourage large countries to develop international trade because they have enough natural resources so that they can produce most commodities their people needed and rely themselves on self-sufficient economy. In fact, this is not true. First, in modern society, a country cannot produce every kind of product their people needed without any international exchange, even it has rich resource. That because, every country has certain level

production division and some productions had been specialized for some historical or natural reasons. Needless to say small country, even if large country cannot produce all kinds of goods to the nation. Second, large country has rich resources, but this does not mean that this country can deploy its natural resources and use it by themselves. Large country has rich resources but often lacks of deploying technology and machineries. So it is still necessary for resource rich country to expand international trade with other country in order to exchange necessary goods domestic economy needed. Fourth, a nation's economic growth would be faster if it exchange goods with other country according to comparative advantage theory. China is a large country with rich natural resources (in the terms of total amount), it successfully exported some products, even some products which are needed in domestic market, to the world market, and exchanged back some products which are most needed in deploying resources or strengthen industry.

The biggest problem related to export in large country is agriculture. Large country has large population which means food supply is the most important target. Here raised two questions: (1) What is the priority of economic development in all sectors? (2) What is the relationship between export and agriculture? In many developing countries, governments took agriculture as priori development sector for the pressure of population. But unfortunately, those nations which paid great attention to agriculture and concentrated most resources on agriculture did not solve food problem fundamentally partly because agriculture could not developed only by developing agriculture sector. On the other hand, those countries which wanted to realize industrialization before agriculture modernization did not solve food problem either. Only those countries which keep general balance development on industry and agriculture did better in

industrialization and agriculture transformation. Large countries with great population should develop its agriculture first by agriculture reform and developing agriculture related industry. But this means not that industry is not important. Actually, in some cases, a nation's agriculture can be developed only when its industry is strong enough to support basic needs of agriculture. Then, the nation's industry can be developed only when its basic food problem has been solved. China is this kind of case. China reformed its agriculture after 1978 and supplied basic food to their people. In 1984, most population in China has enough food to eat. Since then, China began to reform its industry based on continuous good harvests so that its industry grown very fast. In return, accelerating industrialization promoted agriculture development. In the first half of 1980's, China gave some priorities to its industry sector, but still took agriculture as first priority. At the same time, China paid great attention to develop agriculture by developing related industries. One successful example is the development of rural industry in agriculture sector. Rural industry contributed a lot to agriculture production, innovation of agriculture technology, increasing of agriculture productivity, absorbing agriculture surplus labor force and promoting peasant's living standard. Meanwhile, rural industry contributed one-third total value of national industry. China's case shows that agriculture could be developed if the nation kept a balanced growth in agriculture and industry.

There are some contradictions between agriculture and export because resources are limited in most developing countries. Even in large country, resource shortage also is a serious problem. China cannot supply enough capital, technology, machineries and agriculture goods to its agriculture, but it still invested lot capitol to its export industries and exported great amount of resources and products which are needed in agriculture. In some years, this hurt

agriculture and caused a reduction of agriculture product. That is one reason of the slowdown in agriculture productivity in recent years. But in normal situation, export expansion cannot hurt agriculture but help agriculture. Since 1987, China has carried out export promotion strategy and achieved great success in export sector. Meanwhile, agriculture got great help from export. For example, export increased China's import capability so that China can import more advanced agriculture machineries, chemical product and technology for reforming its traditional agriculture. On the other hand, export stimulated the development of rural industries. In 1990, the export value of rural industries counted about one-fourth of total national export value. And the export of agriculture manufactured goods had been increased responding to the increase of total export in recent years. Based on this analysis, we can see that export has positive effect on agriculture in most cases. So large country can develop its export with the help of agriculture, or in return, large country can develop its agriculture with the help of export.

(4) The Advantage of Chinese Model: Bigger Capability of Adjusting to Outside Shocks

Since China is a large developing country or giant, China's case has some differences from other LDCs or NICs. One most important difference is China has bigger capability of adjusting outside shocks. China has rich resources, so it can be " self-sufficient " in some aspects in order to avoid some international shocks on price, economic growth. In 1982, many western countries suffered from a deep recession, but China achieved 14.5% GNP growth rate even though its export reduced a lot. In recent years, some NICs have been losing their advantage of cheap labor force, but China still holds its advantage of cheap labor force

because China is a large country, investors can find much cheap labor force in Central-China or North-China even though labor force has been becoming more and more expansive in some areas such as Special Economic Zones and Coastal Cities. This is an advantage of large country. At this circumstance, I think, the large developing country not only can follow the export-growth model, but also can has some advantages: the mixture of cheap labor force and high technology, the mixture of dependance to international market and independence to international market (some sort of self-sufficient), the mixture of huge, stable domestic market of investment and consumption and limited, small, unstable international market of investment and consumption. These advantages makes large country more flexible than small country in responding to international shocks.

