An Inquiry into An Infraconnection of the Greater Chinese Economic Cooperation System

by

Xin-Yu Li

Bachelor of Arts
University of Zhengchou, 1983

Master of Law
Beijing Foreign Affairs College, 1988

Submitted in Partial Fulfillment of the Requirements

for the Degree of Doctor of Philosophy in the

Department of Government and International Studies

University of South Carolina

1994

Major Professor

Committee Member

Chairman, Examining Committee

Committee Member

Dean of the Graduate School

Acknowledgements

I started working on this research about two years ago, initially in the seminar, "Integration 735, 1992." In this seminar, I presented a term paper with the title of "Integration Theory and A Tendency of the Greater China." In September 1993, I presented another research paper with the title of "An Inquiry of the 'Systemic Service' among the Chinese Mainland, Hong Kong and Taiwan" to the conference of "An Economic Cooperation Tendency among the Chinese Mainland, Hong Kong and Taiwan" in Beijing, which was co-sponsored by China Xinhua News Agency, Chinese Academy of Social Sciences, Taiwan United Daily News Group, the Center for East-West Studies of Hong Kong and the Institute of International Studies at the University of South Carolina (USC). This dissertation combines the key ideas in these two papers with more theoretical analyses and empirical supports.

Completing my long journey toward a doctoral degree, I owe many thanks and gratitude. My first and special thanks goes to Ambassador Richard L. Walker. I am very grateful for his strong support, considerate encouragement and invaluable guidance during my four-year studies toward a doctoral degree at USC. Especially from starting the preparation to the completion of this dissertation, Ambassador Walker was most generous not only for providing the resources to carry out this research, but also in giving his valuable time to read all of the manuscript in various draft stages to probe, challenge, support, and encourage me on the idea of this research. I owe a special intellectual debt to him.

I want to express my deep appreciation to Dr. Donald E. Weatherbee for his concerns in every step of my academic progress. Since I came to USC in Fall, 1990,

he has become my academic adviser, providing me with proper advisement in my course work and critical insights and constructive comments in my dissertation preparation.

I want to thank Dr. James T. Myers for his support to help me have a dissertation grant from the Center for Asian Studies, USC, in the Summer of 1994, which made my research trip to China and Hong Kong possible. Also, I want to thank him for his helpful suggestions which have allowed me smoothly finish my dissertation research.

I am very fortunate to have Dr. Jeffrey S. Arpan, the Chairman of International Business Program at College of Business Administration, to participate on my committee, which allowed me to benefit greatly from his professional and practical experience.

Also, I wish to express my gratitude to Dr. Donald Puchala for his intellectual input. Dr. Puchala supervised a term paper I did in the seminar of "Integration 735, 1992" which was served as the bases for this dissertation.

During the research trip to China and Hong Kong in the Spring of 1994, I had lengthy discussions with scholars and government officials on aspects of economic policy and development. Here, I would like especially to thank Dr. Chen Hansheng, my graduate adviser at Beijing Foreign Affairs College. Dr. Chen has been very concerned with the progress of my Ph.D studies in the United States. He has always been generous in giving me his valuable time and advice, even through international telephone conversations. When I was in Beijing this time, we had several detailed discussions about the ideas of the dissertation research. I am deeply grateful for his 15-year solid support and guidance for my scholarship establishment. Also, I would like to thank Mr.

Sun Yafu and Mr. Tang Yi of the Office of Taiwan Affairs, State Council, PRC, for their time in very helpful interviews. I want to thank Professor Yu Yun of Beijing University and Professor Zhou Zunnan of Beijing Foreign Affairs College who introduced me to the China Statistical Information and Consultancy Service Center and the China National Information Center for all the most useful and latest data and materials. Also, I want to thank Mr. Zhou Jianmin of Taiwan News Branch of China News Service, and Professor Lui Tanbai of Internal Reference Branch of China Xinhua News Agency, Professor Fang Kai-tai of Hong Kong Baptist University, and Professor Zhong Jian-ye of China Engineering Consulting Corporation for all their concerns and supports.

I also want to thank Mr. & Mrs. Francis Elders, Dr. and Mrs. Wagners, and in memory of Mr. H.C. MaClister and Mrs. Amelia Siokos, who have been my host, American family, and friends since I came to the United States. Their sincere love, generous help, and time spent reading the manuscript are the unforgettable gifts for my success in my studies in the United States.

Last, but not least, I am abidingly grateful to my dear parents and the whole family who have been, by all mean and in all the time, supporting me through such a long and hard journey toward my doctoral degree. Their love and support mean a great deal to me. I also want to thank my husband, Nan Wang, who has been so patient and helpful in reading the draft and providing critiques and suggestions, and who has helped me solve all the computer problems in editing and making various tables and figures.

I dedicate this work to Dr. Chen Hansheng at age of 98, my most respectable teacher, to whom I have always been grateful.

I would take complete responsibility for the contents.

Table of Contents

Acknowledgements iii
Table of Contents vi
List of Tables viii
List of Acronym ix
Introduction 1

Part One **Theoretical Inquiry of Infraconnection** 15

Chapter I **The Concept of Infraconnection** 16
A. General System Theory in IR & IPE 16
B. The Dimorphism of An Actor & the Definition of Infraconnection 26
C. Major Elements of Infraconnection & Their Theoretical Foundations 31

Chapter II **The Roie of Infraconnection** 46
A. The Relation to the Concept of Resources 47
B. The Difference from the Concept of Infrastructure 50
C. The Application in the Development Theory 55
D. An Alternative to the Power Theory 59
E. A Function in the Interdependence Theory 65
F. The Position in the Integration Theory 67
G. Significance of Infraconnection in IR & IPE 74

Chapter III **The Measurement of Infraconnection** 77
A. The Basic Measurement 77
B. Toward A Macrometrics 81
C. An Optimal Development Path of Infraconnection 84
1. The Densities of Some Economic Activities 87
2. Economic Efficiency of the Market 88
3. Economic Freedom of the Actors 90

Part Two **Empirical Inquiry of Infraconnection in the Greater Chinese Economic Cooperation System (GCECS)** 95

Chapter IV **Some Findings: Special Features of Infraconnection in the GCECS** 97
A. Intensive Interactions toward A Multi-Integration 100
B. Complementary Setup as A Direct Condition 103
C. Policy Orientation toward Openness and Cooperativeness 110

D. Five Cultural Geneses as A Foundation 115

Chapter V Some Findings: A Current State of Infraconnection in the GCECS 123

A. The Transportation Network and Its "Bottle-Necks" 123
1. The Transportation Network in the GCECS 124
2. Overloaded Railways in the Mainland 127
3. Critical Conditions of the Mainland's Highways 129
4. The Busiest Airport in Hong Kong 131
5. Busiest Seaports in the GCECS 132

B. The Communication Network with Uneven Development 136
1. Mixed Telecommunication Channels in the GCECS 135
2. Mailing Still the Most Common Way 141
3. Family-Ties as A Special Communication Network 142

C. Hidden Peril in the Market Development 144
1. The Market Structure in the GCECS 145
2. The Problems in the Mainland Distribution System 147
3. Problems in the Mainland Banking System 151

D. Restriction of Policy Setting in the GCECS 153

Chapter VI Some Implications of Infraconnection for GCECS Development 161

A. Transition I: Modernization of the Infraconnection Hardware 162
1. Transportation Networks 162
2. Telecommunication Systems 169
3. Marketing Channels 173

B. Transition II: Democratization of the Infraconnection Software 179
1. From Complementary Setup to Market System ... 180
2. From Reform Measures toward A New Economic Order 186
3. From Traditional Family Style to Modern Team Work 191

Conclusion 195
Appendix A 201
Appendix B 213
Bibliography 225
A. English References 225
B. Chinese References 240

List of Tables

Table I.1.	Three Major Issues of General System Theory	17
Table I.2.	Dimorphism of Actor in Business Activities	27
Table I.3.	Infraconnection with Independent Part and Dependent Part	45
Table IV.1.	The Competitive Advantages and Disadvantages Among the Chinese Mainland, Hong Kong and Taiwan	107
Table IV.2.	Direct Hong Kong-Guangzhou Transport Modes	116
Table IV.3.	The Population Distribution of Overseas Chinese	119
Table V.1.	Taiwanese Opinion on the Mainland Transportation and Communication Environment	135
Table V.2.	Comparison of the Telecommunication	139
Table VI.1.	The Model of Multi-Integration in the GCECS	194

List of Acronyms

ABC, Agricultural Bank of China
BOC, Bank of China
CAAC, Civil Aviation Administration of China
CEOA, Coastal Economic Open Area
CITIC, China International Trust and Investment Corporation
COC, Coastal Open Cities
EEC, European Economic Community
ETDZ, Economic and Technical Development Zone
FDI, foreign direct investment
FIEs, foreign investment enterprises
FYP, Five-Year Plan
GATT, General Agreement on Trade and Tariffs
GCECS, Greater Chinese Economic Cooperation System
GST, General System Theory
HKB, HongKong Bank
ICBC, Industrial and Commercial Bank of China
IDD, International Direct Dialling
IPE, International Political Economy
IR, International Relations
MDT, Ministry of Domestic Trade (the Mainland)
MOC, Ministry of Commerce (the Mainland)
MOF, Ministry of Finance (the Mainland)
MOTC, Ministry of Transportation and Communication (Taiwan)
MPT, Ministry of Posts & Telecommunications (the Mainland)
PBOC, People's Bank of China
PSDN, Packet-Switched Data Network
SEZ, Special Economic Zone

Introduction

The fast growing and increasingly coordinated economies of the Greater Chinese Economic Cooperation System **(GCECS)**[1]--the triangular economic interactions primarily among the Chinese Mainland, Hong Kong and Taiwan with a broad connection and support from all the overseas Chinese, is already a phenomenon with major significance in East Asia. How to understand its origins, substance, dynamics and prospects thus has become an important subject both for theoretical and practical inquiry.

However, it is difficult to use any existing model or approach in international relations (IR) or international political economy (IPE) to explain this peculiar fast growing and integrating tendency of the GCECS, because the situation of the GCECS is so atypical that several methodological problems remain unsolved.

First, it is insufficient to employ Gross Domestic Product (GDP) or Gross National Product (GNP)[2] as a critical indicator in the measurement of the

---

[1] The idea of the "Greater Chinese Economic Cooperation System," was firstly proposed by Huang Zhilian, a Hong Kong scholar. Later, Wu Anjia, a Taiwanese scholar, in his article, "'ZhongHua JinJi XieZuo XiTong' De ZhengZhi HanYi." (The Political Implication of the 'Greater Chinese Economic Cooperation System') ZhongGuo DaLu YanJiu 2 (1992), and Cheng Chaoze, a Hong Knog scholar, in his article, "'ZhongHua JingJi XieZuo XiTong' ChuTan." (A Review of the 'Greater Chinese Economic Cooperation System') ZhongGuo DaLu YueKan 2 (1994), thoroughly discuss this concept. Mainly, they identify this concept with two basic meanings--regional and blood-tied orientation and economic functions.

[2] Both Gross National Product (GNP) and Gross Domestic Product (GDP) are the official measure of the overall economic performance of a nation.

However, GNP refers to the total value of all goods and services produced by the residents of a nation in a given year, (usually one year), **regardless of their locations.** It is calculated by summing expenditures in four broad areas of consumptions (C), investment (I), government purchases (G), and net exports (NE), before deduction of depreciation charges and other allowances. That is:

$$GNP = C + I + G + NE$$

GDP refers to the total value of goods and services produced **within the geographic boundaries**

development level of the GCECS.

Considered as a basic statistical measure of a nation's economic performance, GDP is the total value of goods and services produced **within the geographic boundaries** of a nation or a political entity in a given year. GDP is a means for evaluating the size of the economy, and it reflects the productivity of a country or political entity. The growth of GDP is identified as an indicator of the extent of economic well-being as well as of the rate of economic growth; also, it is served as a basis for economic planning of a country. Many development theories imply that developing countries should pursue fast GDP growth which is the only way to catch up with the developed countries. However, the history of development for all countries is not just the history of GDP growth, but also the development considering industrialization, democratization, institutionalization, modernization, or civilization. In other words, GDP growth only indicates the level of an economy, but can hardly tell the quality of this economy. For two different countries, behind the same GDP levels which they have reached, there might have been quite different development processes, even qualities. In addition, in some instances, a long-term evolution of a country can hardly be predicted depending only on the short-run GDP growth.

For the GCECS, there is no doubt that currently it is one of the fastest economic (GDP) growth areas in the world. However, it is still difficult to evaluate its development level in the comparison to other areas if its social evolution is taken into

---

of a nation in a given year, (usually one year). Unlike GNP, GDP does not reflect earnings from income earned abroad.

Generally, **GDP together with net property income from abroad constitutes GNP.** The ratio of GDP to GNP is unity, such as in the United States; but in Japan, it is slightly less than one and in Canada it is slightly greater than one. To a large extent, these two concepts are interchangeable.

In this research, GDP will be used.

account. The problem is that the measurements of industrialization, democratization, institutionalization, modernization, and civilization are not as simple as the measurement of economic growth (GDP). Hence, the first key question is: how can we estimate the development of the GCECS more accurately and comprehensively, especially in the comparative studies of IR and IPE?

Second, it is misleading to use theories, which mainly describe the relationship among nation-states, to explain the relationship among the actors in the GCECS.

It is difficult to identify the three major actors in the GCECS, the Mainland China, Hong Kong, and Taiwan, as modern nation-states. Although some arguments even maintain that the southern part of the Chinese Mainland, Hong Kong, and Taiwan will become "an independent economic triangle," there is no evidence to demonstrate that these three areas will merge as a "greater" nation-state. In fact, fast growing economic interactions are not limited to this area alone; they are expanding so rapidly and widely that many small actors, such as regional economies, cross-regional corporations, family-tied firms, and even individuals, are becoming more active in the GCECS.

Consequently, it is hard to apply the theoretical generalization based on Westphalian nation-state system to the case study of the GCECS. For instance, the relations among all the actors in the GCECS cannot be simply explained as "foreign relations" concerning "national interests" or "balance of power;" also, they cannot be treated as a "domestic issue" with the concepts like governance and political institutions. As a matter of fact, the characteristics and integrating dynamics of the Chinese society,

including the Chinese Mainland, Hong Kong, Taiwan and all the overseas Chinese, are more profoundly rooted in its cultural and family bases. In other words, the relationship among different social groups within the Chinese society can only be understood on a more fundamental basis of human civilization other than the modern nation-state theory.

In addition, with many different non-nation-state actors or small actors, the cause-effect chain from micro level (actors) to macro level (system) becomes so complicated that existing theories, especially the nation-state theory, fail to delineate it explicitly. Hence, the second key question is: how can we describe such a typical relationship between the micro level (actors) and the macro level (system)?

Third, as one of the results regarding the above problems, it is difficult to apply the integration theory, which has been used successfully in the studies of the European Economic Community (EEC), to the case of the integrating tendency in the GCECS.

European integration is a special case with two unusually common characteristics:

1. The actors of EEC are generally or relatively well-developed industrialized nation-states;
2. The nation-states of EEC have democratic political systems.

Integration theorists like Karl W. Deutsch and Ernst B. Haas primarily use these two facts as essential prerequisites to build their models in analyzing the process of European integration. In reality, these two prerequisites for EEC integration characterize European society, and such characteristics linked together provide an ideal type for enriching the integration theory. The problem is, however, that the GCECS does not

have these two prerequisites as the EEC does.

The GCECS is an economic, geographic and cultural system mainly involving the Chinese Mainland, Hong Kong, and Taiwan[3] which can hardly be identified as three nation-states. They have quite different degrees of democratization in their political systems and quite different levels of industrialization in their economic development. According to traditional integration theory based on the case of the EEC, it can hardly be proven that an integration tendency exists in the GCECS, because this area is not an ideal type in the study of integration theory. The political and institutional barriers within the GCECS prevent any actors in this area from performing at/over the nation-state level. Any concepts like supergovernment, supernational institution, political community or superpower are not sufficient to describe the integrating process of the GCECS. Thus, the integration theory which has been successfully used in analyzing the case of the EEC is obviously hardly appropriate in the case of the GCECS.

Nevertheless, an integrating tendency in the GCECS might be implied by some features such as increasingly intensive economic interactions and cultural exchanges among the three key actors. They benefit from one another, and the peaceful development of the whole GCECS can provide stability and prosperity to the region as well as to the world. Thus, the third key question has to be addressed: how can we identify and analyze the unique integrating tendency which is taking place in the GCECS despite some serious political and institutional barriers?

---

[3] The overseas Chinese and their communities, such as in Bangkok, Manila, Vancouver, San Francisco and other areas in the world, have provided the lubrication which makes possible the movement of funds, ideas, and people within the GCECS. Their roles in the economic development of the GCECS cannot be neglected. However, this research will center around the Chinese Mainland, Hong Kong and Taiwan.

Challenging by all these problems, traditional theories of IR and IPE can hardly draw out some meaningful conclusions for the future of the GCECS. For instance, it is hard to estimate the development of the GCECS only according to its GDP growth; it is also hard to predict the political future of the GCECS only focusing on an emergence of some kind of new political institutions; especially, it is very hard to evaluate the impact of the GCECS upon the rest of the world simply by judging whether it would be a new great power.

Moreover, the GCECS is not a unique case which faces such problems in the studies of IR and IPE especially in the post-Cold War period. As some dominant issues, such as ideological conflicts and balance of great powers, become history, the phenomena regarding growing closeness and cooperations beyond nation-states then become more visible than before. For example, in Europe, besides the continuous development of EEC, Western Europe and Eastern Europe also attempt to become closer for potential cooperations; In the Pacific Rim, besides the GCECS, Taiwan, South Korea and Japan also demonstrate an increasing closeness for the economic cooperation; Along with the allied nations in Southeast Asia (ASEAN) and the free trade zone of the United States, Canada and Mexico (NAFTA), the whole Pacific Rim is becoming closer than before for economic development and cooperation.

The key point is that, although the major actors in these regional or global phenomena are still nation-states, no one integrating tendency of these phenomena is driven by international conflicts, balance of powers, nor by the sense of the "nation-state" with "national interest." The reason for such a declining role of nation-states is, on one hand, many small actors within nation-states, such as various corporations,

organizations, even family-tied firms and individuals, become so active in international affairs that nation-states can be no longer treated as unitary actors in international relations; and on the other hand, many integrating tendencies have reached such a scale that no characteristics of any single nation-state can fully represent them. In this sense, all these cases face the similar problems as the GCECS does when the traditional theories of IR and IPE are applied to analyze their origins, substances, dynamics and prospects.

In order to solve these problems in the studies of integrating phenomena in the GCECS as well as in the other cases, it is necessary to identify new systemic variables or indicators which can be more practicable in characterizing a system in the integration process than those concepts such as supergovernment, supernational institution, political community or superpower. It is also necessary to find a new approach which can study not only the complicated cause-effect chain connecting the changes at the level of small actors to system development, but also the cause-effect chain leading from system to actors, i.e. how development in the system causes changes to the actors.

One alternative to serve this purpose is to employ the concept of "infrastructure." Infrastructure is a system variable which describes the necessary foundation or framework for all the actors to survive in the system. For a nation-state, generally, infrastructure includes power and water supply systems, communication and transportation systems, education and health care systems, and waste disposal systems, etc. Most of these components need heavy public investment and generate long-term returns. To some extent, infrastructure is a good indicator for demonstrating the system characteristics, especially the characteristics of the system's evolution.

However, since the concept of infrastructure includes so many components which can be further classified into different categories with different functions in the system, such as resources, connection, and service, etc., the dynamic relations among these components become obscured. As a result, infrastructure becomes less sensitive to the study of cause-effect chains within the system. Also, infrastructure has been used as a nation-based concept; thus, it can hardly be applied to the situation below/over national levels.

In addition, infrastructure is only the physical part of a civilization. The non-physical part with various factors, such as cultural geneses, marketing systems, economic orders and others, has similar system functions and characteristics as infrastructure has for economic and social development. Thus, infrastructure is not a proper "candidate indicator" to construct a dynamic model for a new approach in the studies of IR and IPE theories.

The thesis of this research is an effort to develop a new approach with the new concept of **infraconnection** in the studies of IR and IPE. This new approach is expected to face the theoretical challenges raised by the study of the GCECS as well as that of the others; and it is also expected to be more practicable and powerful than infrastructure interpretation, integration or interdependence approach. This new approach could be described as **STRUCTURAL IDEALISM** with the following statements:

1. **International System** means neither a simple collection of actors within the system nor an abstract and theoretical perspective. It can be identified by an **infraconnection**, i.e. by those tangible or intangible networks in a full system scale which are independent from any individual actors, but

provide all the necessary conditions and essential linkages for all the interactions in the system;

2. Based on the new concept of infraconnection, **international relations** do not only refer to the actor-actor relations in the international system, but also include the actor-system relations, i.e., the dependency of actors on the infraconnection of the international system;
3. In modern society, along with the development of technologies in advanced transportation and communication, the actor-system relations become more decisive than actor-actor relations to world development;
4. Thus, as a cornerstone of **STRUCTURAL IDEALISM**, international relations could be improved through improving the infraconnection. This improvement does not come from the conflicts among the actors in the system, but from a peaceful and cooperative construction made by all the actors in the system.

The idea behind the concept of infraconnection is drawn from a deep examination of the concept of infrastructure with the emphasis on the key question of why so many non-nation-state actors and small actors are emerging on the international stage and why they are playing more important roles in international relations than before. Generally, the answers are the following:

1. The progress of technology, especially in the fields of **transportation** and **communication**, is bringing people closer and making the world smaller. Thus, the ability of individuals independently to effect changes in international relations has been strengthened.

2. The development of international **marketing systems** provides a more flexible and competitive environment for the non-nation-state actors and small actors to interact with each other than was provided by the old political and diplomatic environment that mainly benefitted the nation-state actors.

3. The development of **international order**, represented by laws, principles, regulations and policies, assures the legitimacy of the interactions among non-nation-state actors or small actors; therefore, it increases the effectiveness as well as efficiency of these interactions.

In fact, the concepts or variables like transportation, communication, international markets, and international order are not only the foundations to make small actors or non-nation-state actors more active, but also the most essential connection networks to integrate societies. Thus, these variables may be the keys to solve the problems in the studies of the GCECS and the other integrating societies.

In traditional theories of IR and IPE, these concepts or variables are always treated as backgrounds or prerequisites, and some concrete events or problems dominate the fields. As technologies advance and all the actors in the international system become more interdependent, these background or prerequisite factors gradually and eventually are putting or will put on the front stage in the studies of IR and IPE. This is because on one hand, the actor-system dependent relationship is so sensitive that those connection networks become dynamic causes to speed up the development of the international system; but on the other hand, these connection networks are developing toward a scale that they cannot be fully controlled by any individual actors. In other

words, no one actor can fully control international transportation networks, international communication networks, international markets, and international order. This fact itself should alert every decision-maker or scholar that such a social and economic reality must be seriously dealt with, since it is directly related to the whole international system and it can bring dramatic changes anytime and anywhere.

By abstracting these important characteristics from those connection networks, we are arriving at a new system variable--**infraconnection**. This variable is the sum of those connection networks, such as international transportation networks, international communication networks, international markets, and international order. It does not belong to any individual actors but to the whole system. It provides a sustainable environment for all actors to connect or interact with each other in the system.

In the view of **STRUCTURAL IDEALISM**, the above problems raised in the studies of the GCECS are expected to be solved with the key concept of **infraconnection**. This is because:

First, actors with different political institutions and different development levels in the GCECS can hardly achieve an integration symbolized by supergovernment, supernational institution, political community or superpower. But they may still achieve some kinds of integration which are symbolized by an improved infraconnection. In a practical view, this improved infraconnection is expected to be more effective than any above political forms to hold all the actors together in the GCECS, especially when some political barriers still exist.

Second, GDP growth can be achieved by many short-term efforts, even though some of them have negative effects on the future. In this sense, a fast short-term GDP

growth can hardly reflect features of a long-term economic development. In contrast, the development of infraconnection needs great long-term efforts from all the actors (i.e. both public and private sectors) in the system. Its physical development, such as the development of transportation networks or telecommunication networks, is an essential indicator of the modernization level of the system. Its intangible evaluation, especially the development of the economic order, can also demonstrate the democratization degree of the system. In this sense, infraconnection is a more comprehensive indicator other than GDP in the measurement of economic development. It is a powerful analytical tool in the case study of the GCECS, especially when something behind the fast GNP growth becomes more fascinating.

Third, all the components of infraconnection are crucial for both nation-state actors and non-nation-state actors, even for small actors, to interact with each other; and a small change in the infraconnection is very likely to lead to some dramatic changes which could directly affect many actors (both nation-states and non-nation-states) in the system. In other words, infraconnection can be regarded as a dynamic cause for the system development as well as for the cause-effect chain between the system and actors; therefore, it can be examined directly at the systemic level.

Fourth and finally, the development of the GCECS cannot be described as the result of a traditional power struggle or international anarchy; in fact, it is mainly caused by increased **connections, interactions, and cooperations** within the area. Hence, an emphasis on infraconnection should be a good direction to build up a dynamic model for the study of the GCECS. Although a number of previous researches have discussed the importance of some infraconnection factors such as economic policy,

the monetary system, transportation and telecommunication networks, **infraconnection**, as a comprehensive concept, needs an extensive integrated inquiry. To address such an inquiry is the intention of this dissertation.

Centering on both **STRUCTURAL IDEALISM** with the key concept of **infraconnection** and the case of the GCECS, this research will have two parts. Part One is the theoretical inquiry of infraconnection. In this part, there are three chapters.

Chapter One will introduce the new concept of infraconnection along with a detailed analysis of general system theory in the application of international relations, especially in the explanation of actors' abilities in international system. Then, the theoretical foundation of infraconnection relating to environment theory, integration theory, political economic theory and international order theory will be reviewed.

Chapter Two will discuss the characteristics and significance of infraconnection by comparison with some other traditional concepts in the theories of international relations and international political economy, such as resources, infrastructure, development, power, interdependence, and integration.

Chapter Three will explain the basic measurement methods for the empirical study of infraconnection through the provision of comprehensive framework with both the discussion of standardization and optimization of the infraconnection in the GCECS. The purpose of this chapter is primarily to lay a methodological foundation for the case study of the GCECS in the next three chapters.

Part Two will focus on an empirical inquiry of infraconnection in the Greater Chinese Economic Cooperation System (GCECS). It also has three chapters.

Chapter Four will examine one process with three special features--

complementary setup, policy-openness orientation and five cultural geneses. These three special features, in reality, have significantly functioned as a catalyst or foundation in the early development stage of the GCECS.

Chapter Five will examine the current state of the infraconnection in the GCECS which is associated with its fast economic growth. Mainly, they are transportation networks and its "bottle-necks," communication networks with uneven development, some hidden peril in the market development, and restrictions in the policy orientation. Such a crucial state is alerting the actors in the GCECS to put all the common efforts in clearing the path toward a healthy and prosperous direction of the development.

Chapter Six will comprehensively assess the implications of the infraconnection development in the GCECS in terms of two major transition processes, i.e., the modernization of all the hardware of the infraconnection in the GCECS and the economic democratization of all its software as well.

The basic proposition of this dissertation is that the infraconnection approach presents an up-to-date theoretical view of international relations and international political economy--**STRUCTURAL IDEALISM**, which might alter conventional wisdom regarding integrated or coordinated behavior in the GCECS as well as in the other regions of the world by enriching and extending the theoretical inquiry and empirical support.

Part One

Theoretical Inquiry of Infraconnection

The GCECS, as a society with long history and newly-developed economy, has few similarities to modern nation-states which are based on the theoretical generalization from the Westphalian nation-state system. To study such an atypical phenomenon cannot simply employ current theories of international relations (IR) and international political economy (IPE) which mainly consider the nation-states as foci. It is necessary to probe and trace back to some more fundamental dynamics and cultural genesis of the development in the GCECS, especially those factors, such as transportation, communication, market and order, which are usually called "backgrounds" in IR and IPE theories. In other words, the case like the GCECS can only be understood in the modern IR and IPE with such "backgrounds" on which the human society primarily makes its history.

The problem is that no existing theories of IR and IPE integrate these "backgrounds" as a major content, though these "backgrounds" have been discussed in the theories of IR and IPE. Hence, an inquiry into the development of the GCECS first needs to construct a new approach--infraconnection approach--which can directly examine these "backgrounds" at a system level. Since most of the concepts in this new approach have been used in the theories of IR and IPE, the infraconnection approach is not completely new but just an alternative understanding to the modern IR and IPE based on most existing theories of IR and IPE.

Chapter I

The Concept of Infraconnection

The major difficulties in the study of the GCECS are how to describe this social system and how to analyze its system-actor relations as well as the dynamics of the system development. These difficulties are primarily resulted from the shortages in General System Theory (GST) which is the major analytical tool at system level in the studies of IR and IPE. The purpose of introducing a new concept--**infraconnection**--is to help improve GST and to overcome these difficulties.

This chapter begins with a review of GST and a discussion of its major problems in the studies of IR and IPE. Then, the new concept of **Infraconnection** will be introduced based on the analysis of the system supports for actor's behavior in the system. Finally, with a brief review of some leading theories in IR and IPE, such as environment theory, integration theory, political economic theory and international order theory, this chapter will demonstrate that infraconnection approach is an effort to integrate the major foundations of these theories into the application of the GCECS.

A. General System Theory In IR & IPE

By definition, "system is a set of interrelated parts or an arrangement of units connected in such a way as to form a unity or a whole."[4] For one social system, General System Theory (GST) mainly concerns three issues:

---

[4] Viotti, Paul R. and Mark V. Kauppi. International Relations Theory--Realism, Pluralism, Globalism. New York: Macmillan Publishing Company, 1987. p.605.

1). actors (social entity)--
natures,
functions, and
behaviors;

2). actors' relations--
inheritance by historical and cultural factors,
stratification and its impact, and
interactions mainly in economic, political, social (including family and clan), and military spheres;

3). actors' environment--
system boundary, and
system nature--stability or instability.

Some of the basic examples can be presented in the Table I.1.

Table I.1. Three Major Issues of General System Theory

Theory System	Actors (Nature, Function, & Behavior)	Actor's Interactions	Actor's Environment (System & Nature)
Economics	Firm (production & consumption)	Cooperation, Competition & Trade	Stability & Development
Political Science	Community, Party, Class & Government	Party Conflict, Class Struggle & Social Revolution	Changes of Social Institution Status
International Relations	Nation-states	Balance of Power	Peace & War

Within this framework, GST can be regarded as an integrated methodology with two keystones--**BEHAVIOR APPROACH** and **MULTI-LEVEL ANALYSIS APPROACH.**

BEHAVIOR APPROACH focuses on the relationship between the system and its environment. Charles A. McClelland, in his book Theory and the International System, ascribes a behavior tone to international relations theory: "International relations is the study of interactions between certain kinds of social entities, including the study of relevant circumstances surrounding the interaction."[5] There are two ways to understand McClelland's meanings of "certain kinds of social entities." One way is to treat these

[5] McClelland, Charles A. Theory and the International System. New York: The Macmillan Co., 1966. p.18.

