

FOREIGN TRADE AND ECONOMIC GROWTH

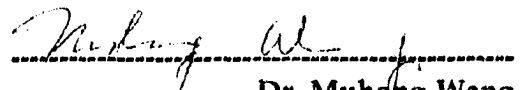
A Case of China in Its Open and Reform Era

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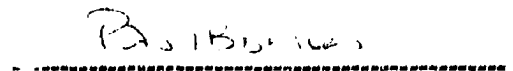
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for the Master of Arts degree in International Development Studies at
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Thesis Approved by :



**Dr. Muhong Wang
(Supervisor)**



**Dr. Paul Bowles
(External Examiner)**



**Dr. Henry Veltmeyer
(Coordinator of IDS Program)**



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**To my son,
my husband and best friend Urchi**

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ABBREVIATIONS

CIF	Cost, Insurance and Freight
DRS	The World Bank Debt Recording System
EDI	Electronic Data Interchange
FDI	Foreign Direct Investment
FIEs	Foreign Invested Enterprises
FOB	Free On Board
FTCs	Foreign Trade Corporations
FYP	Five Year Plan
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GNP	Gross National Product
GVIAO	Gross Value of Industrial and Agricultural Output
GVIO	Gross Value of Industrial Output
IDRC	International Development Research Center
IMEIs	International Multilateral Economic Institutions
IMF	International Monetary Fund
LDCs	Less Developed Countries
MFT	Ministry of Foreign Trade
MOFERT	Ministry of Foreign Economic Relations and Trade
MOU	Memorandum of Understanding
MNCs	Multi National Corporations
MTI	Ministry of Textile Industry
NIEs	Newly Industrialized Economies
OECD	Organization of Economic Cooperation and Development
OCCs	Open Coastal Cities
OCPs	Open Coastal Provinces
PPP	Purchasing Power Parity
PRC	The People's Republic of China
R&D	Research and Development
SEZs	Special Economic Zones
S&T	Science and Technology
TVES	Town and Village Enterprises
UNCTAD	United Nation's Conference on Trade and Development

ABSTRACT

Foreign Trade and Economic Growth

Since China adopted the open and reform policy in 1978, the rapid expansion in its foreign trade and the striking growth of the economy have caught world wide attention. Total trade volume reached US\$196 billion in 1993 which is almost ten times the trade volume of 1978. Annual trade expansion ranged from 15% in the 1980s up to 18% in 1993. Such a rapid expansion is about three times that of the world rate over the same period. In 1978, China was only ranked the thirty second in the world in terms of trade volume, and it has been the world eleventh largest trading nation since 1992. Agriculture grew at an annual rate of 6.4%, and industry at 12% in the 1980s. GNP increased at an annual rate of almost 9% throughout the 1980s and up to 12% in 1993. Undoubtedly, China has become one of the fastest growing economies in the world, and its future potentialities are immense. While examining the great changes China has undergone since 1978, compared to the pre-reform situation, and placing China at the center of the whole picture of Asia and the world, the study tries to discover all the contributions which have brought about the changes, and to see how and under what conditions, foreign trade has functioned as an engine of growth. The improvement of the overall social environment resulted from the open and reform policy instituted in 1978. The reforms created the prerequisites for the expansion of trade. The emphasis is laid on China's technological transformation through both foreign investment and direct import of advanced technology which has efficiently served as the expeditor of productivity and exports of Chinese commodities. However, foreign trade is by no means the panacea to all of China's economic ills. Its function as an engine is restrained by the productivity, the ultimate motivating force of economic growth, as well as the surrounding factors which affect such motivating forces. Constraints exist in China's state owned enterprises, the backbone of China's economy, low trading efficiency as well the social concerns about human capital, R&D, etc., are all discussed as they form as crucial factors for China's sustainable foreign trade expansion, further economic growth and overall social progress.

Liumei Wang

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1. INTRODUCTION

Following the continuous development of world specialization and social division of labor, a nation's economic activities increasingly cross its national boundaries. Foreign trade, through mutual exchange of commodities, services, technologies, helps balance the surpluses and shortages of the nations involved, developing their productivity and accumulating their wealth. Since modern society entered the era of telecommunications and information technology, foreign trade, as a vehicle for spreading the advanced technologies, has played a crucial role in reducing labor in production process, increasing efficiency, promoting economic growth and social progress. In the course of the 1960s and 1970s, national economies became progressively more integrated with one another and with the world market. The whole world in the 1980s had witnessed the formation of multipolarity of developed market economies, the tendency towards regionalization with the signing of the North American Free Trade Agreement, the completion of the Single European Market, the further rise of Asian Newly industrialized Economies (NIEs) and their alignment with Japan, one of the trading giants in the world.

The drastic structural change of the world economy over last three to four decades was reflected in a process of deindustrialization and the dislocation of raw material processing, assembly and other labour intensive or low skill intensive industries in the developed nations. A number of countries or economies, such as the four NIEs in East Asia, namely Hong Kong, Taiwan, Singapore and South Korea, made full use of their relatively cheap labour advantages by developing labour intensive industries such as garments and

electronics, and greatly expanded their trade through exports. These economies gained their strength rapidly and were able to develop quickly more skill intensive industries. They achieved an economic miracle of maintaining the growth rate of GNP at 8-10% annually over the past three decades. However, the structural change of the world economy does not bring benefits to all the developing countries. For most developing countries which rely mainly on primary goods exports, lack purchasing power, and the capability of acquiring and innovating modern technologies due to political instability, wrong government policies, economic backwardness and other social obstacles which keep them weak and passive in international trade, are left behind struggling in a vicious poverty cycle. The disparity in per capita income between the developed and developing countries is still in well excess of 100 times. Increasingly concern has been expressed as to the future of the developing countries, including China, with three fourths of the world's total population. Before examining China's foreign trade performance in detail and seeking the experiences and lessons, it is necessary to look at the international trade in the past four decades as a whole, to see its general trend, major issues and how they have benefited to both the developed and developing countries.

1.1 Overview of International Trade

Since the end of the World War II, international trade has experienced revolutionary changes centered on the creation of various new technologies which resulted in tremendous increases in the volume of trade, and the significant changes in trade composition. While confirming the important role of trade in leading the increase of world output and the integration of the global economy, much concern is also expressed as to the major issues in the

trade, particularly that of the price decline in primary goods as well as the issue of appropriate technology, both have affected developing countries the most.

1.1.1 World Trade in General

Technical innovations, particularly in the developed countries in three basic sectors, namely the containerization of trading goods, the automation in engineering and information technology, widely applied in all walks of life, have contributed immensely to the promotion of international trade. Revolutionary strides in containerized shipping and rail transportations have greatly reduced the rate of damage of the commodities and made commercial flow of production facilities safe and profitable. Improvement of engineering techniques provided with the innovation of robot system, micro processors, etc, has been another revolution leading to automation of various industries and has enabled them to make processing of precise parts of a machinery in seconds instead of days by manual labour. This revolution has set a new milestone in achieving ever higher production, better and unified quality of products worldwide and serves as the foundation for the flourishing of the international trade from time to time. The innovation of information technology has been the most recent important contribution in shortening the distance of the world and making international trade easier and more convenient. The popular application of computer systems in production, trading and service, particularly the application of Electronic Data Interchange (EDI) technology in the developed nations, has made complex communications almost instantaneous and operations for various purposes

speedy. All these progress made in the modern society has contributed to the rapid expansion of world trade as a whole.

Trade expansion

The total value of the world trade rose from US\$124.3 billion in 1950 to US\$6,964.6 billion 1990, which represents about 55 times increase over that of 1950.¹ The World Bank Report 1991 indicated that since 1950 world trade expanded 50% faster than the growth of world output. This clearly indicates that international trade has been acting as the leading edge in the growth of world output and the integration of regional and the world economies. Both the developed and developing countries basically represented the world average level by having around 25 times increase in export value from 1963 to 1992. However, four Asian NIEs far outperformed the world average level over the thirty years. Taiwan stood out well ahead of all listed. Its exports increased 244 times in export value since 1963.² China, though a late comer, has also far surpassed the industrialized countries in terms of the rate of export expansion, particularly since 1978, the year in which the government adopted the open and reform policy.

The changes in world trade composition

The changes in trade composition has been reflected in the increasing trade share of knowledge-intensive products and service due to the steady development in science and technology, especially in the developed countries. The major growth area in commodity trade since World War II

¹ UNCTAD (1991), The Handbook of International Trade and Development Statistics.

² Calculated based on data provided by IMF (1993), International Financial Statistics Yearbook.

has been in manufacturing. In addition to the technological progress over the decades, the reduction in tariff and non-tariff barriers to trade and an associated increase in specialization at the level of the individual plant in manufacturing in the countries and regions such as the 'NIEs' in Asia could be another contribution towards the expansion of the world manufacturing industries. The service industries also increased in relative importance since the early 1950s to 50 and 60 percent of employment in many countries by the end of the 1980s. Receipts from trade in invisibles rose from about 24% of world trade in 1975 to 27% in 1985.³

The nature of the international trade

The developed countries continued to occupy the dominating position in world trade, with their share in the value of world exports increasing from 64 per cent in 1955 to 71 per cent in 1990. Developing countries as a group recorded a slight decline in the volume of exports in 1980-1985, followed by strong expansion at an average annual rate of 9% in 1985-1990. However, the fast pace in export expansion in the second half of the 1980s was essentially the result of the dynamic export performance of a number of developing economies in South and South East Asia, especially those of NIEs and recently Mainland China. Export growth in Latin America accounted for barely 3% and Africa for 0.5% at the end of 1980s. The least developed countries recorded no improvement in the purchasing power of exports in 1980-1985 and declined in the second half of the decade.⁴

The main concern in the world trade has been the weak status of the majority of developing countries due to several major issues such as arms

³ Rugman (ed) (1989), International Business in Canada. p40.

⁴ Data from UNCTAD, Analytical Report. 1992.

trade, the continuous decline of the prices of primary goods which most the developing countries rely on as mainstay of their economies, and the vulnerability of developing countries to technology transfer from the North. The biggest challenge to developing countries is to find ways of improving their foreign policies and strategies so that their local comparative advantages in foreign trade could be further displayed.

1.1.2. The Issue of Price Decline in Primary Products

Contrary to the increasing trend for technology and service trade worldwide, the importance of commodity trade in international trade, the trade of primary goods -- natural resources and agricultural goods, has dropped considerably. This has been severely affecting the economic status of most developing countries, which traditionally rely on their primary goods as major sources of exports.

The facts

The commodity trade worldwide declined considerably in the 1980s, its share fell from 41 to 26 percent. The value of commodity trade fell from US\$779 billion in the period 1979/81 to US\$739 billion in 1987/89.⁵ The United Nations Development programme also indicated that between 1981-1990, the total cost of debt servicing, unfair trading practices, and unequal competition, was equal to \$500 billion which was equivalent to seven Marshall plans.⁶ Economist William Cline noted that in one year alone, 1981-1982, the total loss to non oil developing countries from deteriorating

⁵ Data selected from UNCTAD VIII, Analytical Report, 1992. p221.

⁶ Mihev, January 1994, Economic Justice Toward a Just and Sustainable Canadian Foreign Policy, discussion Paper based on NGO submissions to the Canadian Council for International Cooperation's Foreign Policy Review. p4.

terms of trade was estimated at \$79 billion.⁷ According to IDRC Canada, in 1986 alone, the fall in prices of commodity exports cost Africa \$19 billion which was more than the amount it received in assistance.⁸ The World Bank estimated that in 1986, developing countries lost about \$7.4 billion in revenues due only to the decline in the price of sugar, which was more than twice as much money as they received in food aid in the same year. When the international coffee organization agreement collapsed in 1989, world coffee prices fell by almost 35% in one month, and it has remained low since then.⁹

Major causes of the price decline

The reason for such decline of the prices of primary goods could be many and complex. Changing tastes in foodstuffs and the development of synthetic products undoubtedly affected in some way the demand of some traditional commodities in the international market. A case in point is fiber-optics which competes with copper wire for telephone and TV transmission lines. However, likely the major reason for price decline of primary goods was the protection by the developed countries over their domestic agriculture through provision of export subsidies. In 1985, the World Bank reported that nearly 30% of the developing countries' agricultural exports to the industrial countries were restricted by quota restraints or nontariff barriers. Another important reason is the monopoly status of multi-national corporations (MNCs) in the world trade in primary goods. Statistics show that by 1980, roughly 70-80 per cent of the global primary commodity trade valued at \$980 billion was accounted for by MNCs. According to Philippe Chalmin that the

⁷ IDRC (1992b), The Global Cash Crunch - An Examination of Debt and Development.

⁸ IDRC (1992a), Our Common Bowl- Global Food Interdependence.

⁹ Statistics are collected from News Paper, World Food Update, October, 1993.

bulk of international commodity trade was in the hands of about 50 companies.¹⁰ UNCTAD report also indicated that 70-75% of global banana market was dominated by three conglomerates, over 70% of Cocoa was traded by six corporations, and 85-90% of leaf tobacco were directly controlled by six transnational leaf buyers.¹¹ It was estimated by Susan George and Nigel Paige that of some \$200 billion a year spent on agricultural products originating in the Third World, the producing countries received only 15 per cent of the total. The rest went to intermediaries, mainly multinational corporations. The original producers received only very small shares, for example, 4% for coffee, 5% for tea, 6% for bananas, and 13% for cocoa.¹² The trade in minerals in particular is arranged by the multinationals with intra-firm transfers which means 'buying and selling' transactions are carried out among their own subsidiaries leading to enhanced interests.

Severe consequences

The effects of price decline of primary goods exports together with the debt crises in developing countries have been severe and direct. In 1986, agricultural production only accounted for 3% of the GNP of the OECD countries and 7% of the labour force. But for developing countries, production from agriculture accounted for 19% of GDP and 60% of the labour force. Almost all the developing countries have agriculture as their economic mainstay and their products cover 50-100% of their total

¹⁰ Chalmin, "International Commodity Trading Companies" in *Journal of World Trade Law*, November-December 1980, p539

¹¹ UNCTAD (1992), *Fibres and Textiles: Dimensions of Corporate Marketing Structure*, (TD/B/C.1/219).

¹² IDRC (1992a), *Our Common Bowl - Global Food Interdependence*, p18.

merchandise exports.¹³ When the price of agricultural products experienced a drastic decline in international trade, these countries were forced to sell their products at the prices below their production costs, and eventually they had to grow more in order to cover the expense of importing the necessities, such as fuel or medicines, or to pay their foreign debts. It was estimated that in 1989, fifteen highly indebted countries exported almost \$20 billion more than they did in 1981 while importing \$20 billion less. The \$20 billion extra earnings from exports went directly into servicing their debt, while the \$20 billion drop in imports translated into lost jobs in North American export manufacturing sectors.¹⁴ These figures explain how badly the developing countries have been affected by the price decline of primary goods, it indeed has even affected the developed nations.

Although the recent round of GATT has brought the hope to have the removal of export subsidies on Northern agricultural products, it won't have effect on prices until the beginning of the next century, and the full removal of restrictions on exports of clothing and textiles from developing countries is only set to take effect in 2006.¹⁵ The removal of subsidies from the North over their agricultural goods could help the South to compete on a fairer grounds. More effective measures to encourage their agricultural production and trade are necessary, as such efforts will ease their economic dilemma, and it is also part of an action to secure the world food supply. However, developing countries can no longer rely on their traditional

¹³ Raghavan, "Recolonization: GATT, the Uruguay Round and the Third World" in Third World Network, 1990. p163.

¹⁴ IDRC (1992b), The Global Cash Crunch - An Examination of Debt and Development.

¹⁵ Raghavan (1993), "Uruguay Round Balance Sheet After Ten Years" in Third World Network Features, Dec 17. pp26-27.

primary goods exports in the context of technological advances. The only solution for them to escape from the passive status in the world trade in the long run is to enhance their national economic strength by gaining modern technology, to be exact, gaining appropriate technology. However, appropriate acquisition and assimilation of appropriate technology remains a big issue to most the developing countries due to both internal and external constraints .

1.1.3. The Issue of Technology Acquisition

In the 1950s and 1960s, science and technology were taken as the worldwide common knowledge which could be picked off the shelf by developing countries to meet their needs. Such accessibility would allow them to bypass the phase of development experienced by industrialized countries that was noted for intensive energy and materials consumption and wide spread pollution, enabling them to shorten the gaps between themselves and the industrialized countries. Unfortunately, by the mid 1960s, various forms of protectionism have mushroomed putting the developing countries in a very difficult position to acquire the technology urgently needed.

Technological distance between the North and South

The emergence of modern technologies such as biotechnology, microelectronics and new materials over the last 3 decades has transformed industries, service , trade and almost every walk of life particularly in the North. Sectors of advanced technology have become major actors of the industrialized economies. In a country like Canada, information technology consumes up to 35 per cent of its industrial R & D investment, while all sectors of advanced technology account for 55 per cent of industrial R & D. The overall technological sector is now responsible for 59 per cent of its

GNP.¹⁶ The United States, Japan and Germany are considered as top three giants in technology supplies. The American exports of 'high-tech' products, namely aerospace, computers, electronic equipment, telecommunications equipment, scientific instruments, electrical machines, other machinery, chemical products, covered about 67% of the total exports in 1979 and 76% in 1987. As for imports, high-tech products accounted for an even greater share of 81% in 1979 and 77% in 1987.¹⁷ Japan has shown a trade surplus every year since last decade and together with Germany remain strong technology suppliers. It is reported in a United Nations document¹⁸ that approximately, 95% of the developing countries' imports of machinery and transport equipment come from developed countries.

Having majority of the world population, developing countries possess only 12.6 per cent of the global stock of scientists and engineers in research and development, and 9.4 per cent are concentrated in a few countries in Asia. At present only 1% of patents are owned by individuals or companies in the Third World, of those, 84% were owned by foreigners and less than 5% were actually used for production in the Third World.¹⁹ Developing countries account for only 2.9 per cent of global expenditures on R & D and 3.3 per cent of global exports of machinery and transport equipment.²⁰

¹⁶ Data selected from "Advanced Technologies in the 1990s" in World Business, June 1993.

¹⁷ Data selected from Statistics Canada (1988), Science and Technology Indicators.

¹⁸ UNCTAD (1989), Technology policies for Development and Selected Issues for Action.

¹⁹ Khor Kok Peng (1990), "The Uruguay Round and Third World Sovereignty" in Third World Network.p30.

²⁰ UNCTAD (1989), Technology Policies for Development and Selected Issues for Action.

Constraints in technology acquisition

Countries which lack modern technology in production or are slow in their progress in technological transformation tend to exhibit poor competitiveness, fewer static and dynamic gains in international trade, and difficulty in escaping the cycle of poverty. The need of modern technology in both commercial and non-commercial forms is urgent for all the developing countries in order to effect possible and quick change of their backward economic status. Yet for most the developing countries, the financial difficulties they face constitute a big obstacle preventing them from accessing modern technology. In addition to the problem of the decline in the prices of primary goods for exports and the deterioration of the terms of trade, the debt crisis suffered by most the developing countries is another major issue which has economically paralyzed many countries. According to 1987 World Bank Report, debt/GNP ratio of 109 DRS countries²¹ involved was up to around 52%, and debt/export ratio up to nearly 223%. Sub-Saharan African countries in particular had debt almost equal to and even surpassed total amount of their GNP in 1987 and 1991.²² These countries are powerless in terms of technology acquisition. Furthermore, developing countries on the whole lack capabilities in recognition, selection, negotiation, assimilation and final innovation of new technologies. The judgement of appropriateness of foreign technology as well as the control of appropriateness in acquisition are truly difficult due to the complicated nature of modern technology itself, and the lack of human resources, suitable social environment and political instability in some countries. Their capability of technology acquisition is very limited. To top them all, various forms of protectionism from the

²¹ DRS refers to World Bank's Debt Recording System.