(5) China's Trade Type: Diversified Trade Destinations

Another important feature of Chinese model is its diversification of trade partners in the world. From Table 8, Figure 4 and Figure 5, we can see that China's most export flowed into LDCs, counted for 58.7%; China has more than 100 trade directions in the world, even though Hong Kong, Japan and United States are the three largest trade partners. In this case, Chinese model is different from NICs which relied their export heavily on American market. NICs are dependant to the United States: there would be an earthquake in NICs if there was a volcano the United States--their economy would be worse if The United States had a recession; their export would cut a lot if the United States had a big trade deficit. But China's export is not relying on American market even though the United States is the third largest trade partner in the world. Table 8 shows, 58.7% of China's export in 1989 flowed into developing countries, 35% flowed into industrialized countries. The export flowed into the United States were just

9.9%, 3988 million US dollars. It would be less than 25% or 26 billion US dollars in total export and import between China and The U.S. even though we added the amount of re-export from China to Hong Kong (and other countries and areas) and from Hong Kong to the U.S. We can see from these data that American market is very important to China's export; American market contributed about one-fifth of China's export in recent years. But this means not that China would not expand its export without American market. China now is developing trade relationship with most LDCs and DCs, including European countries. In this way, China's export destination will be diversified further. So American market will not be the only important destination of China's export. Chinese model shows that it would be easier for large country to avoid this kind of shocks if the country diversified its trade destination.

China has achieved some progress in export promotion, but there remain some problems. First, agriculture productivity has been going down for many years because government paid too much attention to export and paid less attention to agriculture in recent years. China should adjust its export strategy a little bit. Second, China's export still is low level export by comparing with advanced countries and NICs. China should improve its trade statu and export more high technological, high value-added, high quality product in order to become a new industrialized country. Third, China's export system should be reformed further, especially pricing system in order to get used to the international system. Fourth, China should improve its quality of export product and reduce its cost in the production in order to compete in the world trade market. Finally, some trade problems such as trade balance with other country, shortage of foreign exchange, import quotas etc., should be solved as soon as possible.

References:

- G. Ranis and T. P. Schultz edited, *The State of Development Economics*, 1987.
- H. Chenery and T. N. Srinivasan edited: *Handbook of Development Economics*, Volume 2, 1989.
- R. E. Feinberg etc., *Economic Reform in The Three Giants*, 1990.
- L. R. Klein, *Can Export-led Growth Continue Indefinitely ?*
—An Asia-Pacific Perspective. *Journal of Asian Economics*, Volume 1, 1990.
- H. Myint, *An Analysis to Economic Backwards*. *Oxford Economic Papers*, June, 1954.
- World Bank, *World Development Report*, 1982-1991.
- International Monetary Found, *World Tables*, 1990-1991.
- International Monetary Found, *Direction of Trade Statistics Yearbook*, 1990;
Direction of Trade Statistics, April, 1991.
- International Monetary Found, *International Finance Statistics*, 1989-1991; *IFS Supplement on Trade Statistics*, 1988.
- Chinese State Statistics Bureau, *Statistical Yearbook of China*, 1990.
- People's Daily, January 7, 1989; February 23, 1991.
- United Nations, *Monthly Bulletin of Statistics*, 1989-1991.
- The Economist Book of Vital World Statistics, 1990, London.
- United Nations Development Program, *Human Development Report*, 1990.