"social entities" as **actors**, and the social system is these actors plus their environment. In this sense, all the interactions are the actor-actor relations **inside** the system. The other way is to treat these "social entities" as **systems**, and all the interactions are those systems responses to the **outside** environment. These two understandings together imply two essential assumptions in connection to the **BEHAVIOR APPROACH**.

1). Actors can be treated as systems, and vice versa. Since the "actor" and the "system" are only two different names regarding the same social entity, the nature of this social entity can be described either as the nature of the actor or the nature of the system.

2). There is only one kind of interactions in the universe, i.e., the interactions between social entities and their environment. This relationship can be called either "actor-actor relations" or "system-environment relations."

In this way, the **BEHAVIOR APPROACH** only needs to isolate (i.e. identify) the social entity (actor or system) from its environment, to consider any inputs to the social entity as control variables, and to observe its outcomes. Richard N. Rosecrance has reached the conclusion that such a system comprises three elements: disturbance **inputs**, a regulator that undergoes changes as a result of the disturbing influence, and environmental constraints that translate the state of the disturbance and the state of the regulator into stable or unstable **outcomes**.[6] Thus, **the major purpose of the BEHAVIOR APPROACH is to find the functional relationship between input and outcome at the level of individual social entity**, so that it can predict outcomes

[6] Rosecrance, Richard N. Action and Reaction in World Politics. Boston: Little Brown, 1963. pp. 220-221.

(behavior) at the level of the system through examining the inputs to the system.

By reviewing theories which describe and analyze the nature and function of human society, such as economics, political science, and international relations, it seems clear that mostly they can be assigned within the frame of the **BEHAVIOR APPROACH**. For example:

a. The Realist approach considers nation-states as unitary actors and the alterations in the balance of nations' power as the major interactions in the international system. In a realist perspective, the development of international political economy is primarily indicated by the rise and fall of great powers;

b. The Marxist approach takes classes as the key actors and class struggle as the major interactions in the social system. In Marxist view, the development of the political economy is the result of institutional changes, which are in turn produced by the conflicts or revolutions among the classes; and

c. The Idealist approach asserts that the economic rule (i.e. market dynamics) can separate social development from any political interference; hence, the major actors in the international system are not nation-states but corporations, organizations, firms, or families, even individuals. With these assumptions, all the interactions within the international system are competitions among actors. This approach argues that the ideal international relations should include free competition among actors depending on their comparative advantages.

In the **BEHAVIOR APPROACH**, many concepts which are used to describe the nature of actors are still effective in identifying the nature of systems. For example, in the international system, one nation-state is an actor. Hence, its institutional status, and its economic growth are all treated as nature and behavior of the actor. At the same time, when the smaller actors, such as corporations, organizations, even family-tied firms or individuals, are taken into account, the nation-state is regarded as the system for the actors within. Therefore, the institutional status and the economic growth of the nation-state are treated as the nature and behavior of the system, i.e. the nature of the environment of these small actors.

If **BEHAVIOR APPROACH** stresses that there is no difference in methodology between the study of actors and the study of systems, **MULTI-LEVEL ANALYSIS APPROACH** declares that there are significant differences in distinguishing social entities as actors or systems, since social entities with different scales can be involved in partial-whole relationship.

Generally, there are four kinds of relationship in the universe, i.e., actor-actor relations, actor-system relations, system-environment relations and system-system relations. As discussed in the **BEHAVIOR APPROACH**, the system-system relations have the same nature as the actor-actor relations. In the view of **MULTI-LEVEL ANALYSIS APPROACH**, the actor-system relations and the system-environment relations can also be regarded as special kinds of system-system relations, since any larger system within which the smaller system is embedded can be treated as the environment by the smaller system. Furthermore, in a larger system, any smaller systems can be treated as an environment component of other small systems. Thus, all kinds of relations are system-

system relations. The only difference is their scales. **The major task of MULTI-LEVEL ANALYSIS APPROACH is to divide social entities into actors or systems at different levels and analyze their relationships across different levels.**

Some modern international relations theories, such as integration theory, interdependency theory, and linkage theory, have made great efforts to describe the aggregate social relationships leading from small actors to big systems. All these approaches start their analyses with the **BEHAVIOR APPROACH** focusing on an actor at a micro level. Then, they move their analyses with the **MULTI-LEVEL ANALYSIS APPROACH** across different system levels and finally toward the whole international system at a macro level.

Combined with the **BEHAVIOR APPROACH**, the **MULTI-LEVEL ANALYSIS APPROACH** mainly distinguishes the system level and their nature with two methods--**key-actors-centric** and **key-events-centric**. In the former, a system is represented by the key actors within and the nature or characteristics of the system is represented by the performance of the key actors. For example, international system is represented by its key actors--nation-states, especially by the so-called "leading nation-states," such as the United States, the Great Britain, Germany, France, Japan, China, Russia, etc. The nature or characteristics of the international system is reflected by the performance of these nation-states. In the same way, a nation-state system is represented by its government. This means, what the government controls indicates the scale of the system, and the nature of the system is determined by the performance of the government. Furthermore, a government system is represented by its president or some other key decision-makers and the nature of the government is determined by their

performance.

In this sense, the GCECS can be divided into several levels. The largest level includes the Chinese Mainland, Hong Kong, Taiwan and all overseas Chinese communities; the second largest level includes the Chinese Mainland, Hong Kong and Taiwan; and the third level is the so-called "an independent economic triangle"--Guangdong province, Hong Kong and Taiwan; and the bottom level includes all the corporations, communities, firms, families, even individuals. The characteristics of these four different levels will be determined by the different performance of the different actors involved at each level.

The second method to distinguish system levels is key-events-centric, i.e., how large a system is depends on how many actors are included in the same event and the nature of the system depends on the development of the event. In this sense, international system is not a simple one but many sub-systems characterized by events like the Cold War or European integration (EEC), etc. The Cold War system can be characterized by the West-East conflict, or balance of great powers; the EEC system is characterized by the intensive political, economic and social interactions among its members. Now, the fast economic growth and increasing intensive economic and social interactions among the Chinese Mainland, Hong Kong and Taiwan becomes another new **event** which attracts the world's attention. That is the reason why the GCECS can be regarded as a system in the study of IR and IPE.

Both key-actors-centric and key-events-centric methods are believed to have great explanatory power in the study of IR and IPE, since there is no doubt about the basic assumptions in the **BEHAVIOR APPROACH** and the **MULTI-LEVEL ANALYSIS**

APPROACH. However, in the post-Cold War era, both actors and events are changing so dramatically and frequently that they become harder to be the key indicators of the system nature. For instance, the Cold War has ended, but what did the Cold War system leave for the current international relations? The interactions among EEC countries may become less active, can we say that the European integration is halted? GDP growth in the GCECS may drop, can we assert that the development in the GCECS moves to an opposite direction? Moreover, some key decision-makers could die or be changed by elections, can we assume that the nature of the associated systems will be totally changed?

Neither key-actors-centric nor key-events-centric methods can answer these questions, since something else does exist, which could determine the system development. As a matter of fact, this difficulty with key-actors-centric and key-events-centric methods is directly caused by some problems in the basic assumptions of the BEHAVIOR APPROACH and the MULTI-LEVEL ANALYSIS APPROACH. They are:

(1). Not all the concepts which are used to describe the characteristics of actors can be used to properly describe the characteristics of the system, and vice versa.

For example, concepts like great power, governance, and sovereignty are very useful for demonstrating the nature of the nation-state as an actor, since the nature of nation-states can be distinguished from the others by specific identifications with these concepts. However, considering the nation-state as a system, these concepts are less practical to describe its nature, since they can hardly identify the actor-system relations within the nation-state. In this sense, the system nature should be different from the actors nature.

However, there is no definition of a system in GST other than the collection of the actors and these actors' relations within. Therefore, "system" in GST is only an intangible and unmeasurable context. When the actors and their relations become more complex, how to identify and describe the system nature then becomes more difficult.

(2). There is no permanent functional relationship between the input and outcome of a social system.

Since human society develops quickly and dramatically, the functional relationships between the input and outcome of a social system is not as stable as those of a natural system. If the functional relationship changes, the outcome to the social system can be hardly predicted by examining its input to the system. Therefore, the **BEHAVIOR APPROACH** will lose its explanatory power. This power can only be maintained by opening the "black box" of the system (or actor) to explore the primary conditions and the dynamics within which support the functional relationship between the input and outcome.

(3). Any social entity, whether an actor or a system, can hardly be isolated thoroughly.

In reality, general system theorists ignore an important fact, that is, many functions or abilities (especially the interaction ability) which one actor has cannot exist independently without some other systemic supports. For instance, if one actor wants to do business with others, this actor must depend not only on some necessary tools, such as telephone, TV, car and money etc., but also on some essential connection supports, such as telephone service, TV station, highway network, banking system, and

stock market. It is worth noticing that all these supports may not belong to this actor, but they are the necessary conditions for this actor to interact with others. In this sense, this actor's behavior is not only independently determined by its own abilities, but also determined by some other connection supports which do not belong to this actor but to the whole system.

Also, these systemic supports cannot be simply treated as inputs to the social entity, because the functions of these systemic supports must co-exist with the social entity's behavior. Thus, in a functional sense, even if some social entities can be identified geographically or demographically, it is hard to analyze their input-output relations, because the behaviors of these social entities may be strongly influenced beyond their own controlling abilities.

Hence, without the definition of such systemic connection supports which are beyond the individual actor's controlling abilities, the actors and the systems can hardly be identified and measured. Therefore, the **MULTI-LEVEL ANALYSIS APPROACH** will lose its explanatory power as well. The only way to maintain this power is to clearly identify those systemic connection supports.

Moreover, since all the actors are affected by the same systemic connection supports in the same system, the nature of these systemic connection supports can represent the nature of the system. In this sense, the "system" can become tangible and measurable. The problem is that neither key-actors-centric nor key-events-centric methods mention these connection supports. This is a key reason that they could go to impasse in the explanation of the GCECS as well as other post-Cold War phenomena in IR and IPE.

A new concept or variable, thus, becomes necessary to General System Theory. This concept or variable is expected to be more practicable in describing the nature of social system, especially making it tangible and measurable; it should be more fundamental or dynamic in the analysis of input-outcome relationship; and it should be more a determinant in the study of the cause-effect chain between actors and systems and across system levels. In other words, a new method to distinguish system levels becomes necessary to GST. That is the **key-linkage-centric** method, i.e. a system is identified by the connection network which links all the actors in the system and the nature of the system is reflected by the nature of this connection network. This concept or variable is named **infraconnection.** In this sense, how large a system is depends on how far the terminals of its connection network can reach; and how the system develops depends on how the connection network develops. Since the development of the connection network is much more essential and stable than those of any concrete events or actors, with the concept of **infraconnection**, a system development could be more tangible, stable, decisive, and independent from any changes of specific actors or events.

B. The Dimorphism of An Actor & The Definition of Infraconnection

The key to understanding the concept of infraconnection is to understand the twofold characteristics of one actor when it performs in a certain system. As discussed above, many functions or abilities which one actor has are determined not only by this actor itself, but also by some conditions outside of this actor. This phenomenon can be

described as the "dimorphism" of an actor, that is, a function or ability which one actor possesses may have two dichotomous characteristics. They are:

> **Independence (or internality).** Among all the factors which can affect the function or ability of the actor, independence is those factors which can be fully controlled or developed by this actor itself;
>
> **Dependence (or externality).** Among all the factors which can affect the function or ability of the actor, dependency is those factors which cannot be fully controlled or developed by this actor itself.

Table I.2 demonstrates some examples of the dichotomous characteristics which one actor performs in some business activities. In Table I.2, the first column lists some functions or abilities which are crucial for any actors who intend to achieve business success or to promote economic development. The second column lists those factors which not only have great impact on the functions or abilities listed in column(1), but also can be fully controlled or developed by the actor itself. The

Table I.2. Dimorphism of Actor in Business Activities

Function or Ability	Independence (Actor-centric factor)	Dependence (System-centric factor)
Information-collection	Communication Tools	Communication Network (service)
Innovation	Research	Technology Accumulation
Investment	Money	Bank, Stock Market
Employment	Labor	Labor Market
Training	School & On-the-job Training	Education System & Knowledge Accumulation
Trade (Sale/Purchase)	Products	Commercial Market
Travel & Shipping	Transportation Tools	Transportation Network
Negotiation	Skill & Strategy	Rules & Regulation
Business Operation	Production & Strategy	Market, Rule, Law or Regulation

third column lists those factors which cannot be fully controlled or developed by the actor itself, but which still essentially affect the actor in connection with those functions

or abilities listed in column(1).

In other words, for one actor who attempts to have the functions or abilities listed in column(1), the creation and development of those factors listed in column(2) are only determined by the effort of the actor itself, and the return of this effort is then fully collected by this actor. However, the creation and development of the factors listed in column(3) are not only determined by the effort of this actor, but also determined by the efforts of other actors (maybe all actors) in the same system. Consequently, the return of one actor's effort in connection to developing those factors listed in column(3) cannot be fully collected by this actor itself, because other actors can also get benefits from its effort. In other words, the factors listed in column(2) can be determined only by the private sector, but the factors listed in column(3) are usually determined by both private and public sectors. In this sense, the factors listed in column (2) can be treated as **actor-centric factors** and the factors listed in column (3) are **system-centric factors.**

The dimorphic nature of actors makes the research of actors' abilities very complicated. Take communication ability as an example, suppose one actor has a portable cellular telephone, and the other has a regular telephone. Generally, the actor who has a portable cellular telephone has more a powerful communication ability than the one who just has a regular telephone, because the portable cellular-phone holder can call anyone at anytime and anywhere; but the regular-phone holder can only make phone calls in certain places, such as at home, in office or in public phone box. However, this result does not take the difference between the two telephone service systems into consideration. The portable cellular telephone service system is much more expensive than the regular telephone service system. Therefore, it may not cover as

wide an area as the regular telephone service system. If the actor who has a portable cellular telephone goes to the region that only has regular telephone service, the comparative advantage will be reversed. In this case, the communication abilities of these two actors are seriously affected by something which does not belong to any one of them.

The current actor-centric theories in IR and IPE pay less attention to the system-centric factors than to those actor-centric factors in the determination of actors' abilities. They assume:

1). the system-centric factors are the same for all of the actors in the same system. This is often true when a comparison is made within a relatively small system. For example, all actors within one nation-state function themselves under the same service of one national communication system;

2). the system-centric factors are so unimportant that they can be ignored in the study of actors' functions or abilities. This assumption is usually true when the technology is in its primitive stage. For example, if there were no airplanes in the world, it would be more important to invent airplanes than to establish the airline control and management system.

However, these two assumptions in the studies of modern IR and IPE have to be questioned, since there are many different countries (i.e. different systems) and different cases under the different development levels of advanced technology. As a result, the actor-centric theories face a serious challenge in the measurement of actors' functions or abilities, especially when the measurement involves the functions or abilities of one actor interacting with others. This is the major cause which leads to the

problems of GST, which therefore result in the problems to identify the systems like the GCECS.

In order to solve this problem, this research introduces a system-centric approach with the following three assumptions:

1). the actor-centric factors (the independence sector) can be identified as the functions or abilities of an actor;

2). the system-centric factors (the dependence sector) can be separated from any actors in the system and integrated as one system variable--infraconnection--with the following three criteria:

   a. In a system, the infraconnection is the sum of both the **necessary condition** for all the actors to interact with each other and the **essential linkage** which connects all the actors in the system;

   b. infraconnection does not reflect the nature of any specific actor in the system, but that of the whole system;

   c. infraconnection cannot be fully controlled by any specific actor in the system, but it requires efforts from both private and public sectors to build up or maintain its function and role.

3). a meaningful comparison among any functions or abilities (i.e. the actor-centric factors) should be taken using the same infraconnection support in the system.

In this sense, both the actor's nature (i.e. its functions or abilities) and the system's nature (i.e. infraconnection) become clear and measurable. Also, the relationship between actors and the system can be easily examined from actors to the system, and vice versa. This may be a way to solve the problems of the GST and to face the challenges (see Introduction) raised in the study of the GCECS, since the GCECS can be identified and examined with its infraconnection. And how concrete

events, such as political barriers, fluctuation in GDP growth, and changes of key decision-makers, effect the development of the GCECS depends on how these events impacts on the development of the infraconnection in the GCECS. No matter how actors and events changes, as long as the infraconnection is still developing, the GCECS is developing as well.

C. Major Elements of Infraconnection & Their Theoretical Foundations

According to the definition of infraconnection and the analysis of the dimorphism of an actor (list in Table I.2), infraconnection should consist of the crucial systemic supports associated with the fundamental connection and interaction activities within a system. Specifically, for an economic system, the major connection and interaction heavily rely on transportation, communication, marketing, and economic order (rules), infraconnection can be therefore represented by the associated system networks with the following major activities. They are:

1). Transportation Networks
   -- Air lines (airports)
   -- Railways
   -- Highways
   -- Waterways;

2). Communication Channels
   -- Languages
   -- Mass media
   -- Postal Mails
   -- Telecommunication networks
   -- Special ties, such as family relationship and human connections;

3). Market Systems
   -- Monetary systems including banking, stock markets, bond markets and other money markets

-- Labor markets
-- Commercial Commodity markets, including market channels and distributions;

4). Economic Order
-- Laws or regulations
-- Rules or principles
-- Policies.

These four major elements do not belong to any individual actors, and they do not describe any characteristics of one actor in the system, but they can be unified as one comprehensive concept--infraconnection. This is because that they together can connect all the actors in the system at a systemic level, and they are both necessary conditions and the essential linkage for all the actors' economic interactions in the system. To a large extent, one actor may make some changes on these elements of infraconnection, but how the infraconnection develops can directly affect all the actors in the system. In this sense, the infraconnection itself, as an independent variable, can play a very important role in an economic system.

More generally, the significance of the four major interactions related to infraconnection (i.e. transportation, communication, marketing and ordering) have already been recognized and studied in many fields of international relations and international political economy, despite the absence of the definition of infraconnection in the traditional General System Theory.

1. Transportation and Environment Theory

The significance of transportation has been implied in the environment theory of international relations. This theory mainly concerns the intimate relationship between

geography and power and how this relationship affects human behavior. For environment theory, factors such as geography, demography, resource distribution, and technological development, are becoming increasingly important in the studies of international politics. Just as Harold and Margaret Sprout have suggested that the international political milieu cannot be fully understood without reference to the "whole spectrum of environing factors, human as well as nonhuman, intangible as well as tangible."[7]

With the advent of modern transportation technologies, increased attention has been given to geography, focusing upon population/resource distribution, the strategic location of states, and the forward projection of national power. Because geopolitics has its focal point of national power and the control of territory, it follows that those political entities which are the most able to project their capabilities over greater distances constitute the dominant states of any time in the history of the international system. "At an abstract level, the relationship between geography and power--geopolitics--resides in the ability, at any time, of one state or another to move power in order to influence or control desired territory deemed to be of strategic importance."[8]

The major outline of this theory has been discussed in the works of Alfred Thayer Mahan, an American naval officer who emphasized the sea power; Sir Halford Mackinder, a British geographer who created the Heartland theory; Giulio Douhet, an Italian advocate of air power; and Harold and Margaret Sprout, American ecologists

---

[7] Sprout, Harold and Margaret Sprout. The Ecological Perspective on Human Affair--With Special Reference to International Politics. Princeton University Press, 1965. p.27.

[8] Dougherty, James E. and Robert L. Pfaltzgraff. Contending Theories of International Relations. New York: Harper & Row, Publishers, Inc., 1990. p. 59.

who stressed the impact of technology on the environment.

Although the primary concentration of environment theory rests on the impact of the transportation technology upon the national power and power struggle, the conclusion which is drawn from this theory has significant implications for many fields other than the emphasis on power and power struggle in the studies of IR and IPE.

First, a great power is always sustained by a great economic strength. The logic behind this assumption in the environment theory is that the development of transportation capability of a nation-state drives its economic development which in turn cultivates this nation-state as a great power; or the economic development could be achieved in the process of pursuing such a status as a great power with the development of its transportation capability. By all means, the transportation capability is always essential and crucial in international relations.

Second, the history of world development has demonstrated that who first understands thoroughly and masters the key transportation technology which causes the replacement between environmental factors will lead the world development. Just as the former U.S. general Daniel Graham has stated:

> "Throughout man's history, those nations which moved most effectively from one arena of human activity to the next have reaped enormous advantages. For example, when man's activities moved from land to the coastal seas, the Vikings established an extraordinary dominance by excelling at sailing those seas. After the epic voyages of Columbus and Magellan, Spain and Portugal dominated the world through military and commercial control of the new arena of activity--the high seas. Later, England with her powerful fleet of merchantmen and men-of-war established a century of *Pax Britannica.* When the coastal seas of space--the air--became a new sphere of human activity, the United States gained great strategic advantages by acquiring the most effective military and

civilian capability in aviation."[9]

Third, it is worth noticing that one nation-state's ability in transportation is determined by both transportation tools and international transportation networks. Other powers can hardly effect another nation-state's transportation ability by controlling this nation-state's improvement in its transportation tools, but they can achieve such a purpose by controlling the international transportation network. This is true that the control of the strategic geographic points in international transportation networks has always been a hot issue in the power struggle among nation-states. In the modern time, the international transportation network has developed into such a large and advanced scale that no single nation-state can fully control it; and the whole world becomes more interdependent.

Fourth, most important implications in environment theory is that the development of transportation technology has strengthened the capabilities of political entities (both nation-states and non-nation-states), not only in power struggles, but also in economic and social cooperation. To a large extent, the development of transportation (as well as communication) technology can replace one set of environmental factors with another; also, it can change the major activities of human society from one area to another, for instance, from international conflict to international cooperation.

Today, the fast development of technology is once again altering the specific geopolitical relations, i.e. the revolution of transportation (communication) technology, especially its essential networks, is making people so close and so interdependent that

---

[9] Graham, Daniel. High Frontier--A Strategy for National Survival. New York: Tom Doherty Associates, Inc., 1983. pp. 34-35.

the economic development, instead of military conflict, becomes the major issue in international relations and international political economy. To some extent, who first understands thoroughly about such a change and then masters the key technology, which is causing this change, will reap enormous advantages in world development.

2. Communication and Integration Theory

The importance of communication in the improvement of international relations can be found in integration theory. The purpose of this theory is to explore the dynamics for a peaceful unification or co-existence among different social communities or nation-states. This theory has been successfully applied in the studies of the European Economic Community (EEC).

During the 1940s and 1950s, and to a considerable extent thereafter, political scientists have attempted to describe world politics as a Hobbesian situation[10] in which independent units, i.e. nation-states, are locked into patterns of fundamental conflict. Some realists, such as Hans J. Morgenthau,[11] have ascribed international conflicts largely to the characteristics of human nature. Others have stressed more on the nature of the international system as a condition of what kenneth N. Waltz describes as "international anarchy."[12] Regardless of differences in explanations, there has been a

---

[10] Thomas Hobbes, seventeenth-century English philosopher, characterized anarchic politics--the absence of a sovereign or central authority--as producing grave threat to individual security. In Hobbesian view, the absence of central authority in international relations poses a security threat to all states to which they may respond internally by strengthening their power positions, or externally by forming alliances. Therefore, in Hobbesian view, international security should focus more on power and the balance of power than on law and other rules or norms.

[11] Morgenthau, Hans J. Politics Among Nations. New York: Knopf, 1978.

[12] Waltz, Kenneth N. Man, the State and War. New York: Columbia University Press, 1959.

substantial agreement among many leading theorists about the crucial importance of conflict and war in the international arena.

However, the European unity movement flourished in the 1950s, first in the European Coal and Steel Community (ECSC), then in the European Economic Community (EEC) or common Market. It would clearly have been misleading to characterize this movement in Western Europe as "international anarchy," or to have interpreted those relations in terms of security or possible violent conflict. This important case, for contemporary world politics as well as for theories of international relations, has led many scholars to examine it with new approaches other than Realists' traditional interpretations. Karl W. Deutsch, as a pioneer in this research, has focused his attention on "regional integration" as an appropriate concept for describing the process that was taking place in Western Europe.[13]

Unlike those scholars who stress power struggle, Deutsch describes integration theory with his communication model. According to him, social development and communication can be mutually stimulated and strengthened; and the communication channel, which consists of not only mass media and telecommunication, but also of the same language, common customs, family ties, common patterns of culture, is the essential condition and linkage to the learning process which brings mutual understanding, mutual responsiveness and a "sense of community."[14] Deutsch points out that "The most promising general method for moving toward these goals seems to

---

[13] Deutsch, Karl W., et.al. Political Community and the North Atlantic Area: International Organization in the Light of Historical Experience. New Jersey: Princeton University Press, 1957.

[14] Ibid., p.5.

be more and better communication. This would involve not only a greater exchange of goods, persons, and ideas, but also more institutions for carrying on consultations between governments and, where possible, for making joint decisions."[15]

Although integration is only one possible tendency of world development, the approach which is used in integration theory with the emphasis of communication is applicable to any other fields of IR and IPE. This is because communication is so important for any social linkage that it can be regarded as the essential clue to solve many social development problems. To a large extent, if the Realist approach provides a major analytical tool--the conflict approach--for the studies of IR and IPE, integration theory, however, provides another one--the communication approach.

In the integration theory, "communication" is a broad concept which includes all the social peaceful exchanging and cooperating activities, such as exchanging activities in goods, ideas and people; cooperating activities in consultations and making joint decisions. Again, it is worth noticing that all these communication activities not only depend on the communication tools, but also on the communication channels and networks which are especially represented by the advanced telecommunication networks, the postal system, the mass media, and various social groups such as families, communities, governments and international organizations.

Along with these communication channels and networks moving into their high sophisticated stages, human societies become more visible and understandable. Also, communication channels and networks are very important in identifying the human society, because any members in one society can easily move away; however, no matter

---

[15] Ibid., p.201.

how its members change, the communication channels and networks of the society are always there. As a result, these communication channels and networks themselves become the landmark of this human society. Its advanced level reflects the development level of the human society; and its density as well as stability reflect the integrated degree of the human society. In this sense, the social integration is just a process in which several social communication channels and networks are merged toward a bigger one.

3. Market and International Political Economy

The consequence of the market role has been expressed in the modern international political economics. The major literature can be found from the works of Adam Smith, David Ricardo, Robert L. Heilbroner, Charles Kindleberger, David Baldwin, Richard Rosecrance, Robert Gilpin, Joan Edelman Spero, Stephen Gill and David Law.

Traditionally, the Realist approach, here called Mercantilism, has dominated international political economics for a long time. In Mercantilism, world development is based on the primacy of politics. The supreme goal of politics is national security and external autonomy. As a consequence, the central objective of a nation-state policy is to build up a national **power**. In Mercantilists' model, markets are the only certain means for nation-states to exercise and achieve power.

The major challengers to Mercantilists are Liberal advocates, such as Adam Smith and David Ricardo. They emphasize the spontaneous, orderly and efficient character of markets, i.e. the apparently spontaneous coordination of economic activity

which might be achieved through the market mechanism, as if by an "invisible hand."[16] Such a stress on the market suggests the conditions for the relative autonomy of economic forces.

Liberalists argue that the Mercantilists have exaggerated the importance of the national power of a given nation-state relative to others, rather than the general economic conditions and institutions which could be of general **benefit** to all. Mercantilists have placed "uneconomic" stress on the importance of national security, so that the wealth of the nation (and implicitly of all nations practicing such policies) would be curtailed in the long term. In Smith's view, the potential **gains** to be made from interdependence and specialization were considerable.[17]

Robert Gilpin defines market economy as one in which goods and services are exchanged on the basis of relative prices; and that is where transactions are negotiated and prices are determined. He points out: "A market increases the efficient allocation of existing resources. Economic growth occurs because the market fosters a reallocation of land, labor, and capital to those activities in which they are most productive."[18] "Whereas powerful market forces in the form of trade, money, and foreign investment tend to jump national boundaries, to escape political control, and to integrate societies."[19]

---

[16] Smith, Adam. An Inquiry into the Nature and Xauses of the Wealth of Nations. Oxford: Clarendon Press, 1976.

[17] "Smith" qtd. in Gill, Stephen and David Law. The Global Political Economy. Baltimore: Johns Hopkins University Press, 1988. pp. 4-6.

[18] Gilpin, Robert. The Political Economy of International Relations. New Jersey: Princeton University Press, 1987. p.19.

[19] Ibid., p.11.

Throughout the human history, Mercantilism and Liberalism can influence or have influenced decision-makers in many ways. Their combination reflects a spectrum of decision-making styles with the different emphasis from the sides of social **conflict** to social **cooperation**.

On one side, it is Mercantilism which stresses social conflict. Since a lack of trust among nation-states has made each nation-state face a self-help situation, national security becomes the top goal. In order to guarantee the security and continuous development for itself, one nation-state must strengthen its own capabilities (i.e. pursue power). In the international market system, this implies increasing the independence of this nation-state from others and increasing the dependence of others on this nation-state by controlling world resource and market.

On the other side, it is Liberalism which emphasizes social cooperation. Different from the Mercantilists' emphasis on national security, Liberalists particularly stress the benefits from the world market. In order to get more benefits from the world market, one actor has to produce beneficial outcomes for the whole society. In this process, however, this actor will lose its independence in the international market system. If many actors do the same things, the economic ties will be strengthened among these actors. As a result, interdependence becomes the major phenomenon in the international market system.

Earlier in this century, the Mercantilist view has had the dominant position both in the theories of IR and IPE and in the practices of world development. This fact can be reflected by the two world wars and the Cold War. In the post-Cold War era, the weight of Mercantilism in IR and IPE decreases and the weight of Liberalism increases.

To study the dynamics of this shift is just one of the major foci of infraconnection approach.

A key point that Liberalists made and will be adopted by the **STRUCTURE IDEALISM** is that international trade can promote world development if the world has an adaptable international market system. This market system can be represented by those networks related to international monetary system, international distribution system, and international sales system. In this sense, international market system can function as another essential network at a system level which supports all the actors' economic interactions in the international system.

Since a better international market network can improve and smooth international economic interactions, this improved economic interactions will create a better interdependent relationship which can help to build up better international relations. Thus, improving the international market system (network) is a possible way to shape international politics.

4. Economic Order and International Order Theory

Finally, the prominence of economic order has been indicated in the studies of international order. Hedley Bull and Samuel P. Huntington and their works are the representatives in this field. Bull focuses on the social order in a nation-state system; while Huntington pays more attention to the political order in a political institution.

In a philosophical view, "social order" is a typical pattern of a goal. As Bull points out, "The order which men look for in social life is not **any** pattern or regularity in the relations of human individuals or groups, but a pattern that leads to a particular

result, an arrangement of social life such that it promotes certain goals or values."[20] Huntington directly identifies "political order" as a goal which reflects the ideal political life.[21] according to him, order is an ideal pattern which can link the physical structure and the process of the social development to human values in connection to the destination of human society.