²² World Bank figures, cited by IDRC, *The Global Cash Crunch - An Examination of Debt and Development*, 1992b, p5.

developed nations such as intellectual property right protection, makes it more difficult and complicated for developing countries to acquire modern technology.

The rapid development of new technologies in the developed countries, and the financial dilemma of the developing countries, their hardships in accessing modern technology, formed a sharp contrast between the rich and poor. There is a continuing tendency that the developing countries are facing more and more unfavorable conditions in the international trade. Where is the solution to effectively close the gap? The rise of the four NIEs, Hong Kong, Taiwan, Singapore and South Korea, does not provide the model for all the developing countries to follow, yet it does bring a lot of hope that shortening the gap is possible and more quickly than expected. Then, there comes the rapid expansion of China's foreign trade and impressive economic growth since 1978. What does the drastic change in China, once so remote and mysterious to the West, bring to the world?

1.2 Overview of China's Foreign Trade and Economic Growth

As one of the poor and backward agricultural countries in the world, China shares much of the similarities and difficulties of most developing countries. The People's Republic of China struggled and suffered several set backs after its foundation in 1949 in her efforts to industrialize the country politically through the socialist system, and economically with a central planning, self reliance and import substitution. In the 1950s, due to the embargo and political isolation from the West, China mainly relied on the former Soviet Union for political support, economic assistance and import substitution. Such heavy reliance resulted in a serious loss when the relationship between

the two countries collapsed in the early 1960s. When the four NIEs in East Asia experienced their economic sprint in 1960s, China was in the political turmoil of so called cultural revolution, and the economy was paralyzed. It was not until 1978, the year when the Chinese government adopted the open and reform policy that the economy began to show sign of vigor.

The open and reform policy, which started with the establishment of the Special Economic Zones (SEZs), followed by the opening of fourteen coastal cities, the other special areas and zones, coupled with other reform strategies, has greatly improved the whole environment for foreign trade development ever since, and brought tremendous vitalities to China's developing economy. Foreign trade has been synchronized with the overall 'open and reform' process in China. Since 1978, foreign trade has played an increasingly important role both in the economic growth, and in the overall improvement of the nation's foreign economic relations with countries all over the world.

Since 1978, the average annual rate of trade expansion has been in excess of 15 per cent which is more than three times the rate of growth in world trade. With the rapid growth in both imports and exports, the country has become one of the most dynamic trading countries in the world. Total volume of imports and exports in 1990 was US\$114.4 billion, which is over 100 times that of 1950 (US\$ 1.13 billion),²³ while the world total trade volume in 1990 was US\$6,874.6 billion, 55 times increase over that of 1950. However, striking changes in China's foreign trade was taken mainly after

²³ UNCTAD (1991), Handbook of International Trade and Development Statistics.

1978, at which point, it ranked the world's thirty-second in terms of trade volume. Nowadays, however, China is the eleventh largest trading nation in the world. In addition to trade, the overall economy has grown and continues to grow at a remarkable rate. The average annual growth rate of GNP between 1952-1980 is 6.2%. But it increased by annual rate of 8.9% during the period of 1980-1990,²⁴ 7% in 1991 and 11-12 percent in the last two years.

According to the report written by Nomani and Greenberger on May 21, 1993 in Wall Street Journal that China has the world's third-largest economy, trailing only the U.S. and Japan, and moving ahead of such economic powers as Germany, Canada and Britain based on a new method of calculation by the International Monetary Fund which turned China's 1992 GDP of 2.4 trillion yuan into US\$1.7 trillion instead of US\$440 billion as a result of the old methodology. Although the IMF's new calculation based on Purchasing Power Parity is still very controversial, China's success in foreign trade expansion and economic development since 1978 is undoubtedly one of the most impressive in the world.

1.3 Purposes of the Study

China's striking trade expansion and economic growth since 1978 provides a sharp contrast to its performance before 1978. This serves as a good example to countries with similar conditions of size, poverty, density of population, that drastic changes in their policies and economic structures under favorable social environment and international relations can bring into play the potentialities and comparative advantages of a nation in trade. China's technological progress since 1978 is also a good example that appropriate

²⁴ Yeh (1992) "Macroeconomic Issues in China in 1990s" in China Quarterly, v131.

acquisition and innovation of modern technology can quickly enhance the power of a nation in international trade. In addition, the problems China has in her trade and economic development, such as lack of human resources, regional disparities, are also common to the developing countries. Research on these problems within international development studies can make a significant contribution to both scholarship and economic policy. China, once to be considered as the model of self reliance and import substitution industrialization, with its recent changes in economic life, has generated the attention and support of different school of thought and development theory.

It is beyond the author's knowledge and the scope of this study to judge which school of thought provides the best understanding or explanation of the significance of China's trade and economic practice. The purposes of this study are rather to explore or identify through a survey of China's foreign trade expansion, over the previous four decades along with an analysis of specific policy changes and changes in overall social environment, the key to this process of expansion; and to establish whether and under what conditions that foreign trade could serve as an engine of China's economic growth. By focusing on China's foreign trade expansion and its contributions to the economic growth in the period of vigorous reforms of the economy, and viewing China's changes in the whole picture of the development of world trade, and its integration of regional and global economies, it is possible to see the interaction among all factors from inside and outside China which have significant impacts on China's trade expansion and economic growth. This is the objective of the study.

A nation's foreign trade growth is subject to both domestic and international market conditions of supply and demand. The international conditions include framework of facilitating institutions, the general climate for conducting the business and the structure of economic and political relations among nations which can directly or indirectly affect a nation's gains and losses in foreign trade. Under normal international peaceful conditions, the strength of a nation's foreign trade lies in competitiveness of its products, services and technology. Thus, internal conditions include production capabilities, the level of science and technology, the entire business environment as well as the most critically, the role of state. The year 1978 set a significant milestone in China's modern history. It symbolized China's shift from a closed, isolated society towards a nation open to the rest of the world; a shift from a rigid central planning economic system to a socialist market economy; a shift from the former strategy of import substitution to that of export promotion.

The focus of this study is on three questions: a) how foreign trade flourishes in China's open and reform era; b) how trade and technological importation, adaptation and innovation act as an engine of economic growth; c) what the constraints on China's development are and how they possibly restrain China's foreign trade from sustainable expansion. With referring to these questions, the author will argue that trade could serve as an engine to economic growth only under certain conditions by displaying its essential role in promoting the interaction of production and consumption; It is also argued that the engine of growth is only sustainable when it helps preserve

the environment and promote social progress along with the accumulation of the material wealth.

1.4 The Scope of the Thesis

The thesis consists of eight chapters. Chapter 1 draws a rough picture of world trade in the last four decades, its general tendency and major concerns related to the developing countries. It also gives a general review on China's foreign trade and economic growth over the same period. In addition, the purposes of the study are explained and the scope of the thesis defined in this context. Chapter 2 serves as a brief overview of literature, focusing on both the neoclassical and dependency theories of foreign trade, specifically their arguments about the export promotion versus import substitution both of which China has to certain extent experienced. Chapter 3 provides a historical background of China's foreign trade over the pre-reform period between 1950 and 1978 when foreign trade was controlled under the typical central planning economic system, and under conditions of political instability and turmoil. The basic features of the trading system and its related characteristics over the historic period are examined to provide a comparison to foreign trade in the subsequent open era. Chapter 4 examines the essential and specific features of China's open and reform policy. The major strategic steps, such as the establishment of special economic zones, the encouragement of foreign investment, and the rural and urban reforms are discussed in order to show how the policy, the infrastructure, and the entire environment were improved paving the way for the expansion of foreign trade. The reform of the foreign trade system is emphasized to express how the original rigid system, the import substitution strategy and the related institutions and measures, were changed to meet with the new

demand of foreign trade in the open era. Chapter 5 evaluates the contribution of China's foreign trade to the promotion of China's technological transformation since 1978. The modernization of Science and technology has been one of four major goals China aims to achieve by the year 2000. Changes in domestic science and technology policies and China's importation of technology are particularly emphasized as they both played and will continue to play an extremely important role in bringing about technological change, and in developing productivity and economic growth in China, and in return provides significant impetus to export promotion. Chapter 6 sums up the achievement China's foreign trade has made since 1978, as well as the evidence about economic growth in both industry and agriculture, in order to see the overall results of the open and reform policy and the expansion of foreign trade. Chapter 7 discusses the concern about the constraints China has in its foreign trade and related areas, such as the loss of China's large and medium state owned enterprises, low trading efficiency. Furthermore, important social aspects, such as education and R&D situations, are discussed. They are considered by the writer to be the sustainable power behind the engine, and the neglect of which would threaten the sustainable trade expansion and economic growth. Finally, Chapter 8, summarizes China's overall progress in its foreign trade expansion and economic growth along with the problems and constraints that remain as hindrance to further economic development, along with the general trend of international trade and integration of the regional and global economy. China faces tremendous opportunities in its further expansion of trade and continuous growth in the economy, but its constraints and challenges are also severe.

2. LITERATURE REVIEW

2.1 Trade and Economic Growth, the Central Issue

It was a critical issue to Adam Smith when he established the foundation of the Science of Political Economy in the eighteenth century, whether or not and in what way the opening of an economy leads to the expansion of foreign trade, and whether or not and in what way the expansion of foreign trade contributes towards the growth of a nation's economy. The theory of comparative advantages formulated by Ricardo in the famous chapter Seven, 'Foreign Trade' of the book entitled 'On the Principle of Political Economy and Taxation' (1817) and in 'An Essay on the Influence of a Low Price of Corn on the Profits of Stock' gives a positive and definite answer to the question whether trade makes an economy grow. According to the theory, countries should specialize in the production of the goods which they could produce at a competitive price either because of abundant natural resources available, or/and wages are low, or/and skilled labor available so that cost could be much cheaper. Furthermore, it is argued that trade should be free from any barrier so that the comparative advantage could be led into full play. Consequently, it provides the possibility for a nation to open up the economy to the world market, specialize in the production of commodities and services which are best able to produce, and make 'unproductive' labour more 'productive'. If a nation imports the commodity that used the fixed input (land) in production, and exported non land-using manufactures, that form of trade will enable the economy to satisfy a given volume of

demand for wage goods with a lesser extension of the margin of cultivation and thus reduce the pressure of diminishing returns on profits.²⁵

Ricardo's theory laid the foundation for the evolution of trade theories ever since. Based on the theory of comparative advantage, neoclassical theorists believe the power of competition and trade as a powerful engine to a nation's economic growth. Dependency theory, on the contrary, advances the idea that developing countries should have less associations with developed countries because specific conditions lead to a dependent relationship between 'center' and 'periphery' countries that distort the development of the latter, it therefore, calls for an end to dependency so that nation-states can take control of their own development.²⁶ Disputes never ends ever since. Because this research is about China's foreign trade, which aims at exploring the impacts of trade expansion on the economic growth and vice versa, the literature review in this chapter will focus on strategies on foreign trade, which necessarily point towards the institutional, legislative and other structural and social changes, and possible dramatic changes in the economy. In particular, two opposite trading strategies, the import substitution and export promotion represented by Dependency theory and Neoclassical Theory, respectively, are discussed.

2.2 Proponents of Import Substitution

Countries generally adopting import substitution industrialization strategy aim at helping balance of payment difficulties, reducing the dependence on

²⁵ Chaudhuri (1989), *Economic Theory of Growth*.

²⁶ Wilber and Hameson (1975), "Paradigms of Economic Development and Beyond" in *Direction in Economic Development*, pp1-41

the international economy, protecting local infant industries and stimulating industrial growth. The main device used in this direction is the restriction of imports of consumer goods. The relevant policies adopted by the governments who favor the import substitution strategy are usually high tariffs, quotas, licensing, multiple exchange rates, and eventually need and bring about a lot of government control and administration over the implementation of such policies.

Dependency theory with Andre Gunder Frank, as the important popularizer, holds that development and underdevelopment are two aspects of a single global process, two sides of the same coin, which is to say that underdeveloped nations are dependent on developed countries politically, economically and socially. They rely on the developed countries to import their primary commodities, rely on them for advanced technology, financial aid, investment, even education. Because of such heavy dependence, development at the 'center' implies underdevelopment at the 'periphery' due to the continuous extraction of surplus by the 'center' from the 'periphery'. In order to break the chains of surplus extraction, dependency theory advocates the policy of self-reliance for developing nations to have less association with the developed countries.

Based on an analysis of a general tendency towards the decline in the terms of trade for developing countries, Raul Prebisch, an exponent of 'structuralism', a school of thought propagated by the UN Economic Commission for Latin America, and also one of the pioneers in development, concluded in his article 'Five Stages in My Thinking on Development', that import substitution stimulated by a moderate and selective protection policy

was an economically sound way to achieve certain desirable effects. Such a policy, he argued, would help correct the tendency toward a foreign constraint on development resulting from the low income elasticity of demand for imports of primary product by the centers, compared with the high income elasticity of demand at the periphery for manufactures from the centers. Import substitution by protection counteracts the tendency toward the deterioration of the terms of trade, by avoiding the allocation of additional productive resources to primary export activities and diverting them instead to industrial production.²⁷

Another pioneer, Paul N. Rosenstein-Rodan, developed the 'big push' theory, which stated that the crucial task of a development program was to achieve sufficient investment to mobilize the unemployed and underemployed for the purpose of industrialization. To reach an optimal size of the industrial enterprises, however, the area of industrialization must be sufficiently large. This called for planned industrialization by the simultaneous planning of several complementary industries.²⁸ He emphasized big size and complementarity of industrialization, heavy investment in industry, especially in manufacturing, state intervention, and import substitution.

2.3 Opponents of Import Substitution

Neoclassicals believe that the power of competition is the self-regulating force of economic activities which will establish an equilibrium between production and consumption. Their theory is mainly a theory of price and

²⁷ Meier and Seers (1984), *Pioneers in Development*. p179.

²⁸ Meier and Seers (1984), *Pioneers in Development*. p 211.

the allocation of resources to specific uses under the incentives of utility maximization for the consumer and profit maximization for the producer.²⁹

Represented by Alfred Marshall, neoclassical theorists hold trade as 'the engine of growth' and oppose the strategy of import substitution. The main neoclassical argument advanced by Little, Scitovsky and Scott in the 1970s, Bhagwati and Krueger in the 1980s, is that protection is overdone and lead to an inefficient allocation of resources due to distortions in factor and product markets. They argue that excessive administrative regulations give rise to overlapping government control and bureaucracy, low efficiency, and corruption which discourage productive private initiatives. The existence of import restrictions lead to a higher exchange rate which distorts the prices of the products, and reduce relative gains obtained from exporting. The protection of local industry raises the prices of manufactured goods relative to agricultural products in the home market and the overvalued exchange rate reduce the domestic currency receipts for agricultural exports. Due to the overvalued exchange rate, the credit for installing machinery is relatively cheap, and as a result, factories tend to be over equipped leading to a waste of capital. Moreover, protection in product markets make it possible to earn good profits even at low capacity utilization. Capital goods can be obtained relatively cheap due to the combined effect of over-valued exchange rates, low import restrictions for such goods and subsidized financing conditions, resulting in bias against the employment of labour. The imports of consumer goods is reduced substantially at the expenses of increased imports

²⁹ Greenwald & Associates (1984), The Concise McGraw-Hill of Dictionary of Modern Economics.

of equipment and materials resulting in an even more rigid dependence on foreign suppliers and renewed foreign exchange crisis.

Krueger has argued that in principle, a government can protect some industries in the domestic market while providing sizable export subsidies to other industries. In practice, however, the scope for such a two way protection is limited for a number of reasons. (1) protective devices or export subsidies are meaningful only if they discriminate against some other activities. (2) The protection of a large number of activities is generally inconsistent with encouraging exports, because exporters of manufactured goods require relatively easy access to international markets for their inputs of raw materials and intermediate and capital goods, and (3) protection at the levels deemed necessary to induce import substitution usually requires a great degree of control (to prevent smuggling, false invoicing, etc.) to ensure that the domestic market is profitable enough, and to prevent export of the protected goods.³⁰ Krueger also argues that there is at least as much incentive to earn as to save foreign exchange and that incentives to export are fairly uniform and not discriminatory across commodity groups.³¹ Policy implications drawn from such an analysis are that there should be less government interference, lower tariffs, devaluation of local currencies, less quotas and letting the market forces play freely. In short, export promotion should be adopted so as to bring a country's productive structure in line with its comparative advantage, leading to economic growth. Compared with import substitution, export promotion strategy is believed to have more

³⁰ Krueger (1985), "import substitution versus export promotion", in Finance & Development June, 1985

³¹ Krueger (1985), 'Import substitution versus export promotion' in Finance & Development, June, 1985

advantages.³² First of all, export promotion is not limited to the narrow domestic market of the import-substitution. Secondly, the inflow of foreign capital to support export promotion is not dependent on home market protection but is induced by considerations of efficiency on the resource cost. It also upgrades labor skills when it involves the production of labor-intensive manufactures through technology imports. It contributes more to greater employment and improved income distribution.

In short, Neoclassical theory emphasizes two theoretical reasons why export promotion may be the superior strategy. First of all, the costs of excess export promotion are more visible to policy makers. Secondly, an export-oriented development strategy generally entails relatively greater use of indirect, rather than direct, interventions. Neoclassical economists take NIEs as a good example to demonstrate that export promotion outperforms import substitution. Krueger argued that NIEs' remarkable rates of growth were associated with the rapid growth of exports. Countries which adopted export promotion had their growth rate sharply jumped up. In Hong Kong, one of the four Asian NIEs, exports covered 99% of GDP during the period between 1963 and 1978, while the increase in GDP over same period remained around 8%. It is further believed by Neoclassical writers that outward-oriented policies created dynamic effects in addition to the static gains from improved allocation of resources.³³

³² Based on description by Meier (1976), in the book *Leading Issues in Economic Development*, p672.

³³ Anne O. Krueger, 'import substitution versus export promotion' in *Finance & Development*, June, 1985

According to Kari Levitt,³⁴ the role of multinational corporations is also evaluated favorably by neoclassical theorists. Apart from providing market outlets, these companies are said to have a positive impact on developing countries by bringing in industrial skills and training local workers. It is also argued that the multinational firm is an important agent in redirecting development strategy and getting it in line with comparative advantages. The international character of multinational firms will lead to a rationalization of their worldwide activities, correcting the distortions in factor use in the countries where they operate. In this fashion, it is argued that export promotion will assist employment and alleviate income inequality.