Table 1

Trade Ratio of China

Year	GDP value	Export value	Import value	Miliions of US dollars Growth rate as %			Trade ratio
				GNP	Export	Import	
1980	252230	18271	19500	6.6			
1981	264340	21560	21566	4.9	18.0	10.3	8.2
1982	260400	21875	19009	8.8	1.5	-11.9	7.9
1983	274630	22226	21390	10.2	1.6	12.5	7.9
1984	281530	24822	26150	14.5	11.7	22.3	9.1
1985	265530	27327	42526	12.7	10.1	62.5	13.2
1986	271880	31148	43172	7.9	14.0	1.5	13.7
1987	293380	39542	43392	9.4	26.9	0.5	14.7
1988	372320	47540	55251	26.9	20.3	27.3	13.8
1989	417830	52538	59140	12.2	10.5	7.0	13.4
1990	438720	62000	53350	5.0	18.1	-9.8	13.4
Total	3392790	368849	404446				
Average				11.4	13.3	12.3	11.3

Source: World Development Report, 1983--1991.

People's Daily, Feb.23, 1991.

Note 1: The trade ratio is average of export and import divided by GDP.

Note 2: The GDP growth rates of 1989 and 1990 are GNP growth rates.

Table 2

China's Trade Share As Percentage of GNP

Year	GNP	Export	Import	Share as % of GNP		Share of export & import as % of GNP
	Millions of US dollars			Import	Export	
1970	93242	2437	2518	2.6	2.7	5.3
1980	298692	20382	20562	6.8	6.8	13.7
1981						
1982	274214	26142	19919	9.5	7.3	16.8
1983	293496	26528	21686	9	7.4	16.4
1984	299479	30881	27798	10.3	9.3	19.6
1985	291106	31615	42789	10.9	14.7	25.6
1986	281531	35236	43828	12.5	15.6	28.1
1987	304336	44124	44407	14.5	14.6	29.1
1988	371620	53539	56881	14.4	15.3	29.7
1989	416295	57997	62239	13.9	15	28.9
Average				11.3	11.8	23.1

Source: IMF: World Tables, 1990-1991.

Table 3

China's Share and Rank of Export in Total World Export

Year	Total world export Billions of US dollars	China's export	China's share of export as % of total world export	China's rank
1980	1993.9	18.27	0.92	28
1981	1974.5	20.89	1.06	21
1982	1853.5	21.82	1.18	18
1983	1811.9	22.2	1.23	17
1984	1943.6	24.42	1.26	19
1985	1957.8	25.92	1.32	16
1986	2110	27.04	1.28	18
1987	2450	34.72	1.42	17
1988	2683	40.6	1.43	16
1989	2898.9	52.54	1.8	14
1990		62.6		

Source: Direction of Trade Statistics, April, 1991.

Statistical Yearbook of China, 1990.

People's Daily, Jan. 7, 1989; Jan.7, Feb. 23, 1991.

UNs: Monthly Bulletin of Statistics, 1989-1991.

Table 4

A Comparasion of Trade Ratio and Export Share

Year=1988

Countries and areas	Trade ratio	Rank	Countries and areas	Export share as % of total world export	Rank
Singapore	195.4	1	US	14.88	1
Hong Kong	116.8	2	W.Germany	11.90	2
Taiwan	51.8	21	Japan	10.43	3
S.Korea	36.6	41	UK	8.19	4
U.K.	30.2	58	France	6.96	5
W.Germany	29.6	60	Italy	4.79	6
Japan	17.7	103	Canada	3.84	8
China	15.8	108	S.Korea	1.99	11
U.S.	11.7	117	Sweden	1.75	13
Brazil	7.9	120	Singapore	1.41	15
India	7.3	121	China	1.32	16
USSR	2.0	126	Australia	1.20	17

Source: The Economist Book of Vital World Statistics, 1990, London.

Table 5

Annual Growth Rate of China's Foreign Trade

Year	Growth rate of total trade %	Growth rate of export %	Growth rate of import %
1980		32.9	27.7
1981	13.6	18.6	8.5
1982	-5.4	1.9	-12.6
1983	7.2	1.4	12.9
1984	16.9	12.1	21.6
1985	37.1	10.1	63.9
1986	7.8	14.0	1.5
1987	13.7	26.9	0.5
1988	23.8	20.1	27.4
1989	7.0	8.6	5.4
1990	3.3	18.1	-9.8
Total	118.0	164.7	147.0
Average	14.1	15.0	13.4

Source:IMF: IFS Supplement on Trade Statistics, 1988.

Direction of Trade Statistics,1990.

People's Daily, Feb. 23, 1991 (for 1990's data).