In a functional view, "order" can be defined as a steady state of the system development. In fact, "political order" which Huntington identifies just indicates "political stability." For Bull, however, social order mainly sustains three primary goals which are safety, consistence and stability.

In a practical view, "order" is sometimes defined in terms of obedience to rules or principles; laws or regulations; and certain policies. Bull argues that "in most societies, what helps to create patterns of conduct that conform to the elementary goals of security against violence, the honoring of agreements and the stability of possession, is the existence of rules prohibiting murder and assault, rules prohibiting breach of contract, and rules of property."[22]

These three perspectives are frequently interchanged in the studies of social order. The logic behind them is that the goal must be interpreted as some kind of steady state of the social system development; and to achieve such a steady state, laws or regulations, rules or principles, and certain policies, must be obeyed.

---

[20] Bull, Hedley. The Anarchical Society--A Study of Order in World Politics. New York: Columbia University Press, 1977.

[21] Huntington, Samuel P. Political Order in Changing Societies. Yale University Press, 1968.

[22] Bull, Hedley. The Anarchical Society--A Study of Order in World Politics. New York: Columbia University Press, 1977. p. 7.

On one hand, the goals are the fundamental guide lines for a human society in the process of civilization; and the rules are the guarantee for the society to follow these guide lines. Thus, the nature or level of the order in social life is determined by the nature of the goals and the rules associated with the goals.

On the other hand, Bull points out that for a certain human society, the development of these goals and rules heavily depends on the level of civilization of this society being "conscious of certain common interests and common values."[23] For Bull, the common interests, common values, and common prestige mainly come from a common culture or civilization which includes a common language, a common epistemology and understanding of the universe, a common religion, a common ethical code, a common aesthetic tradition, and family ties.

Thus, the social order of a society is just as the soul of a men. The civilization creates the goals and rules for social order; while the social order promotes the further civilization. Since civilization includes all the social activities, social order can exist in any kinds of social activities. Economic activities are not the exception. Combining all the laws or regulations, rules or principles, and policies for economic activities, one intangible system network, which can be equally treated as the social order, thus become visible. As discussed above, the transportation networks and communication channels are very helpful to identify a society, so does the social order (i.e. the network of regulations, rules and policies). If the transportation networks and communication channels can be regarded as the **hard-nets** of a society, then the social order will be the **soft-nets** of this society.

---

[23] Ibid., p. 13.

Integrating the four pillars--transportation, communication, market system and economic order--from the different fields of IR and IPE, establishes a primary foundation and guide line for any civilization. This research, with the concept of infraconnection, specifically emphasizes that, these four pillars can be divided into two parts--an independent part and a dependent part (see Table I.3.):

Table I.3. Infraconnection with Independent Part and Dependent Part

Four Pillars	Independent	Dependent
Transportation	Transportation Tools	Transportation Networks
Communication	Communication Tools	Communication Channels
Market	Market Relations	Market Systems
Order	Goals	Laws, Rules & Policies

The dependent part, i.e. transportation networks, communication channels, market systems, and laws, rules and policies can be further regarded as the foundation of the four pillars of IR and IPE. The concept of infraconnection is hereinafter defined as a collection of those networks with such important characteristics. The development of infraconnection, as a hidden dynamics, has been driving the concrete events of political and economic development in the human history. Now, it has reached such a level that any individual actor in the system can hardly control infraconnection monopoly. As a result, we, human beings, have created a substantial social reality--infraconnection--which we have to rely on for survival; now we must more carefully improve it, since it becomes more determinant for the development of human society than anytime before.

Chapter II

The Role of Infraconnection

When transportation-communication technology becomes more advanced, when markets and economic order become increasingly important, and when more actors, either nation-states or non-nation-states, have appeared to be more competitive, the interactions in an economic system then become more intense. The GCECS is the case. Such a phenomenon requires a systematic survey in the studies of international relations (IR) and international political economy (IPE) to provide insights of an emerging economic system that not only integrates the heretofore separate activities within the actors, but also links the activities of every actor in a systemic chain.

However, traditional theories of IR and IPE have only been attached to a problem-focused approach, in which there is no system-level context; thus, less attention has been paid to the studies of the relationship between actors and the system of these actors.

By introducing the concept of infraconnection, the unoccupied system-level context in IR and IPE can be filled, i.e., the nature of infraconnection can be equally regarded as the nature of the system, and the relationship of actor-infraconnection can be regarded as the relationship of actor-system. In this way, the infraconnection approach can provide a practicable path that enables the studies of IR and IPE truly to reach a system-level, two centuries after Adam Smith began to use market dynamics instead of political dynamics to analyze IR and IPE. How infraconnection plays such a role as a key system variable can be delineated more manifestly by a comparison between the concept of infraconnection and some other concepts which have been

widely used in the studies of IR and IPE, such as resources, infrastructure, GDP, development, power, interdependence, integration and others.

A. The Relation to the Concept of Resources

By definition, **resources** are anything available in nature that are capable of being transformed into human being's properties and exhausted by their owners. In the theories of IR and IPE, resources can be divided into two kinds: tangible and intangible. Tangible natural resources generally refer to the following basic categories: (1) energy; (2) food and water; (3) mineral and forest. Intangible human resources are mainly associated with (4) knowledge or technology, (5) policy or law, and (6) social culture.

Compared with the concept of infraconnection, resources are also the necessary conditions for every actor's survival in the social system. For example, people demand food and water, productions need materials and energy, transportation tools require petroleum, and telecommunication channels rely on electricity. Furthermore, those like modern power supply systems also function as systemic networks to link many actors in an economic system. Thus, the concept of "resources" and the concept of "infraconnection" do share some common features.

In many traditional theories of IR and IPE, infraconnection is just regarded as a typical kind of resources since it is also something available for actors to use in a system. However, a neglect of the difference between these two concepts is just the same as a neglect of the dimorphism of an actor's behavior. Such a neglect is one of the major reasons that have raised many puzzles and challenges (see introduction) in the modern IR and IPE, especially in the cases like the GCECS.

The basic logic between the concept of resources and that of infraconnection can

be reflected by re-interpreting the Table I.2 in Chapter 1. If considering the column 2 of Table I.2 as the available resources to an actor, then the actor's abilities can be determined by the available resources which the actor has plus the system infraconnection supports.

Furthermore, resources are exhaustible goods which mean a certain amount of resources, especially the tangible natural resources, can hardly be used by two or more actors at the same time. To a large extent, resources are identified not only by their geographical nature, but also by their ownership. That is, to discover and explore resources is a process which identifies the geographical nature of resources and then privatizes them. International trade is such a process which relocates resources by changing their ownership.

The differentiation by ownership is a major characteristics of resources which differ from the concept of infraconnection. Since two or more actors in one system can benefit from the same infraconnection at the same time without damaging each other, to differentiate the ownership of infraconnection thus becomes less necessary than to do so for resources. In other words, no matter who is the owner of the infraconnection, the infraconnection itself is originally designed to be shared by all the actors in the system. Hence, in the comparison of these two concepts, resources are an actor-centric variable--private goods, while infraconnection is a system-centric variable--public goods (but they are never free goods or costless). This difference leads these two concepts to their different roles in IR and IPE.

First, because of the resources ownership, other actors can hardly have access to the resources if there is no permit from the owners. Such a fact implies that in international relations, some actors can hold rich resources, but the others face a serious

scarcity of the resources. Since resources are the necessary conditions for survival, the actors with rich resources have great competitive advantages in the world economic and political development. In other words, the larger and more varied resources a particular actor possesses, the greater the likelihood that this actor is powerful. Thus, to control or seek to control resources has always been the major issue, i.e. the means to pursue hegemony, in international relations.

Second, resources rely on infraconnection to transform them from one owner to another (i.e. to exchange ownership). For instance, the power supply network is in fact a typical gas and electricity transforming system; the cable TV is an information transforming system; and the banking system is a money transforming network. Here, gas, electricity, information and money are resources; while the power supply lines, cables and banks belong to infraconnection.

Third, the concept of "resources" emphasizes the ownership and the quantity. The more resources one owns, the stronger he/she is. The concept of "infraconnection" emphasizes the interactions and their effect. The better infraconnection that supports one, the more efficient interactions which allow one to be able to complete with others.

When the technological development of infraconnection was only in its primitive stage, to control resources usually means to own the resources geographically and politically through colonizing the areas of the resources. This might be one of the major causes of wars among great powers in human history.

With the progress of technology, the cost of a war has become so high that any war for resources has turned out to be a lower priority for decision-makers; at the same time, the development of infraconnection assures the effectiveness of international trade for relocating resources across actors in the international system.

From the view of infraconnection, resources conflicts result not only from the scarcity of world resources, but also from the mismatch between the resource-supply distribution which is geographically settled and the resource-demand distribution which responses to human needs. Wars can hardly help solve these problems. In contrast, wars have wasted huge resources and deliberately intensified the distribution-mismatch of resource supplies and demands.

In fact, the scarcity of resources can only be solved by technological revolution--to discover new alternate resources, for instance, using nuclear energy resources instead of the fossil energy resources. However, before new technologies become applicable, a better way to solve the resources conflicts is to increase the efficiency in using the existing world resources by eliminating the mismatch of distribution between the resources supplies and resources demands. To achieve this goal, a well-developed infraconnection is urgently needed so that international trade can be more efficient and international relations more cooperative. In this sense, to develop the infraconnection is an alternative way rather than power struggle to solve the resources conflicts in international relations.

Briefly, if discovering and consuming resources are the major human behaviors in the process of social development, infraconnection is the primary channel which can help human being to get or re-distribute resources efficiently.

B. The Difference from the Concept of Infrastructure

Another concept which has been employed to describe both the necessary conditions for actors' survival and essential linkages for actors' interactions in a system is **infrastructure**. According to Webster's Third New International Dictionary (1961),

the definition of infrastructure refers to the underlying foundation or basic framework (as of an organization or a system). The Random House Dictionary of the English Language (Second Edition, 1987) defines infrastructure as "the fundamental facilities and system serving a country, city, or area, as transportation and communication systems, power plants, and schools."

Roger J. Vaughan has explained the concept of infrastructure with detailed categories. He says that "the term **infrastructure** refers to facilities and equipment necessary or desirable for the delivery of services to meet social and economic needs."[24] In his categories, infrastructure consists of three parts: (1) most of resource supply systems, such as energy and water supply systems; (2) some components of infraconnection like transportation and communication systems; and (3) some other basic public services, such as education, health care, security, including fire safety and emergency services, recreation, and other social or government facilities.

Apparently, most components of infraconnection can be filled in the context of infrastructure. However, the differences in the connotation and denotation between these two concepts can lead to their different applications in the studies of IR and IPE.

1). The concept of infrastructure covers too many things to be an effective system variable in the study of actor-system relations in IR and IPE.

Infrastructure includes some components of resources, some parts of infraconnection, and many others. As discussed above, resources are an actor-centric variable with its emphasis on ownership. As a component of infrastructure in certain

---

[24] Vaughan, Roger J. "Rebuilding America--Financing Public Works in the 1980s." Rebuilding America's Infrastructure--An Agenda for the 1980s. Ed. Michael Barker. Durham, N.C.: Duke University Press, 1984. pp. 108-109.

system, resources can demonstrate the fundamental strength of the system as a whole. In this sense, infrastructure is still an actor-centric variable, because it reflects the power basis of a system when this system is actually regarded as an actor. However, infrastructure also includes some components of infraconnection which are mainly system-centric variables. Hence, infrastructure can be also regarded as an indicator of the system status when the dynamics of the system development is examined. Since both concepts, resources and infraconnection, are included in the concept of infrastructure, the relationship between resources and infraconnection is hidden in the infrastructure level. Thus, still as same as a neglect of the dimorphism of an actor's behavior, infrastructure is an insensitive indicator in the studies of actor-system relations.

2). Infrastructure can be only used as an indicator to assess a well-institutionalized system like nation-states; while infraconnection is a more flexible indicator which can assess any kind of systems.

The development of infrastructure is a long-term and high-cost project. It includes both private sectors like resources supplies and public sectors like infraconnection, education and health care. This characteristics makes infrastructure difficult to be well organized and systemized as a whole unless it is established under a well-developed institutional force.

On one hand, some components of infrastructure, especially those projects with limited or no market return but with positive social return, can hardly be financed by private capital, but they can be financially supported by large public capital. The complexity of this financial problem requires the institutional force for successful planning as well as implementation. Therefore, an important prerequisite for the

establishment of infrastructure is the institutionalization of the system. Since a nation-state is the best institutionalized system in the world, infrastructure has mainly functioned well under the nation-state.

On the other hand, any systems over the national level, such as international organizations, international development zones, and regional integration, have no unified infrastructure, since these systems are much less institutionalized than any nation-states are. National interests, such as sovereignty and "territorial principle," i.e. the private rights of nation-states in consuming resources and services, are the major obstacle to establish international power supply, water supply, education or health care systems. Even within the framework of European integration or some other international cooperations, infrastructure is still a concept primarily based on the nature of nation-states and has functioned under nation-states.

A prerequisite to connect the components of national infrastructure into the international level without institutional force is that this connection must guarantee mutual or equal benefits for all nation-states (or non-nation-state actors) who have joined in this international system. Among all the components of infrastructure, only transportation and communication networks, also the components of infraconnection, can satisfy this prerequisite in the current world political and economic system.

In other words, only infraconnection, which has to be distinguished from the concept of infrastructure, can satisfy the connection principle for mutual or equal benefits, no matter over or below the national level. This is because that it has following advantages:

a. Infraconnection is public goods; thus, there are less ownership conflicts. Meanwhile, the needs for actors' interactions become an essential

institutional force for its establishment;

b. Infraconnection is not free goods. Communication and transportation are profitable projects with a market rate of return and limited risk; therefore, it is easy to be financed by both public and private capitals;

c. Infraconnection makes the world smaller, people closer, productions more dependent, and the society more integrated. Therefore, infraconnection itself is a special institutional force.

Thus, the development of infraconnection is the necessary condition even for the establishment of infrastructure, especially over the national level.

3). The concept of infraconnection includes another two components--market and economic order--which are neglected by the concept of infrastructure. Therefore, the infraconnection approach has more explanatory power in the studies of IR and IPE than the infrastructure analysis has.

The concept of infrastructure emphasizes the necessary facilities and equipment which can provide services to satisfy the social and economic needs. For the market, it not only provides facilities for international trade, but also generates basic dynamics for economic growth. For the economic order, it may offer some facilities for international justice, but more important, it is a goal, a blueprint, which guides human society as it moves toward an ideal destiny. The significance of these two concepts--market and economic order--in the studies of IR and IPE is far beyond what are only treated as some kinds of facilities and equipment in terms of infrastructure. As discussed in Chapter I, market system and economic order are the soft-net which can help to improve all the economic activities for world development.

In summary, although the concept of infrastructure includes some components

of infraconnection like transportation and communication, the infrastructure approach emphasizes the physical structural development in terms of facilities and equipment within a single actor--nation-state. In this sense, infrastructure is only a static indicator for the internal nature of an actor. By comparison, the infraconnection approach focuses more on the development of both a hard-net like transportation and communication networks and a soft-net like market systems and economic order in terms of the multi-actor relations connected by these networks at any system level, i.e., below the national level, over the national level, and in regional or international level. In this way, the concept of infraconnection is not only an indicator of the system's nature, but also a dynamic factor on the chain of actor-system relations.

C. The Application in the Development Theory

Development theory is the most essential theory in the studies of IR and IPE. To find out the position of infraconnection in this theory is thus a reasonable starting point to explain the significance of infraconnection in IR and IPE.

In the development theory, the definition of **development** usually refers to "expanding choices"[25] or a gradual and advanced differentiation in the process of evolution. For human society, development generally refers to economic growth, political maturity and social progress. From different views of development studies, the process of social development in human society is described with various concepts like modernization, industrialization, institutionalization, democratization and civilization. Focusing on the economic development process, this paper will primarily discuss the

---

[25] Apter, David E. Rethinking Development--Modernization, Dependency, and Postmodern Politics. California: Sage Publications, 1987. p.16.

relationship with the concept of infraconnection to the concepts of economic growth, economic modernization (or industrialization), and economic democratization (or institutionalization).

In the measurement of economic growth, the increase of Gross Domestic Product (GDP) is regarded as a major indicator. Normally, GDP is computed in money paid for goods and services annually. This implies that, in a certain year, only the goods which have been paid are calculated into the amount of GDP. However, the amount of these paid goods may not be equal to the total amount of goods which are produced by the society in the same period. Thus, the growth of GDP only demonstrates the magnitude and speed of economic growth, but can hardly tell how efficient the economic growth is. In fact, there are three kinds of goods which relate to the GDP growth:

1). the potential goods which a society can produce. This indicates that the potential productivity is mainly determined by the available technologies and resources for this economic system;

2). the real goods which the society has produced annually. The amount of these goods relies on the productive activities of every producer in the economic system;

3). the utilized goods, i.e. they are paid for with money and calculated into the GDP. The amount of these goods heavily depends on the consuming activities and the exchanging and flowing processes in the economic system.

From a utility perspective, economic growth occurs only when the productivity factors can be utilized, i.e. the real produced goods can be transformed into utilized goods. If not, this would imply that the society is wasting or has wasted the resources to produce these goods. In this sense, the utilization efficiency is also the indicator of

the economic development.

From a view of the life cycle, different strategies have to be used in different periods of the whole production cycle. At the primary stage of one production, searching resources and technology to increase potential productivity are very crucial; then, at the growing stage of this production, increasing real productivity becomes more important; finally, at the mature stage or the declining stage of this production, maximizing the utility of existing productivity possesses the dominant role.

In most development cases, including the GCECS, searching, exploring and controlling new technologies and new resources, improving the investment environment and quality of labors and management have frequently been emphasized, but how to improve utilization efficiency has attracted less attention. However, the utilization efficiency eventually will become a focus especially when the economy becomes more mature.

Thus, a better development strategy should be an optimal combination between developing new productivity and maximizing the utility of existing productivity. The latter heavily depends on the structural and qualitative changes of the economic system. The GDP growth alone can hardly demonstrate this aspect.

In IR and IPE, the structural and qualitative changes of an economic system are usually associated with the concepts like economic modernization and economic democratization. **Economic modernization** means expanding and advancing technical choices for economic activities; while **economic democratization** refers to a perfect economic environment or institution for efficient economic activities, i.e. every actor, no matter how big or small, can sufficiently exert its potentials to compete (freely) with others in the environment. Because of such a complex in the process of modernization

as well as democratization, the growth of GDP itself cannot simply demonstrate all these aspects, especially when those different societies reach at the same GDP level.

By comparison with the concept of GDP, infraconnection shows a better sensitivity to the basic differences in the development process of different societies.

1). Infraconnection (transportation, telecommunications, market systems, and economic order) is the essential condition and the dynamic catalyst for the economic development.

In reality, any development strategy can hardly succeed without a sufficient support from infraconnection. This is because all the activities, such as searching for resources, exchanging technology, improving investment environment as well as the qualities of employment and management, upgrading the distribution of goods and services, expanding markets and utilizing products, need a well-developed infraconnection. All these economic activities, especially the utilization efficiency, can be improved if they are integrated under a better infraconnection.

2). The development of infraconnection itself is a clear feature for economic modernization and democratization.

First, the development of communication and transportation facilities and networks involves the use of many leading technologies. Therefore, it is a sensitive indicator of the level of modernization. Second, the development of market system and economic order is also very responsive to the historical and cultural backgrounds of different societies. Thus, the development of infraconnection is consistent with the processes of both modernization and democratization.

3). Infraconnection functions as an institutional force to provide essential linkages which can enhance connections between different societies as well as

increase the efficiency for these societies to interact with each other.

GDP can only measure the economic scale of a nation-state as one actor. While infraconnection not only demonstrates the development levels of individual actors (either nation-states or non-nation-states), but also reflects the degree of regional integration among these actors, since different societies can be integrated as a whole under a common infraconnection.

The development of the GCECS is a good example to demonstrate the significance of infraconnection in the development process. In recent years, the GCECS is one of the fastest growing areas represented by GDP growth in the world. However, it is not the fastest development area represented by the development of its infraconnection. By definition, infraconnection belongs to the category of long-term decisions--time-consuming planning and realization, and long-lasting impact. One weakness in infraconnection is that it may be easily neglected in short-term planning. However, the modernization of infraconnection (transportation, telecommunication, market system, and economic order) is indispensable for both quantitative and qualitative growth. If the impact of lasting neglect cannot be corrected through both short-term and long-term efforts, weakness and shortage in the quality of infraconnection will eventually become a bottle-neck to its quantitative growth. For the current development of the GCECS, to improve its infraconnection should be more important and urgent than simply to pursue a fast growth of its GDP.

D. An Alternative to the Power Theory

For a nation-state, the cumulated national wealth through a continuously economic development is the foundation of national power.

Power is one of those terms which has been most frequently used in the studies of IR and IPE. Hans J. Morgenthau even defined international politics, and indeed all politics, as a "struggle for power."[26]

From a view of social psychology, power is a nature of human being. As Charles E. Merriam points out: "Power withdraws from its physical externals, beyond its symbols, lurking somewhere behind its material defenses. It is a creature of habits, of culture patterns woven deeply into the lives of men; subjective it might well be termed, were this term not employed at times to the exclusion of the emotional and psychobiological, as if epi- or para-phenomenal, as if apart somewhat from the central drive of life."[27] Harold D. Lasswell indicates that power comes from the growth of demands as for "security," "equality," and "supremacy."[28]

From a functional view, power can be regarded as both attributes or capabilities (**bases** of power) and as a process of interactions (how nation-states **influence** others to behave). In other words, power has two dimensions:

1. Capabilities--internal power
2. Influences--external power.

Generally, the basic elements that determine the actual and potential power of a nation-state can be grouped into seven categories:

1. Geography, including natural resources
2. Population
3. Economic development

---

[26] Morgenthau, Hans J. Politics Among Nations. New York: Knopf, 1967. pp.25-26.

[27] Merriam, Charles E. "Political Power." A Study of Power. Illinois: The Free Press, 1950. p. 8.

[28] Lasswell, Harold D. "World Politics and Personal Insecurity." A Study of Power. Illinois: The Free Press, 1950. pp. 7-9.

4. Science and technology
5. Traditions and social psychology
6. Government and administration
7. Military organization.[29]

Based on these two perspectives, power is the "strength capable of being used efficiently," that is, "strength plus the capacity to use it effectively"[30] in support of some objectives. Harold D. Lasswell defines power--the will to use power, the capability of power, and the influence (effect) of power--under the titles as "symbols," "conditions" and "control."

This section will first try to demonstrate that infraconnection is not only one of the crucial conditions for nation-states to obtain their internal power (capabilities), but also one of the necessary conditions for nation-states to exert their external power (influences); then to make a comparison between the power approach and the infraconnection approach.

Internal Power

Some scholars describe the concept of power to be the sum of military, economic, technological, diplomatic and other capabilities at the disposal of the nation-states. Others see internal power not as some absolute value determined for each nation-state as if it were in a vacuum but, rather, as capabilities relative to the capabilities of other nation-states. For instance, the power of the United States is evaluated in terms of its capabilities relative to the capabilities of Russia, Japan and others.

Internal power is determined not only by the quantitative economic growth, but

---

[29] Feld, Warner J. International Relations: A Transnational Approach. California: Alfred Publishing Co., 1979. p.31.

[30] Kindleberger, Charles P. Power and Money: The Politics of International Economics and the Economics of International Politics. New York: The Basic Books, 1970. pp.56-65.

also by the qualitative changes through the processes of modernization and democratization, especially when power is evaluated in terms of the capabilities by other competitive countries. In other words, who can continuously renew its capabilities and keep the leading position in the economic competition worldwide will have the greatest power in the world.

As Samuel Huntington points out, successful societies are those that always find ways short of their own destruction to sustain the dynamism of their youth. The structure of such societies will presumably encourage free competition, mobility, fluidity, pluralism, and openness--all qualities that prevent the society from decline and ensure its renewal.[31] These concepts, in describing the society which can remain a great power, illustrate the characteristics of a society with a high level of democratization; and such a level in fact is sustained by a well-developed infraconnection. That is, when other conditions are equal, who has a better developed infraconnection will have stronger renewal capability, therefore have great internal power in the world.

External Power

External power has usually been viewed as influence relationship--the ability of one actor to induce another to act in some desired fashion, or to refrain from undesired behavior.[32] The ability to exert influence over another, without the actual expenditure of capabilities, represents the most effective employment of power.

There is no doubt that the internal power which one actor possesses is the basis

---

[31] Huntington, Samuel. "The U.S.-Decline or Renewal?" Foreign Affairs Winter (1988-1989): 76-96.

[32] Holsti, K.J. "The Concept of Power in the Study of International Relations." Background 7 February 1964: 182.

for its external power, i.e., the internal power can be transformed into external power. The inevitable result of this belief is that many nation-states pursue higher internal power endlessly, even with some ambiguous purposes regarding the transformation of its internal power into external one.

As a matter of fact, internal power is not always equal to external power. The power transformation from internal to external heavily depends on the available means of exerting power and the ability of adapting to the environment. Traditionally, external power can be differentiated from the use of force. Therefore, the transformation implies a change from an economic strength into a military force. That is, who has strong military capability supported by strong economic strength will be the great power in the world.

With the development of technology and the civilization of societies, the cost of a war, even a very small one, tremendously increases. Hence, war becomes less attractive to the decision-makers of nation-states. In contrast, economic relations become important tools to exert power. That is, a country with the strongest economic strength and military capability--internal power--may not have the strongest influence--external power--in the world; but a country may have strong external power without strong internal power. One example is the OPEC oil embargo of 1973 with a dramatic increase in oil prices. This case implies that who ever controls the crucial resources will have great external power, even though they are in a developing situation. Another example is Japan. Japan has both limited military capability and limited resources, but it still has great influence in the direction of international relations. This is mainly because Japan has, as well as takes advantage of tremendous and efficient economic interconnections with other countries.

The Japanese experience properly illustrates the significance of infraconnection in possessing external power. Generally, external power can be conducted through the channels provided by the components of infraconnection. A country may show no power to influence others in developing new technologies and pursuing economic growth within their own territories. However, it can influence others through occupying strategic geographic stations to control international transportation networks; through overseeing international telecommunication networks and other communication channels to manipulate information flow; through controlling monetary system to dominate international market; and through managing international organizations to achieve the preferred economic order. As a result, instead of pursuing military capabilities, whoever is the most efficient in taking advantage of international infraconnection will gain greatest external power in world development. Thus, to build up as well as to take advantage of a beneficial international infraconnection, or to increase the efficiency of using the existing international infraconnection, may become one of the major choices on the menu of strategic planning for decision-makers.

It is worthy of note that there are some critical differences between military choice and infraconnection choice. They are:

1). The military capability can be obtained through inside efforts of a nation-state; while controlling infraconnection needs more efforts outside the nation-state. The result of controlling infraconnection is determined not only by the efforts of the nation-state who wants to have control, but also by those who do not want this nation-state to have control.

2). Infraconnection belongs to the system. The utility of infraconnection is originally designed for all the actors to share in the system. Thus, it is hard to simply

borrow the traditional power theory to analyze the role of infraconnection, since power theory is actor-centric theory which emphasizes self-interest and divides infraconnection into individual properties. Under this situation, the political requirements or self-interests of individual actors will block and void infraconnection as an essential linkage to integrate societies.

3). The establishment of infraconnection is a long-term project with heavy costs. As the world makes progresses, international infraconnection will be developed into such a scale that no single actor, including superpowers, can afford to control it only with its own effort. This implies that the establishment of international infraconnection needs internationally cooperative activities. Rather than conflict politics, infraconnection politics is cooperation politics.

These differences suggest that focusing on the establishment of international infraconnection instead of power struggle may essentially change the principles of international relations and international political economy.

E. A Function in the Interdependence Theory

In international relations and international political economy, power relations can be regarded as a typical actor-actor relationship in which one actor (with the power) always occupies a dominant position. This implies that the actor with the dominant power can be independent from the others; while the others have to be dependent on it. Also, there is another kind of actor-actor relationship in IR and IPE, that is, no actor occupies a dominant position but actors are mutually or equally dependent each other. This is called **interdependence**.

According to Robert O. Keohane and Joseph S. Nye, interdependence always

carries with it costs, "since interdependence restricts autonomy, but it is impossible to specify **a priori** whether the benefits of a relationship will exceed the costs. This will depend on the values of the actors as well as on the nature of the relationship."[33] Keohane and Nye conceptualize interdependence with two dimensions: sensitivity and vulnerability. "Sensitivity involves degrees of responsiveness within a policy framework--how quickly do changes in one country bring costly changes in another, and how great are the costly effects?" They suggest that "vulnerability can be defined as an actor's liability to suffer costs imposed by external events even after policies have been altered."[34]

The significance of interdependence theory is that it simplifies the complicated IR and IPE theories into a typical benefit-cost analysis regarding the changes of actor-actor relationship. If one country changes its relationship with another country that would lead to a heavy cost, probably this country may maintain the original relationship. Since an interdependent status means that every actor who is involved in a certain relationship will pay a heavy cost if one changes certain relationships with others. Such a "relation cost" is the key rule in the interdependent societies.

If the relationship between actors can be viewed as an interaction process between these actors, then the "relation cost" can also be regarded as "interaction cost." Since infraconnection is the major channel to complete interactions, the "interaction cost" is mainly due to the resistance of the infraconnection between the actors, such as the difficulty in relocating resources, imperfect information responding to changes, and

---

[33] Keohane, Robert O. and Joseph S. Nye. Power and Interdependence: World Politics in Transition. Boston: Little, Brown and Company, 1977. pp. 9-13.

[34] Ibid., p.13.

limited mobility, etc.

Thus, the establishment as well as the improvement of infraconnection are the key to reduce the "relation cost." That is, the actors' relations can be easily changed under the perfect support of a well-developed infraconnection. The higher quality the infraconnection has, the less interdependence the actors have. Thus, to have a well-constructed infraconnection is the best way to liberate actors from the interdependent relationship with heavy sensitivity and vulnerability.

The key point in this argument is that when infraconnection releases one kind of interdependence--actor-actor interdependence, it will strengthen another one--actor-system interdependence. Along with the development of infraconnection, actors have more freedom to interact with each other and to change their relations; however, they are more seriously dependent on the systemic support of infraconnection. Thus, infraconnection becomes a major linkage for all the actors in the system, and the changes of the infraconnection become more sensitive to the issue of raising or reducing the "relation costs" for all the actors.

F. The Position in the Integration Theory

Integration theory has already occupied a prominent position in the studies of IR and IPE even before the interdependence theory becomes acceptable. **Integration** has been first used successfully in the study of EEC, and then it becomes the term to describe the general social progress of peaceful mergence in international relations.

According to Keohane and Nye, integration is a special kind of interdependence in which the actor-actor relationship is assembled by an institutional framework. Centering on this institutional framework, however, integration theorists have different

understandings from various perspectives.