Both Dependency and Neoclassical theories have their own strengths over the significance of their favorable strategy. This author considers that every trade strategy, as a means to achieve trade expansion, must function in a very complex international, domestic, political, economical, and social changing conditions. All these conditions promote and/or restrain the strategy, affecting trade performance at different time. Import substitution has many constraints, yet it does play a positive role in balancing a nation's payment, especially when a country has little capacity in exports and does not have the conditions for export promotion. China could hardly introduce the export promotion strategy right after the liberation in 1949, mainly because China was isolated and suffered from embargo and sanctions from the West. Also, China could not adopt export promotion during the cultural revolution when the whole nation was engaged in class struggles leaving

³⁴ Levitt, *The State of Development Studies*, International development studies, occasional paper, No.92.1

machinery idle in the factories. Export promotion could have disadvantages under conditions when the terms of trade deteriorates. Export promotion must be based on the principle of comparative advantages, while advantages lie in specialization of production and high quality of products which nowadays could only be achieved through continuous upgrading of technological level for the most of developing countries. The experiences and lessons China can offer with reference to an analysis of forty years of trade performance, with its striking difference before and after the shift, not only relates to the question of trade strategies but also to whether or not the whole political, economical, social and cultural environment support the strategy to function effectively, and whether trade brings enough benefits to promote the production and consumption, and vice versa. These questions will be addressed in the following chapters.

3. BACKGROUND STUDY

3.1 China's Foreign Trade and Economy in 1950-1978

When the People's Republic of China was founded in 1949 after three decades of political instability and warfare, productions in the industrial and agricultural sectors were below their peak levels of the early 1930s. The new economy started to function in 1952. Over the subsequent two and a half decades before 1978, the economy was manipulated by a central planning system, although efforts were made several times to adjust the policy from 'more centralized' to 'less centralized' in certain ways. During the pre-reform period, between 1952 and 1978, China's output growth averaged about 4 percent a year, and industrial output rose rapidly while agricultural production grew on an average about 2 percent a year. Research showed that this economic growth was achieved largely by increasing the amount of labour and capital employment, there was little growth in total factor productivity.³⁵

Foreign trade in China during the pre-reform period was relatively ignored as the Chinese government adopted a policy of self-reliance and the whole nation was isolated from the outside world. During the early years after the establishment of the People's Republic of China, primary products accounted for about 80 percent of China's exports and industrial finished products accounted only for 20 percent. In that period, China had little industrial production, with the industrial output covering only one third of the gross value of industrial and agricultural output (GVIAO). Between 1950 and 1957,

³⁵ IMF (1991), Economic Reform and Macroeconomic Management.

GVIAO increased at an average annual rate of 14.4 percent, the industrial output grew by 22.4 percent per annum, and the volume of exports by 16.4 percent. In the years from 1957 to 1962, the economy was almost at a standstill and even in absolute decline in 1961 and 1962 due to leftist policy mistakes of 'great leap forward'. From 1957 to 1965, the average growth rate of GVIAO was reduced to 6 percent, industrial production 8.9 percent, and exports 4.4 percent.³⁶ Ten years of the political turmoil of so called cultural revolution (1966 to 1976), plunged the Chinese economy into the verge of collapse, export trade was labelled a 'national betrayal' and import trade was considered the 'worship of things foreign' and 'fawning on foreign powers'.³⁷ Export growth came to a standstill.

3.2 Foreign Trade Regime and Its Characteristics

The central planning system was basically characterized with the state ownership of the bulk of the means of production, strict planning over resource allocation and utilization, absolute control over the price of commodities, as well as the control over input and output of production. The system seriously inhibited the development of productivity. The direct reflection of such a system on China's foreign trade in the pre-reform period was the absolute monopoly of the central government over foreign trade, and the implementation of 'import substitution' strategy. State monopoly and strategy were mainly reflected in the following five aspects:

³⁶ Xu (1987), "The commodity Composition of Imports and Exports" in China's Foreign Trade.

³⁷ Liu (1987), China's Economy in 2000.

1) Monopoly through control of trading organization

Foreign business was conducted by sixteen state owned foreign trade corporations (FTCs) under the direct leadership of the Ministry of Foreign Trade (MFT), which was exclusively responsible to the State Council. These FTCs were specialized in trade in defined product areas and usually paralleled in structure with industrial production ministries. For instance, China National Textile Import & Export Corporation handled commodities produced by the Ministry of Textile Industry. FTCs received import and export plans from the MFT every year, and were fully responsible for carrying out transactions throughout the procedures. Such a system allowed specialization in trade, which was always necessary in conducting business well. But there was no competition at all and the 'producers' (in the case of exports) and the 'endusers' (in the case of imports) had no choice whatsoever in finding a different or better channel of business. The system induced bureaucracy and low efficiency.

2) Monopoly through rigid planning in foreign trade

Annual and five-year plans for foreign trade were an integral part of the national economic plans. These plans usually specified, in varying degrees of detail, the volume, commodity composition and geographical pattern of foreign trade that was to be undertaken in the next period. Such a planning in foreign trade resulted in two problems:

First of all, the import and export plan, jointly formulated over the years by the MFT and the Government Central Planning Commission, often lagged far behind in market information both inside and outside China. Consequently, the approved items either for imports or exports had to be returned back for

further approval in case there was any change in type and important specifications of the commodity and/or in any need of additional foreign exchange. The approval procedure was long and tedious. Secondly, unexpected production shortfalls during the year could reduce the availability of the goods for exports, and domestic consumption had to be cut in such cases in order to meet the foreign demand. The FTCs were unable to purchase the planned quantity of export goods, and had to acquire higher unplanned high cost goods to fulfil the target, but with a financial loss.

3) Monopoly through strict pricing in commodities

For the exports, FTCs bought the goods from producers according to trade plans at the domestic prices, which were set by the government. With no reward of foreign currency and no direct connections to the international market, the local producers had little interest in promoting their products in the foreign trade.

For the imports, pricing of imported goods to domestic currency was set up by converting the contract prices (CIF), or by adding the contract price (in case of FOB), the cost of insurance, and freight using the official exchange rate, to which the commission charged by the trading corporation must be added. The relevant point here is the official exchange rate as China's official exchange rate remained constant at 2.46 Renminbi Yen per US dollar for 16 years from 1955 to 1971. Obviously, the Renminbi Yuan was much overvalued. Such a system in essence provided subsidies to the import of heavy machinery, equipment and industrial raw materials needed for industrialization of the country.

4) Monopoly through stringent control over foreign exchange

Instituted in early 1950 until early 1980s, Chinese law required that all foreign exchange holdings, including those of overseas Chinese, foreign travelers, and foreign missions, be deposited in the Bank of China, the only bank which was authorized to deal with foreign exchange transactions. Withdrawal of the foreign exchange was only possible when it was converted into Chinese currency. Exporters had no right to retain whatever the amount of foreign exchange they earned for their own usage. The limited foreign exchange earned for the country was allocated by the Bank of China according to the priority approved by the state plan.

5) Strategy of import substitution

'Import substitution' simply means exports are just for the needs of imports. That is, the sole purpose of exports is to earn foreign exchange which is urgently needed to the imports of necessities. Before 1978, the composition of imports consisted more than 90 percent produced goods and less than 10 percent of consumer goods. At the same time, primary goods accounted for 80 percent in exports and only 20 per cent of exports were manufactured goods.³⁸ Imported goods were mainly machinery and equipment which were essential to the industrialization of the country, yet were all very expensive. Meanwhile, Renminbi Yuan, the Chinese currency had been overvalued for decades. Furthermore, foreign exchange was strictly controlled from the top to the bottom levels of all organizations and individuals. All these measures seriously hindered the exports, the earning of foreign exchange and flexible imports.

³⁸ Chen (1987), "Soviet Union and East Europe" in China's Foreign Trade.

To sum up the regime of China's foreign trade before 1978, it is understood that such a policy had a positive significance shortly after the founding of new China in helping the unified planning of the economy and breaking through the blockade and embargo imposed by the United States and the countries aligned with USA. To a certain extent, the import substitution strategy helped balance the payment of the country's account, especially when the export capability was very limited and earning of foreign exchange very difficult. Besides, China had no access to foreign investment and the government policy also did not encourage foreign investment at all. Under such circumstances, import substitution was necessary to help ease the foreign exchange shortage and pay for the major imports necessary for industrialization. However, the system became increasingly rigid in responding to domestic and foreign market supply and demand situation, causing extremely low efficiency in foreign trade. In addition, the overall closed or semi-closed economy, and China's poor infrastructure, such as shortage of harbors, transportation facilities, hotels, etc., formed very poor conditions for an effective expansion of China's foreign trade.

4. CHINA'S OPEN AND REFORM POLICY AND ITS IMPACT ON TRADE

The wise adoption of open and reform policy by Chinese government in 1978 shifted the country's closed and backward economy onto the right track which had turned China's history towards a brighter future. Foreign trade which had been neglected for so long started to take off in an open and reform era. The promotion of foreign trade relies primarily on the development of domestic production, the actual strength of a country. It also relies very much on the international economic environment, and supports from the countries worldwide.

The open and reform policy, in essence, is domestically to infuse new vitality to China's economy by introducing the market economy which aims at bringing the initiative of Chinese enterprises into play with provision of more decision making power and freedom in production and sales of the products under sound economic and social environment, so that production and commodities exchange could be greatly and considerably increased; Externally, by implementing the open foreign policy, China brings her closed or semi-closed economy to the big stage of world competition so that more foreign investment could be absorbed, and foreign trade, especially the import of technology and the other necessities be promoted in order to speed up the economic growth and overall social progress. China's development record since 1978 has provided strong evidence of the success of China's open and reform policy.

4.1 Great Improvements in China's Business Climate

The foreign business climate in China has improved fantastically since 1978. Significant steps have been the establishment of special economic zones and areas, where trade is greatly encouraged, and favorable policies granted; the adoption of suitable legislation; the efforts in joining the international multilateral economic institutions, particularly the efforts made to be readmitted into GATT. The results have been immediate and obvious.

4.1.1 The Creation of SEZs, OCCs, OCPs, and the Economic Regions

The creation of four Special Economic Zones (SEZs) in Shenzhen, Zhuhai, Shantou and Xiamen in 1979 by China's senior leader, Deng Xiaoping has been the symbol of China's open reform policy and the significant start of China's continued efforts in the improvement of the foreign business climate. Shortly after the establishment of SEZs, 15 Coastal Cities (OCCs) and 11 Coastal Provinces (OCPs), Hainan, and the other special areas were open to the outside world.³⁹ The target for the 1990s has been the development of different economic regions such as the Yangtze River Delta, the Pearl River Delta, and the Bohai Sea region. All these economic zones and regions enjoyed special treatments and favorable policies from the central government with regard to absorption of foreign investment, foreign trade and the other economic supports. Foreign investors are offered tax holidays, access to imports of parts and to foreign exchange, freedom to hire expatriates and relative freedom to hire labour including transferred rights to use the land. The opening of these zones, cities and provinces has basically turned

³⁹ 15 OCCs in China are Opened Coastal Cities of Dalian, Qinhuangdao, Tianjin, Yantai, Weihai, Qingdao, Lianyungang, Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhangjiang and Beihai. 11 OCPs are often referred in literature as Opened Coastal Provinces of Liaoning, Hebei, Shandong, Jiangsu, Zhejiang, Fujian, Guangdong, Hainan, Guangxi and two cities of Tianjin and Shanghai.

the whole eastern and south-eastern coastal line towards the rest of the world in trade and cooperation. With the gradual development in the 1990s of economic regions, trade and other economic activities with foreign countries will penetrate more into the inland and remote areas.

The achievements and future potentialities from the areas discussed are immediate and far reaching. Shenzhen, as the earliest reforming star, has proved particularly successful. A report from China Business Review, volume 18, 1992, indicated that foreign investment (mainly from Hong Kong) in Shenzhen's infrastructure jumped from 11 percent in 1979 to 50 percent in 1981; Total foreign investment from 1979-89 exceeded \$5.5 billion. In 1990, Shenzhen attracted more than \$500 million in foreign investment, around 8 percent of China's total foreign investment that year. Shenzhen's export volume soared from \$9.3 million to \$2.2 billion.

Among all the OCPs, Guangdong province is the most prominent in terms of its overall reforms, foreign investment attraction, and foreign trade expansion. China's People's Daily reported on January 17, 1994, that annual rate of increase of foreign direct investment was over 40% in the 1980s and over 100% in 1993. Actual utilization of FDI in 1993 amounted to US\$9.6 billion which was more than 40% of the total value utilized by the whole nation that year. The total imports and exports value in 1993 was \$45.4 billion, around 25% of the total trade value in China. The export value of manufactured goods accounted for 90% of total exports. The export/GNP rate increased from 9% in 1979 to 38% in 1993. The province has maintained the first place in China in its trade value for eight consecutive years.

The Yangtze River Delta has Shanghai as the 'Dragon head' in leading the economic development of the region, which includes Jiangsu and Zhejiang provinces. The region has been considered as the most developed over the previous decades, possessing abundant natural resources, a solid industrial bases, and comparatively more trained human resources. Shanghai, as the largest city and most powerful industrial base having one of the biggest harbors in China has played a significant role in the nation's foreign trade expansion. The open and reform policy, particularly the establishment of New Pudong Development Zone since 1990, provided tremendous opportunities in trading with foreign partners and added 'wings to the tiger' in the country's overall economic performance. The fulfillment of the region's ambitious development strategy will contribute not only to its regional prosperity, but also to a leading role of the region in bridging China's North and South which are divided by the Yantze river, in their economic interactions and activities with the world market.

Enough evidence has accommodated over the years since 1978 that the creation of these zones and regions provided the foundation for improving China's business climate, institutional changes and reforms in the whole country, and the integration of the nation's economy into the world economy.

4.1.2 Improvement of Legislation

The announcement of hundreds of laws and regulations with regard to foreign investment and foreign trade practice has been another important contribution of Chinese government in improving the business climate since 1978. More than 300 economic laws and regulations were issued in five years

after 1978 ⁴⁰ with 36 legislation documents approved in 1986 alone. The key foreign economic laws and regulations are: Law on Joint Ventures using Chinese and foreign Investment, Income Tax Law, Trademark Law, The Economic Contract Law, The Patent Law, The Investment Law, etc. Amendments have been made several times for the purpose of perfecting the legislation and continued efforts have been made by the Chinese government in improving the legislation system. The effective enforcement of the Anti-Unfair Competition Law since December 1, 1993, which greatly helps protect the trade secrets and business interests of all trading partners involved in transactions, has been a significant sign of China's strong determination in creating a fair competition environment and applying international trade practice.

4.1.3 Support from IMEIs

International support, political, economical and financial are essential external conditions for China's foreign trade expansion and economic development. One important reason why China traded so little before the open reform era was the lack of support and financial assistance from the rest of the world. As of 1978, the country has improved overall foreign diplomatic relations with many countries of the world including neighboring countries and regions such as South Korea. Meanwhile, with her unswerving efforts made in improving the domestic trading and economic policies, China has successfully received the financial support from the International Multilateral Economic Institutions (IMEIs).

⁴⁰ Beijing Review, February 19, 1985. p7.

China joined the World Bank Group (WBG) in 1979, shortly after the government adopted the open and reform policy, and succeeded in her formal entry into the International Monetary Fund (IMF) on April 17, 1980. Again, on March 20, 1986, China became the 47th member of the Asian Development Bank (ADB). Between 1981 and 1990, China received over US \$9.2 billion in loans and credits from WBG for some 83 projects. During the period between 1986 and 1989, ADB provided China with seven loans of US\$416 million, 22 technical assistance projects in the amount of US\$8.42 million, and a US\$3 million line of private sector investment equity to Shanghai SITCO Enterprise Co., Ltd.⁴¹ Such relaxation of the former strict control against foreign borrowing by the Chinese government since 1978 has helped the country meet its emergent needs in the trade and economic development. On the other hand, by keeping close ties with these international IMEIs, China has been able to remain informed and positive in the international economic and financial stage which is definitely very significant to the country's overall trade and economic development.

4.1.4 China's Efforts in Rejoining GATT

The strong determination of China in rejoining General Agreement on Tariffs and Trade (GATT) since her formal application in 1986 has served as a driving force for the Chinese government to make continuous efforts in improving trading policies and the business environment. In 1991, reductions of import tariffs were made for 43 kinds of commodities. In 1992, another 225 items were listed for the reduction of tariffs, and additional import adjusting tariffs for a group of machinery, electronic products, and

⁴¹ Freaney(1991). China's Relations with Multilateral Economic Institutions.

chemical fibers were further eliminated. The biggest move was the tariff reduction for 3371 items which affected around 50% of total categories of commodities subject to import duties.⁴² In May 1993, China announced that it would abolish its import licensing system which had been a major barrier to the imports of foreign products. All these measures taken so far improved China's conditions for doing business with foreign partners. Possible readmission of China into GATT with mutual reduction of tariffs in trading with over 100 member countries will expand China's imports and exports in the long run. However, the biggest and immediate impact is that China's local industries shall face severe challenge of competition when more and more commodities are imported into the Chinese market. Certain infant industries can be protected, but only for a limited period of three years. Chinese enterprises, especially those state owned which have been relying heavily on government subsidies for their survival are given a choice either to bankrupt or to be reformed. This situation undoubtedly increases the pressure of crisis onto the industries with state owned enterprises which currently still dominate China's economy. China's efforts made in rejoining GATT will help pushing further, quicker reforms and changes in the nation's economy which include the financial and taxations sectors. At the same time, it will eventually promote relevant and necessary reforms of the political system as well.

In summary, China's open door policy has made all the above improvement of overall business climate possible. Without these conditions, rapid foreign trade expansion and striking economic growth would have been impossible.

⁴² Data is from China's People's Daily, November 19th, 1993.

4.2 Rural and Urban Reform- New Vitality to Foreign Trade

The economic reforms going on hand in hand with the implementation of China's open door policy are symbolized in the relaxation of the central planning system and the introduction of market mechanism. The aim is to establish a framework of a 'Socialist Market Economy' by the end of the century. The reforms up to now have been mainly characterized with the decentralization of economic decision making, increased reliance on market forces in setting prices and output, and the development of non state-owned economic entities. The theme of the reforms is to infuse vitality to both industry and agriculture and allow more flexibility and freedom in other sectors of the economy including finance and commerce.

4.2.1 Rural Reform and the Rise of TVEs

China started its economic reform in the rural areas where the production responsibility system was introduced in both collectives to households. The rise of Township and Village Enterprises (TVEs) which created a very potential and vibrant force in Chinese exporting is another symbol of China's success in rural reforms. Encouraged by government document No.4 (1984), rural industry in China experienced a boom unprecedented in its history. There was a tenfold increase in the number of enterprises between 1983 and 1985, and another 50% increase by 1988. The increase in the value of output between 1983 and 1985 was 270%. By 1989 the output was eight times higher than that in 1983. Almost 100 million Chinese were working in Township and Village enterprises in rural areas by 1990. An additional 20 million entrepreneurs were engaged in private service and manufacturing ventures by the end of 1980s. The striking changes in the role of China's rural sector and TVEs in promoting foreign trade is supported by strong evidence

collected from various sources. It was calculated that from 1983 to 1989, annual growth rate in agricultural trade were almost 12%, the value of exports increased yearly by 13.4%. In 1987, total foreign exchange earned in the rural areas of Guangdong amounted to US\$2,7 billion, almost half the foreign exchange earned in the province. TVEs' earning of foreign exchange in proportion to China's total export earning in the 1980s increased from 4.5% in 1984-1985 and 20.8% in 1990.⁴³

4.2.2 Urban Reforms and Industrial Enterprises

The major target in urban economic reforms undergoing in China has been the reform of industrial enterprises which form the foundation of Chinese industry and the leading force of various exports. The ultimate purpose of the reform is to allow enterprises to set up their self-activating and self-restraining mechanism so that operation can be carried on autonomously and enterprises could take the responsibility for their own gains or losses with enough power authorized, reasonable profits shared, and eventually their production efficiency enhanced. The immediate aim has been the separation of government administrative functions and business operations, the separation of power of ownership and the power of management. Before 1978, enterprises had little initiative for improving their efficiency and financial results as the central plan controlled both resources allocation and output target. What the managers needed to do was to fulfil the target. The reform has given enterprises more authority in decision-making and more flexibility in access to financial resources and more marketability for their products. In 1986, a contract system was introduced into medium and large

⁴³ Zwig (1991), "Internationalizing China's Countryside", China Quarterly, V128.

scale enterprises. The contract generally specifies the targets for expected performance of the enterprise, quotas for the output and obligations to the government. The contract system has many limitations, for instance, short term responsibility for the managers might affect their initiatives in making long term plans, but the contract system is definitely a step of progress from the original. The focus of attention is on shareholding system which forces the enterprises to be more risk taking and responsible for their own profits or losses.