Table 6

Structure of Merchandise Exports of China

Percentage Share of Merchandise Export

Year	1980	'81	'82	'83	'84	'85	'86	'87	'88	'89
Fuels, metals, minerals	25	24	26	22		25	14	14	10	11
Other primary commodities	28	23	20	21		21	22	16	17	19
Machinery and transport equipment	5	5	6	6		6	16	4	4	7
Other manufactures	26	27	34	32		48	48	66	69	63
Textiles and clothing	16	21	15	19		24	24		24	25
Total primary product									30	28
Total manufactures									70	71

Source: World Bank: World Development Report, 1982-1991.

Table 7

Structure of Merchandise Import of China

Percentage Merchandise Import

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Food	15	16	23	15		10	7	3	2	4
Fuels			1	1			1	2	2	3
Other primary commodities	29	20	18	18		13	5	11	16	10
Machinery & transport equipment	27	27	17	19		27	31	39	41	31
Other manufacture	29	37	41	47		50	56	46	49	47
Total primary product									18	20
Total manufacture									82	80

Source: World Bank: World Development Report, 1983-1991.

Table 8

Direction of Trade Flows of China

Countries and areas	Year=1989			Millions of US dollars					
	Export	Share %	Rank	Import	Share %	Rank	Export & Import Value	Share %	Rank
Total	51751	100.0		58316	100.0		110067	100.0	
Industrial countries	18189	35.0	2	29661	50.8	1	47850	43.5	2
Developing countries	30378	58.7	1	23681	40.6	2	54059	49.1	1
Asia	26838	51.9	3	19408	33.2	3	46246	42.0	3
Middle East	1366	2.6	5	538	0.9	5	1904	1.7	5
Europe	995	1.9	4	1434	2.5	4	2429	2.2	4
Hong Kong	22003	42.5	1	13890	23.7	1	35812	32.5	1
Japan	8180	15.8	2	10150	17.3	2	18285	16.6	2
U.S.	3988	7.7	3	6918	11.9	3	10906	9.9	3
USSR	1699	3.2	4	1945	3.3	5	3644	3.3	5
Singapore	1644	3.1	5	1400	2.4	6	3042	2.6	6
Germany	1562	3.0	6	3265	5.6	4	4827	4.4	4

Source: IMF: Direction of Trade Statistics Yearbook, 1990.

Table 9

Correlation of Trade Growth and GNP Growth

As percentage of previous year

Year	Growth rate of GNP	Growth rate of export	Coefficient of export & GNP	Growth rate of import	Coefficient of import & GNP
1980	6.6	32.9		27.7	
1981	4.9	18.6	1.84	8.5	1.35
1982	8.8	1.9	0.31	-12.6	-1.17
1983	10.2	1.4	0.15	12.9	1.10
1984	14.5	12.1	0.93	21.6	1.15
1985	12.7	10.1	0.90	63.9	1.64
1986	7.9	14.1	1.28	1.5	0.20
1987	9.4	26.9	2.20	0.5	-0.30
1988	11.2	20.1	1.24	27.4	1.37
1989	3.9	8.6	1.58	5.4	1.24
1990	5.1	18.1	1.79	-9.8	-1.40
Total		131.9	12.20	119.3	5.18
Average	8.7	13.2	1.22	11.9	0.52

Source: Statistical Yearbook of China, 1990, Beijing.

People's Daily, Feb.21, 23, Marct 1, 1991.

Note: The " Coefficient " is the ratio of larithms of export growth rate or import growth rate over GNP growth rate.

Table 10

Export and Import
of The Five Special Economic Zones

Year=1990		Millions of US dollars	
Items	National	5 SEZs	
Total trade	115430	15600	
Total export	62070	8050	
Total import	53360	7610	
Growth rate of total export and import	3.4	13.6	
Growth rate of export	18.1	23.4	
Growth rate of import	-9.8	11.1	
Trade share of 5 SEZs		13.5	
Export share of 5 SEZs		13.0	
Import share of 5 SEZs		13.8	
Manufacture	71.0	87.0	
Primary product	27.0	16.0	

Source: People's Daily, Jan. 19, Feb. 23, 1991.

Note: The Five SEZs are Shenzhen, Zhuhai, Shantuo,
Xiamen and Hainan province.