The one which has been most widely used in the research is Karl W. Deutsch's concept--"security community."[35] Deutsch defines it as a group of people who have had a strong sense of peacefully solving their social problems by institutionalized procedures. Thus, integration results from the formation and strengthening of "security community."

Another concept regarding the institutional framework is Ernst B. Haas' "political communities."[36] Haas emphasizes integration as "the process whereby political actors in several distinct national settings are persuaded to **shift** their loyalties, expectations and political activities toward a new center, whose institutions possess or demand jurisdiction over the pre-existing national states."[37] In Haas' theory, integration is a process in which political community develops from a lower level(national level) to a higher level(international level).

Although integration theorists have developed a complex and ingenious set of notions and distinctions about the phenomena they have been attempting to explain, in practice, integration theory can hardly work well, even in the case of EEC.

One problem is that both Deutsch's "security community" and Haas' "political community" are too ideal to be properly achieved at the international level and also too abstractive to be measured. In Deutsch's original works, the dynamics to establish

---

[35] Deutsch, Karl W., et.al. Political Community and the North Atlantic Area: International Organization in the Light of Historical Experience. New Jersey: Princeton University Press, 1957. pp.2-5.

[36] Haas, Ernst B. The Uniting of Europe--Political, Social, and Economic Forces, 1950-1957. California: Stanford University Press. 1958. p.16.

[37] Ibid., p.16.

"security community" is not discussed clearly. Instead, Deutsch finds a series of **conditions** which are essential or helpful to the formation of an integration by a comparison of contemporary North Atlantic countries with his historical findings.[38]

Haas strongly emphasizes the process of the "shift," but how helpful the "shift" is for the establishment of a "political community" is still vague. Haas fails to measure the "shift" directly. Instead, he develops a set of **thresholds** to describe sequential steps of emergence and development of political community.[39]

Thus, integration is interpreted from "security community" or "political community" into a complex series of **conditions** or **thresholds**. Based on these conditions or thresholds, Deustch indicates that European integration halted during the 1960s; while Haas believes that it had big strike during those years. The failure of the dominant paradigm to explain the real changes in EEC adequately tends to throw doubt on the general validity of integration theory.

At the same time, the success of integration theorists attempts elsewhere to produce more evidence about the conditions in which integration would **not** take place rather than to explain the process of integration itself. Theoretical progress along the lines of comparative politics was stymied by the infeasibility of testing integration theory in a systematic and comparative manner.

The most serious challenge to integration theory is that, the world development does not only have one tendency--integration, but also have another tendency--

---

[38] Deutsch, Karl W., et.al. Political Community and the North Atlantic Area: International Organization in the Light of Historical Experience. New Jersey: Princeton University Press, 1957.

[39] Haas, Ernst B. The Uniting of Europe--Political, Social, and Economic Forces, 1950-1957. California: Stanford University Press, 1958.

segmentation, simultaneously. Especially in the period of post-Cold War, the phenomenon of two simultaneous but opposite tendencies of world development has become more fascinating to many leading thinkers in the studies of IR and IPE.

John L. Gaddis, a diplomatic historian, in his article, "Toward Post-Cold War World," provides a panoramic view of these two tendencies. He describes the new cartography after the Cold War as a contest between the forces of integration and fragmentation. He points out: "The end of the Cold War was too sweeping a defeat for totalitarianism--and too sweeping a victory for democracy--for this old geopolitical map to be of use any longer. But another form of competition has been emerging that could be just as stark and just as pervasive as was the rivalry between democracy and totalitarianism at the height of the cold War: it is the contest between forces of integration and fragmentation in the contemporary international environment."[40] According to Gaddis, "integration" is the act of bringing things together to constitute something as a whole. This act involves breaking down barriers that have historically existed to separate nations and peoples in such diverse areas as politics, economics, religion, technology and culture. While "fragmentation" forces are resurrecting old barriers between nations and peoples, and creating new ones, even as others are tumbling.

James N. Rosenau analyzes the two simultaneous tendencies with the concepts of centralizing and decentralizing tendencies of global structures. He believes that the current international system has two structures--the nation-state structure and the non-nation-state structure. He demonstrates how the macro structure of global politics has

---

[40] Gaddis, John Lewis. "Toward the Post-Cold War World." The Future of American Foreign Policy. Ed. Charles W. Kegley and Barbara J. Wittkopf. New York: St. Martin's Press, 1992. p.17

undergone transformations linked to those at the micro level: long-standing structures of authority weaken, collectivity becomes fragmented, subgroups become more powerful at the expense of states and governments, national loyalties are redirected, and new issues crowd onto the global agenda.[41]

Such two opposite but simultaneously existing tendencies of world development make the integration theory into an impasse, since integration theorists can hardly figure out a dynamic and legitimate theoretical framework with not only properly demonstrating the integrating tendency of the world, but also indicating the disintegrating tendency of the same world as well. In fact, there is a large gulf between the more structural and more actor-oriented approaches to these issues.[42] Such a gulf may be caused by the following problems:

1). Integration theorists ignore the "dimorphism" of an actor's abilities.

As identified in Chapter I, any ability of an actor has two characteristics--independence and dependence. In the development of the actor's abilities, the two parts mutually require each other and grow simultaneously. That is, when one actor breaks down the old dependent relations and attains more freedom, the new independence which this actor has obtained will automatically require a new dependence for support. For example, a businessman has a new portable telephone; therefore, he has more freedom to make and receive phone calls. However, when he is liberated from the restriction of the regular telephone service, he must require a new telephone service--

---

[41] Rosenau, James N. Turbulence in World Politics--A Theory of change and Continuity. New Jersey: Princeton University Press, 1990.

[42] Booth, David. "Development Research: From Impasse to A New Agenda." Beyond the Impasse--New Directions in Development Theory. Ed. Frans J. Schuurman. London: ZED Books, 1993. p.64.

portable telephone service; in addition, he must pay more for the new service than the old one. In this sense, any kind of freedom does not simply mean that it no longer needs restriction, but just indicates a replacement from an old restriction to a new but more advanced, more systemic, and more convenient one. In reality, these two opposite tendencies just reflect such a **dimorphism** of world development, i.e. the decentralization tendency implies that actors become more independent (have more freedom); while the centralization (integration) tendency indicates that these actors are requiring new systemic supports. Infraconnection is one of these systemic supports. An interesting point in this explanation is that the primary desire for freedom is just the dynamics for the social integration.

2). Integration theorists ignore the difference between actors' development and system development.

Also discussed in Chapter I about General System Theory, the traditional IR and IPE theories primarily assume that a system is just an actor in a bigger system and an actor is also a small system compared with its own components. Also, they assume that organizations (as actors) have no difference from societies (as systems) regarding their performances and characteristics. Integration theorists follow this tradition to analyze the integration process. They treat integration process, which is actually a system development, just as the formation of a bigger actor like an organization or a nation-state. This is the reason why integration theorists always expect the emergence of a supergovernment or a superinstitution, such as the security community or the political community.

In fact, the system development like the development of infraconnection may have a totally different process and characteristics compared with the development of

an actor like the formation of a big organization. When actors break out of the old restrictions, they may not need to be commanded under any similar institution as before; however, they have to perform under some kind of new supports by a bigger infraconnection. On the international level, it is hard to establish a supergovernment or universal village, but it is very likely to build up an international infraconnection in which those of more independent actors, either nation-states or non-nation-states, can easily and efficiently interact with each other.

Thus, one basic question is raised here: what kind of integration process is most important in the development of international relations and international political economy? John Gaddis talks about breaking through the national barriers; while James Rosenau describes more small but strong actors in a bigger and better international system. This research attempts to re-think the integration process as the development of infraconnection from the local level to the international level.

3). Integration theorists ignore the historical changes in the development of institutional forces.

Historically, institutional forces are associated with the concepts of dominator, government, and institution. It is assumed that the final condition of an integration is the emergence of these kinds of institutional forces, even in the so-called "pluralistic" integration process.[43] However, the question is that the functions and validity of these institutional forces heavily rely on the dependent relationship between governors and people. In other words, when people are supported by a underdeveloped infraconnection, they are restricted within a limited location; thus, they have limited

[43] Deutsch, Karl W., et.al. Political Community and the North Atlantic Area: International Organization in the Light of Historical Experience. New Jersey: Princeton University Press, 1957. pp. 2-5.

abilities to exchange information and to freely move around for interaction with each other. As a result, they have to follow some instructions from governors in order to be organized to function as a whole. This might be the reason why people in some underdeveloped countries are easier to be dominated and manipulated than those in the developed countries. That is, the poorer infraconnection a society has, the more restrictions its people will have, and the more important the traditional institutional forces as organizers. As discussed before, the development of infraconnection is of great help for actors to break down the restrictions, such as interdependent relationship among actors, and to obtain more freedom. When actors' abilities increase significantly, they may not need traditional governors to dominate them. However, the more freedom the actors have, the more dependent these actors are to an adaptable infraconnection. To a large extent, infraconnection can be considered as an indicator of the development of civilization level.

As technologies advance and societies civilize historically, actors' abilities have been strengthened tremendously; the functions and validity of traditional institutional forces, such as dominators, government, and institutions, have been reduced; and the functions and validity of new institutional forces like infraconnection has been increasing. In this sense, integration process can only be understood as the development of actor-system relations, i.e. the relations between actors and infraconnection. This is also the only way to put the two opposite tendencies of world development into one theoretical framework--the dimorphism of actors *plus* the infraconnection approach.

G. Significance of Infraconnection in IR and IPE

As a summary of Chapter II, it is necessary to highlight the following points:

1. Because of the **dimorphism** of actors' abilities, the development process can be divided into two parts--an independent sector and a dependent sector. The former is highlighted by searching new technology and resources in order to strengthen actors' abilities for a continuous and healthy economic growth; while the latter is represented by the development of infraconnection through the common efforts from all actors within the system, since infraconnection is the basic channel which can help human being get or re-distribute resources efficiently. Infraconnection is the necessary conditions for actors' survival and development mainly by providing essential linkages for these actors to interact with each other.

2. Other than the concept of infrastructure, infraconnection includes both **hard-net** in terms of physical facilities and equipments and **soft-net** in terms of the social relations connected by the infraconnection. Thus, infraconnection, as a system variable is more practicable and sensitive than the concept of infrastructure in the studies of international relations and international political economy.

3. If the pursuit and balance of power is the major issue in international relations and international political economy, infraconnection is the key concept to understand how economic strength can be transformed into power. This is because that the best position to take the advantage of existing international infraconnection might be a considerable source of power. In addition, the development of infraconnection is a possible way to reduce power conflicts; thus to enhance social cooperations.

4. The development of infraconnection can help actors freely interact far beyond the interdependent restriction. At the same time, these actors become more seriously to rely on the support of infraconnection. This implies that the development of infraconnection changes the interdependent relations from actor-actor relationship to

actor-system relationship. The ideal infraconnection should provide an ideal international environment in which every actor, whether big or small, strong or weak, nation-state or non-nation-state, can obtain equal opportunity to compete with others. This is a proposed "**STRUCTURE IDEALISM.**"

5. Since the actor-actor relations may be actually weakened instead of strengthened in the integration process, the traditional integration theory may go into impasse. However, the development of infraconnection becomes an alternative concept for social integration, which is the only way to fill the gap between the actor-centric approaches which emphasize the fragmentation tendency in world development and the system-centric approaches which stress integration tendency in world development.

Although the above comparisons only cover some fields of IR and IPE, they manifestly demonstrate that infraconnection is a meaningful concept of a system. It adds a touching point to the system analysis and clarifies much confusion in the actor-system relations in the studies of IR and IPE. The content of this concept is not new, but is a fact, a social reality, along with the fast development of communication-transportation technology. Under this growing fact, the international system is now experiencing a transition from invisible to visible and from social conflict-centric to social connection-centric.

Chapter III

The Measurement of Infraconnection

As theoretically discussed in Chapter II, infraconnection, as a system variable, becomes increasingly prominent in the studies of international relations (IR) and international political economy (IPE). However, without a proper measurement, its function and significance in the practice of IR and IPE are still ambiguous, even misleading. Thus, how to evaluate infraconnection of an economic system and what are the indicators of the development of the infraconnection in the measurement are essential questions in the empirical study of infraconnection in IR and IPE. This Chapter intends to introduce a basic methodology in the measurement of infraconnection and to discuss two problems regarding a proper measurement of infraconnection. They are: the relations between the components of infraconnection in terms of macrometrics and the criteria to judge the quality of infraconnection. In the discussion, the basic measurement skills associated with the standardization and optimization will be explained as well.

A. The Basic Measurement

The basic measurement of infraconnection mainly includes the measurements of the magnitude and capability of infraconnection. Although there is no technical difficulty in these measurements, so far there are no official statistics regarding infraconnection intensively. All the components of infraconnection are measured separately and diversely. Here lists some examples which will be used in the later chapters:

For Transportation Network: the statistics of magnitude includes the lines of railway, highway, waterway pipeline and airline; the lengths of railway, highway, waterway, pipeline and airline; the distribution of railway, highway, seaports and airports, etc.

Also, the capabilities of transportation system are measured mainly through two ways--the absolute weight of freight and absolute number of passengers which are carried by the transportation tools. There are quite differences in capabilities for the same weight of freight or the same number of passengers regarding a short distance and a long distance, or one-way trip and round-way trip; hence, a more precise way to measure the capability of transportation system should consider both volumes of freight or passengers and distances of which those volumes travel. Therefore, the capability of transportation is usually measured by the turnover volumes of the transportation system, i.e. the weight of freight times the lengths of the transportation systems (ton/km), and the number of passengers who use the transportation tools times the lengths of the transportation systems (person/km).

For Communication Network: one of the important components is the telecommunication system, and there are many statistics associated with its magnitude, for instance, the number of telephone lines and switching stations, the number of microwave lines and stations, the number of satellites and ground stations, and the number of computer networks and working stations. The capability of telecommunication channel is primarily estimated by the annual revenue which is generated by the telecommunication system.

However, the communication network has many other channels, such as postal system, mass media such as radio, television, newspapers and magazines and even

people themselves as information carriers within delegations, conferences, exchange programs, tourists, even family ties including so-called *guanxi*.[44] It is hard to measure these communicating channels accurately, especially the soft-net of *guanxi*. However, in spite of these difficulties, some statistics of postal system, radio, television, conference, exchange programs, tourists, and demography of population, etc. do make sense when the scope and scale of these communication channels are measured.

For Marketing System: there are two major channels, one is the channel for the distribution of delivering goods and service; the other is the channel for money flows. All these channels can help to change the ownership of goods (e.g. from producers to customers). In the GCECS, however, there is another special marketing channel--family-ties or kinship networks.

The distribution channel includes all the places which physically deliver goods from producers to customers. In this sense, the statistics of various brokers, distributors, freight forwarders, storage places, whole-sale stores and retail stores can be regarded as indicators. The capabilities of distributions are usually estimated by the amount of retail sales in an annual basis through these distributions.

The money-flow channel includes banking systems, stock market, bond market and other money markets. It is not difficult to measure the number of banks and stock markets, etc. Also, the amount of money flow through these channels can provide an estimation of the capacity of these channels. A relative measurement is connected with the efficiency of these channels.

---

[44] The Chinese word "*guanxi*" expresses one of the most fundamental concepts shaping life and business in Chinese world. While its most basic English translation is "connections," it has a much deeper meaning, far beyond the American concept of networking. It reaches down into every aspect of society, inflecting social, political, and commercial relations.

For Economic Order: it is meaningless to measure how many regulations, policies or laws can support the economic order, because it is not necessary to assume "the more the better;" in fact, the quality or effectiveness is more important.

There are two ways of understanding the magnitude of economic order. One is to assume that the scope of the economic order is the size of a geographic area in which regulations, policies or laws of the order are valid; the other is to assume that the scope of the economic order is related to the number of actors in the economic system who must obey the regulations, policies and laws.

Taking the GCECS as an example, we can analyze the magnitude of the economic order by examining the effects of different regulations, policies or laws geographically, or by calculating the number of actors who get benefits under the regulations, policies or laws. Basically, they can be categorized and ranked as follows:

1). the highest rank of regulations, policies or laws are valid for all the actors in the GCECS, including the Chinese Mainland, Hong Kong and Taiwan. These regulations, policies or laws can directly bring benefits for all the actors in the GCECS;

2). the second rank of regulations, policies or laws are only valid for some actors in the GCECS who can get benefits directly; however, at the same time, other actors in the GCECS may also get benefits indirectly from these regulations, policies or laws;

3). the third rank of regulations, policies or laws are only valid and beneficial for the actors in three different areas separately.

B. Toward A Macrometrics

Although all the components of infraconnection can be measured one way or another, they are too diverse to be a good measurement for the infraconnection as a whole. As a system variable, infraconnection can be used by macro IR and IPE theories and measured aggregatively. However, the major difficulty is that each component of the infraconnection follows a different dimension with a different measurement standard. Nevertheless, infraconnection is not the most complicated concept in the quantitative studies of IR and IPE.

On one hand, it is not as easy to use as the concept of GDP. GDP is also an aggregative variable with many components, such as consumption, government expenditure, investment, and net export. However, all the measurements can be standardized with the (paid) money value. Thus, in fact, GDP is only an aggregative number which can be used in any economic theories and cross-country comparative studies, although there may be quite different processes of consumption, government expenditure and investment in different countries. For infraconnection, however, the measurements regarding its components can be hardly standardized by the money value as the GDP components are. Thus, these components should be calculated differently in the quantitative measurement.

On the other hand, it is not impossible to integrate the components of the infraconnection as an attractive system variable, since the concept of infraconnection is much easier to be applied in the quantitative study of IR and IPE than concepts like "Power." As early as the 1970s, Ray S. Cline tried to assess national powers

quantitatively with his well-known "Cline Formula."[45] i.e.

$$P_P = (C + E + M)(S + W)$$

The terms in this formula are defined as follows:

P_P = Perceived Power
C = Critical Mass = Population + Territory
E = Economic Capability
M = Military Capability
S = Strategic Purpose
W = Will to Pursue National Strategy

Apparently, those concepts like **E**, **M**, especially **S** and **W** are more difficult to measure and to standardize than any concepts used in the infraconnection framework. However, Cline observed and then calculated them mainly through ranking (weighted) techniques. In spite of its impreciseness, Cline still has successfully provided a method of power comparisons with more than 70 countries.

If the ranking technique is used for measuring infraconnection, the transportation, communication and marketing system then can be measured more precisely than those concepts used in the "Cline Formula." Also, the concept of economic order can be measured following Cline's ranking technique. Thus, to form an equation between the components of infraconnection and its perceived value becomes possible.

In fact, the precise number of the Perceived Power, $\mathbf{P_P}$, is not the most important thing demonstrated by the "Cline Formula" rather than the relationship between the components of power. In other words, the "Cline Formula" at least provides some ideas about the significance of each component of the formula in the determination of the

---

[45] Cline, Ray S. World Power Assessment--A Calculus of Strategic Drift. Washington D.C.: Georgetown University Press, 1975.

Perceived Power. In this sense, if it is possible to form a formula for calculating the perceived value of infraconnection, an important contribution of this formula should be the implication about the internal relations between the components of infraconnection. Here, the question remaining is how the formula for infraconnection should be.

Carefully examining the functions of the components of infraconnection, it is not difficult to recognize that transportation, communication and marketing system consist of tangible and intangible networks whose magnitudes and capacities can be cumulated; therefore, their functions should be additive. This means that the perceived value of infraconnection **(IFC)** has a positive relationship with the sum of the values of transportation **(T)**, communication **(C)** and marketing system **(M)**, i.e.

$$IFC = f(T + C + M)$$

The function of economic order **(EO)** has a different role in the framework of infraconnection. First, it provides intangible support for the actors to interact with each other. Second, economic order is mutually dependent and compensated with other components. That is, on one hand, it exists everywhere within the framework of infraconnection. For example, transportation needs highway regulations, communication needs various rules, and the marketing system cannot function without trade regulations and laws. On the other hand, without the other components, the economic order will become meaningless. In this sense, the variable of economic order should function as coefficients of the other components in the formula of infraconnection. Thus, the formula can be defined as follows:

$$\mathbf{IFC = (EO)(T + C + M)} \quad (1)$$

It is worth noticing that the components--transportation networks, communication channels and market systems--have mutual impact upon each other. For instance, when

transportation and communication networks are improved, the market systems will be improved automatically, since the market channels and distributions heavily rely on the transportation and communication networks. However, formula (1) does not demonstrate such cross effects. These effects are assumed to be separately included in each item of the formula.

Another important implication of formula (1) is the unique position of economic order (EO) in the determination of the infraconnection. The changes of transportation (T), communication (C), and market (M) can only lead to a partial change of infraconnection (less than the proportion of the component changes). However, when economic order (EO) changes, the perceived value of infraconnection (IFC) will change proportionally. Thus, policy-orientation toward a proper economic order is very important in the development of infraconnection.

Formula (1) is expected to provide an essential macrometrics for infraconnection, and to complete a valid system variable (**IFC**) that can enrich the studies of IR and IPE, not only in the case of the GCECS, but also in other cases as well.

C. An Optimal Development Path of Infraconnection

Theoretically, for any economic system, the larger and more advanced the infraconnection is, the better and more efficient the economic situation will be, when other conditions are equal. However, in the real world, it can hardly achieve such an ideal infraconnection overnight.

From a view regarding modernization of infraconnection, to develop or to update infraconnection is always a long-term and high-cost project. With a limited budget in a certain economic system at certain time period, a heavy investment in the

infraconnection may lead to negative effects upon its economic growth, at least in a short-term. Thus, for an economic system in a specific time period, a most needed infraconnection is not the largest and most advanced one but an adapted one. In other words, there is an optimal level in infraconnection development which can satisfy most of the economic requirements in the system, and also avoid the negative effects caused by the over-investment in the infraconnection as well. For **different** systems or even the same system at **different** time periods, the optimal levels of infraconnection development are different.

In this sense, a proper modernization process for an economic system to develop its infraconnection is not to pursue the world largest and the most advanced infraconnection, but the most effective one adapting to its different development periods.

From a view regarding the democratization process in the development of infraconnection, any policy leading to or supporting economic order can only function well under certain economic development in the system. Theoretically, effective economic policies should be the ones that can support an ideal economic order in terms of **STRUCTURE IDEALISM**. However, in reality, there can hardly be such ideal economic policies which can generate some proper results when the economic system is still in its primitive development stage. For instance, "free trade policy" might be a proper policy to support an ideal economic order for the development of a regional economy; however, if it is applied in the early development stage, it may generate some negative results in the regional development, since some industries might be hurt seriously by the foreign competitors.

Thus, to construct an economic order in an economic system does not

necessarily mean to pursue the most ideal one, but a proper one which can function effectively and efficiently under a certain economic development level. In this sense, the development of infraconnection largely depends on the strategic decisions of making an optimal set of policies and regulations to keep the economy with a stable and heathy growth in different periods. An economic order, thus, will be established if this optimal set of policies and regulations can be achieved.

Accordingly, the development of infraconnection is a step-by-step transition process along with the development of the economic system. To identify an optimal level of the infraconnection for an economic system in different time periods, and then to estimate the difference between the optimal level and the current level of infraconnection, is thus an important measurement strategy in the study of the system development. The question here is how to find out the indicators which can demonstrate the effectiveness (i.e., qualitative status) of infraconnection. Also, it is equally important to find out how well an existing infraconnection can satisfy or support the current (or the near future) economic activities in the system.

Theoretically, the effectiveness of infraconnection can be defined as the ratio of the completed volume of economic activities through infraconnection support to the demanded volume of economic activities which require infraconnection support. For example, the effectiveness of freight transportation network should be defined as the ratio of the volume of freight which has been transported to the volume of freight which needs to be transported in a certain time period.

Unfortunately, so far there are no such standardized statistics in measuring the total demand for infraconnection. Thus, it is difficult to measure the effectiveness of infraconnection precisely. However, it can be estimated through three indicators.

1. The Densities of Some Economic Activities

To measure the densities or marginal changes for each component of the infraconnection is to provide some estimations of the consistency between the capabilities of infraconnection and the requirements of economic activities for the infraconnection. The current density of infraconnection should match its designed level. If the current density is greater than its designed level, it indicates that the infraconnection is overloaded, and vice versa. The basic statistical skills include:

For Transportation Network: the freight transportation density is measured as the weight (ton) of freight *per km* transportation network or the turnover volume (ton * km) of freight *per km* transportation network (ton * km/km). In the same way, the passenger density is calculated as the number of passenger *per km* transportation network or the turnover volume *per km* transportation network (passenger * km/km).

For Communication Network: the information exchange should be theoretically measured by the number of bytes of information transformed per communication channel. However, such a measurement can hardly be accomplished. There are proxy variables which can provide some estimations about the communication effectiveness, such as the annual average number of letters mailed per capita, the annual average number of newspaper and magazine subscribers per 100 persons, the average number of telephones per 100 persons, and the average number of long distance calls received, etc. In addition, the percentage of the revenue of communication service in GDP can imply the importance as well as the effectiveness of communication in the economic system.

For Marketing System: the effectiveness of market channels and distributions can be estimated by delivering cost and timing of goods and service per standardized

delivering distance. However, the effectiveness of banking systems and other money channels cannot be estimated by a simple density function, since too many factors can affect that effectiveness. This paper will leave this part for further research.

For Economic Order: there is no compatible density function for economic order like the others. However, the marginal changes of economic activities caused by adding some new regulations, policies, or laws in the economic system can be measured. Such a measurement can be achieved either through a comparison of economic activities between two time periods which are differentiated by different regulations, policies, and laws, or through a comparison of economic activities across two geographical areas which are differentiated by the different regulations, policies, and laws. In fact, an effectiveness of conducting some regulations, policies and laws reflects an effectiveness of infraconnection development for an economic order.

2. Economic Efficiency of the Market

As discussed in Chapter II, one of the major functions in infraconnection is to promote economic efficiency by the way of improving all the economic interacting activities, such as searching for technology, re-locating resources, trading goods, exchanging money, and others. To a large extent, economic efficiency can demonstrate the effectiveness of infraconnection. As a macro effect, economic efficiency can be estimated by the efficiency of the market channels to conduct money flow and distributions to deliver goods and services.

1). The efficiency of the market channels and distributions can be estimated by the

ratio of the changes of annual retail sales to the Total Product of Society (TSP). The difference between the TPS and the GDP is that the TPS does not include the total volume of services, while GDP does. However, the retail sales also do not include the money value of services. If taking services including education and health care into consideration, the retail sales plus services reflect the improvement of living standard; while TSP plus services is equal to GDP. Thus, the ratio of the annual retail sales to the TSP partially indicates the economic efficiency of the whole economic system, since the most important economic activity is to increase living standards.

2). If the ratio of annual retail sales is regarded as an indicator of how much percentage of TSP can be utilized into the improvement of living standard, the inflation rate is an estimator of how much percentage of GDP fails to be utilized into the improvement of living standard, i.e. how much percentage of GDP has been or is wasted, because when GDP increases, the national income should increase as well. The economic efficiency can be identified as the balance between the amount of money which consumers and investors have and the amount of the assets, goods, and services which are available in the market. The failure to achieve such a balance is usually caused by a poor performance to conduct money flow. For example, this balance can be broken by poor economic policies, such as incorrect adjustment of interest rates or increased in money supply; also it can be damaged by the inefficiency of the money exchanging channels, such as the poor banking system and stock market. If such a poor performance prevents consumers from getting enough goods and services, and prevents capital from getting to the productive enterprises, the inflation rate will

rise unexpectedly. This indicates that some amount of money which represents a large amount of already paid resources, labor and capital will be lost or wasted. In this sense, a high inflation rate is a sensitive indicator for demonstrating a low economic efficiency.

Since the balance among consumption, investment and production can be affected by some factors which are related to the infraconnection, to what extent the infraconnection (including information exchanges, economic policies, goods distributions and money exchanging channels) can guarantee such a balance thus becomes an important indicator for the effectiveness of infraconnection. That is, the better effectiveness the infraconnection has, the lower the inflation rate is, when other conditions are equal.

In the GCECS, especially in the Mainland, the inflation rate is running at close to 30% in big cities and averaging 12% plus around the country.[46] Compared with the growth rates of 12% and 13% of last two years, the inflation rate implies that the effectiveness of infraconnection has become a serious problem which may very likely block every effort of transferring economic growth to a real improvement of peopie's living standard.

3. Economic Freedom of the Actors

Another major function of infraconnection is to provide an environment for all the actors to compete **freely** with each other. The effectiveness of infraconnection,

---

[46] Robert, William. "Deadly Serious." The Banker November (1993): 80.

hence, can be estimated by the extent of economic freedom that the actors have in the system.

In the theory of international political economy, economic freedom has negative relationship with the government intervention in the national economy. Generally, there are two basic economic systems in the twentieth century--the free market economy and the central planning economy. Also, there are many mixed economic systems in which both free market and central planning are conducted to some extent.

Human history has proven that a pure central planning economy has less dynamics for driving economic development. This is one of the reasons resulting from current economic reforms throughout socialist countries. However, few pure "laisser-faire" examples remain in current Western economic systems; and government intervention has occupied a proper position in some Western economies. Also, the development experiences of Japan, Singapore, South Korea, and Taiwan demonstrate that government intervention, to some extent, can help to achieve a long-term economic growth. In other words, the governments might not only control certain resources and regulate certain markets, but also offer periodically updated visions of the appropriate industrial and trade profile of the economy and give a directional thrust to private sector choices in line with those visions.[47] Thus, there may be an optimal economic development structure in which a proper government intervention (central planning) can

---

[47] Wade, Robert. Governing the Market--Economic Theory and the Role of Government in East Asian Industrialization. New Jersey: Princeton University Press, 1990.

Hirsh, Michael. "Asian Nations' Success Stories Posing Ideological Challenge." The State (Columbia, South Carolina) 15 November 1992: 1G.

Zhen, Xui-ru. "The East Asian Miracle--Government Involvement in the Economic Growth." Industry of Free China June (1994): 27-32.

KanDeJian De Shou--ShiChangJingJi Zhong De ZhengFu ZhiNeng (A Visible Hand--Government Function in Market Economy). Shanghai RenMin ChuBanShe, 1993.

play its role in a free market system.

In reality, economic freedom is a relative concept. Economic freedom for every actor may imply **chaos** for the whole system. From a view of **STRUCTURAL IDEALISM**, actors cannot properly interact with each other if there is no systemic support provided by infraconnection of the system. In other words, to maximize economic freedom for every actor in the system requires a well-developed infraconnection. That is, an economic democratization can be understood as a process of constructing as well as of developing a proper infraconnection as an environment in which all the actors, whether big or small, strong or weak, nation-state or non-nation-state, will have equal opportunities to compete freely with each others.

In this way, government intervention is not necessarily a restriction to the economic freedom. In fact, the kind of function the government has depends on whether it can help to develop a proper infraconnection. And at the same time, individual firms in a "laisser-faire" environment may not obtain the maximized economic freedom, since their activities also depend on whether the "laisser-faire" environment is represented by a proper infraconnection. In this sense, it may mislead to measure economic freedom only based on the extent of government intervention.