On July 23, 1992, the Chinese government promulgated the Regulations on Transformation of Operational Systems for State Owned Industrial Enterprises, which authorizes enterprises with 14 different rights including those of decision making in input and output, price, purchase, sales, human resource allocation, as well as rights of imports and exports. In an addition to the Law of Enterprises, this 'Regulations' has served as a guarantee for the transition of China's economy from a Centrally Planned system to a Socialist Market Economy. According to Jiang, an official from the State Foreign Economic and Trade Commission, since 1993, the prices of over 90% of consumed products and 80% different means of production have been subjected to the market forces. This has given the enterprises more freedom and initiative in both production and trade, which is beneficial to export promotion. Furthermore, non-state owned economic entities including those collectively and private owned, have developed quickly since 1978. their number increased to 291,000 out of a total of 363,000 by September, 1993.⁴⁴ Their production value was estimated as over 50% of China's total GNP.

⁴⁴ Jiang, "Establishing Socialist Market Economy, Vitalizing the State Owned Large and Medium Enterprises" in *China's Scholar's Abroad*, October, 1993.

According to Lu Yonghua, another official from the State Commission for Economic Restructuring, as of 1994, 100 large state owned factories would be privatized and whose managers would take whole responsibilities for financial decisions and consequences. If the program is successful, other enterprises will be restructured similarly.⁴⁵ At the same time, efforts are also made to improve the environment for these enterprises, which includes reform of the financial sector, and social welfare system, so as to lessen the burden on enterprises as small societies. All these changes reflected the new hope of vitalizing China's enterprises and enhancing their competitiveness in international trade.

4.3 Foreign Trade Reform

The reform of foreign trade itself with regard to policies, organizations, pricing and management systems are equally important. Without them China could never have achieved as much progress in foreign trade. The major reforms achieved so far are decentralization of foreign trade decision making and institutional changes. Reforms in other fields such as pricing of commodities and foreign exchange control have proceeded to a certain extent. Foreign trade reform has enabled China to make up weak points and defects of the absolute monopoly system the central planning system had brought. By all accounts, the reforms have proved successful.

4.3.1 Decentralization and Institutional Changes

Decentralization of trade power is mainly reflected in the release of central control over the plan of import and export commodities. As early as January

⁴⁵ News from "The month in review", Current History, a journal of contemporary world affairs, January, 1994.

1982, the number of planned export commodities fell to 199. It was further reduced to about 112 in 1984 and stood at 112 commodities by 1988. Of these 112 commodities, only twenty-one, comprising 20 percent of the total quantity of exports, were under the direct control of the State Planning Commission. By 1988 the planned share of exports fell to 45%, and the share of planned imports fell from more than 90% at the beginning of 1980s to only 40% by 1988.⁴⁶ The efforts made by Chinese government in rejoining the GATT such as abolishing of licensing system, the tariff reduction of 3371 items of import goods, all aim at the improvement of the investment and business climate, the promotion of exports and encouraging imports.

It was estimated that there were more than 5000 foreign trade companies in China by 1990 compared with a dozen or so in 1978. All these FTCs have been authorized by the central government to handle foreign trade transactions. They are divided into several types. The original FTCs which are directly responsible to the Ministry of Foreign Economic Relations and Trade, with their many years of foreign trade expertise, an extensive worldwide trade network and a large number of experienced foreign trade professionals, are still plying a leading role in foreign trade development. China National Oils and Foodstuffs Corporation, for instance, is one of the largest and earliest established trading corporations in China. Its total business value in the last 40 years was up to US\$110 billion, which equals 14% of China's total trade value at the same period.⁴⁷ Many FTCs were established after 1978 by various production Ministries. For example, China National Textile and Technology Import & Export Corporation set up by the Ministry of Textile Industry deals

⁴⁶ Lardy (1992), *Foreign Trade and Economic Reform in China, 1978-1990*.

⁴⁷ China's People's Daily, October 14, 1992.

textile machinery and technology businesses directly. Its staff are mainly from the Ministry itself and most of them are experts in or familiar with the textiles and textile machinery commodities. Through effective business training in the previous decade, these FTCs have become very powerful in trading with partners all over the world. Provincial FTCs have mushroomed since 1978, many of them are originally the branch offices of the central trading corporations. For instance, in 1988, 38 local branches of China National Machinery Import and Export Corporation were financially independent and have been ever since handling international business independently. These FTCs are very dynamic in trading and undoubtedly form the leading trading forces in local areas. The most noteworthy change in trading institutions is the rise of trading corporations from the grass roots level, i.e, some large enterprises which have been authorized by the central government to handle import and export business directly with foreign partners. China now has also about 100 science and technology institutions which have obtained foreign trade rights. This has been a very significant change in China's trade reform. It has provided China's scientific and technological sector a greater opportunity to join the world in science and technology research and exchanges, the vehicle of world technological progress and trade expansion.

4.3.2 Devaluation of Yuan and Pricing of Goods

As part of the foreign trade reform policy, the Yuan's exchange rates against US dollar and other hard currencies have been adjusted to more realistic market level. By 1992, Renminbi Yuan had devalued against US dollar from around 2.8 to 5.8, which was over 50% devaluation. The People's Bank of China further announced at the end of 1993 a new exchange rate of 8.7 yuan

to the U.S dollar, another 33% devaluation.⁴⁸ It means that Renminbi Yuan have been devalued by around 70% by then. The People's Bank also announced that the Bank would publish the Yuan's exchange rates daily based on those set in the swap market to reflect market conditions. This shows that China has made great efforts in eliminating multiple exchange rates and unifying exchange rates. Such efforts have certainly helped promote China's exports in the international markets.

The pricing system of trading goods has also changed since the reform that both imports and exports have led to an alignment of domestic prices with international prices. At the same time, all the enterprises who sell and buy the commodities are fully responsible for their own gains and losses. The FTCs will only handle business as an agency earning commission in the process. Although a fundamental reform of the pricing system has not yet been formulated so far, the change of pricing enables more flexibility which greatly encourages the export initiatives of the enterprises.

4.3.3 Flexibility in Foreign Exchange Control

China used to control foreign exchange in a very strict way as discussed previously. According to IMF, the reform has allowed nine banks to handle the foreign exchange business since 1988, and export enterprises are able to retain a certain percentage of the foreign exchange they earn. Special Economic Zones are given more privileges. In Shenzhen, for instance, foreign exchange retention is 100% and enterprises in Guangdong can retain from 30% to 100% of profits.⁴⁹ Half of the amount retained is to be used by

⁴⁸ Xinhua News report, cited by Japan Economic Newswire, December, 1993

⁴⁹ Zwig, 1991, Internationalizing China's Countryside in China Quarterly, VI28

the enterprises to import materials, acquire technology, send inspection teams abroad, and so on, while the other half is to be used by local governments to provide infrastructure. In addition, individuals have been allowed now to have their own foreign exchange accounts in China. The opening of 'Foreign Exchange Adjustment Centers' since 1980 is another important step in the relaxation of foreign exchange control. It enables the exporters to sell their foreign exchange and the other enterprises to purchase foreign exchange for their respective special needs.

Foreign trade reform, which centered on decentralization of trading power and the institutional changes discussed, effectively broke the long term monopoly of the central government over foreign trade. The emergence of large number of trading companies at different levels has given play to the advantages of their respective trading experiences, production, science and technological strengths in doing business with foreign partners. The competition eventually created among themselves will help promote their self-perfection in operational and managerial reforms and raise their trading efficiency. Devaluation of the currency and the relaxation of foreign exchange control have created an immediate and direct impact on the promotion of exports and efficient utilization of foreign exchange. All these reform measures have proved to be essential to and fruitful in the expansion of the nation's foreign trade.

5. THE RELATIONSHIP OF FOREIGN TRADE AND TECHNOLOGICAL TRANSFORMATION

5.1. Historic Review Before 1978

China is known for her four great ancient inventions of gun powder, the compass, paper making and paper printing in the time between four to tenth centuries. China's other early technological preeminence such as armaments, the use of wind and water power to drive machines, porcelain, cast iron were also once very impressive to the world. However, due to many complicated historic reasons, China did not seem to inherit much that creativeness in recent centuries. When the developed world made tremendous technological progress over the second half of the twentieth century, the technological gap between China and the advanced industrialized countries increased. Being a poor and backward agricultural country, China did not have much industry at the founding of the People's Republic of China. Industrial output accounted for less than one third of the gross value of industrial and agricultural output. Only after 1949, did the country start to establish her own industries.

5.1.1 Three Waves of Technological Imports Before 1978

During the period between 1952 and 1978, China imported complete advanced plants comprising 876 projects at a total cost of US\$13.7 billion basically for the purpose of establishing its industrial bases.

Between 1952 and 1960, China imported 450 projects from the former Soviet Union and other East European countries at a total cost of about US\$2.7 billion, 90 per cent of which comprised complete plants. Between 1962 and

1968, China began to import technology from such advanced countries as Japan, the United Kingdom, France, Italy, West Germany, Austria, Sweden and the Netherlands. China imported 84 projects totaling US\$0.27 billion. Of which, 91 per cent were paid for complete plants. Between 1973 and 1977, China imported 222 projects which comprised either complete plants or complete sets of equipment with a total cost of US\$4.3 billion. Many of these projects met difficulties due to the turmoil of the Cultural Revolution and economic efficiency was low.⁵⁰

5.1.2 Experiences and Lessons

These projects helped establish the foundation of China's industry and improve the national economy. This has been significant considering China was a very backward agricultural country. The government was obliged to exert continuing efforts in improving the heavy industry by spending US\$25 billion over the twenty eight years leading up to 1978.⁵¹ Between 1952 and 1978, China's output growth averaged about 4 percent a year, as industrial output rose quite rapidly.⁵²

The lessons from the imports of technology during this period could be summarized as follows:

- 1) There was much reliance on the former socialist bloc which caused serious problems when China's relationship with the former Soviet Union was collapsed, and all the experts and technicians who were implementing the contracts in China withdrew at the end of 1950s. Many imported

⁵⁰ Data source from Ding, 1990, "China: Policies for Technology Import" in Technological Change in the Asia-Pacific Economy.

⁵¹ Xu (1987), "The commodity Composition of Imports and Exports" in China's Foreign Trade.

⁵² IMF (1991), Economic Reform and Macroeconomic Management.

plants were paralyzed afterwards. The economy came almost to a standstill in the years 1957 to 1962.

- 2) There was a neglect of software imports. From 1952 to 1978, approximately 2.3% of the contracts for technology imports were for software.⁵³ The purpose of this technology import was to enhance productive capacity, but it did not promote greatly the improvements in the R & D capabilities nor its design and manufacturing skills.
- 3) Before 1978, due to the complete central planning system China in use and the absolute monopoly of the state over foreign trade, exports were limited, with primary products accounting for about 80 percent and industrial finished products only 20 percent. Hard currency was in severe shortage. On top of this, China was strictly against currency imports at that time. The country was very proud of the fact that China was the only country in the world that had neither internal nor external debt. Nevertheless, all the spare parts and auxiliary equipment for the projects imported were only available abroad. This added a heavy burden on the nation in keeping those imported plants working continuously.

In short, China's technology importation in pre-reform period was hard ware and complete-plant oriented with limited sources from abroad. Furthermore, the imports of technology had little connection with R&D activities and transactions were basically concluded by the ministries concerned in addition to only two import and export corporations which were authorized by the central government to deal with technology business.

⁵³ Based on the information given by Simon (1991), "China's Acquisition and Assimilation of Foreign Technology" in *China's Economic Dilemmas in the 1990s*.

5.1.3 The Year of 1978, the Hope for Technological Progress

In 1978, China adopted an open and reform policy which shifted the whole nation from 'class struggle' to 'revitalizing the economy'. Realizing that advanced technology was the most powerful and dependable engine of economic growth, China set 'science and technology modernization' as one of the main goals in achieving her 'Four Modernizations', and technological transformation was officially placed on government agenda.

In the year 1978 alone, China imported 120 complete sets of equipment at a cost of US\$6.4 billion for basic industries, such as Baoshan Iron and Steel project.⁵⁴ The total amount of this project was almost equal to that spent on all technology imports during 1950-77. Technological transformation, which means in China as upgrading of industrial enterprises through the introduction of both domestic and foreign technology and equipment, has always been one of the major concerns of the nation in its process of foreign trade and economic development since 1978, and China has made tremendous progress in upgrading its level of technology, especially in the industrial sector.

During the period 1981-1989, China signed over 18,000 agreements and over 30,000 contracts for the introduction of technology and equipment to support the upgrading of Chinese enterprises for a total of over 415,000 projects. In total, the State pumped in 463.2 billion yuan (US\$98.5 billion). More than 17,000 projects involved the use of foreign exchange funds for the import of technology and equipment to support technical transformation. In the 7th

⁵⁴ Ding (1990), "China: Policies for Technology import".

five-year Plan (FYP) itself, the State allocated a total investment of 276 billion yuan for technical transformation, but initial estimates are that the actual amount of investment for the first four years (1986-1989) was over 314 billion yuan with one year still left to calculate. A report in the Renmin Ribao in mid-November 1990 indicated that the total figure will likely exceed 400 billion yuan. Total funding for technical transformation increased from 18,7 billion yuan in 1980 to 78,9 billion in 1989.⁵⁵

In addition to the overview of China's pre-reform technological conditions, this chapter shall continue to discuss the relevant changes of China's domestic science and technology (S&T) development since 1978 with regard to policies, system and structure which are considered as the fundamental conditions in promoting China's technological progress. This chapter will evaluate China's technological progress since 1978, focusing particularly on the role of acquisition of modern technology either through foreign direct investment (FDI) or direct technology and technology embodied imports in bringing about China's technological change, in promoting exports and economic growth.

5.2. Great Changes in China's Science and Technology

Due to China's political and economic isolation from the rest of the world, and to conflicts with quite some of its neighboring countries, China's science and technology (S&T) before 1978 was more militarized, especially in the 1960s and the 1970s. According to Zhang Binfu from the State Science and Technology Center, S&T personnel in defense industries constituted 13% of

⁵⁵ Simon (1991), "China's Acquisition and Assimilation of Foreign Technology" in China's Economic Dilemmas in the 1990s.

the work force, in comparison with an average of 3% in civilian industry. China successfully launched 27 of its own or foreign-owned satellites including those of telecommunications, weather, resources, reconnaissance, etc.⁵⁶ Yet, the overall level of technology in both industry and agriculture remains very low compared to the western advanced countries. Furthermore, the system's own impediments and deficiencies also constrained itself from contributing more to the economic growth. According to the former vice-minister of State Science and Technology, Wu Mingyu,⁵⁷ China's S&T before 1978 had relied too much on administrative measures and neglected the role of economic levers in managing S&T activities. There existed also a tendency to over-develop 'independent research institutes' while neglecting S&T activities within production enterprises. Besides, the rigidity in management and distribution of S&T personnel also caused waste or underutilization of the expertise and research funds. Reform has been focused on shifting part of the production apparatus from military to civilian sectors, establishing a technology market, changing strategies and encouraging the combination of S&T with production enterprises.

5.2.1 Shift of Some Defence Sectors to Civilian Purposes

One of the most striking changes in China's S&T since 1978 is the shift of some defence sectors to civilian purposes. The working emphasis of these defence sectors have been changed to assisting the civilian economy by technology transfers and through the conversion of its plants to civilian production. According to Xiao Qinfu, in the book, 'Shortest Route', some 3000

⁵⁶ Knezo (1991), "Science and Technology" in China's Economic Dilemmas in the 1990s.

⁵⁷ Simon (1989), "China's Drive to Close the Technological Gap: S&T Reform and the imperative to Catch Up".

long-standing civilian production problems during the 1980s were solved with technologies from the defense sector, with more than 2 billion yuan spent on application of the know-how supplied. By 1989 the value of production for the civilian economy from defense plants had risen to 66% of total output value, up from 10% in 1979.⁵⁸ This was very significant in promoting the overall technological transformation in the whole country.

5.2.2 Changes in Government Strategies for S&T Development

Another important feature of S&T in the 1980s was the changes in government strategies towards S&T development. Between 1978 and 1985, the strategic point was firmly oriented toward high technology. The S&T plan identified 108 key projects in eight major areas: agriculture, energy, materials, microelectronics, lasers, space, high energy physics, and genetic engineering.⁵⁹ But as of 1980, more emphasis was laid on basic research until 1985, when the government stressed applied science and technology in order to drive economic growth and force more cooperation among researchers, industrial firms, and entrepreneurs. Institutes involved in R&D under the Chinese Academy of Sciences are now required to supplement the funding they receive from the State by contracting work with individual enterprises. This shows that technological progress has occupied an increasingly important position in government strategic planning.

High technology remains of vital importance in realizing China's technological transformation. The 863 program formulated in 1986 which includes seven priorities of biotechnology, space, information, laser,

⁵⁸ Cited by Suttmeier (1991), "China's High Technology".

⁵⁹ Suttmeier (1991), "China's High Technology".

automation, energy and advanced materials technology received high attention from the central government. The program has spent roughly RMB500 million up until 1989. There were 10,000 scientists and engineers in 500 organizations involved in the three main sectors of the R&D establishment - the Chinese Academy of Science (CAS), institutions of higher education, and the ministerial research institutes. It was reported that the results during the 1990s are expected to have commercial potential.⁶⁰

5.2.3 The Rise of Non-State Hi-Tech Enterprises and Centers

With 'Beijing Electronic Street' as the pioneer in the 1980s, the rise of non-state high-tech enterprises all over China represents the newly emerged vigorous S&T force, which is of far reaching significance in bringing about China's technological transformation. The government's 'Torch Plan', initiated in 1988, has been given a special responsibility to foster such new high technology firms, and oversee and promote the development of special high technology enterprise zones. According to Radio Beijing in an interview with Zhang Binfu from the State Science and Technology Center (SSTC), the number of high technology enterprises had reached some 15,000 nationwide by the end of 1989, with a work force of 80,000 people. Beijing's success in this field has been very impressive to the nation and the world. In 1988, some 790 companies earned RMB1.4 billion with 470 billion yuan from sales of technology and they also earned US\$13 million through exports. By May 1990, the total number of firms had risen to 894, the 50 largest of which had business networks around the country and annual incomes exceeding 5

⁶⁰ Suttmeier (1991), "China's High Technology".

million yuan.⁶¹ One hundred science and technology institutions have been granted the right to deal the foreign business.