Table 11

Main Economic Indicators of 14 Coastal Cities
and 4 Special Economic Zones

Areas & items	Year=1989	1980' price, yuan remimbi			
	GNP Billions of yuan	Gross industrial product	Export mil. US \$	Share as % of total GNP	Share as % of total export of China
National	1578.9		52540	100.0	100.0
14 coast cities		324.5	28624	20.6	54.5
4 special zones		30.3	7040	2.0	13.4
Total of the cities & zones		354.8	35664	22.6	68.0

Source: Statistical Yearbook of China, 1990.

Note: The Four Special Economic Zones (SEZs) are Shenzhen,
Zhuhai, Shantou and Xiamen.

Table 12

Depreciation Rate of Chinese Yuan to U.S. Dollar

Year	Dollar	Yuan	Depreciation rate %	Export value milli. of US \$	Growth rate of export %
1980	1	1.53		18120	
1981	1	1.74	13.7	22010	21.5
1982	1	1.92	10.3	22320	1.4
1983	1	1.98	3.2	22230	-0.4
1984	1	2.80	41.4	26140	17.6
1985	1	3.30	14.3	27350	4.6
1986	1	3.72	16.3	30940	13.1
1987	1	3.72	0	39440	27.5
1988	1	3.72	0	47520	20.5
1989	1	4.72	26.9	52540	10.6
1990	1	4.72	0	62060	18.2
1991	1	5.20	10.4		
Total			136.5	352550	134.6
Average			13.7		13.5

Source: Statistical Yearbook of China, 1990, Beijing.

People's Daily, March 25, 1991.

IMF: International Statistics Yearbook 1990, New York.

Table 13

Per Capita GNP and GDP Growth Rate of China

Year	80'	81'	82'	83'	84'	85'	86'	87'	88'	89'	90'
Per capita GNP	290	310	310	310	320	320	300	290	330	350	
GNP growth rate	6.6	4.9	8.8	10.2	14.5	12.7	7.9	9.4	11.2	3.9	5

Source: World Bank: World Development Report, 1982-1991.

People's Daily, Feb. 23, 1991.

Note: The growth rates of 1989-1990 are growth rates of GNP.

Table 14

A Comparasion of China's Economic Structure

Countries	Year=1988		As percentage of GDP	
	Agriculture	Industry	Of which manufacturing	Services etc.
China	32	46	40	21
India	30	29	18	41
Bangladesh	44	14	7	41
Brazil	9	42	31	48
Australia	4	32	15	64
Canada				
Germany	2	37	32	62
US	2	17	17	69
Japan	3	30	30	56
Sri Lank	26	16	16	47
Indonesia	23	17	17	39
Thailand	15	21	21	47

Source: World Bank: World Development Report, 1991.