In many cases including the GCECS, government intervention is represented by policy-orientation of its economy. For instance, economic freedom could be restricted by the limits of "Open Door Policy" or by the "Three Nos Policy."[48] Besides these imperfect policies, there are many other factors which can restrict economic freedom. For example, in the GCECS, economic freedom can also be restricted by the

[48] "Three Nos Policy" toward the Chinese Mainland was issued by Taiwan government in the 1970s. It includes three restrictions, that is: no contact, no negotiation, and no compromise.

complementary interdependent relationship among three actors or by the family rules and *guanxi* system. Thus, to maximize economic freedom in the GCECS is closely related to eliminating such restrictions in the GCECS.

In addition, the development of economic freedom should be distinguished from the system improvement and the actors' development. The major events of recent economic reforms in socialist countries characterize **decentralization**--breaking down the old restrictions and establishing the free market economy, i.e. these economic reforms focus on actors' developments. While in the development of Western economic systems, actors have already obtained many economic freedoms; hence, their goal is to establish a proper infraconnection through some kind of **centralization** in order to maximize economic freedom for all the actors in the systems. This is the process with an emphasis on the system improvement.

It is worth noticing that there is a transition process from a focus on actors' development to an emphasis on the system improvement when an economic democratization moves forward. To a large extent, this transition process is just the process of developing a proper infraconnection.

The GCECS now is in such a transition process. After many years of the economic reform, actors in the GCECS have obtained much more economic freedom than before. However, the infraconnection for the whole system is still in its early development stage. Such a situation will or has already become one of the major restrictions for all the actors in the GCECS to obtain a freer, more healthy and prosperous economic development.

The major purpose of this chapter is to provide some ideas of a methodology for the measurement, and to clarify some terms which can help bridge a theoretical view

of infraconnection to the empirical case study of the GCECS. In particular, the discussions in this chapter are expected to draw more attention to the analysis on some major features of the GCECS development but not simply on a quantitative measurement.

Part Two

Empirical Inquiry of Infraconnection in the Greater Chinese Economic Cooperation System

Infraconnection approach, as a theoretical attempt, can be considered as a response to the challenges to the theories of international relations (IR) and international political economy (IPE), specifically in the study of the GCECS. At the same time, the development of the GCECS is a proper case to test the infraconnection approach as a practicable analytical tool in the studies of IR and IPE in general. In other words, both the methodology and the result of this case study--the GCECS--may provide some useful references to the studies of the other regions with the similar problems in the world, especially those in the post-Cold War era.

By definition, infraconnection is the sum of the essential linkages and necessary conditions for all the actors interacting with each other in the system. Part two will explore such linkages and conditions behind the fast economic growth in the GCECS.

In this part, Chapter IV will concentrate on some special features which sustain the primary economic take-off of the GCECS. Chapter V will first examine the current development state of the infraconnection in the GCECS, and then discuss the gap and problems between the relatively underdeveloped infraconnection and the fast economic growth. Chapter VI will describe a development path of infraconnection in the GCECS, and analyze some possible impact of the infraconnection improvement in the GCECS upon the future economic development of this region.

Briefly, Part Two is an attempt to demonstrate the genuine development process in the GCECS in terms of mutual impacts between the development of the

infraconnection and its fast economic growth. It is worth noticing that infraconnection is only the necessary conditions, but not the sufficient conditions for the economic take-off in the GCECS. Besides infraconnection, there are some other conditions or factors which might be important for the same economic take-off. In other words, infraconnection approach cannot cover all the dynamics which drives the economic development in the GCECS. Nevertheless, this approach is expected to provide one of the important guides to explore the nature of the GCECS.

Chapter IV

Some Findings: Special Features of Infraconnection in the GCECS

One of the most striking developments in East Asia in recent years is the emergence of a growing economic relationship among the Chinese Mainland, Hong Kong and Taiwan. Since the mid-1980s, GDP growth in this area has been among the fastest in the world. The average growth rates of GDP per capita are 7.77% in the Mainland, 7.14% in Hong Kong and 6.08% in Taiwan since 1978.[49] Particularly fueled by the progress of market-oriented economic reforms, the Mainland, with a population of 1.2 billion, has attained an average growth rate 9.27% since 1978, especially 12.8% growth rate in 1992 and 13% in 1993. According to the World Bank, "China, Taiwan and Hong Kong is a fourth growth pole in the world economy, next to North America, Europe and Japan. This fourth pole could nearly double in size by 2002, approaching the size of the United States economy when using standard international prices as opposed to conventional exchange-rate-based calculations."[50]

This phenomenon as well as its potential have attracted wide attention in the world both practically and theoretically. It is not only because this economic and social development reality has plenty of implications and impact upon the rest of the world, but also because it has launched a new challenge to the theories of IR and IPE. As discussed in Chapter II, the grand figure of the fast GDP growth cannot explain the

---

[49] World Tables, 1993. Published for the World Band, the Johns Hopkins University Press, 1992.

[50] Quoted by Jue, Stanton. "Economic Integration of South China and Its Implications for U.S.-China Relations." Asian Affairs Summer (1994): 108.

whole story behind this development phenomenon. Even the most essential questions including how to identify this phenomenon and how to explain its development still remain puzzling, because some special features of the infraconnection in the GCECS are represented by the underlying relationships and dynamic linkages other than some common economic and social systems in the world.

The reality of economic and social development in the GCECS is so atypical that it is explained and interpreted in various ways. A term which has been frequently used is the "Greater China." However, this term has many different interpretations. Some have a narrow focus only on Guangdong, Fujian, Hong Kong, and Taiwan; Others extend their definition to the whole area of the Mainland. Nevertheless, the "Greater China" grasps major characteristics of this economic and social development reality which happens beyond the Mainland, but still limits its boundary within the Chinese world. Since "Greater China" can be interpreted in many ways including the emergence of a political community or a potential superpower, it becomes too sensitive to be a proper symbol for this new economic and social development reality.

Against the ambiguous political implications, some scholars, like Robert A. Scalapino, characterize this economic and social development reality as "Natural Economic Territories" (NET).[51] In the contrast to the term of the "Greater China," however, the concept of NET is too narrow to touch any characteristics other than purely economic activities.

The U.S. Department of Commerce identifies the reality as "Chinese Economic

---

[51] Ibid., p.108.

Area"(CEA).[52] In this concept, three general characteristics of this new development reality are:

1) This development reality is associated with all the Chinese, including overseas Chinese;

2) This is a region greater than the Mainland China but still within the Chinese world;

3) It is mainly an economic phenomenon.

In this interpretation, the concept of CEA does seize the most general features of the economic and social development reality among the Chinese Mainland, Hong Kong and Taiwan. However, when the characteristics of the development process as well as of its system evaiuation are taken into account, two important characteristics are still missing in the concept of CEA. They are:

4) The development reality is a social integrating (or multi-cooperation) phenomenon;

5) It is a new kind of growing social system other than any current nation-state or political community.

In order to cover all these five characteristics, this research will use the concept of the "Greater Chinese Economic Cooperation System" (GCECS) to identify this economic and social development reality. A thorough description of the GCECS development will focus on four important features regarding its infraconnection. They are: multi-integration, complimentary setup, policy-openness orientation, and five cultural geneses. While the grand figure of the fast growth rates in the GCECS

---

[52] U.S. Department of Commerce. "The Chinese Economic Area: A Fast Growing Region in Asia." Business America March (1994): 7-8.

demonstrates the development level of the GCECS, these four features of the infraconnection can catch more concrete and substantial characteristics which underlies the process of the development in the GCECS.

A. Intensive Interactions toward A Multi-Integration

An integrating tendency within different political systems and different economic development levels is the most important feature in distinguishing the GCECS from other integrating economic and social entities, such as EEC. As discussed in Chapter II, infraconnection can replace political community as the destination of an integration process. Thus, the phenomenon of the social integration may not be reflected by the emergence of political community, but by the intensive economic and social activities among the integrating social entities. This is what is happening in the GCECS. Although endless debates about the political destination of the GCECS concentrate on whether it is modeled as "one country, two systems" or "one country two governments," the current intensive economic and social momentum can be characterized by a growing flood of cross-border investment, trade, tourism and cultural exchanges.

In 1991, three-way trade between the Chinese Mainland, Hong Kong and Taiwan reached more than $68 billion. Of this amount, $26 billion or 27% of Hong Kong's total exports were shipped to the Mainland; while the Mainland shipments to Hong Kong were $32 billion or nearly half of the exports.[53] In 1993, Hong Kong's re-exports increased at a 20% average rate in volume terms since 1988, with nearly 90% involving the Mainland either as a source or a destination. Taiwan saw a sharp rise in

---

[53] Jue. Stanton. "Economic Integration of South China and Its Implications for U.S.-China Relations." Asian Affairs Summer (1994): 109.

its trade with the Mainland from $3.5 billion in 1989 to about $10 billion in 1993.[54]

With foreign trade totaling about $547 billion in 1992, these three combined economies were already the world's fourth largest trading entity. Their combined exports with value of $281.5 billion accounted for 7.6% of the world's exports and ranked fourth worldwide behind the Untied States, Germany, and Japan. Their combined imports with the total of $266 billion accounted for 6.9% of the world's imports and ranked third behind the United States and Germany.[55]

According to the Hong Kong Trade Development Council, a cumulative investment to the Mainland in 1991 reached $64 billion.[56] Hong Kong and Taiwan together accounted for two-thirds of the direct-investment flows. The overseas Chinese in Southeast Asia add another 10-15%.[57] With nearly $25 billion investment, Hong Kong companies employ 3 million factory workers in some 25,000 factories in the Mainland, about six times as many such workers as they employ in Hong Kong itself. At the same time, the Mainland has become the biggest investor in Hong Kong with a stock of direct investment as high as $20 billion.[58] In 1979, there were only a few dozen Mainland enterprises operating in Hong Kong. In 1992, unofficial estimates place

---

[54] U.S. Department of Commerce. "The Chinese Economic Area: A Fast Growing Region in Asia." Business America March (1994): 7-8.

[55] Ibid., p.7.

[56] Ibid., p.7.

[57] "The Overseas Chinese--A Driving Force." The Economist 18 July 1992: 24.

[58] Li, David K.P. "Evolution of the Greater China Productivity Triangle." The World of Banking September-October (1992): 11.
Also see "It's Already 1997 in Hong Kong."The Economist 18 December 1993: 36.

the number somewhere between 3,000 and 4,000.[59]

By the end of 1992, Taiwan's cumulative investment in the Mainland reached about 12,526 projects, which included the contract capital of nearly $13 billion. In 1993, Taiwan invested projects were over 20,000. Total contract capital investment exceeded $20 billion.[60] A table of the distribution of Taiwan's cumulated direct investment in the Mainland until 1993 demonstrates that the Taiwan investment, although the large number is in the coastal areas, is extending also to the inland areas (Appendix A.1). According to Mr. Tang Yi of the Office of Taiwan Affairs, the State Council, PRC, Taiwan investment has spread all over the Mainland including Xizang.

For tourism, nearly 950,000 Mainland residents visited Hong Kong in 1992; while Hong Kong residents visited the Mainland almost 21.5 million times--an average of more than three visits for each of the territory's 6 million people.[61] Taiwanese, once barred by law from having any contact with the Mainland, made 1.3 million trips to the Mainland in 1992 and 1.6 million trips to the Mainland in 1993. According to the Mainland statistics, from 1987 to April 1994, the total number of Taiwanese visiting the Mainland has reached 5.8 million times.[62] In addition, only in 1992, Hong Kong had 1.6 million arrivals from Taiwan, a 26% jump over the previous year.

The statistics of cultural exchanges between the Mainland and Taiwan, randomly

---

[59] Li, David K.P. "Evolution of the Greater China Productivity Triangle." The World of Banking September-October (1992): 11.

[60] Tang Yi. The Office of Taiwan Affairs, the State Council, PRC. Personal interview. Beijing. 5 May 1994.

[61] "It's Already 1997 in Hong Kong." The Economist 18 December 1993: 36.

[62] The Office of Taiwan Affairs, the State Council, PRC. Personal interview. Beijing. 20 April 1994.

selecting the period of June 1992-June 1994 (see Appendix A.2), indicates that the two-way cross-strait cultural interactions are significant. These cultural interactions have covered wide areas from semi-official meetings, academic exchanges, scientific research projects, book and art exhibitions to sports such as basketball and volleyball team visits, local opera performance, individual concerts and others.

As discussed in Chapter II, social integration process may not be represented by an emergence of some kind political community. It could be represented by the development of an infraconnection which integrates several (different) societies as a big system. Apparently, the wide range and high intensive cross-border interactions among the Chinese Mainland, Hong Kong and Taiwan imply that the economic and social ties, as parts of such an infraconnection, are so strong that they accelerate the integrating process among the diversified societies of the GCECS regardless the political hurdles; and there is no sign to indicate that this growing multi-integrating process will stop. Furthermore, a peaceful improvement of this new economic and social system--the GCECS--toward a healthy and advanced development stage would lead to the prosperity of the whole region, no matter what political implication could be drawn for this area as well as for the world. Thus, the studies of such economic and social ties as dynamic linkages in the multi-integration process as well as their problems and possible trends in the future development which may, in turn, affect this multi-integration process become very meaningful topics in the modern IR and IPE.

B. Complementary Setup as A Direct Condition

One of the direct dynamic linkages which supports the multi-integration tendency in the GCECS is the economic complementary relationship among the Chinese

Mainland, Hong Kong and Taiwan.

This complementary relationship among the Mainland, Hong Kong and Taiwan mainly refers to a fact that the Mainland supplies plenty of low-cost labor, land and natural resources; Hong Kong contributes its international links, its managerial and financial expertise, marketing and searching skills, other value-added services such as packaging and shipping, and capital as well; Taiwan mainly provides capital, production technology and international marketing expertise.

Such a complementary relationship can be reflected by one typical example--the Grande Group,[63] which is one of the 30,000 enterprises in Guangdong operated by Hong Kong and Taiwan businessmen. Grande is a microcosm of the GCECS. The bulk of its production is on the mainland, its research-and-development arm is in Taiwan, its managers and corporate headquarters are located in Hong Kong. In 1994, plants in the Mainland accounted for about 60-70% of the company's production. Just as Ho, Grande's deputy chairman expressed, "China still offers the best production base, cost-wise, that one can dream of, and this triangle is hard to beat."

In Baoan County of the Mainland, Grande's consumer electronics factory makes remote-control toy cars for Hasbro, telephones for Radio Shack and hair dryers for Conair. The average take home pay of the 4,000 workers here, including overtime, is 400 yuan a month, which is about $72--twice the average pay of a worker in a state-run factory.

More in detail, such a complementary relationship can be also regarded as the result of a "Push-Pull Effect"--rapidly rising wages and rents in Hong Kong and Taiwan

---

[63] Blustein, Paul. "Forging 'Greater China'--Emigres Help Build An Economic Power." The Washington Post 1 December 1992: A1.

forcing manufacturers to move offshore, cross-strait, combining with the increasing allure of production in the Mainland. As evidenced by an unemployment rate of less than 2%, both Hong Kong and Taiwan economies have been operating at near capacity since 1987. This labor-market tightness has put upward pressure on wages, which have risen an average of 10% to 11% per annum since 1987.[64]

Another evidence in Taiwan is that the cash generated by years of huge trade surpluses in the mid-1980s caused a lifting of the asset-price--particularly property and equities--to absurd heights. Money supply rose almost 300% over the years 1985-1989, while real GDP went up by only 30%. Consumer-price inflation did not go much above 4%, but asset-price inflation more than made up for that.[65] Both the increasing labor-cost and high asset-price inflation lead Taiwan's labor-intensive industries more difficult to survive. As a result, Taiwan's economy has to make an industrial transition from labor-intensive to higher-technology industries.

At the same time, the development situation in the Mainland just provides an ideal place for such Taiwan's industrial transition. The average monthly wage for an unskilled worker in Shenzhen runs some 40% to 60% lower than the respective rates in Taiwan and Hong Kong. Beyond Shenzhen, labor costs in Guangdong fall by half as much again or more. Both the Shenzhen and Guangdong rates are substantially below the wages commanded by unskilled workers in Thailand and Malaysia. Rents in the

---

[64] Li, David K.P. "Evolution of The Greater China Productivity Triangle." The World of Banking September-October 1992: 11.

[65] "The Conquest of China." The Economist 31 August 1991: 29.

Mainland are also among the Region's lowest.[66] The competitive advantages and disadvantages in terms of the relative costs among these three economies can be summarized in the Table IV.1.[67]

Since the relative costs in land, labor, capital and management expertise emerge a proper complementary situation among these three economies, the transition of labor intensive industries from Taiwan and Hong Kong to the Mainland thus strengthens and expands those industries. This is because what the Taiwan industries try to move out of Taiwan is just what the Mainland requires. In other words, the developing steps among these three actors are just like one followed by another. Taiwan's labor-intensive companies used to be the most successful ones in targeting the world market. Now, this most adaptable labor-intensive technologies need to be combined with the most adaptable labor sources in the Mainland. As a result, a competitiveness of these labor-intensive industries sharply increases. The most important direct effect of this complimentary industrial transition is that Taiwan not only successfully opens a new market in the Mainland for its labor-intensive industries, but also expands its original markets in the world.

According to a Taiwan government survey report on the Taiwan investment in the Mainland, among over 2300 sampling companies which have set up plants in the Mainland in 1992,[68] among their Mainland investments, 56.5% accounts for 100%

---

[66] Li, David K.P. "Evolution of the Greater China Productivity Triangle." The World of Banking September-October 1992: 11.

[67] Lampton, David M. et.al. "The Emergence of 'Greater China': Implication for the United States." (A Report on A Project of the National Committee on U.S.-China Relations., Inc. with the Support of the Henry Luce Foundation). National Committee China Policy Series 5 (1992): 4.

[68] XinHuaShe NeiChan: TaiGongAo QingKuang (DaLu)
"TouShi TaiShang DaLu TouZi." 1992.6.16.

ownership, and 43.5% are joint ventures. Also, 6.8% of their products sell outside the Mainland and Taiwan, and 20% products sell to the Mainland and 11.5% to Taiwan. Within such a production scale, 54% resources come from Taiwan, and 75% machinery equipment from Taiwan as well.

Table IV.1. The Competitive Advantages and Disadvantages among the Chinese Mainland, Hong Kong and Taiwan.

	The Mainland	Hong Kong	Taiwan
Land	Medium	Very high	High
Plant	Medium	Very high	Very High
Equipment	Medium	Medium	Medium
Labor	Very low	Very high	High
Taxes	Low	Low	Medium
Capital	High	Low	Low
Management	High	Low	Low

Even some Taiwan government officials, such as Chairman, Council for Economic Planning and Development of Taiwan, Vincent C. Siew, and senior adviser to the president, Yu Guohua, have reviewed such a situation and admitted that the cross-strait economies indeed have some complementary relationships. Mr. Siew points out that the difficulties in the process of Taiwan economic development in the past two or three years have made small- and medium-sized enterprises hardly survive; however, they have promptly found a new survival environment--the Mainland. Such a new environment not only rescues but also expands their business. Mr. Siew believes that such an economic relationship is a "vertical labor division competition," but not "a horizontal competition." This is the reason why such interactions have mutual benefits.[69]

---

[69] ZhongGuo DaLu YanJui (Taiwan)
Quoted by Yeh, Chih-ying. "DaLu XueZhe Kan LiangAn JinMao GuanXi." 7 (1992): 23-24.

This fact is also an obvious reason for significant changes in Taiwan's trade pattern. That is, the Mainland has become not only the No.2 trade partner of Taiwan after the United States, but also one of the major factors to sustain Taiwan economic growth. A report in Fortune (1992)[70] points out that "the China boom has kept Taiwan from slipping into recession along with America, Europe, and Japan."

Furthermore, according to The Economist (1991)[71], in the first 7 months of 1991, the overall export growth of 14% in Taiwan owes nothing to America, whose deficit with Taiwan fell by 20%, or Japan, whose surplus with Taiwan rose by 20%. Taiwan's surplus with Europe more than doubled, but that was from a low base. The real answer is Hong Kong: Taiwan's exports to Hong Kong rose by more than half, to some $6 billion. Practically all of that was destined to the Mainland: raw and intermediate materials headed for the thousands of Taiwanese-owned factories in the Mainland; and they are turned into the clothes, shoes and toys that Taiwan used to produce for the developed world. In other words, a job that the Mainland now increasingly does is under Taiwanese tutelage.

Also there is a similar transition between Hong Kong and the Mainland. An estimated 90% of Hong Kong's manufacturers either operate factories in or have subcontractor relationships with the Mainland. In 1990, the Mainland-Hong Kong trade related to outward processing totalled more than $30 billion, comprising some 60% of the total trade between the two economies.[72]

---

[70] Kraar, Louis. "A New China without Borders." Fortune 5 October 1992: 125.

[71] "The Conquest of China." The Economist 31 August 1991: 29.

[72] Li, David K.P. "Evolution of the Greater China Productivity Triangle." The World of Banking September-October (1992): 11.

As a business and financial center for Asia's growth, Hong Kong becomes the main node of the vast Overseas Chinese business network as well as of the Western and Japanese multinationals which hope to hook into this network and to penetrate the Mainland. Also, Hong Kong performs the same role, in reverse, for the Mainland. Hong Kong's fate will be determined by which proves more powerful: the advantages of being the principal business and financial center between the Mainland and the rest of the world.

The complementary relationship of Hong Kong's business and financial linkages with the Mainland's rich resources, low-cost labor and land not only allows Hong Kong to sharpen its competitive advantage in lines like finance and property development, but also allows Hong Kong, through the Mainland, to develop lines of business that it had never before taken up, such as electrical goods, plastics and even heavy industries like copper refining.

In addition, Hong Kong enjoys a close economic relationship with Taiwan. Taiwanese companies have been making use of Hong Kong as a shipping center, an investment site, a tourist destination and a "Back Door" to the Mainland.

Because of political barriers, Taiwan still prohibits direct air and shipping links, but trade through Hong Kong has taken off: up 44% in 1991 to $5.8 billion and around $8 billion in 1992. And this was not counting another $2 billion or so that went through third countries along with a bit of covert direct trade across the 100-mile-wide Taiwan Strait.[73]

There is little doubt that the complementary relationship is an important dynamic

---

[73] Kraar, Louis. "A New China without Borders." Fortune 5 October 1992: 125.

linkage to bundle the Chinese Mainland, Hong Kong and Taiwan together, and to promote a much stronger economic momentum and potential of the GCECS as a whole than those of the simple sum of the three economies. However, the complementary potential in the area of the GCECS existed long before, but only in recent six years has this complementarity emerged as a strong marketing relationship to truly drive the economic growth and multi-integration process in this area. What is the trigger or catalyst behind this phenomenon? The answer can be found in another special feature of the infraconnection in the GCECS--policy-openness orientation.

C. Policy Orientation toward Openness and Cooperativeness

According to the infraconnection formula which has been discussed in Chapter III, **IFC = (EO)(T + C + M)**, the values of policies (EO) function as coefficiency to the values of the other components (T + C + M) of the infraconnection. That is, a small improvement in the policies will generate tremendous improvement of the infraconnection as a whole. Thus, it speeds up the development of the GCECS systematically. In this sense, the key policies which are most likely to provide a trigger or catalyst to make the economic complementary potential become a very active marketing relationship among the Mainland, Hong Kong and Taiwan.

The first such a key policy is the Mainland's "Open Door Policy" issued in 1978, which provides flexible entries and profitable opportunities for foreign companies to access the Mainland economy. The "Open Door Policy" first led to the Mainland's "Joint Venture Law" in July 1979, which was aimed at attracting foreign investment and as a consequence, introducing foreign capital, technology, management know-how, and export channels. Under this law, foreign partners are permitted to participate in joint

ventures in China from a minimum stake of 25% up to 100%. The corporate income tax rate for foreign joint ventures and foreign companies is 30%. After a period of five years 40% of profits can be remitted, if available in foreign currency.

The "Joint Venture Law" was followed by the "Special Economic Zone (SEZ) Act" of August 1980, which created special areas to attract foreign investment, primarily from Hong Kong-based industries. The first SEZs were approved by the State Council in Shenzhen, Zhuhai, and Shantou in Guangdong province because of their proximity to Hong Kong. In many ways the SEZs became an economic experiment to test the speed and adaptability of a market economy in the Mainland. Another SEZ was established soon after, further north in Xiamen, Fujian province. In 1983, Hainan Island, off southern China, was also granted SEZ status.

Based on the regulations of the SEZ Act, corporate tax is set at 15% in the SEZs. Enterprises with a period of operation fixed for more than 10 years are eligible for a two-year income tax exemption, starting when they become profitable, followed by a 50% tax reduction during the next three years. Foreign companies investing in energy and transport projects have a five-year initial tax holiday. Imported equipment, vehicles, building materials, automobiles, and consumer goods are exempted from customs duties. Domestic enterprises setting up in the zones are also eligible for preferential tax rates.[74]

In October 1983, the State Council again designated 14 coastal cities as Coastal Open Cities (COC), each with an Economic and Technical Development Zone (ETDZ). These cities are: Dalian, Qinhuangdao, Tianjin, Yentai, Qingdao, Lianyungang,

---

[74] Young, Ian. "Special Economic Zones: China Opens Up--Foreign Investment Pours In." Chemical Week--Country Focus 25 August/1 September 1993: 30-32.

Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhianjing, and Beihai. Corporate tax is 24% in the COCs and 15% in the ETDZs. The COCs have powers to approve foreign-funded projects in a wider area than other cities, while state subsidies for the technical upgrading of old enterprises are also available.

In February 1985, a new type of special zone--the Coastal Economic Open Area (CEOA)--was created with similar financial incentives to those of the COCs. The Chiang Jiang (Yangtze), Zhu Jiang, and Xiamen-Zhangzhou delta areas were designated as CEOAs, which in March 1988 were extended to cover wider areas, including agricultural areas. The State Council also approved the establishment of ETDZs within the CEOAs, along the coast and in the Mainland. By the end of 1992 the CEOAs had been extended to cover 292 cities and counties in the Mainland.

All these policies and regulations, especially regarding the considerable tax advantages and other financial incentives, have attracted many foreign investors, in particular Hong Kong and Taiwan investors. By the end of 1992, companies from more than 105 countries and regions had invested in the Mainland and almost half of these investments had been established in the SEZs, COCs and ETDZs. By 1992, the value of foreign investments reached $57.5 billion, up 380% from the previous year. However, more than 60% among this amount came from Hong Kong, Taiwan and Southeast Asia; about 14% came from the United States, which ranked 3rd after Hong Kong and Taiwan; Japan, European countries and others made up the remainder.[75]

The second trigger in transforming economic complementary potential into economic momentum in order to speed up economic growth and multi-integration

---

[75] Steinberg, Carol. "The Road to China." World Trade 7 (1994): 30-38.
Also see "Hong Kong: Stepping Stone into China." Canadian Business 67 (1994): ss9-ss11.

process in the GCECS is Taiwan's "relative visiting policy." This policy mainly refers to the Taiwan government which permits its residents to visit their Mainland relatives. When the Taiwan government lifted its ban on travel by its residents to the Mainland in 1987, beyond the purely visiting activities among relatives between the two sides of the Taiwan Strait, Taiwan businessmen also obtained opportunities to travel to the Mainland to investigate first-hand prospects for production in the Mainland, and to establish personal contacts with business circles as well local authorities. As these contacts have grown, so too has Taiwan trade and investment in the Mainland. As demonstrated in the Table of "People's Movement vs. Capital Movement "(see Appendix A.3), the total value of Taiwan trade with the Mainland, through Hong Kong, had a significant jump during the time period across 1987 (58.6% in 1987, 79.5% in 1988), and continuously grew at an average rate of 42.2% annually. Also, Taiwan investment in the Mainland likewise blossomed with an average increasing rate of 172.8% since 1987, from just US$140 million hitting to US$25 billion in 1993.

Apparently, the development of the GCECS is significantly shaped and conducted under the policies which are carried out by the Chinese Mainland, Hong Kong and Taiwan. Also, it should be pointed out that some policies like the "Three Nos Policy" (no contact, no negotiation, and no compromise) had seriously negative effects on the development of the GCECS, even though the "Open Door Policy" and the "relative visiting policy" are not perfect. That is, the SEZs imply the limited extent of the "Open Door Policy." Allowing relatives to cross the Strait means that there are still restrictions on certain officials to do so. In fact, all the policies, currently adopted by the Mainland, Hong Kong and Taiwan, reflect the complex motivations, even dilemma in the development of the GCECS. Hence, the framework or guideline provided by

these policies is also unsatisfactory. There is still a long way to transit these policies toward a more openness and cooperativeness, because a healthy and prosperous development of the GCECS largely depends on whether such a transition can be achieved.

This is also one of the explanations why all the people in the GCECS are seriously concerned about the policies regarding the issue of the Hong Kong's 1997 return to the Mainland, since any policies will have significant impact upon the development of the GCECS. Ironically, the "Three Nos Policy," in some way, enhances the strategic importance of Hong Kong as a key linkage and channel between Taiwan and the Mainland. Thus, Hong Kong is most likely to keep its strategic position in the GCECS after 1997.

To sum up, policies in the GCECS function as a trigger, catalyst or resistance for the development of the GCECS. Particularly, the shape or framework of the development in the GCECS is always defined and restricted within some policies. Because of the existence of political hurdles, the framework or economic order sustained by all the current policies of the Chinese Mainland, Hong Kong and Taiwan is not as straight and consistent as that in the other integrating regions like EEC. However, even within the limited freedom provided by current policies, the regional economy is still booming and the multi-integration is taking off. Why does the GCECS have such a strong economic momentum? Besides the complementary potentials existing among the three actors, the "five cultural geneses," another special feature, can hardly be neglected in the answer to this question.

D. Five Cultural Geneses as A Foundation

Several questions still remain in the above analysis. Typically, the "Open Door Policy" is issued to all the foreign investors, not specialized to Hong Kong and Taiwan investors; also, many developed countries other than Taiwan and Hong Kong can provide capital, technology and management expertise (i.e. they also have complementary potential with the Mainland China). As a matter of fact, in the early 1980s, many large American corporations rushed into the Mainland China for investment; however, they lost a lot of it.[76] Why are Taiwan and Hong Kong businessmen so successful? Another related question is that there are many areas with lower labor cost than the coastal areas in the mainland, why did the fast economic growth primarily happen in the economic triangle--Guangdong, Hong Kong and Taiwan, then along the coastal areas of the Mainland?

The perceptible answer can be traced to another special feature of the infraconnection in the GCECS--"five cultural geneses"--geographic closeness, blood-tie, kinship, same language and common customs.

The geographic closeness among the Mainland, Hong Kong and Taiwan is obviously a significant advantage to reduce shipping costs and timing of economic interactions among these three actors. Taiwan, about 150 miles across the Taiwan Strait, only needs overnight delivery time to reach Hong Kong. From Hong Kong to cross the border to Guangdong only goes through one of the SEZs--Shenzhen. On the main route from the provincial capital of Guangzhou (formerly Canton) to Hong Kong, a superhighway is being built that will cut driving time between Hong Kong and

---

[76] Tanzer, Andrew. "Greater China, Greater Profit." Forbes 3 August 1993: 84-85.