Obviously, China's new policy towards science and technology development allows the new S&T system to play a greater role in promoting the technological progress in China's agriculture and industries by helping assimilate foreign technology and innovation of China's own technology.

5.3 The Role of Acquisition of Foreign Technology in China

The cycle of economic growth has a definite pattern. The major components include the introduction of new technology, and investment, increase in demand, expansion of production in demand, reduction in manufacturing cost, increase in exports, increase in foreign exchange earnings, and finally the introduction of some new technology and more investments.⁶² Technical improvement in this process is believed to be the major cause of higher productivity, which in turn, is the key to income growth. The value added goods, together with technology of various kinds, represent absolute power in the current international trade in contrast to the exports of primary goods.

5.3.1 China is in Urgent Need of Technology

As one of the developing countries in the world, China also faces a severe challenge in upgrading the technological level of its industry. According to China's People's Daily editorial, October 23, 1991, in the early 1980s about 70 per cent of China's large and medium-sized enterprises, the backbone of China's industry, had been built in the 1950s and 1960s and their equipment

⁶¹ Suttmeier (1991), "China's High Technology".

⁶² UNCTAD (1988), Technology Policies for Development and Selected Issues for Action.

was worn out or had become technologically obsolete.⁶³ This shows that China faced, and still faces severe challenges in completing its technological transformation.

It is very difficult for China to bridge its technological gap with developed countries by relying merely on her own R&D and following the traditional evolutionary pattern of development, which means to follow the path of scientific research, applied research, development of technology, commercialization and industrialization. Similar to most developing countries, China is short of capital needed for very expensive research. As R&D requires not only equipment and laboratories but also information networks and skills. China does not possess sufficient and qualified scientists and engineers in R&D to meet its large scale technological transformation. Accumulating capital, and training of skilled human resources, engaging the research all take a long time. Acquisition of foreign advanced technology through either foreign investment or direct importation is extremely important in bridging the gap with the western world, and it has already been proved by China's successful experience over the past decade in upgrading the technological level of the whole nation and in the promotion of exports.

5.3.2 Acquisition Through Foreign Investment

The implication of an open and reform policy in China since 1978 has been greatly encouraging foreign investment. Table 1 shows that foreign investment to China between 1985 and 1991 has experienced a constant increase in both borrowing and foreign direct investment. The ratio between

⁶³ Cited by Yeh (1992), "Macroeconomic Issues in China in the 1990s".

foreign loan and FDI in 1991 is around 60:40. Statistics from State Statistics Bureau shows that total contract value of foreign investment in 1993 was 122 billion, which was about a 77% increase over the previous year.⁶⁴ Table 2 indicates the striking feature of China's OCCs and OCPs in their role of attracting foreign direct investment. The annual rate of increase of OCC's in FDI absorption peaked at almost 40%, while the average rate for the whole country is around 30%.

Time magazine reported that by May, 1993, there were nearly 84,000 joint ventures, cooperative enterprises and exclusively foreign-funded firms which were registered in China.⁶⁵ However, by March 19, 1994, China's People's Daily announced the number as 170,000, and half of these foreign invested enterprises were in operation at the level of production. The estimated amount of foreign investment in utilization is around US\$60 billion.

⁶⁴ News from People's Daily, March 1, 1994.

⁶⁵ Rudolph (1993), "Industry - building on Success".

Table 1: China's Intake of Foreign Capital, 1985-91
 (Realized loans and FDI by provincial and ministerial
 borrowers in US\$million, percentage shares in the second line of every item)

Year	Loan	FDI	PRC Total
1985	2505.96	1956.15	4462.11
	56	44	100
1986	5014.57	2243.73	7258.30
	69	31	100
1987	5804.97	2646.61	8451.58
	71	29	100
1988	6486.73	3739.62	10226.35
	63	37	100
1989	6285.70	3773.49	10059.19
	62	38	100
1990	6534.52	3754.94	10289.46
	64	36	100
1991	6767.98	4370.00	11,137.98
	61	39	100

Table 2: Growth of FDI in the Econocoas Areas in China 1979-90
 (cumulative total in million US\$)

	1979-84	1986	1988	1990	1985-90 annual (%)
SEZs	895.87	1711.43	2520.86	3789.68	25
OCCs	472.59	1148.38	2346.31	4116.32	40
OCPs	2256.05	4628.70	8330.71	14043.34	34
Beijing	350.00	588.53	1197.50	1796.61	33
PRC Total	4102.00	8315.00	14701.00	29739.55	30

Note:

PRC : The People's Republic of China

% : annual growth rate, rounded figure

Modified data which are from Chinese Statistical Yearbook cited by Y.Y.Kueh, in 'Foreign Investment and Economic Change', 1992

Over 100 countries and regions have direct investment in China now. The top five in the amount of investment amount are Hong Kong, the United States, Japan, Taiwan and Singapore. Canada ranks as the tenth. Of the total contract value between 1979 and 1990, investment from Hong Kong and Macao made up 69 percent of China's FDI. The United States represented 10 percent, Japan 8 percent, and Taiwan 5 percent.⁶⁶

The geographical distribution of FDI has shown an increase in the proportion of capital invested in the inland area to 20% according to China's People's Daily, October 14, 1993. The distribution of foreign investment in the economic sector is as follows:⁶⁷ between 1985 and 1990, the share of foreign investment in agriculture in its share of total foreign investment was 4.18 and 7.68 per cent respectively. The share of the investment in industry increased from about 36% to 65%. During the first half of the decade, foreign investment contributed a lot in improving China's infrastructure. The proportion of foreign investment in service sector declined from almost 60% in 1985 to 27% in 1990, and the share of real estate dropped from 23% to 3% during the same period.

Such an increase in foreign investment greatly enhanced China's capability in making up its shortage of domestic capital, enabling the country to solve bottleneck financing problems. The increasing share of foreign direct investment in industry has been significant in raising the technical managerial level by importing urgently needed advanced technology and equipment, production skills and management expertise, and all other

⁶⁶ News from China's People's Daily, April 21, 1992.

⁶⁷ See Kueh (1992), "Foreign Investment and Economic Change in China".

urgent necessities. The rapid increase of foreign investment greatly helps promote production and foreign trade. In 1991, foreign funded enterprises in the four SEZs contributed 55% of Gross Value of industrial Output (GVIO), and 76% of exports of the total in those areas. The corresponding figures for Guangzhou were 21% and 66%. The total contribution of China's OCCs and SEZs foreign funded foreign invested enterprises to GVIO during 1987 to 1991 increased from 2% to 17%. Their contribution to exported GVIO experienced an even more striking jump from 18% to 75% over the same period.⁶⁸ In 1992, the total import and export volume of the foreign invested enterprises (FIEs) in China accounted for one fourth of the total China's trade, valued at US\$43.8 billion. The total value of exports of the foreign invested enterprises is US\$17.4 billion which accounts for one fifth of the country's total exports. The share of manufactured goods among FIE's exports is 94%.⁶⁹

5.3.3 Acquisition Through Imports

It was reported that more than 17,000 projects involved the use of foreign exchange for the import of technology and equipment to support technological transformation in the years between 1981 and 1989. The main features of China's technology imports in the 1980s are as the following:

- 1) Foreign technology imports are constantly increasing as shown in Table 3 below. The volume in 1986 is more than double than the total volume in 1981-1984.

⁶⁸ Data source is from Kueh (1992), "Foreign Investment and Economic Change in China".

⁶⁹ Data from China's "News of International Economics and Trade", January 7, 1993

Table 3: China's Imports of Foreign Technology, 1981-1989
Unit: U.S \$ million

year	licenses	consult service	technical service	Co- produce	computer equipment	total
81-84	368.49	16.20	391.46	70.85	1145.70	1992.70
% *	18.49	0.81	19.64	3.56	57.50	100
1985	219.80	8.93	12.92	385.43	2234.31	2961.39
1986	419.36	12.11	235.84	136.40	3651.82	4455.53
1987	350.87	10.19	15.99	509.95	2097.89	2984.89
1988	476.58	27.51	14.24	10.05	3019.88	3548.26
1989	148.45	6.1	38.45	6.58	2723.35	2923.00
% **	5.08	0.21	1.32	0.23	93.17	100

% * : Share of each in total foreign investment between 1981-1984

% **: Share of each in total in 1989

Calculation based on the source:

Ministry of foreign Economic Relations & trade, Beijing, 1990⁷⁰

2) The share of computer and equipment importation covers most of the total foreign technology imports. It was almost 50% in 1981-1984, 75% in 1985, 82% in 1986, 70% in 1987, 85% in 1988 and up to 93% in 1989. The other types of imported technology are comparatively insignificant.

3) The major beneficiaries of foreign technology have been the energy sector, the petrochemicals sector, the metallurgy sector and the telecommunications sector. According to statistics of the Ministry of Foreign Economic Relations and Trade (MOFERT), in 1988, the contract value for key technology import

⁷⁰ Cited by Simon (1991), "China's Acquisition and Assimilation of Foreign Technology".

projects in three industries- energy, telecommunications, and raw materials- accounted for 56% of the total technology import contract value. In 1989, a similar picture emerges. Energy (27.4%), petrochemical (16.4%) and chemicals (11.8%), and telecommunications (5.0%) accounted for the bulk of foreign technology and equipment acquisition. The largest recipients by sector of foreign technology in terms of the number and value of contracts were the textile industry (16.9%), the electronics industry (6.2%), and the chemical industry (4.5%).⁷¹ This has been clearly geared to the support of technological transformation.

4) Although the software coverage has increased tremendously compared with the pre-reform situation, it also showed a strong fluctuation in the last decade. Between 1952 and 1978, software import was only 2.3% in average. During the period of 1981 and 1984, the contract value of software acquisition ranged around 30-50%. But it declined to about 15% in 1987, 19% in 1988 and 14% in 1989.⁷²

5) China's major partners in technology imports have been Japan, the United States, Italy, France and Germany . By 1993, China had imported 28% of total foreign technology from Japan, and around 70% of computers from the United States.

⁷¹ Source from Almanac of China's Foreign Trade & Economic Relations, 1990, cited by Simon (1991) in "China's Acquisition and Assimilation of Foreign Technology".

⁷² Based on the source provided by Ministry of Foreign Economic Relations and Trade, Beijing, 1990 and the article written by Zhou Hongqi with the title Pros and Cons of Technology Imports, China Daily, March 31, 1990, cited Simon (1991).

6) According to Economic Yearbook of China, 1990, the source of funding for the technology imports in 1989 was reported as 74% from foreign bank loan, which represents a heavy dependence on foreign capital.

The drastic increase in China's technology imports indicates the explosive demand for new technology in China since 1978. The changes in the composition of technology imports, and the increase in the proportion of software imports also symbolize China's increasing capability in introducing and assimilating foreign technology. Compared with pre-reform conditions, some enterprises and almost all the trading companies are given the right to deal with technology business. Foreign countries are all welcome to supply appropriate technology in meeting Chinese requirements. All these have been beneficial to the upgrading of the country's overall technological level.

5.4 Progress in China's Technological Transformation

The volume of technology trade has increased at an average annual rate of 60 per cent, to reach 7.5 billion yuan in 1990.⁷³ The increasing volume of domestic and external technology transfers since the year 1978 has contributed greatly to the upgrading of China's industrial technology level, promoted the development of productivity and greatly improved the quality of the products. Meanwhile international technological connections have been established over the years since 1978, which ensures China's access to the most advanced technological world in its future needs for modern technology.

⁷³ Yeh (1992), "Macroeconomic Issues in China in 1990s".

5.4.1 Promotion of Productivity and Trade

It was reported by China Daily, August 29, 1989 that as a result of technology imports over the last decade, China has been able to expand steel production annually by 15 million tons, copper by 90,000 tons, aluminum by 1.5 million tons, ethylene by 900,000 tons, synthetic fiber by 1.1 million tons, and cement by 4.8 tons.⁷⁴ Three other examples are given below to show the progress made in productivity and quality improvement in China's industries through technological transformation:

The impact of technology imports

The assessment for '3000 Projects' imported during the 1986-1988 time period shows that 3,000 projects have enabled some Chinese industries and products to leap-frog technically, significantly narrowing the gap with the advanced nations. Ten percent of the products of the machinery industry today reach international standards of the late 1970s and early 1980s. In electronics, the manufacturing of color TV sets, video cassette recorders, tape recorders and copiers has grown and matured. More than 30 percent of electronic products are now on par with the best of the world in the late 1970s and early 1980s, up from 15% in 1982.⁷⁵ Machine building industry has been most impressive in its efforts of upgrading its level of technology. Over the fifteen years since 1978, machine building industry imported foreign advanced technology with over 1300 projects which greatly enhanced the capability of producing high-tech complete plants urgently needed by the country, particularly in power generation, and industries of oil extraction and construction. Exports of

⁷⁴ Knezo (1991), "Science and Technology".

⁷⁵ Jing Shaogao, '3000 pieces of Technology Imported in 3 years', Renmin Ribao Overseas Edition, December 4, 1986

Chinese machinery has expanded with annual average rate of about 40%. In 1992, the earning of foreign exchange by the machine building industry increased six times over that of 1986, and the industry has become the second largest earner of foreign exchange in China.⁷⁶ Such progress made in China's machine building industry represents the hope of further expansion of China's foreign trade in the long run.

Striking progress in textile industry

China's textile industry is the world's largest in size, having 40 million spindles and 860,000 looms. However, it is an old industry as well with one third of spinning machinery and equipment overdue in service. Before 1978, the industry was in severe shortage of advanced processing technique and technology. Production was limited, quality of many products were comparatively poor and not so competitive in international market. But the industry has been continuously importing modern machinery and equipment from the advanced countries since 1970s. Extensive cooperation with foreign firms in technology transfer and co-production and other kinds of activities have been carried on vigorously. According to the report of People's Daily, November 21, 1992, China's textile industry spent 5.3 billion US dollars during the period of 1980s and imported 112,000 sets of textile single machines, complete production lines and plants. At the same time, the industry has co-produced in China, with foreign partners, around 50 different kinds of textile machinery.

⁷⁶ News by correspondent Zhang in China's Scholar's Abroad, December, 1993.

Together with the efforts made by textile industry itself in structural reform of the organizations, enterprises, products and management, China's textile production took off at a rapid pace, growing by 18% annually throughout the decade. China's Business Review⁷⁷ reported that the nation's textile and apparel exports value rose from US\$5.3 billion in 1985 to US\$13.8 billion in 1990, 160% increase over five years. In 1991, China's textile industry imported one billion U.S dollars of advanced machinery, production lines and plants, which amounted to a 60% increase in import value over the years of the Seventh Five-year Plan. In the first half year of 1992, it was reported that the value of imports in textile machinery and technology was over one billion U.S dollars. ⁷⁸ Textile goods have become the country's major exports accounting for around 30 per cent of China's total export value in 1990, and the industry has been number one in the earning of foreign exchange.

It is true that the spread of modern technology through both the commercial and non commercial means of transfer on the vast and once so isolated land of China has truly provided flying wings for China's many industries, increasing productivity and improving the quality of the products.

5.4.2 Wide Connections with the Worldwide S&T Network

Another important achievement of the past technological performance is that China has established wide connections in the international science and technology research and development circle which enables China to keep in close touch with the network so that China can be well informed about the

⁷⁷ Rasin S (1991) "Off and Running", The China's Business Review , Volume 18, No. 5.

⁷⁸ People's Daily, China, November 15, 1992

world S&T progress. According to Song Jian, the Minister in charge of the State Science and Technology Commission, China has signed agreements with 57 countries and has cooperative relations with 108 countries and regions. China has also joined 187 international non-governmental science and technology organizations and has also become a member of more than 30 scientific and technological organizations under the United Nations. In addition, China's S&T organizations have participated in more than 280 international academic organizations. The Chinese Academy of Sciences, for example, has signed cooperation agreements with counterparts in more than 50 countries and regions. Of the PRC's 340 sister-city relationships, approximately one-third are oriented toward science and technology collaboration.⁷⁹ Such international S&T cooperation will greatly encourage the further progress of China's technological transformation in future.

In short, China has made remarkable progress in her technological transformation since 1978 particularly when compared to the pre-reform conditions. The open and reform policy basically provides the possibility and favorable environment for foreign investment in various forms. The acquisition of foreign technology encourages at the same time China's domestic S&T research and development, which in return helps promote the acquisition and assimilation of foreign technology. Technological progress in China since 1978 which reflected in the increase of productivity, improvement of product quality, the expansion of export and economic growth indicates the extreme importance of modern technology as a most efficient and reliable expeditor of the nation's economic development.

⁷⁹ Simon (1991), "China's Acquisition of Foreign Technology".

6. FOREIGN TRADE AND ECONOMIC GROWTH SINCE 1978

6.1 Achievement in Foreign Trade

China's foreign trade did increase rapidly in all the years since 1978, and increased even faster than the national economy. Foreign trade has played an increasingly important role both in the country's economic growth and foreign economic activities.

6.1.1 Great Foreign Trade Expansion

Table 4 shows that China's total volume of import and export trade in 1990 is about US\$114.37 billion, which is more than a 100 times increase over that of 1950 (US\$1.13 billion).⁸⁰ The world trade volume in 1990 is US\$6,964.6 billion which is an increase of 55 times over the volume of 1950. Chinese Foreign Trade and Economics news reported on January 7th, 1993 that China's total trade volume in 1992 is US\$165.6 billion, 22 per cent increase over the volume of 1991, and nine times over the value of 1978 (US\$18.624 billion⁸¹) Export volume amounted to US\$85 billion and import up to US\$80.6 billion, respectively an 18% and 26% increase over the year before. Statistics from China's State Statistics Bureau show that imports had even bigger increase of 29% in 1993 over 1992, with a total value of US\$104 billion. Exports amounted to US\$91.8 billion, thus total trade volume in 1993 came to almost US196 billion.⁸² China's total trade growth rate is also much higher than the world average and the most developed countries such as Canada, United States and Japan as shown in the following Figures 1 and Figure 2.

⁸⁰ UNCTAD (1991), Handbook of International Trade and Development Statistics.

⁸¹ IMF (1980), Direction of Trade Yearbook.

⁸² Data from the news of China's People's Daily, March 1st, 1994.

Table 4: World and China Trade Volume
in US Billion

Year	1950	1960	1970	1975	1980	1985	1990
World	124.3	265.1	643.4	1779.2	4057.2	3955.2	6964.6
China	1.13	5.22	4.59	15.62	37.82	69.6	114.37

Sources: Data selected from The Handbook of International Trade and Development Statistics, 1991. Figures have been rounded.