Figure 1

Annual Growth Rate of China's Trade

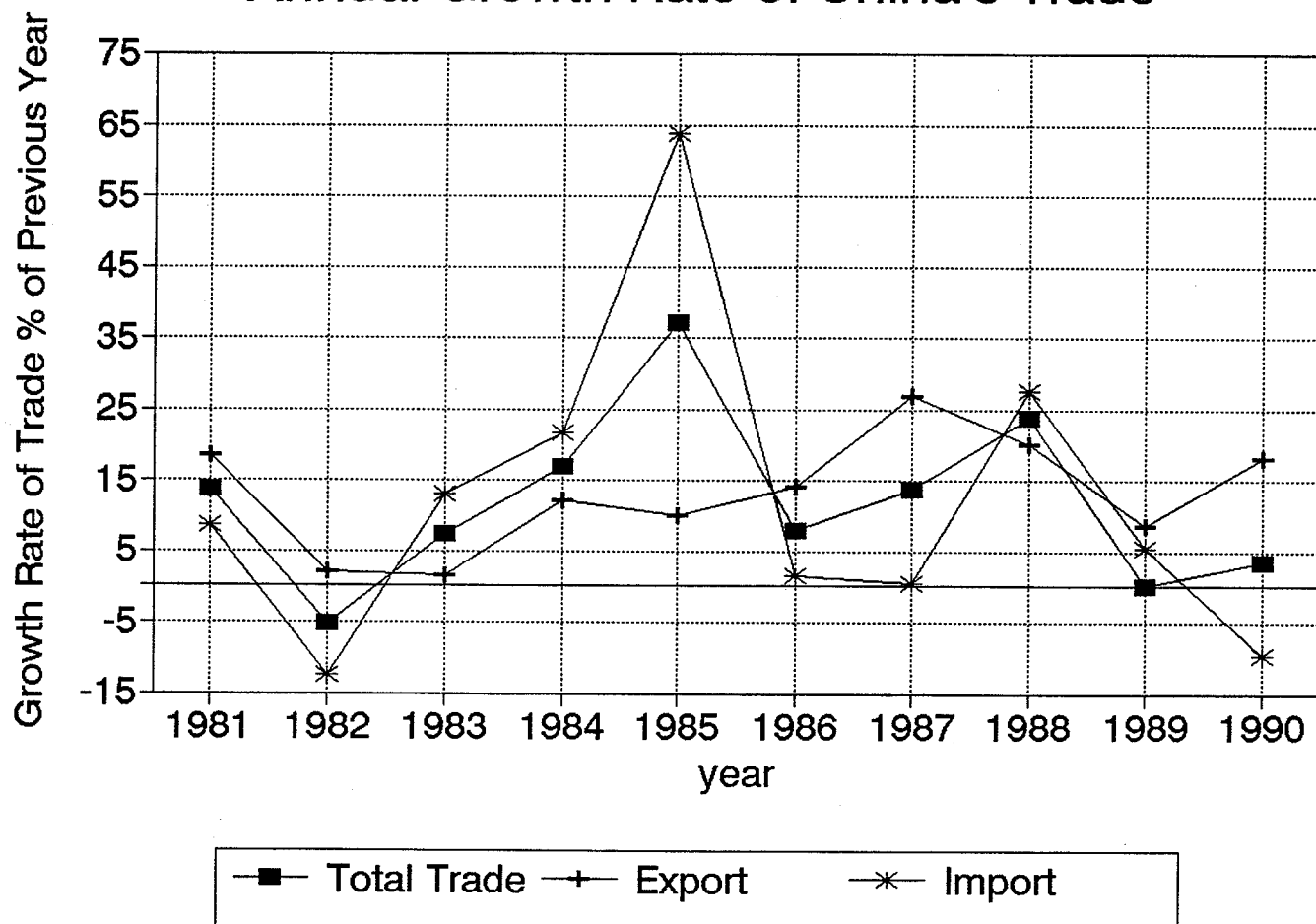


Figure 2
Annual Growth Rate of Export

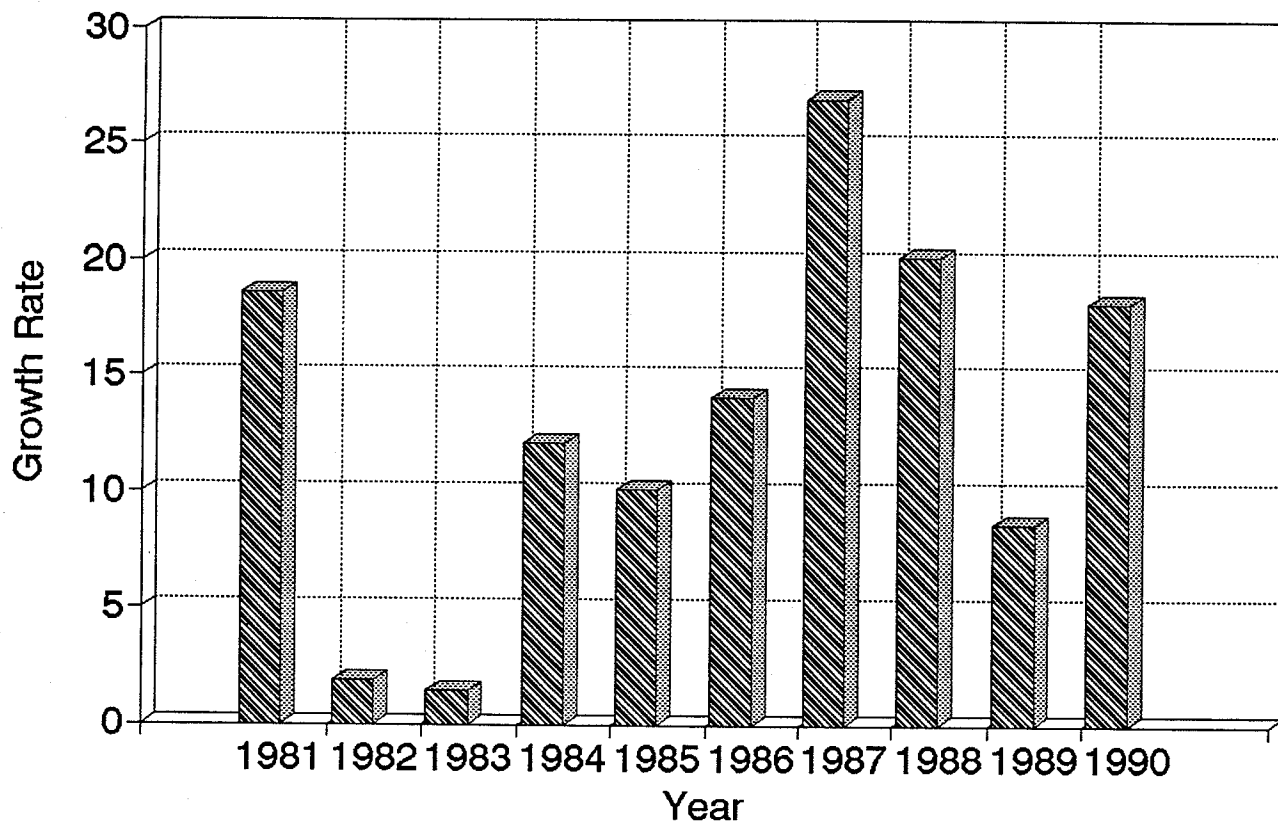