Guangzhou from seven hours to about one hour.

Before the "Open Door Policy," the Hong Kong and Guangdong border was characterized by tension and confrontation. Now, the border is crossed by thousands of people each day. Hong Kong-Guangzhou business travel has become very convenient. (See Table IV.2)[77]

Table IV.2. Direct Hong Kong-Guangzhou Transport Modes

Direct Hong Kong-Guangzhou Transport Modes			
	One-Way Fare	Length of Trip	Departure Times
Plane	HK$334-400 ($44-52)	1/2 hour	3 daily, am & pm
Express Train	HK$148-180 ($19-23)	2 1/2-3 hours	4 daily, am & pm
Hydrofoil	HK$120 ($16)	3-4 hours	1 hovercraft and 1 catamaran daily at 9 am
Steamer Boat	HK$119-200 ($16-26)	9 hours(overnight)	1 daily at 9 pm
Bus	HK$110 ($15)	4 1/2 hours	1 daily at 7 am

The full and convenient range of transport options between Hong Kong and Guangzhou include express train, plane, hydrofoil, the Kowloon Canton Railway (KCR) local train, and boat.

The goods transport, on an average day, has more than 20,000 trucks crossing the border. These trucks mainly take out of Hong Kong the raw materials and half-finished goods that the 25,000 Hong Kong-owned factories in next-door Guangdong province turn into toys, shoes, clothes and stereos. And they bring back most of Hong Kong's food and a large share of the manufactured goods it exports to the rest of the world.

---

[77] Burdman, Pamela. "Commuting Between Hong Kong and Guangzhou." The Chinese Business Review January-February (1991): 38-40.

Additionally, the currency almost universally used in Shenzhen is the Hong Kong dollar; and some 20% of Hong Kong's banknotes and coins are thought to be circulating in Guangdong.

Besides the geographic closeness, convenient communication ties, such as the same language and common customs of Hong Kong residents and Taiwanese with the people in the Mainland, especially in the coastal areas like Guangdong and Fujian provinces, also lead to a better situation for the fast growing economic relations among these three actors. The importance of these communication ties is tremendously enhanced by characteristics of the Chinese Business Circle--the *guanxi* system. As Lee Ming Tee, an Overseas Chinese from Malaysia who has invested more than US$100 million in the Mainland, points out that in the Mainland, "Rules are only secondary. What's most important is people."[78] A report from The Washington Post (1992)[79] comments that "the frustrations and peculiarities of the *guanxi* system are one of the chief factors inhibiting investment by Japanese and U.S. firms."

In fact, the so-called *guanxi* system is just an extensile version of the Chinese traditional family system, since the most favored *guanxi* is just like a family membership. To build up a *guanxi* system is similar to establishing a big family tie. Thus, the core of the *guanxi* implies the Chinese sense of family.

Also, an indisputable evidence is that the family ties and the family sense are still among the most important factors which drive the primary economic growth and multi-integration among the Chinese Mainland, Hong Kong and Taiwan.

---

[78] Blustein, Paul. "Forging 'Greater China'--Emigres Help Build An Economic Power."The Washington Post 1 December 1992: A1.

[79] Ibid., p.A1.

Most of the Taiwanese ancestors came from the Mainland; however, about 14% are those Mainlanders who came after WWII.[80] As discussed above, trade and investment sharply increased when the Taiwan government allowed its residents to visit their Mainland relatives. The consistent pattern of "the People's Movement vs. Capital Movement" (Appendix A.3) indicates that most Taiwan businessmen are also those who have relatives or at least ancestral roots in the Mainland. And the investment is coming to the Mainland mainly through family channels as "trust funds," especially when the Mainland investment environment still has many uncertainties regarding its policy and regulation orientations. Through family channels, the Hong Kong residents, Taiwanese and other Overseas Chinese have started doing business with people, provinces and even villages where their families used to live. Four-fifths of Hong Kong's investments have been going into Guangdong province, where four-fifths of Hong Kong residents have relatives in the Mainland.[81]

Furthermore, the economic boost of the GCECS is also fueled by Chinese-owned businesses in Southeast Asia, the United States, Canada, and some other regions in the world. The population distribution of the overseas Chinese in the Table IV.3[82] reveals a worldwide Chinese economic and social network.

For many generations, Overseas Chinese are linked with each other across national boundaries by durable family networks and clan bonds, which have laid a solid foundation for stronger business connections worldwide. Particularly, there are the

---

[80] The World Fact Book. USA: Central Intelligence Agency, 1994. p.444.

[81] "The Overseas Chinese--A Driving Force." The Economist 18 July 1992: 24.

[82] Ibid., p.24.

Table IV.3. The Population Distribution of Overseas Chinese

Ethnic Chinese in:	Million
Indonesia	7.2
Thailand	5.8
Malaysia	5.2
Singapore	2.0
Burma	1.5
Vietnam	0.8
Philippines	0.8
Rest of Asia & Australia	1.8
United States	1.8
Canada	0.6
Latin America	1.0
Europe	0.6
Africa	0.1
Source: Overseas Chinese Economic Yearbook.	

private and informal capital markets of Chinese family and clan associations, in which financial resources are mainly conducted by the family sense and deployed for new venture activities without the intervention of commercial banks, professional venture capital companies, or government investment agencies. In other words, the Overseas Chinese group constitutes a powerful network--informal though pervasive, with local variations but essentially stateless--held together by capital flows, joint ventures, marriage, political expediency, and a common culture and business ethic. Among all these characteristics, the family sense functions as "trust funds" with the following rules:

1). The only people you can trust are family and a business enterprise is created as a familial life raft;

2). The judgment of an incompetent relative in the family business is more

reliable than that of a competent stranger;

3). Obedience to patriarchal authority is essential to maintaining coherence and direction for the enterprise;

4). Investment must be based on kinship or clan affiliations, not abstract principles.[83]

These rules may have been interpreted with an intended tone, but they are probably generally applicable, especially in accounting for certain archetypal business choices of first-generation Overseas Chinese in the world: real estate, shipping, and import-export companies.[84] Such industries generally require a limited span of control and can be managed effectively by a small group of insiders who can be members of the same family. Even Chinese enterprises that have grown quite large tend to maintain such rudimental organizational patterns.

In a broad view, the GCECS with its geographic closeness is only a part of the global Chinese business network. Partially because of the ethic origin in the Mainland and partially because of the high performance of its economy, the GCECS becomes the core or center of gravity of the global Chinese business network. Overseas Chinese investment surges in the Mainland are not only driven by profit motivation, but also symbolized by "sending money to home." There is one old Chinese saying which can vividly describe such a special feature of an atypical agriculture-oriented "Middle Kingdom"--Farmers would always like to keep fertilized water running within their own farm lands (FeiSui Bu Lui Wai Ren Tian).

---

[83] Kao, John. "The Worldwide Web of Chinese Business." Harvard Business Review March-April (1993): 25.

[84] Ibid., p.25.

The global Chinese business network is just like a global network which many Western multinationals have tried to create in their own organizations. Now some Western companies are casting about for Asian joint venture partners, looking for ways to tap into the increasingly powerful Chinese network. Overseas Chinese thus become a necessary access. In fact, Overseas Chinese have played their unique roles and provided the lubrication which makes possible the movement of funds, ideas, and people within the GCECS.

To sum up, the development of the GCECS characterizes its multi-integration process along with a fast economic growth. The primary momentum of this multi-integration process comes from three special infraconnection features in which, the "five cultural geneses" are the essential linkage; the "complementary setup" is the direct condition; and the policy-openness orientation is the trigger.

It is worth highlighting that the multi-integration process in the GCECS is not reflected by any formation of new political community or by the clearance of the old political barriers, it is characterized by the increasing economic and social interactions among the three major actors. Since such increasing interactions are mainly sustained by the three special features which all belong to the soft-net of infraconnection, several further questions can be raised here: Is the multi-integration process caused by any improvement of the hard-net of infraconnection? Does this multi-integration process tend to formate a better hard-net of infraconnection for the GCECS?

As a matter of fact, the complementary setup feature indicates that the cooperation among the Chinese Mainland, Hong Kong and Taiwan still concentrates on the labor-intensive industries; the policy-openness orientation feature implies that not

all restrictions among these three actors have been released; and the five cultural geneses feature illustrates that such a cooperation is not beyond the traditional family style. Thus, the multi-integration process, supported by the three special features, is still in a primary stage with the characteristics of labor intensity, limited openness and family style.

However, when the multi-integration process has been accelerated, what is its impact upon the development of the three special features? In other words, when the infraconnection, including the three special features, changes, how would this change in turn effect the further multi-integration process?

To answer this question needs a further examination for the development of the infraconnection in the GCECS, both its soft-nets and hard-nets, as well as the relations of this development with the further multi-integration and the economic growth.

Chapter V

Some Findings: A Current State of Infraconnection in the GCECS

As a multi-integrating Chinese-based economy of Asia and a potentially powerful network and dynamic engine of growth for the Asia-Pacific region as well as for the world, the GCECS is becoming the fastest economic growth zone in the world. As demonstrated in Chapter IV, such a multi-integration process, mainly sustained by three special features--complementary setup, policy-openness orientation and five cultural geneses, is tremendously increasing the intensity of cross-border investment, trade, tourism and cultural exchanges. These sharply growing interactions within the GCECS as well as with the rest of the world inevitably are adding a great pressure on the weak infraconnection of the GCECS. Moreover, the three special features, which used to be the major dynamic linkages for driving the primary development of the multi-integration in the GCECS, may very likely change when this development moves forward. Especially, the conflicts between the limited supports of the three special features and the further requirement for the development of the GCECS will inevitably become visible along with a continuously economic growth. This Chapter will discuss current infraconnection in the GCECS regarding its transportation network, communication channel, market system, and policy orientation. Some major problems can demonstrate such a critical situation.

A. The Transportation Network and Its "Bottle-Necks"

As introduced in Chapter I, transportation networks mainly include railway,

highway, waterway and airline systems. Due to the differences in geography, density of economic activity, and development level, the fast growing interactions in the GCECS cause different pressures on transportation networks among the Chinese Mainland, Hong Kong and Taiwan. For instance, the problems regarding railways and highways in Hong Kong can be ignored compared with those in the Mainland, while those in seaports or airlines are more critical for Hong Kong and Taiwan. Because the Mainland is relatively underdeveloped, its transportation problem is more serious.

1. The Transportation Network in the GCECS

Railways have always been crucial for national transportation. The **railway and highway systems** of the GCECS are mainly represented by those in the Mainland and Taiwan. Mr. Sun Yat-sen, as early as in 1912, noticed such an importance for a nation's development. "Transportation is the womb of the industry; and the railway is the core of the transportation. The number of the railways represents the development of the country; and the length of the railways reflects the distribution of the development."[85] According to the official accounts, the Mainland has made a great effort to improve its railway system since the beginning of the 1980s. By the end of 1992, the Mainland railways have stretched 53,890.4 km, including 13,703 km of double-track lines and 8,742.8 km of electrified railways.[86] For the capacity and density of the Mainland railway see Appendix B.1-9.

In 1991, there were 3,309.2 km of railway in Taiwan; and on average, the

---

[85] GuoFu QuanJi (Vol.2). Taiwan, 1981. p.811.

[86] Wu, Naitao. "China Eases Railway 'Bottlenecks'." Beijing Review 18-24 October 1993: 11.

transportation capacity of Taiwan's railways accounts for 360,000 passengers per day. In terms of commodity transportation capacity, the volume stands at 80,000 tons per day.[87]

By 1992, the Mainland's highways stretched over 1.06 million km, of which some 652 km was expressways, 3,500 km first-class highways, 2,086 km second-class special-purpose highways, and 53,000 km second-class ordinary highways. This highway network handled 84.7% of the gross national volume of passenger transport and 44.8% of the volume of passenger flow.[88]

In Taiwan, the highways have displaced the railways as Taiwan's primary mode of transportation. Six extensive highway networks--the freeway, round-island, cross-island, inland, coastal, and connecting systems--covering 20,000 kilometers, circle the island. Approximately 8.6 million vehicles use the highways daily.[89]

The **airline system** of the GCECS, represented by airlines and their airports in the Mainland, Hong Kong and Taiwan, is the major transportation tool for business and tourism as well as small cargo. Hong Kong runs the busiest airline system in the GCECS (see later section). The Mainland's airlines carried 29 million passengers and the total turnover volume of air transport reached 1.35 billion ton/km in 1992. In 1993, the turnover volume reached 1.60 billion ton/km., an increase of 18.52% over 1992 (see Appendix B.3-4).

---

[87] Hainan RiBao (DaLu)
"Taiwan Tei Lu." 1992.4.8.

[88] Li, Ning. "China's Expanding Highway Network." Beijing Review 4-10 October 1993: 11-17.

[89] Hainan RiBao (DaLu)
"SiTong BaDa De Taiwan GongLu." 1992.2.15.

The Mainland's airports, however, have not expanded to catch up with the pace of fast economic growth. Take the United States as a comparison, though two countries have roughly the same physical size, the Mainland has only 109 civilian airports, while there are 6,500 in the United States. Of the 109, only are 16 considered "major" airports, meaning they can handle at least medium-sized aircraft. Currently, 11 Chinese airports can accommodate Boeing 747s. Another 53 of the Mainland's airports can handle smaller jets such as Boeing 737s and Tridents. The three busiest Chinese Mainland airports for both international and domestic traffic are Guangzhou's Baiyun, which is operating at full capacity (174 flights per day), Beijing's Capital (164 flights per day), and Shanghai's Hongqiao (121 flights per day). Guilin Airport and the newly opened Huangtian Airport in Shenzhen round out the top five.[90]

Taiwan has eight local airlines which serve domestic commercial airports in Taipei, Kaohsiung, Taoyuan, Haulien, Chiayi, Tainan, Taitung, Makung, and Taichung. Chiang Kai-shek International Airport at Taoyuan serves Taipei and the northern region of Taiwan. The Kaohsiung International Airport serves southern Taiwan. In 1990, the number of domestic air passengers reached 9.1 million. Domestic air freight handled in 1990 totaled 36,500 tons. In addition, 19 foreign airline companies have operations on the island. International passenger traffic increased from 10 million in 1986 to 18.8 million in 1990. International air freight in 1990 totaled 661,000 tons.[91]

The **seaways** of the GCECS are crucial ties, especially for intra-GCECS transportation. Hong Kong is the busiest seaport not only in the GCECS, but also in the

---

[90] Lee, Joseph W. "The Sky's the Limit." The Chinese Business Review May-June (1993): 16.

[91] U.S. Department of Commerce. Overseas Business Reports. March (1993): 24.

world (see later section). The Mainland has more than 90% of its exports and imports carried by sea. The combined annual freight-handling capacity of coastal ports is around 600 million tons (see Appendix B.10).

Taiwan's port traffic has increased dramatically. From 1986 to 1990, total freight handled in Taiwan ports increased 36% to 118 million tons. Of this amount, Kaohsiung Port, located on Taiwan's southwest coast and the largest and most heavily trafficked harbor on the island, handled 77.98 million tons; Keelung Harbor, a natural harbor situated on the northern shore of Taiwan, handled another 23 million tons; and the rest relatively small ports, such as Taichung Port, Hualien Harbor and Suao Port, handled the remaining 17.02 million tons.[92]

These hard-nets, railways, highways, airports and seaports, function as arteries of the GCECS. They have obviously made great contributions to the primary economic take-off of the GCECS. However, the capacity and its growth rate of these hard-nets are far behind the demand for them, which have been caused by the increased intensive economic and social interactions in the GCECS. Some "bottle-necks" have already become a serious problem.

2. Overloaded Railways in the Mainland

From 1978 to 1992 (see Appendix B.1-9), the average increasing rate of new railway lines is about 0.70% (see Appendix B.1), which is considered quite slow. Since railway construction is generally considered a long-term and high-cost project, the Mainland capability regarding capital and technologies for its construction is very

---

[92] Ibid., pp. 22-23.

limited. As a result, the average increasing rates for the capabilities of railway transportation, represented by the increasing rates of turnover volumes, have only reached 5.55% in freight transport and 8.14% in passengers transport (see Appendix B.4-5).

Because of the fast economic growth, at an average increasing rate of 9.27%, in GDP in the 1980s, the traffic requirement of railways increased more rapidly than the speed of railway improvement. For each year (see Appendix B.2-3), the railway has had to bear an average of 44.68 million tons freight and 13 million passengers more than the previous year. The railway density (pressure) of the Mainland rises annually (see Appendix B.6-9), and the continuation of this situation will inevitably lead to an overloaded transportation system.

While the Mainland's 1992 total industrial output value increased 20% over the previous year, the volume of goods delivered by rail increased only 3%. In 1993, the approved plan for the rail shipment of goods throughout the Mainland would fill, on the average, 120,000 carriages a day, but the railway system can only provide 75,000 carriages, or just a bit more 60% of total demand.[93] Some research reports that the transportation capability of some railroads in the Mainland can only satisfy 40% of the traffic requirement.[94] The total handling capacity of major railways such as the Beijing-Guangzhou, Beijing-Shanghai, Beijing-Shenyang, Lianyungang-Xining, Hangzhou-Zhuzhou, Baoji-Chengdu and Xiangfan-Chongqing railways has reached saturation point, and the number of bottle-necks has increased to 24. Long-distance

---

[93] Wu, Naitao. "China Eases Railway 'Bottlenecks'." Beijing Review 18-24 October 1993: 13.

[94] ZhongGuo DaLu YanJiu (Taiwan)
Zhu, Yen-min. "DaLu TieGongLu JianShe Yu ShiYie JiHua Zi BiJiao." 2 (993): 46.

passenger trains on many trunk railways are also operating far above recommended capacity. One example of a "bottle-neck" would be that of all the coal that was dug out of the Mainland's mines in 1992, and in 1993 30% still sat where it was mined, waiting for the trains to arrive.[95] In addition, although the Chinese Railway Ministry has called for plans to increase container freight volume of moving goods into Hong Kong by as much as 30% annually, the railway system has stagnated at about 2 million tons annually since 1987.[96]

An inadequate railway system in the Mainland hinders the movement of coal from mine to user, the transportation of agricultural and light industrial products from rural to urban areas, and the delivery of imports and exports. As a result, the underdeveloped railway system seriously constrains the pace of economic development throughout the Mainland.

3. Critical Conditions of the Mainland's Highways

In spite of a rapid economic development in 1980s, the Mainland highway system still lags far behind the rapidly growing demand for road transportation caused by increasing economic interactions. An important factor contributing to the extremely rapid growth of road transportation is the freedom of enterprises and collectives (and, more recently, private individuals) to acquire their own motor vehicles. According to Asiaweek (1993)[97], between 1980 and 1990, the number of vehicles in the Mainland

---

[95] Wong, Jesse. "Freighted with Difficulties: Bandits, Traffic and Tariffs are Just A Few of the Things That Make Moving Goods Around China So Problematic." Wall Street Journal 10 December 1993: 4.

[96] Bow, Josephine. "Booming Trade Taking Slow Boat to China." Distribution March (1994): 26.

[97] "The Biggest of Them All?" Asiaweek 24 February 1993: 60.

jumped 209% to some 5.5 million. Passenger-carriers increased 326% to 1.6 million. Of these, about 10% were bought by collective and private enterprises as well as individuals. Such conditions imply an urgent need to expand the highway capacity. According to one analytical article in Beijing Review(1993)[98], some of the major problems in the Mainland highway system can be summarized in the following:

1). **Small quantity and low geographic density**. The Mainland has almost 1.2 billion people who live on 9.6 million square km of land. However, the highway mileage per 10,000 people stands at only 9.12 km, which, if calculated according to available land, is only 110 meters per square km, a figure representing only about one-sixth that of the United States where the figure stands at 670 meters. At present, the Mainland has more than 2,000 towns, townships and 190,000 administrative villages without access to the highway transportation network.

2). **Low standards and poor quality**. Highways rated above second-class account for only 5.58% of the total, while 25.5% are below the standard. More serious, around 60% of the existing high-grade and second-class highways are in urgent need of renovation. The Mainland now has no high-grade highways which link the north to the south, nor the east to the west.

3). **Insufficient traffic capability**. More than half of the national highways have exceeded designed traffic capacity limits. The pressure of highway traffic in the Mainland is growing rapidly; and the average increasing rate of the density of highway traffic is 4.43% in freight and 10.18% in passenger, which is much higher than the same rate for the railway (see Appendix B.6-9).

---

[98] Li, Ning. "China's Expanding Highway Network." Beijing Review 4-10 October 1993: 11-17.

The road traffic conditions are more critical in the high economic growth areas, especially in the more prosperous South, the Pearl River and the Yangtze River deltas. Take Guangdong province as an example. Growth rates of the total road traffic in Guangdong have averaged 20-30% per year and have been accelerating throughout the province since 1980. Congestion in Guangdong has greatly reduced travel speeds and, consequently, increased vehicle operating costs. At present, most truck routes pass directly through cities and towns, forming traffic bottlenecks, particularly in the Pearl River Delta. Traffic congestion is exacerbated by vehicles driving different speeds in the traffic flow. In addition, extremely high vehicle operating costs are anticipated until more traffic separation is achieved.[99]

4. The Busiest Airport in Hong Kong

Since the strategic importance of Hong Kong as the major linkage between the Mainland and Taiwan as well as the rest of the world, Hong Kong's airport--Kai Tak also demonstrates a "bottle-neck" situation. Kai Tak is the third busiest airport in the world for international passengers (after Heathrow and Frankfurt) and second in Asia for cargo (after Tokyo's Narita).

Kai Tak's terminal exceeded its design capacity of 24 million passengers by half a million at the end of 1993. A fifth expansion to the 36-year old terminal was completed in 1988, giving a capacity of 5,300 passengers an hour. However, Kai Tak's transfer rate jumped from 1.5 million passengers in 1987 to 5.6 million in 1993. It provides connections for nearly 700 flights each week to 36 Chinese cities. The average

---

[99] "A Transportation Transformation." The China Business Review July-August (1993): 25.

annual air traffic growth rate is 10%, and the growth in the using of Kai Tak for international destinations averaged 20% in 1994.[100]

The airport averages 370 flights a day, 83% of its runway's theoretical limit of 446. Peak periods push the flight total to 400 or 90% capacity. The daylong average of seats for aircraft using Kai Tak is 280, but during peak periods it rises to 300-350, which indicates the overcrowding problem of Kai Tak airport.[101]

In order to relieve this problem, a new airport, Chek Lap Kok, is scheduled to open in mid-1997, coinciding with the Chinese Mainland's takeover of Hong Kong from the British. But Sino-British funding disputes may threaten that schedule.

5. Busiest Seaports in the GCECS

Hong Kong is also ranked the number one among world container port in terms of 20-foot boxes handled in 1993. Hong Kong's container output increased by 15.5% to 9.2 million 20-foot equivalent units (TEU's) as compared to 1992.[102] There are seven terminals in service at Hong Kong's Kwai Chung container port, handling upwards of 6 million TEU's annually. An eighth terminal--CT 8 is currently under construction; the first of its four berths came on stream in 1993. However, demand for containerized traffic is increasing so strongly (20% from 1992 to 1993) that it is still

---

[100] Mechaw, Michael. "Travel Boom Outpaces Hong Kong's Kai Tak." Aviation Week & Space Technology 4 April 1994: 37.

[101] Ibid., p.37.

[102] Bangsberg, P.T. "Hong Kong Retains No.1 Spot Among Global Boxports." Journal of Commerce and Commercial 28 February 1994: 7.

likely to outstrip the cargo handling facilities of Hong Kong as early as mid-1995.[103] Hong Kong's Port Development Board plans to construct up to 24 additional container berths, but even that may not be enough. This is mainly because fully 42% of the Mainland's exports now pass through Hong Kong, and export volumes are expected to continue to increase.[104] Meanwhile, arguments about Hong Kong's future political development are keeping the Mainland from giving its approval for plans to build a ninth container terminal--CT9, which will add four new berths with 1.6 million TEUs capacity.[105] The delay is threatening to cut into Hong Kong's ability to handle future increases in container traffic, leading to congestion and growing losses in port income.

Taiwan's Kaohsiung Port is the second busiest port in the GCECS in terms of container freight handled in 1991. Kaohsiung Harbor is the Asia's third busiest container port after Singapore and Hong Kong. It has four separate container terminals, capable of storing up to 63,500 containers. However, since inefficient port authorities and political restrictions deny it access to the growing business from the Mainland, Kaohsiung can hardly function as the alternate port in the GCECS to release the congestion problem in Hong Kong port. Its market share is declining as compared to the southern Mainland. According to a study commissioned by the Ministry of Transportation and Communications of Taiwan, it was found that Kaohsiung's rate in loading/unloading containers--under 17 per hour--was the least efficient among western

---

[103] Richmond, Henry S. "Hong Kong's 'Big 4' in Infrastructure: the Airport, the Port, the Environment, and Water Supply." Business America 12 July 1993: 13.

[104] "Growing China Trade Tests Hong Kong's Capacity." Traffic Management February (1994): 71A.

[105] Westlake, Michael. "A Boost for Ports--The Region Gears Up for Bigger Cargo Volumes." Far Eastern Economic Review 10 March 1994: 34.

Pacific ports, trailing Singapore, Hong Kong, Kobe, and Pusan. In terms of cost competitiveness, it is estimated that Singapore undercuts Kaohsiung's costs by approximately 25% for unloading on 40 foot transshipped unit.[106]

To sum up the essential features of the GCECS's transportation networks, several "bottle-necks" have presented a danger and the geographic distribution of these "bottle-necks" has closely correlated with the economic development pattern in the GCECS. That means, the area with more intensive economic activity and higher development level is more likely to have a "bottle-neck" in its transportation network. This fact implies that a big lag exists between the faster economic growth and slower development of the transportation networks, especially in the Mainland. A survey of "Taiwanese Opinion on the Mainland Transportation & Communication Environment" shown in Table V.1[107] indicates that around 40% of Taiwanese visitors complain the Mainland's various transportation conditions as "worse" or "worst;" while only around 13% of Taiwanese say they are "fine." It is clear that the lag between the development of the Mainland's transportation networks and the GDP growth in the area is one of the major restrictions to the further development of the GCECS.

B. The Communication Network with Uneven Development

From a broad view, the communication network of the GCECS includes all the channels which are used to exchange information in the GCECS, such as the mass

---

[106] U.S. Department of Commerce. Overseas Business Reports. March (1993): 22.

[107] ZhongGuo DaLu YanJiu (Taiwan)
Li, Ming-hui & Yang Ming-hsien. "Taiwan DiQu MinZhong DaLu De LuYou XingWei Yu HuanJing RenZhi Zhi YanJu." 7 (1993): 68-80.

media which includes book, magazine, and newspaper publishing, radio, and television; the business communication service system which includes computerized data exchanging systems, marketing researching systems, employee communication systems, and financial communication systems, and others. In order to simplify the discussion of this issue, this section will focus on three major components of the communication network in the GCECS, they are: telecommunication systems, postal systems and family circles.

Table V.1. Taiwanese Opinion on the Mainland Transportation and Communication Environment

Items	Worst	Worse	So-So	Fine	Best	Points
Airport & Sea Ports	27 (9.0)	114 (37.9)	138 (45.8)	20 (6.6)	2 (0.7)	50.43
Efficiency in Customs	31 (10.4)	96 (32.2)	126 (42.3)	41 (13.8)	4 (1.3)	52.68
Transportation Tools	28 (9.5)	97 (32.9)	138 (46.8)	29 (9.8)	3 (1.0)	52.00
Quality of Roads	14 (4.8)	78 (26.8)	150 (51.5)	46 (15.8)	3 (1.0)	56.29
Transportation Situation	22 (7.4)	85 (28.6)	145 (48.8)	42 (14.1)	3 (1.0)	54.55
Services	28 (9.5)	89 (30.2)	125 (42.4)	48 (16.3)	5 (1.7)	54.10
Mainland-Taiwan Communication Service	26 (9.1)	62 (21.8)	136 (47.7)	57 (20.0)	4 (1.4)	56.56
Communication Situation inside the Mainland	14 (5.2)	93 (34.4)	121 (44.8)	40 (14.8)	2 (0.7)	54.29

1. Mixed Telecommunication Channels in the GCECS

The most prominent characteristic of the GCECS's telecommunication network is the uneven development among its actors, not only in scale, but also in the level of technology. Mainly, the situation is the following:

Hong Kong telecommunication network is ranked as one of the world's most sophisticated telecommunication system including the world's No.1 full digital switching telephone system. According to Hong Kong Government Information Service,[108]the major development of Hong Kong telecommunication network can be summarized as follows:

1). By the end of 1992, there were 3.5 million telephones served by more than 2.6 million lines which gave Hong Kong the highest telephone density in Southeast Asia with approximately 61 telephones or 46 lines per 100 population.

2). International Direct Dialling (IDD) service is available to more than 200 countries and regions, and over 600 cities in the Mainland. The IDD service currently handles over 93% of outgoing international traffic. The number of call minutes for international telephone calls was 1,375 million minutes in the year ending March 1991 and 1,696 million minutes in the year ending March 1992, representing an increase of about 23%.

3). Hong Kong is the gateway for the international computer packet switched data service which provides high quality, secure, and error free data transmission worldwide. The Mainland's data network CHINAPAC began offering access to Western businesses in late 1993 through a link with Hong Kong Telcom International Limited (HKT)'s Datapak packet-switched services, the first such direct link in Asia.

4). HKT operates eight satellite station antennas which provide direct communication to over 80 destinations via satellite.

---

[108] Hong Kong: The Facts--Telecommunications. Hong Kong Government Information Service. September (1992): 1.

5). In 1992, Hong Kong was directly connected to four undersea cable systems. They are: the Okinawa-Luzon-Hong Kong undersea cable connects Hong Kong to the Philippines, Japan and North America; the Singapore-Hong Kong-Taiwan undersea cable system links Hong Kong with ASEAN countries, Australia, and Europe; the Hong Kong-Japan-Korea (H-J-K) optical fibre cable connects Hong Kong, Japan, Korea, and North America; and the Hong Kong-Taiwan (HONTAI-2) optical fibre cable system connects Hong Kong and Taiwan.

6). An optical fibre cable system between Hong Kong and Guangzhou was opened in 1988. Another optical fibre cable between Hong Kong and Shenzhen was put into service in June 1992. The Asia Pacific Cable (APC) system, which links Hong Kong directly to Malaysia, Singapore, Taiwan and Japan, became operational in mid-1993.

Telecommunication development in Taiwan has been dramatic. With 36,000 employees for 7 million lines in 1994, Taiwan telecommunication is considered relatively efficient and reasonably profitable by international standards.[109]

By the end of May 1993, Taiwan has 7.6 million telephones, with the density of 36.6 telephones per 100 population. The rate of increase in telephones is 2.7%. Also, mobile phones have become extremely popular in Taiwan, which on average 1 out of 70 in the population has one mobile phone.[110] In 1992, Taiwan made 13 million toll-

---

[109] Reinfeld, William. "Infrastructure and Its Relation to Economic Development: The Cases of Korea and Taiwan." Industry of Free China August (1994): 92.