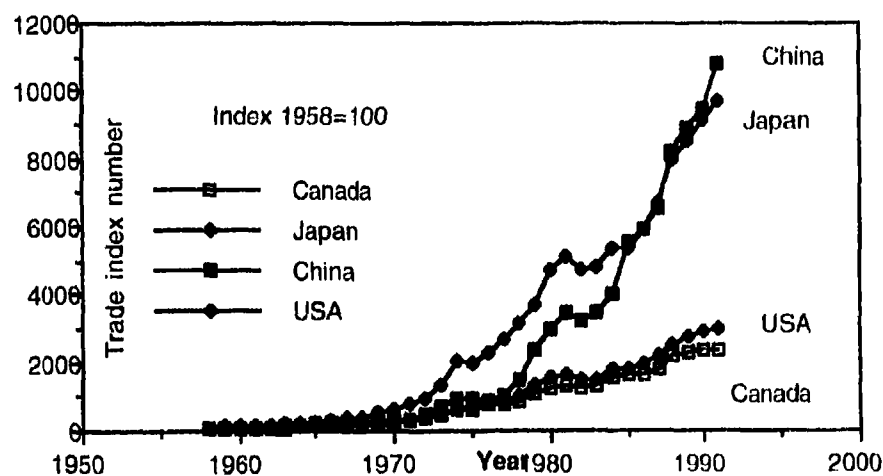


Figure 1: Trade Expansion Comparison
Data source: Direction of Trade Year Book, 1958-1991

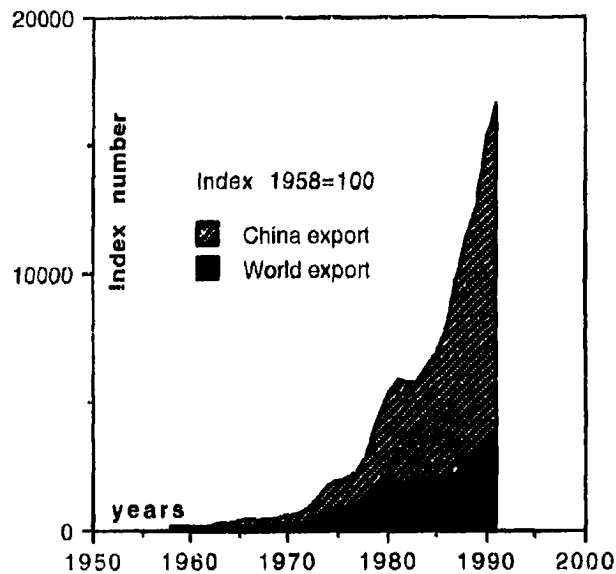


Figure 2: Export Comparison

Data source: Direction of Trade Year Book, 1958-1991

The ratio of foreign trade to GNP rose from less than 10% in 1978 to over 36% in 1991.⁸³ In 1978, China ranked thirty-second in the world in terms of the value of foreign trade, and it is now the world's eleventh largest trading nation. It is optimistic to see that it will not be too long before China is put among the top ten trading giants of the world. The hope lies in the trend which China exhibits in the growth of its manufactured exports and imports in each year since 1978.

⁸³ Gottschang (1992), "The Economy's Continued Growth".

6.1.2 Import and Export Structure by Commodity Groups

Due to the huge demand for skill and knowledge intensive goods and technology in China's technological transformation drive, the share of manufactured goods in China's imports (see Table 5) increased from about 70% in 1984 to 80% in 1990. Among the imports of manufactures, machinery and equipment increased the most from 27% to 41% over the same period.

China's exports (see Table 6) also show the increase of manufactured goods from about 42% in 1975 to 62% in 1990. Among manufactured exports, machinery and equipment increased the most from 1.5% to 7.3% over the same period, showing a striking feature of China's progress in manufacturing goods production. Meanwhile the food items exports decreased from around 35% in 1975 to 13% in 1990.⁸⁴ The changes in composition of China's imports and export commodities indicates the fact that foreign trade in China involves an increasing share of technology related business, which is also a symbol of China's increasing power of technology absorption and innovation. Yet another distinctive feature in China's exports is that textile goods occupies around 30% of the value of total exports all these years. This also reflects the fact that China still relies to great extent on labor intensive and low skill intensive goods production for exports.

⁸⁴ UNCTAD (1991), Handbook of International Trade and Development Statistics.

**Table 5: China's IMPORT Structure by
Main Categories and Selected Commodity Group**
(percentages)

Year	1984	1985	1987	1988	1989	1990
Total value (million US\$)	26184	42490	43215	55268	59140	53345
Main Categories:						
All food items	9	4.4	7.3	7.8	9.1	8.7
Agricultural raw materials	7.7	6.2	6.5	8.6	7.2	6.1
Fuels	0.5	0.4	1.2	1.4	2.8	2.4
Ores and metals	5.5	2.2	2.9	2.3	3.1	2.6
Manufactured goods	69.2	61.3	81.6	79.2	77.4	79.8
Chemical products	15.3	10.4	11.8	16.7	13.1	12.9
Other manufactured goods	26.8	11.9	30.3	25.7	26.5	25.9
Machinery and equipment	27.1	39	39.5	36.7		40.9
Unallocated	8	5.7	0.4	0.6	0.4	0.5
Selected commodity group:						
Cereals	6.4	2.3	3.9	3.4	5	4.4
Crude+manufactured fertilizer	6		3.3	4.3	4	4.9
Crude petroleum				0.2	0.8	0.8
Petroleum products			0.9	1	1.7	1.2
Medical+pharmaceutical	0.3		0.6	0.7	0.5	0.8
Fiber, yarn and clothing	6	6.4	11.2	11.6	12.2	13.7
Metals+metal manufactures	20.4	21.4	14	11	12.7	7.4
Machinery						
Non electrical	13.5		20.1	17.8	18.5	19.5
Electrical	6.5		10	10.3	10.3	10.3
Transport equipment	7.1	11.1	9.4	8.7	9	11.2

Source: Items selected from Handbook of International Trade Development Statistics, 1991.
UNCTAD secretariat computations based on United Nations Statistics Office data.

**Table 6: China's EXPORT Structure by
Main Categories and Selected Commodity Group
(percentages)**

Year	1975	1980	1985	1987	1989	1990
Total Value (millions dollars)	6328	18270	27343	39437	52538	62091
Main Categories						
All food items	32.8	25.1	16.7	14.5	13.7	12.7
Agricultural raw materials	7.9	7.3	6.2	5.7	5	3.5
Fuels	12.5	16.3	25.9	11.5	8.2	8.3
Ores and metals	3.8	3.4	3	3.3	2.6	2.1
Manufactured goods	41.8	47.5	35.9	46.2	53.9	61.6
chemical products	4.6	6	5	5.7	6.2	6.2
other manufactured goods	35.7	38.7	28.1	36.1	40.4	48
Machinery and equipment	1.5	2.9	2.8	4.4	7.3	7.3
Unallocated	1.3	0.4	12.4	18.8	16.6	11.9
Selected commodity group:						
Cereals					1.4	1
Crude+ manufactured fertilizer						0.1
Crude petroleum					5.2	5.5
Petroleum products					1.6	1.6
Medical and pharmaceutical pro					1	1
<i>Textile fibres, yarn and clothing</i>					27.9	28.8
Metals+metal manufactures					4.5	5.3
Machinery:						
Non electrical					2.5	4.4
Electrical					3.9	6.4
Transport equipment					0.9	6.5

SOURCES: UNCTAD secretariat computations based on United Nations Statistical Office data cited by Handbook of International Trade and Development Statistics

The Asian Four NIEs of Hong Kong, Taiwan, Singapore and South Korea have been considered by the Neoclassical economists as the model of success in developing their manufactured goods exports over the last three decades for achieving their economic miracle. The another four Near-NIEs (if they may thus called) -- Indonesia, Thailand, Malaysia and Philippines -- have also performed extraordinarily since 1970s in developing their manufacturing industries and in promoting the exports of these products. However, compared to these NIEs and Near-NIEs (see Table 7), China may have been more successful in promoting manufactured goods production and exports particularly since 1980s. From 1970 to 1980, China was much behind these NIEs, with a growth rate of 8.3% in manufactures exports compared to the range of 10-25% achieved by the NIEs and Near NIEs, and the growth rate of value added goods was only 7% which was also much lower than for most of the 'eight' NIEs. Nevertheless, in the following years (1980 and 1988), the rate of growth in manufactures exports reached 12.5%, which was higher than that of Singapore (7.3%), and much closer to the range of 11-13.7% obtained by the other three 'tigers'. In terms of an increase in value added goods manufacturing, China recorded a 16.3% increase, which contrasted with the NIEs and Near NIEs which experienced growth rates ranged from -0.3% (Philippines) to 12.7% (Taiwan). This is once again the evidence of success of China's technological transformation since 1978, which greatly upgraded the country's technological level and the capability in producing and exporting manufactured goods.

**Table 7: Comparison of China's Exports of
Manufactured Goods with NIEs and Near NIEs
(Growth rate in Percentage)**

Country /Territory	Rate of growth of manufactures export		Rate of growth of manufactures value added	
	1970-80	1980-88	1970-80	1980-88
Indonesia	20.8	30.3	13.1	8.4
Thailand	16.2	17.6	10.0	7.0
Malaysia	15.1	14.8	11.0	7.0
Philippines	25.6	3.0	6.7	-0.3
Republic of Korea	23.4	13.7	15.7	12.7
Hong Kong	10.5	11.2	na	10.6
Taiwan	16.1	13.1	na	12.3
Singapore	18.2	7.3	9.3	4.7
China	8.3	12.5	7.0	16.3

Source: data selected from "UNCTAD VIII Analytical Report", United Nations, New York, 1992

6.1.3 Foreign Trade Structure by Countries and Regions

Since 1978, China has been continuously improving the trade relationship with countries all over the world, particularly the countries in the West and neighboring countries through border trade. On the basis of statistics listed in the table 8, some distinctive features of China's trade structure by countries and regions can be summed up as follows:

- 1) Both China's exports and imports to and from the developed nations as a whole declined from around 42% to 34% in exports in the years between 1975 to 1990, and from 69% to 50% in imports between 1984 and 1990. On the

contrary, exports and imports to and from all the developing countries experienced a significant increase from almost 48% in 1975 to 58% in 1990 for exports, and from 21% in 1984 to 43% in 1990 for imports;

2) China's exports to the whole European region dropped by 4.3 percentage points in fifteen years before 1990, and imports from that region showed only a slight increase of two percentage points in the six years after 1984. However, the United States and Canada experienced a drastic expansion in the imports of Chinese goods. Their imports accounted from 3% to 9% of total Chinese exports in the years between 1975 and 1990, although their exports slightly decreased in the years before 1990;

3) South and South East Asian countries have become China's increasingly important trading partners. China's exports to these countries in the 15 years before 1990 increased the share of total exports from 33% to 54%, and with respect to imports from these countries over six years after 1984, the share of imports increased from 15% to almost 39%. This trend is a sign that China has now more and more trading partners in the world which will eventually provide more flexibility and opportunities in trading. It also reflects the success of China's flexibility in dealing with foreign affairs and trade relations with neighboring countries.

**Table 8: China's Export and Import
Structure by Main Regions of Destination and Origin**

	EXPORT TO (%)				IMPORT FROM (%)			
Year	1975	1980	1985	1990	1984	1987	1989	1990
world (million US\$)	6327.7	18270	27343	62091.4	26184.6	43392	59140	53345
Developed	42.2	46.2	41.7	34.2	69.3	61.3	53.7	49.5
Europe total	14.2	15.5	9.3	9.9	15.2	20	17.8	17.5
EEC	11.6	13.3	0.1	9.1	12.7	16.8	15.4	15
USA Canada	3.2	6.6	9.4	9	18.8	14.4	15.1	15
Japan	23.3	22.9	22.2	14.5	31.3	23.3	17.8	14.2
others	1.6	1.3	0.8	0.8	3.9	3.6	3	2.8
Eastern Europe	9.8	7.3	7.6	5.1	6.2	7	7	6.3
Socialist Asia			0.9	0.6	1	0.6	0.3	0.3
Developing	47.9	46.4	49.8	58.1	21.4	29.8	34.7	43.1
OPEC	7.9	6.7	2.6	2.3	1.7	2	1.8	2.2
America	2.5	2	2.3	1.2	3.9	2.9	4.1	2.8
Africa	8.1	6.1	2	1.1	1.5	0.4	0.7	0.7
West Asia	4.6	5.2	6.2	1.8	0.9	0.9	1.3	1
S.SE Asia	32.6	33.1	39.2	53.8	14.8	25.3	28.4	38.5

Data selected from Hand Book of International Trade and Development statistics, 1991,
UNCTAD Computations based on United Nations statistics Office Data.

China and North America. The United States is now China's third largest trading partner and China is the ninth largest trading partner of the United states. Sino-U.S cooperation in technology business has been very close in the years since 1978, and it has been very important to their mutual interests. At

least 55% of U.S exports to China in 1992 were technology related, which included about 27% of aeronautic equipment, 16% of power generating machinery, 6% of electric machinery, and 6% of medical and surgical instruments.⁸⁵ The United States has basically dominated China's computer market with its market share up to 70%.⁸⁶ There is tremendous potential for further cooperation in the technological field between the two countries. Although problems also exist with regard to protection of intellectual property rights, etc, with the signing of Memorandum of Understanding (MOU) on this issue, and MOU on market access in China in 1992, friendly relations have improved, and future cooperation is much encouraged. Trade relations between China and Canada has also developed quickly over the last decade. Two way trade in 1960s was only US\$100 million to US\$200 million. It grew from US\$400 million to US\$500 million in the 1970s, and it experienced a sharp increase in the 1980s to around US\$1.3 billion. Total trade value between two countries in 1992 amounted to \$4.6 billion, with Canada importing about \$300 million more than it exported.⁸⁷ China is now Canada's fifth and Canada is China's eleventh largest trading partner. Considering the long term huge demand in China's energy, transportation, communication sectors which all represent the strong fields of United States and Canada, there exists a huge potential in technological business and cooperation between China and these two countries.

⁸⁵ Data selected and calculated based on information from China Data in The China Business Review, May-June, 1993. p.5

⁸⁶ Hui and McKown (1993), "China Computes". p18

⁸⁷ Data is from "Opening the Gate to Trade and Enterprise in China" in The New China, an advertising Supplement Issue to Canadian Business, October, 1993.

China and Asia. Trading with Asian countries is extremely important to China, and China is increasingly important to the other Asian countries as well. Statistics in table 9 shows a significant increase in the trade value of China's imports and exports from and to the Asian countries and a high degree of trade interdependence among each other in trading. Calculations based on the data in the table, yield the following summary points:

A. The share of China's *exports to Asia* including Japan (to her total exports to the world) increased from 51% to 71% during the years 1978-1991; The share of China's *imports from Asia* including Japan (to her total import from the world) jumped from 29% in 1978 to 57% in 1991. This reflects the extreme importance of the mutual reliance between China and the other Asian countries, particularly East Asian nations, in trading. Strikingly, the actual increase in China's export value to Asian countries (exclude Japan) increased by around 12 times and import increased 50 times during the period of 1978-1991.

B. Between 1978 and 1991, *China's exports to Japan* covered accounted for 35% of her total exports to Asian countries. This share dropped to 20% in 1991 although the export volume increased almost five times over the period. *China's imports from Japan* represented 97% of her total import from all Asian countries in 1978. It dropped to around 27% in 1991, although total import volume also increased by 224%. This trend does not mean Japan had less significance for both China's imports and exports. On the contrary, it shows China's increasing capacity in meeting the market demand of different areas, her increasing demand for diversified products from all the countries of the world due to the open policy, and particularly the inter trading

practices with other Asian countries. Japan, with its strength in investment, technology, machinery and equipment, remains potentially China's most important trading partner. In 1993, Japan became China's first largest trading partner with mutual trade amounting to US\$39 billion, accounting for about one fifth of China's total value in her trade with countries all over the world. China's imports of technology and equipment from Japan represented 28% of China's imports of technology and equipment same year.⁸⁸

C. Mainland China has experienced a constant increase in trade with Hong Kong since 1978. Hong Kong has enjoyed an increasing share of the *mainland's exports* to the whole Asian region from 51% in 1978 to 62% in 1991. The share of *mainland's imports* from Hong Kong has also experienced a big jump -- from 2% to almost 50% of the value of total imports value from all the Asian countries. This could be partly the result of the many transactions completed with Taiwan and South Korea, via Hong Kong, due to China's open and flexible policies. Calculations based on the statistics provided by IMF⁸⁹ also show that in 1992, mainland's total export value together with those of Hong Kong and Taiwan, rose to US\$281 billion, and it ranked fourth place in the world after the United States, Germany, and Japan. The increasing interdependence between China and the other Asian countries and economies also indicates the rapid formation of Asian economic power bloc and China's increasingly important role in this region.

⁸⁸ News from China's People's Daily, March 19th, 1994

⁸⁹ Calculation made based on statistics provided by IMF (1993), International Financial Statistics Yearbook.

**Table 9: China's Exports and Imports
to and from East Asian Countries between 1978-1991**
(Millions of U.S dollars)

	Export		Import	
Year	1978	1991	1978	1991
Industrial Country	3,547	25,038	7,510	31,544
Japan	1,719	10,265	3,105	10,079
Developing countries	4,253	44,273	1,731	29,635
Asia	3,260	41,008	508	26,508
Hong Kong	2,533	32,110	75	17,451
Singapore	248	2,013	46	1,062
Korea	na	2,177	na	1,065
Thailand	71	847	74	421
Malaysia	163	527	111	803
Macao	na	526	na	171
Pakistan	89	597	43	89
Indonesia	na	481	na	1,402
Philippines	86	253	57	130
World total	9,745	71,986	10,915	63,957
%distribution				
Industrial countries	36.4	34.8	68.8	49.3
Developing countries	43.6	61.5	15.9	46.4
Asia	33.5	57	4.7	41.4

Sources: Data selected from "Direction of Trade Statistics Yearbook", 1985, 1991

6.2 Striking Economic Growth Since 1978

It has been proved that the advantages brought by China's open and reform policy have made the rapid growth of China's foreign trade possible. Meanwhile trade has also acted as the effective engine of the country's economic development in agriculture and industry. The annual growth rate of the GNP has remained at around 9-12% through the fifteen years since 1978 in contrast of 2-4% annual growth achieved by the developed countries, and 4-8% growth by most of Asian NIEs and Near NIEs. The country has changed beyond recognition.

6.2.1 Agriculture

Great changes have taken place in China's countryside since 1978. There has been impressive growth and unprecedented structural changes in China's agricultural sector. Compared with an average annual rate of growth of 4.7 per cent in the years between 1971 and 1980, and 3.05 per cent between 1952 and 1970, the average annual growth rate between 1981 and 1990 was 6.4 per cent.⁹⁰ The biggest achievement in agriculture is the sharp increase of grain output, which has fundamentally solved China's problem of feeding one fifth of the world population with her only less than 10% of arable land. The coupon system which applied for more than three decades in China's grain, edible oil, cloth and other related products supply has finally been abandoned. It has been reported that after the country's liberation in 1949, China spent nine years before the country achieved its first 100 million tons of grain output, another twenty years for the second 100 million tons of grain, and only six years more for the third 100 million tons of grain. The latter

⁹⁰ Ash (1992), "The Agriculture Sector in China".

achievement occurred in the open and reform era. And other kinds of sideline products, husbandry have been promoted as well. By the year 1992, the production value from China's countryside reached around 2,539 billion in Renminbi, a five-fold increase over the 1978.⁹¹ China's countryside, once extremely isolated, poor and backward, has now been closely connected with the urban areas of the country and the outside world through its exchange of commodities, capital and cooperation, all of which will continue to bring significant economic and social changes in the whole country.