Figure 3
Structure of China's Export in 1989

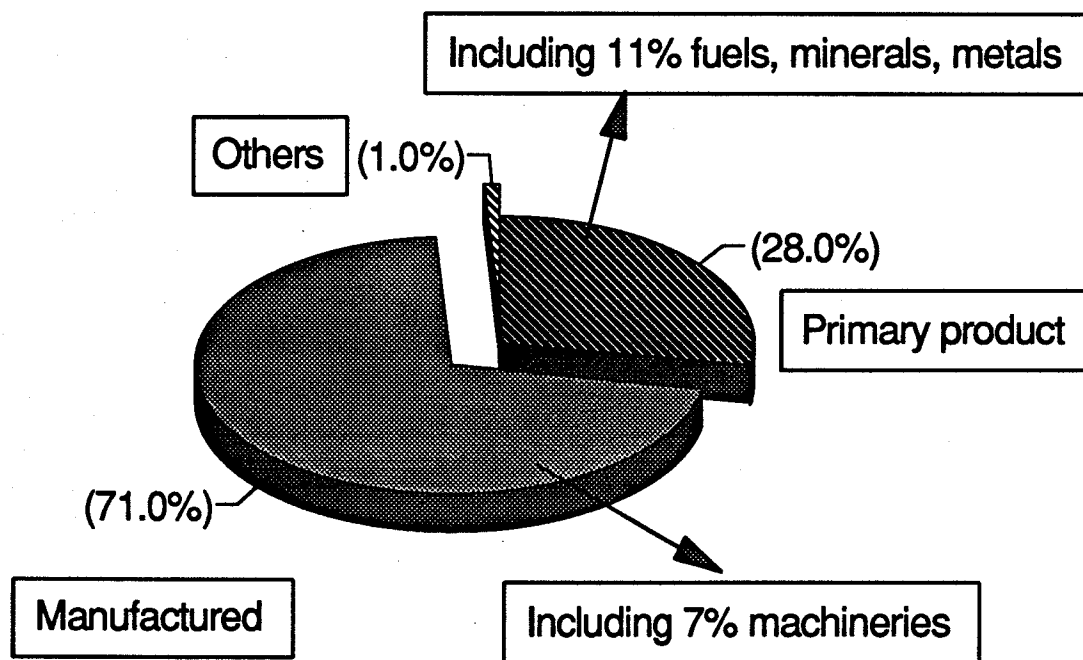


Figure 4

Six Main Trade Partners of China

Year=1989

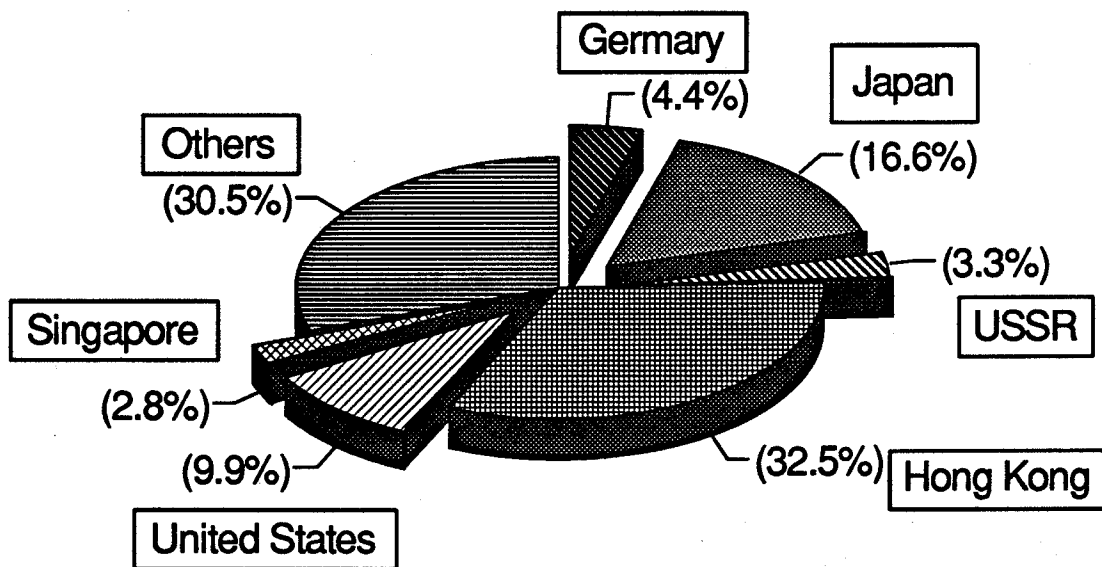