[110] ZhongYang RiBao (Taiwan)
"XinDong DianHua ShiChang LiJi Po Bei KaiHao." 1993.3.18.

telephone calls and 366.9 million minutes of international calls, which increased 23.3% compared with the previous year; but it made 4.4 million minutes telex, which decreased 19.2% compared with 1991. This data implies that the requirements of international communication are increasing extensively and the fast development of international telephone services will replace other traditional telecom services as the major communication tool between Taiwan island and outside.[111]

Although **the Mainland telecommunication system** has a world ranked mobile cellular phone service system, pager system, computer data-exchange system and the satellite communication system, the scales of these services are relatively small. At the same time, the Mainland has one of the most primitive telephone service systems. By 1990, the Mainland had over 11 million telephone exchange lines, including about 152,000 long-distance exchange lines with direct, automatic service to 24 cities (see Appendix B.11). The average increasing rates of telephone service are about 14% in the number of telephones per 100 persons and 30% in the long distance calls (see Appendix B.12).

However, by comparison with Hong Kong and Taiwan as well as some developed countries, such as Japan and the United States, the development level of the telecommunications in the Mainland is still quite backward (see Table V.2.[112]).

In the United States, every person has one telephone line, ranked as No. 6th in the world; in Japan, 1.8 persons share one telephone line, ranked as No. 17th. However,

---

[111] "Volume of Telecommunications and Postal Services." Industry of Free China September (1993): 147.

[112] World Facts and Figures. John Wiley & Sons, Inc., Victor Showers, 1989.
New Book of World Rankings. Facts on File, Inc., 1991.
The World Factbook. USA: Central Intelligence Agency, 1994.

in the Mainland, around 100 persons share only one telephone line which is ranked as No.160th in the world. Finding a public phone in some parts of the Mainland can take

Table V.2. A Comparison of the Telecommunication

Items	Japan	U.S.	Hong Kong	Taiwan	the Mainland
Telephone (000s)	64000	182558	3000	7800	11000
Pop/Tel line	1.8	1.3	2.2	3.2	101
Pop/Telex line	2585		192		1988
Tel. Rank in World	17	6	29	49	160
AM Radio Station	318	4892	6	91	274
FM Radio Station	58	5200	6	23	
TV Station	12350	7296	4	15	202
Satellite Station	5	61	1	1	4
No. of Radio/000pop	863	2119	633	269	184
No. of TV/000pop	587	811	241	272	17[113]

hours. Switching stations are outdated and local loops are overloaded.[114] Worse, long-distance service--the lifeline of cross-border business--lags years behind Western standards. Results of a four-year (1988-1992) study undertaken by AT&T and the Chinese Ministry of Posts & Telecommunications (MPT) indicate that a caller's chances of getting through from the United States to China on the first dial were only 25% in 1988 and 45% in 1992.[115]

In the Mainland, to actually get a telephone line requires a wait of sometimes three to four years. In some big cities, to get a cellular telephone is relatively easier to

[113] According to "The State" (South Carolina newspaper, 22 January 1995), China currently has about 250 million TV sets per 1.2 billion Chinese people. This data indicates that the situation in 1990 has changed from 17 TV sets per 1000 people to 208 TV sets per 1000 people in 1995.

[114] Goff, John. "Needed: One Billion Telephones." Global Finance December (1993): 50-53.

[115] Kao, Jeffrey. "Phoning Home." The Chinese Business Review July-August (1992): 6-10.

apply for than a standard telephone line. However, cellular services are much more expensive than the standard telephone services. For instance, subscribers must pay an initial fee of 20,000-25,000 yuan ($3,600-4,500) per cellular phone and monthly subscription fees of 150 yuan($27).

Obviously, the telecommunication networks in the GCECS are a mixed-up system. Through the center of Hong Kong, these telecommunication networks link each actor in the GCECS as well as the rest of the world. It is also obvious that fast economic growth and multi-integration obtain great benefits from the advanced telecommunication networks in Hong Kong. However, the relatively underdeveloped telecommunication network in the Mainland has been the bottle-neck restricting the telecommunication development of the whole GCECS. According to the survey of "Taiwanese Opinion on the Mainland Transportation & Communication Environment" (also see Table V.1 in transportation section), within the sample of Taiwanese visitors to the Mainland, in average, only 18.3% people say the communication system is "fine" or "best," while more than 36.7% say "worse" or "worst," and rest 44% say "just so-so."

Because an advanced telecommunication system is one of the essential condition for any efficient economic and social interactions, especially those for international trade, multinationals and joint-ventures, the underdevelopment of the Mainland telecommunication system reduces the economic efficiency and increases the internal cost of economic interactions in the whole GCECS. Thus, to modernize the telecommunication networks in the Mainland is one of the keys to maintain fast economic growth and multi-integration process in the GCECS.

2. Mailing Still the Most Common Way

Mail is still the most universal form of communication, though the development of advanced telecommunication may eventually reduce the volume of mail traffic. The mailing communication in the GCECS, ranked 9th in the world,[116] is generally acknowledged as the smoothest, most efficient and cheapest public service anywhere. Mail system is used more because of the unreliability of phone systems in some places of the GCECS, especially in the Mainland.

The mail system in the Mainland has maintained a slow growth rate since 1978 (see Appendix B.11). The number of post offices increased from 49,600 in 1978 to 54,900 in 1992; and the mail lines increased from 4,863,300 km in 1987 to 4,978,700 km in 1992. But the annual total number of letters mailed has nearly doubled from 2,835 million pieces to 5,619 million pieces during the same period (see Appendix B.12). This indicates that the density of the mail service has been increasing intensively in the Mainland since the beginning of the economic reform.

Although Taiwan has developed its telecommunication into a world level, Taiwan residents still maintain the traditional way by using mails as the major communication tools. In 1992, the total number of letters mailed was around 1.7 billion, ranking as the world's 20th.[117] This is partially because Taiwan residents have to communicate in this manner with the Mainland where the mail system is still the major communication tool; it is also partially because the "Three Nos Policy," to a large extent, "forced" the Taiwan residents to use the mail system through Hong Kong as the

---

[116] New Book of World Rankings. New York: Facts on File, Inc., 1991. p.202.

[117] "Volume of Telecommunications and Postal Services." Industry of Free China September (1993): 146-147.

channel which is much cheaper than telecommunication tools. On August 7, 1994, Taiwan General Post Office announced that the time period for express mail to the Mainland would be shortened from seven days to three days.[118]

Within Hong Kong, given its limited area, mail is less important than in the Mainland or in Taiwan. However, as a key linkage in the GCECS as well as a world financial and trade center, Hong Kong's 170 post offices with 5,000 employees still send around 876 million letters annually. Most of these letters are airmail, especially the express mail sent to more than 60 countries and regions around the world.[119]

3. Family-Ties as A Special Communication Network

In the early stage of the economic growth in the GCECS, Chinese family ties, as a special communication channel, have been very conductive for the multi-integration of the GCECS. In particular, they are very helpful in getting through political barriers, avoiding the imperfect financing systems, and managing production within the family circles. However, they also function as the most frustrating obstacle in preventing the people outside the family circles from communicating with the people inside family circles.

As the GCECS economy continues booming, these family-based businesses will also expand, but eventually they will face some communication problems with the people outside the family circles. Outsiders are usually the executives at a professional

---

[118] ZhongYang RiBao (Taiwan)
"You Zheng ZongJuZhang: TouDi DaLu KuaiJieYouJian SanTian DiDa." 1994.8.7.

[119] XinHuaShe NeiChan: TaiGongAo QingKuang (DaLu)
"HongKong DianXun FaDa ShiJie YiLiu." 1991.12.10.

management level or the partners involved in the global business circles. However, the problem is that the family sense which makes money flow as a "trust fund" within the family circle can become a major obstacle in communication with outsiders. A non-Chinese professional manager can't expect the same level of trust he or she would have as a family member in the company. Outsiders can never know family insiders and non-Chinese professionals often have to work doubly hard to understand the reasons underlying certain decisions.

John Kao, a Harvard professor, vividly describes such a typical Chinese business style.[120] That is, the typical Chinese entrepreneur may keep a poor manager on simply because "he's family member," sit on decisions that involve outsiders, conceal information because "she's not family member," avoid necessary confrontations; and in many respects, behave toward subordinates like a guilt-provoking parent. As these companies start to grow, the conventions of traditional Chinese business, especially caution toward outsiders, become a clear competitive disadvantage.

Another communication problem usually exists across generations within the Chinese family business networks. In fact, this phenomenon is a cultural interaction. It involves the conflict between the more traditional Chinese business thcughts which are held by the founding fathers and the more Western thinking styles which are brought by their sons, daughters, or grand-children trained in the Western world.

The problem is that, in Chinese culture, a son or daughter has to respect their parents. Along with this adherence to traditional Chinese values across generations, the family sense is expanded. However, sometimes, father's words can kill the sons' or

---

[120] Kao, John. "The Worldwide Web of Chinese Business." Harvard Business Review March-April (1993): 24-34.

daughters' thinking. As the GCECS economy continues to grow, this Chinese tradition is very likely to restrict its business from developing into a modern level which is more compatible with the rest of the developed world.

Comprehensively, the mixed-level communication networks of the GCECS mostly supported the primary multi-integration in the GCECS. However, since the capacity of the mixed-stage communication networks is seriously restricted by some underdeveloped parts, the comprehensive level of the communication network in the GCECS is not as high as it should be. The demand for all kinds of communication services caused by the fast economic growth and the further multi-integration far exceeds the capacity of these mixed-stage communication networks. Some hidden problems and conflicts between the imperfect mixed-level communication networks and the growing demands for the advanced communication services in the GCECS have become more serious than before.

C. Hidden Peril in the Market Development

The market system can be interpreted in many ways. Broadly speaking, the market system is the set of all the places and channels which help to implement economic interactions, such as trade, investment and retail sales, depending on the comparative advantages of each participant. For instance, the complementary set-up belongs to the market system, since it helps to combine all the comparative advantages of resources, capital, labor, technology, management, information searching and final product sales among the Mainland, Hong Kong and Taiwan in the development of the GCECS.

Narrowly speaking, the market system mainly refers to two networks: 1) the

channels or distributions which help to exchange commodities as well as raw materials, i.e. the commodity market system; and 2) the channels or places which help to exchange money, i.e. the monetary system. As the economy of the GCECS continuously grows and the multi-integration process moves forward, a dramatic change will inevitably occur in the market system of the GCECS. The market structure and some features regarding hard nets like the distribution system and banking system now need to be discussed.

1. The Market Structure in the GCECS

The GCECS is not a single and unitary market. It can be divided into many segments, depending on various criteria. **First, the market of the GCECS can be differentiated by development level.** Hong Kong and Taiwan share top ranking in fields such as technology, management, services, infraconnection and living standard. Next is the Guangdong province, located on southern coastline of the Mainland. These three places consist of a development "triangle" as the core of the GCECS. Outside this developed "triangle," are the cities or areas along the coastline of the Mainland, which can be ranked as the No.3 developed market. Then, midland or inland of the Mainland can be regarded as the No.4 or the most underdeveloped place in the GCECS. Such a multi-development pattern is the major source to generate the complementary potential of the GCECS (see Chapter IV); therefore, it is a very important factor for developing any marketing strategy for GCECS.

Second, the market of the GCECS can be differentiated by different trade or taxation policies. Hong Kong is an entirely free trade zone with the world's largest duty-free port. Taking into account its warehousing facilities and excellent

communications, Hong Kong functions not only as the key linkage in the GCECS, but also as one of the largest trade centers in the world.

Both Taiwan and the Mainland have some tariffs or import taxes on some kinds of commodities, and are duty free on others. For instance, the basic duty formula in Taiwan is as follows: raw materials, 0-25%; semi-processed goods, 0-10%; and finished goods, 5-15%. Typically, 0-30% for concrete and glass; 0-30% for machinery; and 0-50% for aircraft, etc. No duties are levied on imports of machinery and equipment for "sophisticated" industries governed by the Statute for Industrial Upgrading, including iron, steel, aluminum, copper, electrical engineering, electronics, shipbuilding, chemicals, and organic fertilizers, etc.[121]

Taiwan has three export-processing zones--two in the Kaoshiung area and one in Taichung--established to foster increased expertise in the electronics and components fields. The Taiwan government plans to create a fourth zone, for software producers, in Nankang (northern Taiwan). All production in the zones must be for export, though special permission may be obtained to sell the products in Taiwan. Operations are free of import duties and commodity taxes on products.[122]

The import tax and duties policies for the Mainland have been introduced in Chapter IV with the discussion of the Mainland's Special Economic Zones (SEZs); 14 coastal cities as Coastal Open Cities (COC), each with an Economic and Technical Development Zone (ETDZ); and the Coastal Economic Open Area (CEOA). Seaports in the SEZs offer duty-free importation and storage of goods and materials. They are

---

[121] "Investing, licensing and Trading Conditions Abroad--Taiwan, 1993." The Economist Intelligence Unit 1 October 1993: 34.

[122] Ibid., p.34.

Futian, Shatoujiao and Shantou (all in Guangdong province); Xiamen (Fujian province); Haikou (Hainan province); Dalian(Liaoning province); Tianjin and Qindao (Shandong province); Zhangjiagang (Jiangsu province); Gaowaiqiao (in shanghai); Ningbo (Zhejiang province); Fuzhou (Fujian province); and Guangzhou (Guangdong province).[123] Such a policy orientation seriously shapes trade flow in the GCECS.

Third, the market of the GCECS can be segmented by the different regional growth dynamics and their distinctive patterns of commercial distribution. For instance, south coastal Mainland markets are served by highly independent importers and wholesalers, many of which maintain offices in Hong Kong and communicate by FAX and cellular phone. Distribution networks in the Lower Yangzi Basin are dominated by Shanghai-based companies, many of which are tied into family-based manufacturing or banking groups. The distribution of imported products in the northern Mainland region remains largely in the hands of state-owned, import-export companies. Japanese and Korean trading companies are important in the northeastern Mainland.

Besides these factors, some others are also important, such as transportation and communication conditions, population, income level, living styles, local government policies, etc. This segmentation interacting with these criteria strongly determines the basic framework of the market distribution system in the GCECS; also, it is the major source of many problems in this distribution system, along with fast economic growth.

2. The Problems in the Mainland Distribution System

The Mainland's open market reform and rapid economic growth have enticed

---

[123] "Investing, licensing and Trading Conditions Abroad--China, 1994." The Economist Intelligence Unit February (1994): 64.

a tremendous surge in activity and market investment by Hong Kong and Taiwan companies as well as those in the rest of the world. The Mainland, with 1.2 billion people, has become second only after Japan as Asia's largest and fastest growing market for most products. However, the product distribution system in the Mainland causes several serious barriers to success for companies, both in manufacturing domestically and relying on product imports.

One of these barriers is the historical influence of the old bureaucratic distribution system--*fenpei* system. Until the mid-1980s, the Mainland's economy operated under the *fenpei* system. *Fenpei* means distribution in the sense of allocation. The State Planning Commission dictated overall production goals for factories throughout the Mainland. Factories would be allotted a set amount of subsidized raw materials and funds to enable them to achieve those State-set production targets. Once a factory met its target production quotas, its goods were shipped to the Ministry of Commerce (MOC) Central Distribution Centers. There are three major distribution centers in Tianjin, Shanghai, and Guangzhou; under these three, numerous second and third tier distribution centers handled products at the local level. Thus, products from one region would first be shipped to one of the three tier-one distribution centers before being distributed back to local areas.

The main flaw in the old *fenpei* system, however, was its rigid hierarchy. The wholesale network provided producers little or no contact with product end users, so customer preferences were not considered when production goals were being set. Rather than looking down the chain to the end user and his needs, producers were forced to seek approval from above. The old system's method for handling imports was as rigid as that for domestic goods. Foreign products entered the Mainland only via State-run

foreign trade corporations (FTCs), which would purchase and import foreign goods according to central directives. Most imports under the old system were industrial rather than consumer products, reflecting government priorities.

The Mainland began to liberalize the FTC system in 1984, when central authorities first permitted foreign companies to deal directly with newly created import-export enterprises. Reform of the domestic distribution system began in 1986, when factories were allowed to begin selling goods directly to end users. Before 1986, as much as 80% of all goods in the Mainland traveled through the State-run system. Since then, the transformation has been gradual and is not yet complete. In 1994, some factories continued to sell up to 80% of their goods through the State network, while others report that only 5-20% of their goods are bought and distributed by the State.[124]

Most Chinese distribution companies today have evolved from local and provincial bureaus of the former MOC. Local MOC wholesalers traditionally served as intermediaries between the producer and the retail outlet. Under the old system, the wholesalers transported and stored products through their own distribution centers. Today, they still control large warehouses, run fleets of trucks, and arrange train transportation. In fact, open market reform did not eliminate the old bureaucratic tradition, even when the form of the whole distribution system has been changed. Thus, low efficiency still characterizes most of the Mainland distribution subsystems.

Another barrier is regional or local protectionism. Any variety among the Mainland's economic regions is hindered by the tendency in the market toward regional

---

[124] Reinganum, Julie and Tina Helsell. "To Market, To Market." The Chinese Business Review January-February (1994): 31.

and local protectionism. Shanghai-based customers are most likely to buy from Shanghai-based importers, Beijing customers from Beijing-based importers, and so on. This situation makes it difficult to build coherent national distribution networks across different regions.

The third barrier is critical intra-regional transportation conditions, which have been discussed partially in the transportation section of this Chapter. All freight forwarders, whether Chinese or foreign, face extreme congestion on main-roads and highways. Roads are so crowded that what was once a two-to-three day trip between cities can sometimes take over a week. The situation is such that companies based in Guangzhou sometimes find it necessary to ship products destined for Shanghai by exporting them to Hong Kong and then re-importing from Hong Kong to Shanghai.

Long delivery time is the fourth barrier to importing products into the Mainland. One chemical company shipping their product out of Singapore to customers in Jiangsu Province (near Shanghai), for instance, needs about a 75-day delivery time from order placement to final customer delivery. Order processing alone can take 20 days because of communication difficulties and the inexperience of Chinese customers in specifying their requirements and preparing the necessary documentation. Letter of credit processing (usually required in the Mainland) takes another 15 days. Ocean transport from Singapore to Shanghai requires 25 days, plus another 5 days for landing and customs clearance. Local delivery then averages an additional 10 days within the region, or 30 to 60 days if the customer is in a different region than the port of entry.[125] Long delivery times add to delivery and inventory costs and greatly reduce responsiveness

[125] Byrne, Patrick M., Kim Woodward and Johnson Chow. "Success in China Takes Patience." T & D April (1994): 58.

to customer demand. Distributors often fail to inform their customers of the time of delivery, adding frustration and uncertainly to delay.

3. Problems in the Mainland Banking System

Although there are also many problems in the Taiwan and Hong Kong banking systems, the problems in the Mainland's banking system have become one of the most serious problems which could hurt the further development of the GCECS. In the 1980s, the economic reform with the "Open Door" policy has changed the Mainland into an external-oriented economy. In a short time, the GDP grew rapidly, as did the total national income. Now, the Mainland faces a similar situation that Japan, South Korea as well as Taiwan once faced their rapid economic growth, that is, the consumers held a large amount of cash in their hand. However, the Mainland finds it more difficult to deal with this situation, since the Mainland's banking system, stock market and other money markets are too primitive to handle such a condition. As a result, only in 1992, the Mainland inflation rate reached 30% in major cities and 12% around the country.[126]

Before the financial reform, the People's Bank of China (PBOC) was the only bank in the Mainland acting as China's central bank, its commercial bank, and the budget supervisor. By the late 1970s, however, it became clear that this one-bank system was too bureaucratic and inefficient, and was completely unresponsive to the needs of growing sectors in the economy.[127]

---

[126] Roberts, William. "Deadly Serious." The Banker November (1993): 80.

[127] Tideman, Sander G. "Dealing with Nonconvertibility and Other Financial Aspects of Doing Business in China." East Asian Executive Reports July (1993): 16.

In 1983, the State Council decreed that the PBOC would be the central bank that also controlled the so-called "specialized banks" that were established or reestablished in the financial reform process. These ar the Industrial and Commercial Bank of China (ICBC), the Agricultural Bank of China (ABC), and the Bank of China (BOC). Other important banks (that handle foreign exchange business) are the People's Construction Bank, formerly a department of the Ministry of Finance (MOF); the Bank of Communications, headquartered in Shanghai; the CITIC Industrial Bank, subsidiary of the financial conglomerate CITIC (China International Trust and Investment Corporation); and the China Investment Bank. All of these banks are state-owned.

The PBOC is nominally in charge of the Mainland's banks. But neither the banks nor even the PBOC's own branches pay it much heed, which makes it difficult for the central bank to control credit. For example, in the Mainland's economy, where interest rates are administratively determined, the PBOC has to warn passively against, rather than actively restrain, monetary excesses. In fact, it is hard to determine exactly who is in charge of monetary policy and who is responsible for keeping the financial system from spinning out of control.[128]

As long as the economy is on course, the weakness of the financial system is not apparent. But when the momentum becomes too intense and fixed investment and industrial production shoot up, inflation inevitably follows.

The state-owned banks are not any more professional than the central bank that is supposed to supervise them. They, too, have few independent decision making powers and continue to serve, like the central bank itself, as government cashiers,

---

[128] Sender, Henny. "Money Machines--China's Banks Are Forced to Act as Government Cashiers." Far Eastern Economic Review 15 July 1993: 74.

dispensing loans at the behest of the State Planning Commission.

A bank's inability to make loans on the basis of genuine economic criteria has led to economic overheating. Because there is no financial discipline, there is no mechanism to bring productive capacity into some sort of rational relationship with demand. A recent study in one province discovered that at least 40% of loans cannot be repaid at all. Many times, short-term loans become long-term loans and long-term loans become indefinite.[129]

Banks often have no choice but to continue lending to unprofitable state enterprises in a phenomenon the Chinese call "the soft squeezing the hard." When their allotted funds run out, the banks, in turn, appeal to the PBOC for expanded quotas. Monetary and credit-creation targets again are sacrificed to expediency.

D. Restrictions of Policy Setting in the GCECS

The importance of policies in the economic development of the GCECS can be reviewed in two ways: one is to examine the changes in the GCECS when a policy is conducted in the GCECS; the other one is to examine the changes in the GCECS when a policy is absent in the process of fast economic growth.

First of all, economic policy should be distinguished from political policy. Theoretically, economic policy, included in the infraconnection, is different from that included in any political statement. This is because that infraconnection policy serves all the actors' interests in the GCECS, but political policy may only serves one actor's interest. In other words, infraconnection policy is originally designed for the common

---

[129] Ibid., p.75.

interests of all the actors in the GCECS; while, political policy may be only designed for the "private" interests. Thus, the criterion to distinguish infraconnection policy from political policy is to examine whether one policy will benefit all the actors in the GCECS or not. According to the common benefit principle, the current infraconnection policies can be summarized as the following two kinds (see Appendix A.4 for detailed information):

1) "Open Door" policy:
   (1) Joint venture regulation;
   (2) Special Economic Zones (SEZs);
   (2) Indirect trade;
   (3) Visiting relatives;
   (3) "Three direct connects;"
2) Economic regulations:
   (1) Investment;
   (2) Labor exchange;
   (3) Anti-economic crime, etc.

In practice, it is hard to distinguish which policy is purely economic and which one is purely political, since any policy may simultaneously have economic effects and political implications. It is also hard to distinguish which policy has truly positive effects upon the GCECS and which one has truly negative effects, since most of the policies conducted have both positive as well as negative effects. As discussed in Chapter IV, some policies in the GCECS reflect a very complicated motivation, even a dilemma in the development of the GCECS. Thus, there are few policies in the current GCECS which simply belong to a perfect infraconnection policy. Also, many

policies have strong positive effects on the fast economic growth and multi-integration in the GCECS in the early stage. However, as the development of the GCECS moves forward, their limits (or negative effects) gradually become visible. One example is the Mainland Special Economic Zones (SEZs) policy.

A set-up of SEZs in the Mainland implies that the economic openness in the Mainland is limited, i.e. those outside the SEZs would hardly have the same advantages compared with those inside the SEZs, especially in terms of corporate tax. Corporate tax is set at 15% in the SEZs, but at 24% to 33% in most of the coastal cities and state-owned enterprises.[130]

Also, despite a move toward GATT membership ("General Agreement on Trade and Tariff"), the Mainland at he end of 1994 remained a highly protected market. Tariff rates are as high as 30% for many chemical products and 220% for automobiles, for example.[131] However, in practice almost no one pays duties at the full official rate. Relaxation of central government control of the economy in the 1980s led to a burgeoning of concessionary tariff rates that were offered by SEZs or by trading companies with special official privileges. For example, some sales may have been arranged directly by sales representatives of the foreign company. While there are near-term benefits of the grey market in lowering product prices and increasing competitiveness of imported products with locally manufactured products, in the long term, tariff differentials among various import channels create havoc in the distribution

---

[130] "Investing, Licensing and Trading Conditions Abroad--China, 1994." The Economist Intelligence Unit February (1994): 43.

[131] Byrne, Patrick M., Kim Woodard and Johnson Chow. "Success in China Takes Patience." T & D April (1994): 56.

chain. Transportation routes are distorted toward the duty-free ports of entry, raising transportation costs, causing rail transport bottlenecks, and greatly lengthening delivery times. Importers and distributors are chosen on the basis of their special tariff status, rather than on the basis of their regional coverage or service capabilities.

In addition, several ports along the coast of south China offer duty-free or reduced-duty treatment to local import distributors. Thus, In order to avoid tax, for example, chemical products can be sold at normal CIF prices in Hong Kong to an import distributor that takes the product into the Mainland through one of the special ports and then ships it north by rail to regional distributors, which deliver to customers or to second-tier dealers.

Another typical but also obvious example of the negative effects of policies is Taiwan's "Three Nos Policy". There is no doubt that this policy increases the opportunity cost for the Taiwanese to do business in the Mainland, since a third place must be used as a channel to get into the Mainland; consequently, communication as well as shipping costs have to be increased. For instance, when a multi-integration takes off, the demands for mails, telephones and other communications across the Taiwan Strait are sharply increased. However, since all the communication services should go through the third place and then be transferred into the Mainland, the Mainland and Taiwan have to put into the third place more than US$10 million annually.[132] Fortunately, the most favored third place is Hong Kong. Thus, most of this opportunity cost can be balanced with the Hong Kong's relative revenue.

From the view of Taiwan, Hong Kong's handover to the Mainland in 1997

---

[132] XinWen Gao (ZhongGuo XinWenShe)
"HaiXiaLiangAn YouDianYeWuLiang ZhuNian DaFuDu ShangSheng." 1992.1.31.

would make communicating, travelling and trading through Hong Kong to the Mainland against the "Three Nos Policy." To escape the dilemma, Taipei has come up with a characteristically pragmatic solution: pretend that nothing has really changed. Taiwan's published Hong Kong-Macau Relations Bill in 1994 will grant the two territories special third-party status, setting them apart from the rest of the Mainland in Taipei's eyes.[133]

Briefly, some economic policies seriously affect the direction, speed and the level of further economic development in the GCECS. When the policies are consistent with the inside economic dynamics, the economy of the GCECS will continuously boom. If the policies are not consistent with the inside economic dynamics, internal cost will increase tremendously, and eventually they will exhaust the economic momentum of the GCECS.

Besides the negative effect of some economic policies, the economic development could also be distorted by the absence of some policies, laws and regulations or the absence of necessary means to carry out these policies, laws and regulations.

A good example is the debate about the Hong Kong's future between the Mainland and the UK. These issues, though they are not applicable policies, have directly delayed two largest infraconnection improvement projects--the ninth container terminal CT9 of Hong Kong port and the Chek Lap Kok new airport in Hong Kong (see previous sections).

Another example is the absence of proper economic regulations and laws, together with fast economic growth, which is causing the rise of economic crime. Such

---

[133] Rosario, Louise do. "Port of Convenience--Taipei to Keep Using Hong Kong as China Gateway." Far Eastern Economic Review 1 September 1994: 22.

a serious situation in the Mainland, according to an analysis in The China Business Review[134], is summarized in the following:

1). **Smuggling,** which encompasses criminal activity that contravenes Customs laws and regulations, includes false reporting and the movement of goods without requisite import or export documentation. In 1993, confiscated or recovered Chinese contraband included 1.7 tons of gold, 35,000 vehicles, 10,000 video recorders, and 100,000 tons of steel.

2). **Speculation,** which refers to the interfering with effective administration of monetary affairs, pricing, and distribution of goods, has taken on a whole new meaning in the Mainland. Typical activities include trading controlled or high-demand commodities on the black market; forging government approvals, import and export licenses, contracts; and illegally trading controlled commodities such as gold, silver, foreign currency, precious gems, and relics. Such activity has intensified and become more sophisticated along with the fast economic growth and multi-integration process.

3). **Fraud**, as a material misrepresentation in business transactions, has become alarmingly frequent and widespread in the Mainland, and it is not limited to purely domestic transactions. For example, in late 1993, a Hong Kong-invested joint venture used forged bills, contracts, and letters of credit to swindle $724,000 from a bank in Huiyang, Guangdong province.

4). **Embezzlement**, which means converting entrusted property for personal use, has risen markedly in the Mainland. The wide-use of computers and other electronic

---

[134] Silk, Mitchell A. "Cracking Down on Economic Crime." The China Business Review May-June (1994): 21-28.

means have made such crime easier to commit and harder to track.

5). **Diversion of foreign exchange**, taking foreign exchange approved for one use and utilizing it for some other activity, is a recurring problem given government controls on foreign currency holdings. Until 1993, this economic crime was carried out primarily through black market swaps. However, given the surge in the outflow of Chinese capital in 1994, payment for goods and services in the Mainland is being conducted through offshore accounts outside the detection of the Mainland's foreign exchange regulators.

6). **Disclosure of State secrets**, or the wrongful disclosure of classified information, is of particular relevance to foreigners in the Mainland. In September 1988, the Mainland promulgated its first law on Guarding State Secrets including a wide range of non-public financial and economic information.

7). **Pirating of intellectual property**, including criminal trademark, copyright, enterprise name, and patent infringement, has been growing rapidly in the Mainland despite the passage of laws to increase intellectual property protection. It is estimated that software manufacturers have lost $500 million in the Mainland in 1993.

8). **Tax evasion**, the criminal violation of tax laws with a view toward evading tax liability, has a long history in the Mainland. The Mainland's tax authorities annually uncover hundreds of millions of dollars in tax irregularities.

9). **Bribery** has risen to its highest levels in years in the Mainland. Of the more than 50,000 economic crime cases the procuracy handled in 1993, over 50 percent involved bribery for amounts in excess of $1,724.