6.2.2 Industry

China's industrial production value has been substantially increased in the fifteen years since 1978, and this increase has greatly enhanced the nation's capability in foreign trade and the comprehensive strength of her economy. The following table gives an idea of China's Gross Value of Industrial Output (GVIO) growth and the structural changes brought in various industries. The total value rose from 523 billion Yuan in 1980 to about 1,714 billion Yuan in 1990, averaging 12 per cent per year. The country's industrial output increased another 21% in 1992.⁹²

Among all the industries, machine building industry was the star performer as described previously, achieving an average annual growth rate of 13.3% through fifteen years since 1978, and become the second largest foreign exchange earner after the textile industry. Machinery production increased six times between 1986 and 1992 increasing its share from 23 percent in 1980

⁹¹ News delivered by correspondent Zhuang Yuan "Reforms -- the Opportunities of Chinese peasants" in *China's Scholar's Abroad*, December, 1993

⁹² Rudolph (1993), "Industry - Building on Success".

to about 29 per cent in 1990. Petroleum experienced a decline in its share from 5.8 per cent in 1980 to 3.8 per cent only in 1990.⁹³ It can be seen from the table that the share of output from enterprises at the township level and below rose from almost 11 percent in 1980 to 32 per cent in 1990, while the enterprises above this level declined their share of output from about 90% to 68% over the same period.

Table 10: GVIO Above Township Level and at Township and Below, 1980-1990

Year	1980	1985	1990
<u>billion Yuan</u>			
Total	523.09	925.53	1714.45
Above township	467.93	751.91	1169.01
Township and below	55.16	173.62	545.45
<u>Percentage share</u>			
Total	100	100	100
Above township	89.46	81.24	68.19
Township and below	10.54	18.76	31.81
<u>Indexes</u>			
Total	100	176.94	327.76
Above township	100	160.69	249.83
Township and below	100	314.77	988.87
<u>Increase in percentage (over previous year)</u>			
Total		21.68	7.76
Above township		16.10	5.05
Township and below		53.66	14.07

Note: ⁹⁴ Above township consists of state, county, collective, urban street collective and other; township and below consists of township, village, cooperative and individual.

⁹³ Field (1992), "China's Industrial Performance Since 1978".

⁹⁴ Field (1992), "China's Industrial Performance Since 1978".

The gross value of industrial output produced by township and below level enterprises in 1990 was nearly ten times over that of 1980 while enterprises of the above township level only doubled the output in 1990 relative to 1980. The reason for this difference might be explained that the proportion of ownership of enterprises at township and the level below increased. Another important reason is that these enterprises are given more freedom and are less regulated by the central plan.

With all the information given in Chapter six, it is obvious that China's unprecedented foreign trade expansion went hand in hand with the economic growth over the whole period since 1978, and with trade as the leading edge.

The great achievement China has made in technological transformation so far can be attributed mainly to trade promotion and the associated introduction of modern technology, which quickly changed passive status in production and exports of many Chinese industries such as textiles and machine building. This is most essential to the overall success of China's economy since 1978 and it also represents the hope for the future.

7. CONSTRAINTS AND UNCERTAINTIES

Although China's foreign trade has made spectacular progress since 1978, and the share of trade in both import and export volume over the world total increased from about 0.9 % in 1950 to 2.6% in 1993, it is still far from that expected by both the world and the Chinese people considering the huge size of the country, one of the world largest, and that of her population, one fifth of the world's total. Looking into the future, there is still much uncertainty as to the sustainability of China's development in foreign trade and the economy, particularly with regard to the constraints China has in the state owned sector, the losses of enterprises, low trading efficiency, regional disparities, and hidden social problems, which could eventually hinder the nation's foreign trade and economy in its further development.

7.1 Losses of the State Owned Enterprises

According to Chinese official news, by September, 1993, China had total 363,000 industrial enterprises, among which 71,000 were state owned, 278,000 collectively owned, and the rest of them come under other forms of ownership.⁹⁵ This means that state owned sector account for about 20% of the total number of enterprises, while collectively owned sector account for 77%, and the other forms of ownership accounted for around 3%. China has among the state owned sector, 144,000 medium and large enterprises which cover only about 4% in number, yet create 46% of the country's total production value and 67% of China's profits and tax return.⁹⁶ The state owned sector also employs more than 70% of the 148 million urban

⁹⁵ Jiang (1993), "Establishing Socialist Market Economy, Vitalizing State Owned Enterprises"

⁹⁶ Jiang (1993), "Establishing Socialist Market Economy, Vitalizing State Owned Enterprises".

workers.⁹⁷ This information suggests that state owned industrial enterprises still serve and will continue to serve as the backbone of China's economy and as the foundation of the nation's foreign trade expansion.

The general performance of China's industries in the last fifteen years since the reforms were instituted improved considerably over the previous decades, particularly with the emergence of many star enterprises which have been vigorous and powerful in export promotion and international trade, and with the sound performance of newly established collectively and privately owned enterprises. However, the problems of great losses from state owned industrial enterprises, especially those of medium and large enterprises which consist of many many 'small societies' in China, remain serious, and eventually will become the bottleneck of China's sustainable trade expansion and economic growth.

According to the survey and analysis made by Robert Michael Field ⁹⁸ of China's industrial performance, in 1985, each worker and employee at a state-operated enterprise used three times as much capital as his counterpart at a collective enterprise but produced only 60 per cent as much output per 100 Yuan of capital. By 1990, gross value per 100 yuan of capital at state-operated enterprises had fallen to half that at collective enterprise. Losses have been severe and many state-operated enterprises can not do without subsidies for their survival.

⁹⁷ Rudolph (1993), "Industry - Building on Success".

⁹⁸ Field (1992), "China's Industrial Performance Since 1978". p594.

In 1982, losses at independent-accounting state-operated enterprises was almost 5 billion Yuan and it came to 35 billion yuan in 1990, which was more than seven times of those in 1982. The percentage of enterprises suffering losses increased to twenty seven.⁹⁹ In 1991, subsidies of losses of state-owned enterprises came to about 55 billion of Renminbi Yuan, accounting for 16.2 per cent (compared with 11 per cent in 1978) of total government fiscal revenues.¹⁰⁰ Other sources stated that in 1992, state enterprises absorbed \$7.8 billion in subsidies and the entire deficit for that year was \$4.2 billion. In eleven months between January and November, 1993, state owned enterprises continued to have a total loss of 29 billion Yuan (around US\$3.4 billion) which also represented over 37% in number of all the state owned enterprises.¹⁰¹ This shows that the situation of losses has not been effectively and significantly improved all these years, and it has become very critical to China's overall reforms.

The reasons for the losses are varied and very complicated. First of all, Chinese enterprises have for a long time been operating under the protective wings of central planning and government subsidies. In general, they lack the adaptability to the overall systematic changes brought by the open and reform policy. Secondly, due to policy fluctuation and extremes in strategic planning in the pre-reform period, the nation's overall pattern of various industries and their relations to the raw material production sectors, and the pattern of products were not rationally structured, causing severe problems in energy and raw material supply. In China's textile industry, for instance,

⁹⁹ Field (1992), "China's Industrial Performance Since 1978".

¹⁰⁰ Lardy (1992), China's foreign Trade and Economic Reform, 1978-1990.

¹⁰¹ News from China' Economics Daily reported in China's Scholars Abroad, December, 1993

there occurred notorious 'Cocoon Battle' and 'Wool War' in the 1970s and the 1980s. Those who failed in the battle of getting the needed raw material, and were short of electricity or whatever the energy they needed, had to leave their machines idle. Such problems caused many enterprises to adopt the policy of 'having five sharing the work of three' and 'leaving machines three days idle for the operation of rest four (in a week)'. Furthermore, shortage of raw material caused prices to soar, which tremendously increased costs. Thirdly, those enterprises that suffered great losses are usually in urgent need of modern technology. Yet with serious financial problems added to a shortage of technical personnel, and a weakness in management, their capabilities in acquiring appropriate technology are hardly existent.

The Chinese government has been trying hard to improve the situation through the overall enterprise reform as discussed in chapter four. Measures include encouraging leasing and purchasing of such enterprises by the powerful ones and even the private sector so that the state assets will not be wasted and human resources will be reutilized. Wuhan No.2 Printing and Dyeing Mill, for instance, was sold to Hong Kong business Company. The new regulations promulgated by the Chinese government on July 23rd, 1992 further authorize the enterprises with fourteen rights with regard to production, price, trade and even human capital allocation. These regulations will definitely have significant impetus for the years to come on all enterprises concerned, bringing hope to those that suffer great losses. Nevertheless, the shortage of raw material and energy in China will continue to be a big problem as the rationalization of industrial and products structure through macro regulations will take a long time in producing concrete effects. Lack of financial and technological capability in China's most of

enterprises will also continue to prevent them from acquiring urgently needed modern technology. It can be doubted such a situation of severe losses in the state owned sector will be fundamentally improved in the short term. And this will directly and negatively affect China's exports as well as the imports of technology in particular.

Therefore, the further reform in China's state owned enterprises remains the key to the success of Chinese overall reform, the key to China's sustainable foreign trade expansion and the future growth of the national economy. The task of foreign trade in this respect is indirect; that is, to encourage such reform in Chinese industries through appropriate acquisition and successful assimilation of modern technology for those having the access to so that foreign exchange would be efficiently utilized and enterprises are gradually empowered with more advanced and appropriate technology.

7.2 Trading Efficiency

Foreign trade efficiency could be understood as the direct or indirect costs of transactions over a certain period. Direct costs include those involved in document preparation and handling in connection with the movement of goods from the seller to the buyer, while indirect costs could be extended to all other costs in the form of either capital or labor related to getting business done. International trade nowadays relies heavily on the infrastructure based on the world explosion of information technology with communications and computer technology as the symbol. Trading efficiency has been greatly improved in western countries. The cost of international trade, including paperwork, information transmissions for customs purposes, etc, in general,

has been reported by the United Nations at around 10 per cent of the total value of international trade without taking into account all the indirect costs which might be greater. Thus the United Nations Conference on Trade and Development secretariat estimates that a mere improvement of 25 per cent in the efficiency of such procedures worldwide would yield savings of roughly \$75 billion annually.¹⁰² In China's case, considering its comparatively still poor infrastructure and infostructure as well as the bureaucratic interference and irrational trading network, the real cost behind that foreign trade growth is hard to measure.

7.2.1 Bureaucracy In China's Foreign Trade Practice

Chinese enterprises involved in import and export business and foreign trade professionals suffered a lot in foreign trading practice during pre-reform period due to the notorious cumbersome formalities with regard to project approval, negotiation procedures, personal control, and all the other formal or informal rules and instructions from various bureaucratic authorities. Decentralization of decision-making power during the previous reform period has reduced a lot of the bureaucratic interference and has given the enterprises and trading companies much freedom to control the business more efficiently.

However, fifteen years of 'open and reform' practice has not fundamentally changed the previous way of bureaucratic control inherited from the monopoly over the control of foreign trade business. This to certain extent is reflected in the instability of the government trading policies and strategies

¹⁰² UNCTAD Bulletin, No.18, 1993

which led to several austerity and retrenchment programs in 1982, 1985 and 1988. In two years between 1981 and 1982, the Chinese government cut spending due to the inflation causing delay of many business projects. In 1985, there was again the contraction of foreign exchange expenditure leading to the abrupt restriction of consumer goods imports. In the first half of 1990, China's imports dropped again by 18% compared to the first half of 1989 because of the cut back of money supply by the government.¹⁰³ Such phenomena shows that China's trading system is still subject to too much government control.

The partial institutional reform in China in the 1980s also added somewhat confusion to both domestic enterprises, trading agencies and foreign partners. Foreign business companies complained that they experienced great difficulties determining whether the authority claimed by their negotiating counterparts was real, and if real, how long it would last. Authority either shifted unpredictably back and forth among central and local government, or became fragmented among the various central and local government organs.¹⁰⁴ During such a transitional reforming period, Chinese enterprises and the trading agencies often felt the frustration dealing with the shifts of powers or the unclear division of responsibilities, or intersecting control of authorities among three levels of authorities (central governmental, provincial and Municipal), and sometimes, even different authorities on lateral levels.

¹⁰³ Weil (1991), "The Business Climate in China: Half Empty or Half Full?", p775.

¹⁰⁴ Weil (1991), "The Business Climate in China: Half Empty or Half Full".

For example, the import business of a Polypropylene Cigarette Filter Tow Processing Plant required the enterprise to get approvals from both the former Ministry of Textile Industry (MTI), and the high authority of tobacco production, as the plant was involved with tow production which was subject to the leadership and control of MTI, yet the tow was for making cigarette filter, which was controlled by the tobacco industry in China. In addition to that, there are authorities and partners in charge of energy, plant design, and so on so forth. Conflicts or different opinions among such authorities over the plant scale, or related technology, or price, or the choice of foreign supplier, even the contract terms and conditions, could cause enough headaches to the enterprise director in making final decisions. Trading agencies in China also found such business ten times harder to deal with, as the negotiation process of the contract can be long and complicated; and hardship suffered was not only in dealing with different foreign business competitors, but also in keeping balance among Chinese partners, and efforts made in leading the business to the optimum possible solutions.

Therefore, bureaucratic interference in foreign trade can increase directly the cost of the business and drastically reduce the efficiency of foreign trade. To reduce such interference, further reform in administration and further release of the central power is needed, so as to encourage more free reactions of the enterprises and trading companies in responding to the market demand they face.

7.2.2 Constraints in China's Trading Network

Serious problems remain in the trading network including all the links in the chain of foreign trade, namely production, trading agencies, banks,

insurance, customs, commodities inspection and so on so forth. The problems include overlapping control over the trading procedure, lots of bureaucracy, and insufficient infrastructure such as telephone service which is recognized among the poorest countries in the world with one line per every one hundred people. Lack of communication facilities is another big problem which causes slow response in communication is another big problem for efficient trading. The traditional file managing paper work adds much to the low efficiency. As world trade aiming towards 'paperless trade' by applying the Electronic Data Interchange system (EDI), China's poor infrastructure and slow pace in trading will lead to substantial losses in competitiveness and hinder the function of foreign trade as the "engine" of economic growth.

The competitiveness of the future international trade depends more and more on a nation's possession of technology, the technology-intensive goods production and services. Competitiveness is also more and more linked to a country's ability to 1) acquire and master generic information technologies (i.e., basically, telecommunications and computer technologies), 2) build, operate and maintain the local technical equipment (communications lines and exchange systems, computer facilities), as well as local physical infrastructures (ports, airports, rail and road systems), and 3) access to four types of major networks (i.e, trade, finance, information and procedural networks).¹⁰⁵ Much effort has been exerted by the United Nation's Conference on Trade and Development (UNCTAD) to increase international trade efficiency recently, and a 'Trade point' system was introduced at 1992

¹⁰⁵ UNCTAD VIII, Analytical Report, 1992.

conference with the idea to bring together traders, administrations, transporters, bankers, insurers under the same physical or virtual roof. Through the use of information technology, provides different countries with access to strategic information and possibilities to connect to worldwide specialized networks. UNCTAD is now preparing to establish such 'trade points' in 16 pilot countries representing different types of economic environment. It is certain that with the application of such networking system, future inter-country trade links will increase considerably and the economic impact will be multiplied.¹⁰⁶ Whether or not China will be competitive in the future international trade arena depends to a considerable extent on how much efforts the Chinese government and people will make to access and possess all these abilities listed above, and to catch up to the world trend in international trading practice.

7.2.3 Problems in Trade Human Resources and Management

China is in desperate need of experts and specialists who are capable and proficient in doing international business. First of all, there is the increasing demand for trade professionals. As it was discussed before, over 5000 of trading companies emerged in the last fifteen years, and large numbers of enterprises were given the authority to deal business directly with foreign partners. Numerous enterprise directors were pushed on to the negotiation table for foreign business transactions. Unavoidably, there were some confusion and misleading trade practices in doing business due to the lack of understanding of the nature of foreign business. Secondly, the reforms carried on in all spheres of Chinese economic activities gave a dynamic force

¹⁰⁶ UNCTAD Bulletin, No.18, 1993.

to market institutions, the commodity structure, prices, and supply of raw materials. This has also added some new difficulties and complexities in doing foreign business. Enterprises are somewhat more vulnerable to upstream changes namely, the shift of authorities, raw material supply, quota, etc., and the downward, such as product sales channels, changes in demand due to technology and so on. Emerging bureaucracy interference and the overlapping control in particular could all make the business more difficult. Furthermore, as China opens her door wider to the outside world, more businessmen, real or false (speculators or non-professionals) may all be invited to conduct business, which can also add the difficulty in doing business for Chinese trade personnel.

The most noteworthy problem with the new trading human resources in China may be the lack of negotiation skills as a whole. One of the key points for the success in business negotiation is 'know yourself, know your counter partner'. Negotiation skills are usually accumulated by learning from the experiences and lessons through many years of trading practice, during which knowledge of universally applied business procedures are familiarized. Negotiators are required to understand the background situation of both sides, the products, the companies, their relevant positions in the line, in the world. To top them all, competent negotiators are also able to understand the cultural and conceptual difference between both sides over the subject discussed, able to sense the negotiation style of counter partners, so that correct judgement could be made with regard to the strengths, weak points, opportunities and threats of both sides on which effective negotiation strategies could be chosen. Due to the relative isolation of Chinese society from the rest of the world in the decades before 1978, plus the language

barrier, generally speaking, it is very difficult for untrained trade personnel to understand foreign practice in production, trading, negotiation, not to mention subtle cultural differences. According to professor F.Grow¹⁰⁷ that more difficult for Chinese managers is understanding the foreign context of their foreign guests' negotiation position. His research showed that Chinese negotiation teams easily missed the subtle nuance in the bargaining process and had difficulty analyzing the needs of the foreign side. Lack of experiences of trading personnel in negotiation and dealing the business could cause extremely low efficiency, and could also result in signing contracts with insufficient terms and conditions stipulated leading to disputes and complications in contract implementation.

In all these years after the country's opening to the outside world, numerous contracts were signed and at the times, cases of arbitration also increased. News from China's People's Daily indicated that there were great losses among some Chinese enterprises that introduced foreign direct investment. Among 2,623 cases of foreign invested goods inspected and assessed officially, many of them were found to have been overvalued at an average rate of 39% by foreign investors. Some foreign partners invested with second hand machinery and equipment yet with very high prices.¹⁰⁸ On the one hand, attention must be drawn to Chinese enterprises for careful selection of their foreign partners to establish the joint ventures. On the other hand, lack of capability in appraising the assets, and lack of bargaining power in negotiations are also major reasons why so many enterprises suffered financial losses. Definitely, special training in human resources in China's

¹⁰⁷ Grow (1991), "Search of Excellence in China's Industrial Sector".

¹⁰⁸ Report from China's People's Daily, December 13, 1993

foreign trade and investment circle has become a very urgent task in the years to come.

Although foreign direct investment in the form of joint ventures and other forms has generated opportunities for introducing modern managerial experiences and skills, effective application of modern managerial skills needs the further reform of the management system and changes in the concept of management in particular. Experienced managers who understand the market economy and management are generally welcomed now in China. Yet the fundamental transformation of foreign trade management system needs to be focused on changing the concept of managing the people with the objective of dealing with international business rationally and effectively. This is undoubtedly another arduous task in China's future reform in order to match management and human capital with the requirement of increasing flow of foreign investment and technology. Slow movement in fulfilling this task will certainly slow down the pace of foreign trade expansion.