Figure 5

Six Main Export Destinations of China

Year=1989

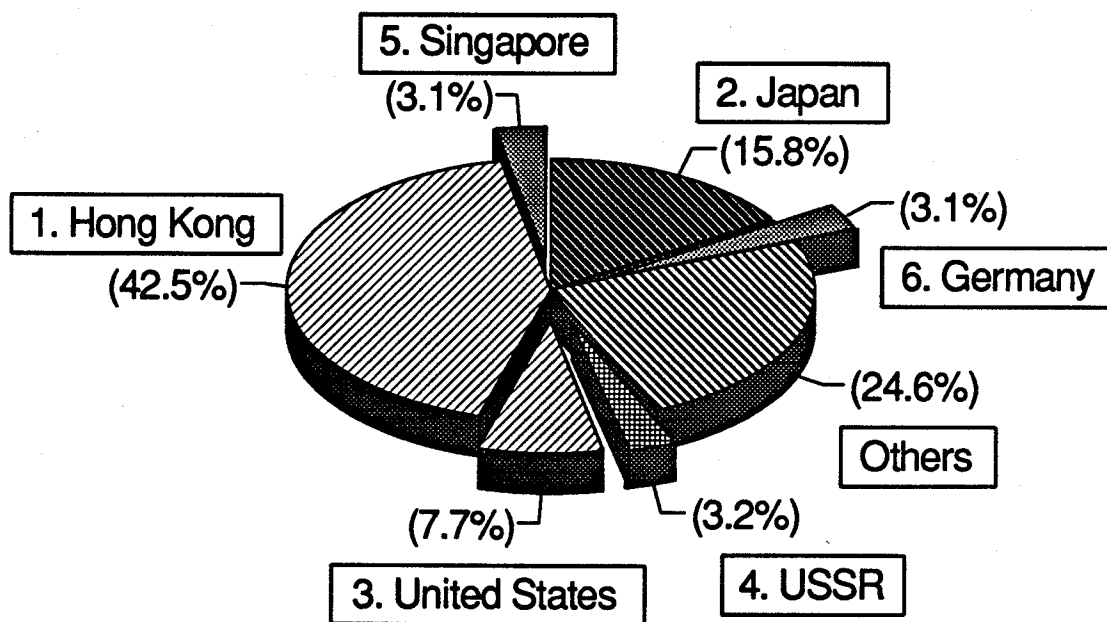


Figure 6
Per Capita GNP of China

Unit: Current US dollars