7.3 Who Benefits?

China's foreign trade performance over the last fifteen years has been proved as a vehicle for the spread of modern technology and the engine of the nation's economic growth. However, foreign trade, as a vehicle and engine does not necessarily always mean the propeller to the social justice and sustainable development. Because such vehicle may bring inappropriate or dirty technology which would contaminate the environment, and endanger the balance of the ecological system, the only system which humans can rely for survival. These effects could be in both short and long run. Similarly,

when a nation's wealth is accumulated quickly through the promotion of the 'engine', most of the wealth could also flow into the pockets of small number of the individuals, leaving the majority struggling in poverty. In China's case, trade expansion and economic growth have raised the living standard of the nation as a whole, yet regional disparities between the North and the South, the East and the West, as well as the income differences among the rich and the poor are tending to increase, and has already caused worldwide attention. The situation with respect to education and R&D, both of which represent the potentialities of China's future strength in trade and economy are also not very encouraging.

7.3.1 Regional Disparity and Income Distribution

The hard practice of China's open and reform policy has brought considerable prosperity to those of the coastal cities and areas. On the other hand, enlarged disparity is also found in economic development between those Special Economics Zones, Opened Coastal Cities, Opened Coastal Provinces, special economic regions and inland areas of China. Guangdong had the fastest growing of China's regional economies. While national income increased at a brisk 8.7 % a year between 1978 and 1990, Guangdong's gross domestic product grew at an average annual rate of 12.4%. China's foreign trade rose an average of 15% annually over the same period, while Guangdong's was growing at over 22% a year.

Research also indicates (table 11) that all those economically opened cities and areas cover only less than 29% per cent of total China's population, yet they contributed 43% of the total revenue, and the total GNP of these areas covers more than the half of the nation's total. Foreign investment went

almost to all these areas in the 1980s. The regional disparities in per capita net income of Chinese peasants between 1986 and 1990 also increased. It is 1:3.16 between Gansu province and Shanghai in 1986.¹⁰⁹ The ratio changed to 1:4.17 in 1990. Statistics from Chinese Peasant Income Studies, 1987¹¹⁰ shows that inequality of income distribution increased in China's rural areas during the last 15 years, with a Gini Coefficient of 0.2124 in 1978, 0.2318 in 1982 and 0.2636 in 1985. The Gini Coefficient remained basically the same in urban area in China around 0.180.¹¹¹

The problem of enlarged disparity has also caused a lot of social problems. Peasants from those poor areas abandoned farming and flew into the big cities for job hunting and many of them keep wandering in the streets and shelter themselves in public areas or under the bridges thus increasing the burden on and the instability of the whole society.

Table 11: Major Indicators of the Econocoas Areas in China, 1987
(value in Billion Yuan in current prices)

	Land Million km2	Population Million	Revenue	GDP
4 SEZs	0.013	9.749	2.868	15.655
15 OCCs	0.134	87.926	37.688	183.668
11 OCPs	0.42	210.70	60.81	369.88
PRC total	9.5	1,080.73	234.66	1,105.42
% share				
SEZs	0.13	0.9	1.22	1.42
OCCs	1.40	8.14	16.06	16.62
OCPs	4.38	19.50	25.91	33.46

Notes: Econocoas Economically opened coastal areas

Source: Data from 'Foreign Investment and Economic Change in China'¹¹²

¹⁰⁹ Walker (1989), "40 Years On: Provincial Contrasts in China's Rural Economic Development".

¹¹⁰ Cited by Chai (1992), "Consumption and Living Standards in China".

¹¹¹ Chai (1992), "Consumption and Living standard in China".

¹¹² Kueh (1992), "Foreign Investment and Economic Change in China".

7.3.2 Weak Links in Education and R&D

Various research shows that the quality of China's labour force is not very encouraging as far as education levels are concerned. The 1982 census data show that about 28 per cent were illiterate, 34 per cent were educated to primary school level, 26 per cent to junior high school, 11 per cent to senior high school, and those with college education constituted less than 1 per cent. And the majority of this labor force is foreseen to continue as the mainstay in the two decades to come during which tremendous technological changes are needed and further foreign trade expansion is expected. Upgrading the quality of the existing labor force in the next ten to twenty years through various training programs is extremely important. In addition, the share of education in GNP dropped from 2.6% in 1980 to 2% in 1990. The situation in China's rural areas is even worse. As a matter of fact, the economic return on education is lower than the opportunity cost for the peasants concerned. School enrollment in the countryside dropped 25 per cent in primary school from the number of 128 to 97 million, and 35 per cent in secondary school from 40 to 26 million between 1980 and 1989.¹¹³ By considering the severe shortage of skilled human resource, the present education situation does not seem encouraging enough to meet the future demand of the labour force in China. Unless it is improved quickly, this situation will eventually lessen the potentialities of China's economic growth.

Despite the rapid progress China made in its technological transformation, constraints with regard to the import and other ways of technological transfer remain to be solved for future progress, and the domestic S&T system and

¹¹³ Calculation based on data from Yeh (1992), "Macroeconomic Issues in China in the 1990s".

R&D work also need a lot of improvement to further meet the increasing demand of the nation's technological transformation. In all these reform years since 1978, China's R&D situation, as the foundation of a nation's technical and technological progress has basically set on the way going towards its close combination with the production units, so that practical innovation could be encouraged and commercialization of new innovation and the results could be promoted. However the whole process is still too slow. Calculations based on statistics show that in 1987, China had only about 38% of the research institutions which were connected directly with enterprises. By contrast, Japan had 90% of their research units directly connected with production companies.¹¹⁴ Such lack of coordination between the R&D and production has made the nation's technology imports and assimilation of foreign technology very difficult to achieve. The Share of R&D funding in GNP decreased from 1.4% in 1980 to 0.7% in 1990 which is fifty per cent drop. It could not keep up with the increasing demand of the country's technological transformation. R&D funding in proportion of GNP is also relatively low by world standards when compared to the share of R&D funding in Japan, South Korea and India in 1990 which were 2.8, 1.8 and 1.2 per cent respectively.¹¹⁵ China remains weak in dealing with the future demand of the nation's technological transformation, although a goal has been set so that by the year 2000, the technological level of China's industry should reach the standards that developed countries achieved in the late 1970s or early 1980s. The application of R&D results will be increased to 60 per

¹¹⁴ Simon (1989), "China's Drive to Close the Technological Gap: S&T Reform and the Imperative to Catch up".

¹¹⁵ Yeh (1992), "Macroeconomic Issues in China in the 1990s".

cent, and the share of R&D expenditures in GNP raised from 0.7 per cent in 1990 to 1 per cent in 1995 and 1.35 per cent in 2000.¹¹⁶

The developed countries are having a day by day rapid development in the technological field. International trade will further this trend by having increasing proportion of technology related exchanges in commodity and services. Countries that lack the power to catch up will find themselves increasingly passive in international trade. The hope of a developing nation like China lies in the ultimate innovation and application of its own technology, creating new comparative advantages of its own based on local conditions. Strengthening China's S&T in its coordination with domestic enterprises in their technological transformation and the coordination with the world wide S&T network is most important in reaching such a target. The training of human resources which are qualified to carry on such a mission remains the key. Therefore, China's education and R&D systems as the power behind the engine must be further reformed and improved to empower the existing labor force and new generations with competent capability.

¹¹⁶ Yeh (1992), "Macroeconomic Issues in China in the 1990s".

8. CONCLUSIONS

In summary, it is necessary to look back at the world picture again. In the last four decades, developed countries have been growing at quite a moderate pace with annual GNP growth of 2-4%. Many of them have found it hard to pull out of the economic recessions. They have been wandering at about 2-3% growth rate in the last decade. Some countries even had negative growth in recent years. GDP growth rate in 1993 was -0.8% for France, -1.7% for Germany, -0.3% for Switzerland and Spain, -1.2% for Belgium and 0% for Italy 0%.¹¹⁷ Obviously, the developed countries appear to be in an economic crisis which has dampened the growth and prosperity of the 1950s and 1960s, the 'golden age' or 'glorious years' of capitalism. There is a tendency towards a stagnation in the production of goods and services. Nevertheless, the solid industrial strength the developed countries have achieved and particularly the high level of technological innovation and development achieved over the last four decades, have enabled them to continue their dominant position in international trade. With one fourth of the world total population, their exports remain 60-70% of the total world exports. With the trend of increasing proportion of skill and knowledge intensive goods, service and technology in future international trade, as well as the continuous strengthening of western protectionism over 'their' technology, know how, licences, etc, these developed countries will continue to display their superiority and gain advantages from international trade. The fact of an eighty-twenty division of the world's wealth by the developed and developing nations has never changed greatly. Undoubtedly, developed countries as a whole will continue to represent the rich extreme of the world.

¹¹⁷ Cited in "1994 in figure" by Report on Business Magazine, January 1994

On the contrary, the developing countries as a group, representing three fourth of the world's population, have in average 60% of labour force engaged in agriculture which contributes roughly 20% to their GDP and 50-100% of their exports. The economies of these countries have only grown at an annual rate of 1-4% since 1960s. Their trade performance shows a good sign of hope especially since the second half of 1980s with an average increase of around 9%, due in particular to the sound expansion of trade in Asian NIEs, Near NIEs and the striking trade expansion and economic growth in mainland China. Unfortunately, most developing countries, especially those in Africa and Latin America, are still facing severe economic problems which are compounded, if not caused, by the so called Structural Adjustment Program, the continuing deterioration in their terms of trade, and particularly the debt crisis. According to UNDP, the heavy losses which developing countries suffered in the 1980s from the price decline of primary goods, and debt servicing were as much as \$500 billion, equivalent to seven Marshall plans. For many developing countries, debt has even exceed their annual GNP. In 1987, debt/GNP ratio of all DRS countries was up to over 50% and debt/export ratio up to almost 223%. Sub-Saharan African countries in particular had a debt load almost equal to and even surpassed the total amount of their GNPs, and debt payment amounted to three times of their export earnings.¹¹⁸ Servicing the external debt for these countries not only entails negative overall growth in production, consumption and income, but also threatens lives of thousands in these heavily indebted

¹¹⁸ For Sub-Saharan African countries, their debt/GNP is 99.8% in 1987, 106% in 1991. Their debt/export ratio is 359% in 1987 and 341% in 1991. These statistics are provided by IDRC (1992), in *The Global Cash Crunch - An Examination of Debt and Development*. p5.

countries. Definitely, these countries represent the other poor extreme of the world and a change in their status in international trade and economy warrants worldwide concern and action.

The exception to this situation is the so called Newly Industrialized Countries especially the Asian NIEs and Near NIEs and recently China. UNCTAD in its 1992 Analytical Report indicated that 80% of the total manufactured export value from developing countries were from some 15 developing economies. Representing 60% of the world total population, the whole Asia's trade in 1992 accounted for 85% of the total for all developing countries.¹¹⁹ The Asian NIEs and Near NIEs contributed the most in this respect with their striking trade expansion in last three decades. The reasons for the rise of these NIEs are various and complicated, but they still have, to various degrees, common features in their development process. The key to this process appears to lie in their capacity to establish and expand their manufacturing industries for export markets at a time when the developed countries concentrated their attention on capital and technology intensive industries. Their achievements have been solid, even spectacular. All these economies, except Philippines, expanded their exports in a range from 50 to 244 times in value from 1963 to 1992. The World Development Report 1991 indicated that Asian NIEs' total share of manufactured goods in exports by the year 1989 ranged from 73% for Singapore, 92% for South Korea, 93% for Taiwan and 96% for Hong Kong. The average for developed countries was 80%. Their fast pace of economic growth of the Asian NIEs has been labelled as a miracle. The rise of the Asian NIEs and the Near NIEs has

¹¹⁹ Calculation based on data provided by IMF (1993), International financial Statistics Yearbook.

undoubtedly given hope to the developing world amid various economic dilemmas.

China lost time in catching up with the advanced world, and many good opportunities in the thirty years after its liberation, which the Asian NIEs have been able to gain. Political isolation from the West, the rightist and leftist mistakes made in economic policies, such as the 'Great Leap Forward' at the end of the 1950s, the Cultural Revolution in the 1960s, all prevented the economy from going towards a steady and rational form of development. The rigidity of the highly centralized planning system allowed no room for export promotion, and only for import substitution, which seriously restrained the nation's comparative advantage of its abundant natural resources including cheap labor, restrained foreign trade from playing the role as the engine in bringing about economic changes. As one of the biggest countries in the world, China did not show its strength until recently. China is a late comer in the world economic stage compared to the Asian NIEs. Luckily, it is not too late and her annual 15% trade expansion since 1978 and continuous high speed growth in the economy have finally showed her potential as an economic giant. The sleeping lion is awakening. The former president of the United States, Nixon included China, in his speech in 1971, as one of the five giants in this world. China was not strong economically at all in 1971, and even now it only has GNP per capita of around \$340. Although China became the third largest economy in the world in terms of purchasing power parity calculated by IMF in 1992, the nation's considerable economic potential and its enormous force of production are only recently manifest thanks to the open and reform policy which China initiated in 1978. As was the case for the Asian NIEs, China's development has been nothing less

than explosive as shown in her absorption of foreign investment, technology in various fields over the previous 15 years. Such development will continue to rely on sustaining an open and reform policy as well as political stability.

China's foreign trade underwent many turns and twists on its road of development in all these years since 1949, but it has achieved steady and continued expansion since 1978. There are two major decisive factors which have basically brought about the expansion. One is China's ready absorption of foreign investment which resolved a number of bottlenecks such as backward infrastructure, shortage of fund for urgently needed machinery and technology. Another decisive factor is the direct imports of advanced technology which provided a number of enterprises with a new impetus for increased production and improvement of product quality. A great number of new products and value added goods have been turned out and exported, which has directly served to the expansion of exports. China's manufacturing exports increased to 70% of total exports by 1992, which was much closer to the world average of 74% and the developed nation's average of 80% in 1989. Certainly such progress made through foreign investment and technological upgrading have been backed by the overall improvement of the business climate including the establishment of economic zones, the introduction and fine-tuning of legislation, and reforms in institutions, all of which serve as the necessary conditions and guarantee for the possible expansion of trade. Furthermore, support from worldwide financial institutions such as the World Bank, the International Monetary Fund have provided indispensable conditions which enabled China to win the time and speed up the pace in trade and economic growth. The efforts China has been making in rejoining

GATT objectively help the country gain the necessary supervision and support from the international trade community, promoting the process of China's business climate improvement and the perfection of various reforms, particularly as relates to enterprises and the relaxation of import and export controls. All these factors have been and shall continue to bring promising changes which will further benefit foreign trade expansion and economic growth.

China's foreign trade performance over the whole period since 1949 has clearly indicated that the role of foreign trade as the engine of economic growth can only be brought into play when certain conditions are provided both domestically and internationally. As has argued, any trade policy or strategy adopted in a nation is always constrained by a particular economic and political system which adopts trade policy to the whole economic and social environment, and serves the specific purposes. It does not seem significant to argue the advantages and disadvantages of certain trade strategy without considering the actual political, economic and social conditions of a nation. It may not help if those heavily indebted nations apply a policy of export promotion under conditions of serious price instability or decline for commodities produced for exports.

The role of foreign trade as an engine of economic growth is also limited. Sustainable trade expansion relies ultimately on the development of productivity which serves as the true motive force and the foundation of the economic growth. China faces the arduous task of transforming its industrial enterprises into modern and efficient ones which will be armed with new and appropriate technologies and skilled, technologically specialized human

capital in order to meet the country's continuous trade and economic growth. Immediate and effective efforts are needed to change the grave status of heavy financial losses in 37% of the large and medium sized industrial enterprises which are almost two fifth backbone of Chinese industries. The hope of Chinese industrial enterprises lies in the successful assimilation of modern technologies and the ultimate innovation of China's own technologies. In this respect, the success of China's textile industry and machine building industry have been good examples. Educating the new generation and training the existing labor force are the key to the success of China's R&D and technological upgrading of the enterprises in the long run. The task of foreign trade in promoting China's further technological transformation is to further encourage the appropriate acquisition and assimilation of foreign technology and technology embodied goods, promote the interflow of technology and its related goods between China and the rest of the world. China needs appropriate technologies which represent the leading edge in the development of the industries, allowing them to increase productivity, improve the quality of products, and develop China's resource so that local advantages can be fully displayed and further developed; Technology must also be clean and serve to the nation's interests of future development socially and ecologically. While having rapid expansion and high economic growth since 1978, China was also reported to have serious air and water pollution, and the overall degradation of the environment, the problems of which have already caught the attention of both the Chinese government and the international environmentally concerned community. Expansion of foreign trade and economic growth must be confined in the ultimate sense to strengthening social justice, including equalizing income

distribution, ensuring ecological sustainability and the overall social progress. China has definitely a lot to do in this regard.

To conclude, China's striking trade expansion and economic growth since 1978 has provided a model for economic development in other developing countries. The further expansion of trade and economic growth is promising. With its tremendous demand and unparalleled market size, China has shown to the world its inevitable role in building the common global prosperity. The country will continue to expand its trade with the developed countries, particularly in the import of modern technology and related goods, such as machinery, computers and equipment; as well as the exports of all kinds of Chinese commodities. The technologies China seeks to possess will focus further on those for the bottleneck areas such as energy, raw materials and transportation. Taking China's transportation as an example, China aims at investing totally 700 billion of Renminbi Yuan (almost \$100 billion) to release the pressure of a bottle neck, with altogether 400 projects to be finished in the 1990s. All these projects will increase China's highway from about one million to 1.2 million km, railways from 53,000 to 70,000 km and double the deep water berths to 600 in the major harbors.¹²⁰ Foreign loans and direct investment are greatly encouraged. Different forms of joint ventures, cooperations in and outside China are desperately needed to ensure the fulfillment of these projects. This obviously provides good opportunities for foreign investors and relevant business partners all over the world.

¹²⁰ News from China's People's Daily, November 25, 1993

China has a more complementary trade with the other developing countries, with particularly those in Asia. The reunion of Hong Kong with mainland China in 1997 will bring about perfect combination of the advantages of the two, the tremendous potential market of the mainland, and Hong Kong's unique role as a free trade port and expertise in international trade. The possible future exploration and development of China's North Eastern Tumen area together with the bounded countries of Russia, North Korea would give immense development possibilities for all these countries involved in the cooperation. An ambitious plan has emerged to convert a massive 7,500 sq mi area into a \$30 billion trade and transport complex with 11 separate harbors, and three international airports. It has been reported that cooperation had been attractive because of the complementarity of those three economies with those of Japan and South Korea, and because of the enormous potential of a regional market that could encompass nearly 300 million people, have a collective GNP of almost \$3 trillion, and account for nearly one-third of world trade.¹²¹ The program has been considered as a future Rotterdam, as of 1989 has been supported by United Nation's Development Program. The development of such a special region will further enhance China's trade relations and other economic cooperation with neighboring countries, increasing their interdependence and contributions to the growing prosperity of the whole region. In a word, China is full of opportunities and hope in further expansion of its foreign trade and economic growth, in spite of the severe challenges the nation has to face.

¹²¹ Manguno (1993), "A New Regional Trade Bloc in Northeast Asia" in the China Business Review, March-April, 1993. pp6-9

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