Such rising incidence, diversification, and sophistication of economic crime in

the Mainland alerts all the actors in the GCECS that a proper economic order is one of the most important requirements for a further healthy development of the GCECS.

To sum up this Chapter, in terms of infraconnection, the development level of the GCECS is not so cheerful as the GDP growth indicates. The current infraconnection in the GCECS is far from reaching its optimal level which can properly support the continuous economic growth. On one hand, if the problems existing in component of the infraconnection in the GCECS are neglected, to keep a stable fast economic growth will inevitably increase the internal cost and eventually exhaust the economic momentum of GCECS development. On the other hand, these problems imply that the increasingly intensive economic interactions in the GCECS require a more effective and efficient infraconnection for the future of the GCECS. All of these are necessary part of the dynamics for the future development of the GCECS.

In this sense, there are two ways of keeping the fast economic growth in the GCECS. One is to expand every economic activity continuously but pays less attention to the improvement of infraconnection in GCECS. In this way, the fast economic growth would be possible in the short-term. However, it would be no different than to "borrow the future from today." The other way is to pay enough attention to the construction of an optimal infraconnection for the GCECS, and through this improvement process, fast economic growth could move in a steady and healthy direction. This is the way to "build up today for the future."

Chapter VI

Some Implications of Infraconnection for GCECS Development

The evidence of continuing economic growth in GCECS implies that political barriers can hardly prevent the economic development of GCECS. Also, it is clear that the fast economic growth in the GCECS does not tell the whole story behind its development process. The early economic take-off and the multi-integration process in the GCECS are mainly sustained by the three special features--complementary setup, policy-openness orientation and five cultural geneses--which represent the natural and relative primitive advantages in the infraconnection of the GCECS. As the continuously fast economic growth and the multi-integration in the GCECS draw a wide attention in the world, the problems regarding the limits of the special features and other imperfection of its infraconnection, especially those discussed in Chapter V, are alerting all the actors within the GCECS. To a large extent, how this fast growing interacted economy and multi-integration applies to the future of the GCECS heavily depends on how its infraconnection develops.

Thus, under the current political situation, the fate of GCECS is not determined by what the GDP growth could reach in the near future, but by whether its infraconnection can be improved from the current mixed and relative distortional stage to an optimal stage. As discussed in Chapter III, this problem-solving process could be a high-cost, long-term and incremental transition project which can be characterized as economic modernization and democratization. The future of the GCECS largely relies on a peaceful and smooth achievement of this transition process. This Chapter will

analyze two major features of such a transition process--the modernization of the hardware of infraconnection and the democratization of its software.

A. Transition I: Modernization of the Infraconnection Hardware

The infraconnection hardware in the GCECS mainly includes its transportation network, communication (especially telecommunication) network, marketing distribution system, and banking system, etc. In order to maintain a healthy economic growth and a stable multi-integration progress, the GCECS is facing an important transition process which can be characterized by a modernization of these hard networks, i.e. an urgent development of its infraconnection in order to synchronize the pace of the economic development in GCECS. In fact, the genuine development of GCECS, in terms of modernization, should be fundamentally represented by its infraconnection development, especially the hardware part. Since the Mainland is relatively underdeveloped in its infraconnection hardware among the three actors, the modernization process primarily means an emphasis on the Mainland's catching-up with Hong Kong and Taiwan; at the same time, Hong Kong and Taiwan capital is playing a very important role in the promotion of the Mainland modernization process.

1. Transportation Networks

All the actors, the Mainland, Hong Kong and Taiwan, have given the modernization of transportation networks--especially their railways, highways, seaports and airlines--the highest priority in their development plans.

The Mainland is making great efforts in its railway construction. The Mainland's railway development program, in all, needs 124.2 billion yuan ($20.7 billion) in 1993,

1994 and 1995. But 33 billion yuan ($5.5 billion) was spent on 553 railway projects in 1993. The projected total length of the Mainland's rail lines will reach 60,000 km in 1995. By the turn of the century, the rail network is planned to increase to 70,000 km and to exceed 90,000 km by 2010.[135]

The major problem which has caused the low pace in improving the Mainland's railway system is the shortage of funds and the policies to raise such funds. Since 1949, government has controlled most railway construction projects. Thus, the pace for improving this network was seriously limited by the government budget. In order to speed up the construction pace, from the 1980s on, foreign loans gradually began to play an important role. From 1980 to 1990, $2.1 billion of foreign loans was used to construct four new lines (1,167 km) and electrify seven existing lines (3,746 km). Foreign loans for rail projects in 1992-1995 top $4 billion, more than the total of the past ten years combined.[136]

The Mainland's railway modernization process is also fueled by Taiwan and Hong Kong capital. For examples, Nan Huaijin, a Taiwan businessman, in February, 1993, decided to cooperate with Zhejiang and Fujian provinces to build up Wenzhou-Fuzhou railway, which was the second largest Taiwan investment project in the Mainland railway construction;[137] The 251-km Jinhua-Wenzhou railway in Zhejiang

---

[135] "Transportation--Ambitious Plans to Extend Road and Rail links." Institutional Investor 27 (1993): 4-6.

[136] Ibid., p.4.

[137] ZhongYang RiBao (Taiwan)
"Tai Shang Nan Huaijin YouYi ZaiJian Wen-FuTieLu." 1993.2.6.

province is another joint-venture, with $200 million in Hong Kong capital.[138]

As for the Mainland highway system, the first goal of the Ministry of Communications is to complete and systematize the national systems by the end of this century. It includes constructing or improving two main east-west highways and two north-south highways. These four national highways, which together extend some 14,500 km, will connect more than 100 larger cities, and 20-plus provinces, autonomous regions and municipaiities. They represent some 41.4% of the planned total mileage of the national highway network.[139]

Consistent with the national highway construction, an unprecedented zeal for road building has spread everywhere in the Mainland. Highway construction is no longer the sole responsibility of the national transportation department, but also involves local governments at all levels as well as private enterprises.

In the next 20 years, Guangdong province plans to build 16 expressways with a combined length of 3,300 km and a total investment estimated at 90 billion yuan ($15 billion). The roads will first link Guangzhou, the provincial capital, to cities in the east, such as Shenzhen, Dongguan and Huizhou; and then stretch to the west and north and join the state highway network. The first phase involves projects with a total length of 930 km. A major part of the project is due to be completed by the end of 1995.[140]

Besides Guangdong, Jiangsu province in the Yangtze River delta will upgrade

---

[138] "Transportation--Ambitious Plans to Extend Road and Rail links." Institutional Investor 27 (1993): 5.

[139] Li, Ning. "China's Expanding Highway Network." Beijing Review 4-10 October 1993: 13.

[140] "Transportation--Ambitious Plans to Extend Road and Rail links." Institutional Investor 27 (1993): 5.

all of its highway system to above Class II roads and add more than 1,000 km of expressways or Class I roads before 2000. It also plans to complete an expressway network linking Nanjing with cities such as Shanghai and Nantong. Shanxi, a coal-rich province, will build the Mainland's first expressway in a mountainous area, the Talyuan-Jiuguan expressway.[141]

The Mainland's highway construction is also the effort of the whole GCECS. The Guangzhou-Shenzhen-Zhuhai superhighway is an example. Hopewell Holdings of Hong Kong, on 23 November, 1993, signed a US$ 1.4 billion contract to build the 110-km second phase of this superhighway. This project is to be completed by mid-1996.[142] Also, Hong Kong-listed CNT Group, headed by the Shanghai-born tycoon Tsui Tsin Tong, has decided to cooperate with Sichuan provincial government to build a 300-km highway linking the cities of Mianyang and Leshan with the total cost of more than US$ 530 million.[143] A joint-venture road contract involving investment from the Hong Kong New World Group was signed at the end of 1993. This 10 billion yuan ($1.7 billion) project will undertake the 296-km East Guangdong section of the Beijing-Guangzhou highway, to be completed by 2000.[144]

In addition to the effort made in railways and highways construction, the Mainland is turning its attention to developing its coastal ports. The Mainland overall target for harbor construction before the year 2000 is to build a network of large,

---

[141] Ibid., p.5.

[142] "Skirting the Pothples--Hopewell Wins Chinese Vote of Confidence." Far Eastern Economic Review 3 December 1993: 62.

[143] "The Value of Connections." Far East Economic Review 3 December 1992: 51.

[144] "Transportation--Ambitious Plans to Extend Road and Rail links." Institutional Investor 27 (1993): 6.

medium-sized and small ports with good supporting facilities to meet the needs of the growing economy, and trade in particular. The government has identified four international deep-water transfer ports along the Mainland coast for key infrastructure projects: Beilun, Dayao Bay, Meizhou Bay and Dapeng Bay. In 1993, Dayao Bay Port completed four 10,000-ton class berths while Meizhou Bay had finished three. The largest, Beilun, had built 50 berths by the end of 1993, including 23 deep-water berths with a combined annual handling capacity of 50 million tons, and is expected to have a capacity of 100 million tons by the year 2000.[145]

The Mainland's development of its ports is an attempt to relieve the congestion problems of Hong Kong's port. The southern Mainland ports have begun to develop joint-ventures with terminal operators and freight carriers in Hong Kong. For example, in 1992, Hong Kong's Hutchison Whampoa, Ltd. and the Shanghai Port Authority agreed to invest $982 million to renovate and operate a container port serving the New Pudong Development Area. The project should make Shanghai one of Asia's major international container terminals by the early next century.[146] Hongkong International Terminals Ltd. has decided to upgrade the Mainland's port of Yantian which is located very close to Hong Kong. Five billion yuan, or $575 million, has been allocated for the first two phases of Yantian's development.[147]

Along with overall reform efforts, the Mainland has begun to decentralize its aviation industry to encourage competition and improve air traffic systems. The State

---

[145] "Ports--Building A Network of Ocean and River Facilities." Institutional Investor 27 (1993): 16.

[146] Ibid., p.16.

[147] Bangsberg, P.T. "Upgrade of Small Chinese Boxport on Track, Hong Kong Firm Says." Journal of Commerce and Commercial 2 February 1994: 7.

Council has directed Civil Aviation Administration of China (CAAC) to relinquish control over daily airline operations and instead to focus on regulating the industry. By 1990, six new airlines had emerged, organized on a regional basis: Air China in Beijing, China Eastern in Shanghai, China Northern in Shenyang, China Northwest in Xian, China Southern in Guangzhou, and China Southwest in Chengdu. These new Chinese airlines operate 492 domestic routes to 109 cities and 58 international routes to 53 cities.[148]

Before the Mainland began to pay attention to its transportation construction, Taiwan had already started a modernization process of its transportation system. In the late 1960s, Taiwan experienced its economic transition from internal-orientation to external-orientation. The demand for transportation increased tremendously with the Taiwan's transportation system facing serious "bottle-necks." In 1973, 54% goods could not be transported in time.[149] In order to solve the congestion problems in Taiwan's transportation system, Taiwan made a great effort in transportation construction in the 1970s. For example, in railway construction, the "Ten Fundamental Projects" (1974) included electrifying the western line and constructing the northern turnover line; later, the "Twelve Construction Projects" (1978) included expanding the eastern line and constructing the southern turnover line. Taiwan has successfully completed all these projects.

In 1993, the Taiwan Ministry of Transportation and Communication (MOTC) launched its ambitious plan--the Six-Year Development Plan--to further upgrade

---

[148] Lee, Joseph W. "The Sky's the Limit." The Chinese Business Review May-June (1993): 12.

[149] Hainan RiBao (DaLu)
"Taiwan TeiLu." 1992.4.8.

Taiwan's transportation system. Its projects and their budgets and implementation periods for 1991-1997 include:

* Construction of four underground rail lines between Wanhua and Panchiao--US$1.5 billion, 1991-1999;
* Improvement of the Eastern Taiwan Railway--US$1.6 billion, 1992-1998;
* Cross-Island Express Highway--US$1.4 billion, 1992-1997;
* West Coast Express Highway--US$2.0 billion, 1992-1996;
* Southern Cross-Island Freeway-US$4.9 billion, 1991-1993;
* Preliminary Mass Rapid Transit (MRT) Project in Taipei--US$11.1 billion, 1988-1998;
* Kaohsiung MRT System--US$4.9 billion, 1991-2000;
* MRT Systems for Taoyuan, Hsinchu, Taichung, and Tainan cities--US$7.4 billion.[150]

Taiwan transportation system now fully circulates the whole island and strongly supports Taiwan's fast economic growth.

The projects to improve Hong Kong's transportation system, as discussed in previous Chapters, mainly focus on the Chek Lap Kok airport and the CT9 container terminal of the seaport. Another terminal, CT10, is also in the planning stage and supposed to be opened in conjunction with the Chek Lap Kok airport.

Hong Kong's Chek Lap Kok airport project includes an airport, $8 billion; 34-km railroad, $4.4 billion; and 2-km tunnel under the harbor, $1 billion. It also includes the Tsing Ma bridge, which would carry road and rail on a 1,377-meter suspension span. The funding for this project comes from Japanese companies with $4.2 billion in construction and consulting contracts, United Kingdom $2.7 billion, the Mainland $2.2 billion, the Netherlands $1.9 billion and the U.S. $1.3 billion.[151] According to Hong

---

[150] U.S. Department of Commerce. Overseas Business Reports. March (1993): 13.

[151] Mecham, Michael. "Travel Boom Outpaces Hong Kong's Kai Tak." Aviation Week & Space Technology 4 April 1994: 37-38.

Kong New Airport Projects Coordination Office, about $6.1 billion has already been in construction contracts.

2. Telecommunication Systems

The Mainland's old telecommunication system has been recognized as a major obstacle to economic growth for the whole GCECS, especially given the large amount of foreign direct investment flowing into the Mainland. To a large extent, to improve the telecommunication system for the GCECS is mainly concerned with modernizing the Mainland's telecommunication system.

During the 7th FYP (1985-1990), the Ministry of Post & Telecommunication (MPT) concentrated on digitizing and expanding the backbone facilities and adding digital switching installations in major urban networks. MPT spent $2 billion on modernizing the Mainland's telecom network, channeling its investment toward the provincial capitals and coastal cities. The Mainland's total switching capacity will reach 26.5 million lines in 1995, about five times the total number of digital lines at the end of 1991 (see Appendix B.11). MPT also hopes to link all of the Mainland's major cities with a fiber-optic network--a goal which will require an estimated 33,000 km of fiber cable. Most urban networks are to have automatic switched service and domestic direct-dial capability by 1995. MPT estimates that the number of telephones in the major provinces and cities will be nearly four times the 1986 figure by the end of the 8th FYP period.[152]

By the year 2000, MPT hopes to achieve targets double its 1995 goals. Digital

---

[152] Gorham, Sid and Achmad M. Chadran. "Telecom Races Ahead." The Chinese Business Review March-April (1993): 18.

switching and transmission services, along with direct-dial and international-direct dial capabilities, are to be make available at the county level. 5% of the population, including 30-40% of urban residents, are expected to have telephones by the end of the century.[153]

In some respects, MPT is already well on its way toward meeting these goals. Total telecom investment in the 8th FYP (1991-1995) will reach $13 billion, as MPT and the provincial and local P&Ts work to complete the interprovincial fiber-optic main network and expand service to rural areas. By the end of the decade, even faster network growth is anticipated. Some provinces, such as Jiangsu and Guangdong, are likely to add over a million new lines each year in the 1995-1999 period.[154]

In the Mainland, even though user fees and equipment costs for cellular service are substantially higher than for ordinary telephone service, the Mainland's cellular networks had nearly 50,000 subscribers in more than 20 cities by mid-1992, a rapid increase from the 6,000-7,000 who signed on when cellular services were first offered in 1987. If the pace of development continues, the Mainland will surpass the MPT projection of 150,000 cellular subscribers well before the 2000 target date.[155]

Guangdong province leads the Mainland in both the number of cellular networks and the number of subscribers. By the end of 1992, the Guangdong P&T had completed a $22.3 million expansion to boost total cellular capacity to 75,000 lines--more than

---

[153] Ibid., p.19.

[154] Ibid., p.19.

[155] Gorham, Sid and Achmad M. Chadran. "Communicating on the Go." The Chinese Business Review March-April (1993): 27.

40% of the Mainland's total.[156] The Guangdong P&T has also entered into agreements with Hong Kong cellular operators to establish roaming services between Guangdong and Hong Kong. A Hong Kong cellular subscriber can now use his handset in Guangdong to call home--or anywhere in the world, as cellular users can also access the public telephone networks.

After Guangdong, Beijing and Shanghai are the most developed cities in cellular networks, each with a capacity of about 6,000 subscribers. The aggressive development plans of these cities and other P&Ts in the coastal provinces are expected to push the Mainland's overall cellular network capacity to nearly 300,000 lines by 1995--far higher than the MPT's initial estimates.[157]

Demand for pagers has grown even faster than the demand for mobile phones. By the end of 1992, over 500,000 Chinese were using pagers, up sharply from the 10,000 initial subscribers in 1985. In cellular service, Guangdong province leads the paging market, with over 100,000 paging subscribers spread across 37 systems. The provincial P&T is now working to connect these systems to allow province-wide paging service. Jiangsu, Nanjing, and Wuxi P&Ts have also implemented paging interconnection to provide wide-area service to more than 15,000 subscribers.[158]

Desktop computer access to electronic mail (e-mail) is also an option for foreign companies in the Chinese Mainland, through MPT's public digital packet-switching network, CHINAPAC, the Mainland's first nationwide data communication system.

---

[156] Ibid., p.27.

[157] Ibid., p.27.

[158] Ibid., p.28.

These services are critical for the country's growing finance, transportation, trade, and tourism industries, as packet-switched data network technologies allow for quick processing of credit cards, travel reservations, and financial transactions, among other uses. CHINAPAC was installed in 1988, and is fast approaching its 500-port capacity. In August 1992, the MPT signed with Canada's Northern Telecom a US$9 million contract to supply it with data packet switching equipment and software. In February 1993, the company began installing its DPN-100 switches in Beijing and provincial capitals. These form the backbone of CHINAPAC. CHINAPAC will eventually link nodes in all 32 of China's provinces, municipalities, and autonomous regions. In 1992, Northern Telecom sold data switches to P&Ts in Anhui, Fujian, and Liaoning. The initial "starting kit" configuration will offer 8,000 access ports, doubling to 16,000 ports as the other five provinces come on-line.[159]

In 1993, MPT contracted with Northern Telecom for a second system to increase Packet-Switched Data Network (PSDN) capacity tenfold by 1995, and Sprint/Telenet is reportedly in the running for an agreement to supply and possibly produce packet switching equipment in China. By 1995, the total capacity of national and local PSDNs is expected to reach at least 10,000 ports. US e-mail providers MCI Mail, Sprint Mail, and AT&T Mail have all entered into agreements with China to give subscribers access to the carriers' international networks via CHINAPAC.[160]

The Mainland will also expand its satellite network under the MPT's 8th FYP. It calls for increasing the ground segment of its domestic satellite network from 8

---

[159] Johnstone, Bob."Great Leap Forward." Far Eastern Economic Review 8 April 1993: 57.

[160] Gorham, Sid and Achmad M. Chadran. "Telecom Races Ahead." The Chinese Business Review March-April (1993): 24.

stations in 1991 to at least 20 by 1995.[161] Once largely reserved for backhauling video and radio traffic, satellite networks will expand because of growing demand for voice and data. The Mainland has developed considerable satellite transmission capabilities for both telecommunications and broadcasting. The Mainland also has launched a number of its own satellites in addition to leasing transponders from IntelSat and AsiaSat. The rapid rise in thin-route data traffic has created considerable congestion in China's space segment, and MPT and broadcasting ministries are racing both to lease and launch additional transponder capacity.

A very interesting project, which reflects the telecom cooperation among the actors within the GCECS, is the Chinese Mainland and Taiwan's plan to establish a Hong Kong partnership to design and build a regional telecommunication satellite. Under the proposal, Taiwan's China Development Corp. would put up US$10 million, while Great Wall Industrial Corp. of Beijing would invest as much as US$50 million. Japanese and Singaporean interests may also participate, bringing the total capital to US$100 million. Many details are still up in the air; but the venture would be the first known example of direct business links between the Chinese Mainland and Taiwan.[162]

3. Marketing Channels

As discussed in Chapter V, the market of the GCECS is not a single and unitary one. Among its segments, the Mainland is the largest one with the greatest potential.

---

[161] Chadran, Achmad."Deregulation: The Great East Asian Catalyst." Satellite Communications May 1993: 20.

[162] Baum, Julian. "Bridge in Space--China and Taiwan to Build Satellite." Far Eastern Economic Review 25 March 1993: 69.

However, most of the problems regarding marketing channels are also in the Mainland. Thus, to improve the Mainland's marketing channels becomes crucial for the improvement of the whole GCECS. Along with the modernization of the Mainland transportation and communication systems, the Mainland distribution system is also being improved. Besides efficient distribution, retail sales are pivotal for the success in the commodity market. In 1992, the Mainland's 10 million-plus retail enterprises employed over 24 million people and racked up record sales. The Mainland's retail market, estimated at about US$200 billion in 1993, is expected to triple by the year 2000.[163]

According to the Hong Kong Trade Development Council, State-owned enterprises, a category which includes most large department stores, accounted for over 40% of the Mainland's total retail sales in 1992. Collectively owned shops, typically cooperative stores in villages and cities, claimed about 28% of retail sales, while individually owned enterprises accounted for another 20%. Joint-venture commercial enterprises or retail conglomerates with branches in a number of cities accounted for much of the remaining sales.[164]

Before the economic reform in the 1980s, retail sales were strictly controlled by the Ministry of Commerce, now known as the Ministry of Domestic Trade. Stores could buy only from designated sources, and only at prices set by the State Price Bureau. In the 1990s, however, Chinese retail enterprises have gained a much greater autonomy to purchase directly from factories and from wholesale markets in some large cities,

---

[163] Ho, David and Nancy Leigh. "A Retail Revolution." The Chinese Business Review January-February (1994): 22.

[164] Ibid., p.22.

though the ministry still wields considerable control over retail distribution.

As a first step in the trial liberalization of the retail sector, the State Council in late 1992 issued rules for foreign investment in this area. The rules define the scope of business, important export authority, and the taxation of foreign investment enterprises (FIEs) engaged in retail in the municipalities of Beijing, Shanghai, Tianjin, Guangzhou, Dalian, Qingdao, and in the Special Economic Zones (SEZs). While providing consumers greater choices, the new rules were also designed to induce State-owned shops and enterprises to spruce up their marketing techniques to remain competitive. By the end of 1993, the State Council had approved applications for about half of the 22 retail joint ventures that were allowed to be constructed in the designated coastal cities.[165]

Compared to the reform in the retail sector, the reform in the Mainland banking system is more difficult and more important. The People's Bank of China (PBOC) will be further transformed into a real central bank which would formulate and implement monetary policy as well as supervise the Mainland's financial industry. The other specialized banks--of which the four largest in capital and assets are the Industrial & Commercial Bank of China, the Bank of China, the People's Construction Bank of China and the Agricultural Bank of China--to function more as commercial banks and less as arms of the government. In order to manage policy-orientated investment efficiently, the Mainland intends to set up another three new policy-orientated banks: a long-term development bank for financing key state construction projects; an import and export credit bank to provide credit for the export of capital goods; and an

---

[165] Ibid., p.22.

agricultural policy orientated bank.[166]

In addition, another financing reform is to allow foreign banks to open branches in the Chinese Mainland. By the end of 1994, a number of foreign banks (around 25 banks) operated about 70 branches in the Mainland that assist foreign firms with foreign currency business such as documentary credits, loans, remittances, deposits, and so on.[167]

Along with the Mainland financing reform, a more integrated banking system is gradually developing in the GCECS. Taiwan has set a new course for the financial sector and it clearly hopes that broadening the range of banks will provide the necessary financial infrastructure for expansion outside the island, especially in regard to the Mainland and Hong Kong. With a continuous growing two-way trade with the Mainland (through Hong Kong) and increasing Taiwanese investors pouring funds into the Mainland, Taiwan banks are beginning to follow their customers across the Strait, especially with the establishment of the 15 new private banks in 1992.[168]

Taiwan banks are now able to handle indirect remittances via Hong Kong and many believe direct remittances to be inevitable as commercial links strengthen with the Mainland. In May 1993, the Taiwan Finance Ministry announced "Regulation on the Cross-Straits Financial Interactions." According to the regulation, the cross-Straits financial interactions would include remittance, issuing credit letters, export-import loan

---

[166] GuoWuYuan GongBao (ZhongGuo GuoFa [1993] 91 Hao)
"GuoWuYuan GuanYu JingRong TiZhi GaiGe De JueDing." 1994.1.29.

[167] Tideman, Sander G. "Dealing with Nonconvertibility And Other financial Aspects Of Doing Business in China." East Asian Executive Reports July (1993): 16-18.

[168] "Bankers Confront the Mainland Factor." Euromoney August (1993): 88.
"Going with the Flow." Asian Business June (1992): 61.

on security and others. Also, the regulation made business remittances to the Mainland no longer have to be disguised as personal remittances.[169] Furthermore, the Taiwan Finance Ministry indicated that a study on the feasibility of setting up a branch or representative office on the Mainland was under way. In fact, a Taiwan delegation with 15 Taiwan banking senior officials went to the Mainland for two-week visit in May, 1993. This delegation included the president of Zhong Xin Bank, the president of Shanghai Commercial Bank, the president of Yu Shan Bank, and the president of Bao Don Bank. The head of the delegation, Lu Run-kong, the president of Taiwan Da An Bank, said that "the purpose of this trip to the Mainland is to have a better understanding of the situation in the Mainland's financial development and to explore the possibility of Taiwan bank investment there as well."[170]

Compared to Taiwan, Hong Kong banks have penetrated in the Mainland much more deeply. Business is booming for the Hong Kong's 162 banks, which are riding high on explosive growth rates there. Hong Kong banks are considering opening more branches in the Mainland.

HongKong Bank (HKB) is in the best position to benefit from the liberalization of the Mainland banking market and also to undertake corporate advisory work, branch modernization and asset liability advisory work for the domestic banks. HKB's business with the Mainland is growing substantially, the bulk of which is indirect, through the high numbers of its customers who have set up factories and production lines across the

---

[169] XinWen Gao (ZhongGuo XinWenShe)
"Taiwan GongBu LiangAn JinRong WanLai XuKe BanFa." 1993.5.5.

[170] XinWen Gao (ZhongGuo XinWenShe)
"Taiwan 15 Jiao YingHang KouChaTuan QiChen Fu DaLu." 1993.5.6.

border. Of its 15 offices on the Mainland, it has full branches in Shenzhen, Shanghai and Xiamen.[171]

Standard Chartered, the UK bank, has six full branches and four representative offices in the Mainland. It is the third largest bank group in assets in Hong Kong after the HKB (including Hang Seng Bank which is 68% owned by HKB), and the Bank of China group comprising 13 banks, of which four are incorporated in Hong Kong.[172] In addition, the Bank of East Asia, the next largest bank in Hong Kong, has five branches and one representative office in the Mainland.

Meanwhile, the Bank of China has been building up its position in Hong Kong and is becoming a force in retail markets both on the Mainland and in Hong Kong, since Hong Kong dollar deposits held by Chinese banks have increased to 23% of total deposits at the end of 1991 from 22% in 1990. As a result, the Bank of China is likely to become a note-issuing bank at some stage and to join the HKB and Standard Chartered as a permanent chairman of the Hong Kong Association of Banks.[173]

To sum up, two points in the modernization process of infraconnection hardware in GCECS should be highlighted:

1). Although many projects are still being planned, the construction of the hard-net of infraconnection in the GCECS demonstrates a bright future. If this modernization process is achieved, an expected improvement in the

---

[171] "Quick Off the Blocks--With Five Years to Go Before the Official Hand-Over Date Hong Kong is Already Exploiting China's Business Potential." The Banker December (1992): 56.

[172] Ibid., p.56.

[173] Ibid., p.57.

infraconnection will definitely release the great pressure caused by the increasing intensive economic interactions in the GCECS and will promote further multi-integration of the GCECS.

2). According to the mutual investment projects, the cooperation and penetration between the Mainland and Hong Kong infraconnection construction have become more intensive. However, because of the "Three Nos Policy," the hardware connections between Taiwan and the Mainland are still quite limited, though they are improving. Such facts imply that if the transition involving infraconnection hardware with its three special features fail to catch up with the pace of GDP growth, the software--policies, regulations and laws, as a basic setup of infraconnection, would remain the same no matter how the infraconnection hardware in the GCECS improves.

B. Transition II: Democratization of the Infraconnection Software

The major idea of the **STRUCTURAL IDEALISM** has been emphasized many times in this research, i.e. international relations could be improved by improving international infraconnection, since a better infraconnection can provide a better economic environment in which all the actors, whether big or small, nation-states or non-nation-states, could obtain equal opportunities for free competition. Free competition relies on the comparative advantages which the actors have. The economic democratization is the process of creating and developing such an environment. The GCECS is one of the cases which demonstrates **STRUCTURE IDEALISM**, since the improvement of infraconnection software in the GCECS, especially the three special features, is just a part of this democratization process. In detail, the democratization process, to some

extent, can be represented by another three transition processes along with the fast economic growth and modernization of the infraconnection hardware.

1. From Complementary Setup to Market System

As discussed in Chapter IV, in the early stages of the economic take-off in the GCECS, the comparative advantages and disadvantages in the GCECS naturally form a complementary relationship, especially the so-called the "iron triangle area"--Guangdong, Hong Kong and Taiwan. This complementary setup can be briefly described as Taiwan and Hong Kong labor intensive industries move to the Mainland coast areas in order to take advantage of the cheaper labor sources.

However, this complementary setup is gradually shifting first from the "iron triangle" to the whole coast line, and then from the coast line into the interior of the Mainland. For instance, until the mid-1980s, the Special Economic Zones (SEZs), mainly located within the "iron triangle," were the most attractive sites for foreign investors, who were largely from Hong Kong. This was the first industrial transition from Hong Kong to the SEZs. Foreign investment in the SEZs accounted for 24.9% of total overseas investments in the Mainland in 1987. However, heavy industrialization and increasing labor costs in the SEZs prompted a second industrial transition from the SEZs to the Coast Open Cities (COCs) and to the Economic and Technological Development Zones (ETDZs). Thus, COCs and ETDZs have developed more quickly than the SEZs. Overseas investment in the SEZs dropped to 18.5% in 1990, while the foreign investment in the COCs and the ETDZs increased from 19.9% in 1986 to 25.8%

in 1990.[174]

Around 40% of the firms in Shenzhen have announced their intention to move or have moved their factories from Shenzhen to other areas of the Mainland. In 1993, 100 firms moved out from Shenzhen. Even some big Taiwan investors now directly go for other areas.[175] At the same time, as the modernization of the infraconnection hardware in the GCECS moves forward, many places inside the Mainland can provide better infraconnection; thus, they have begun to attract Taiwan and Hong Kong investors. Here are some examples:

The March 9, 1993 issue of "ZhongYang RiBao" (Taiwan) ranked 100 Taiwan millionaires with their companies. Among them, Yong Fen Yu Company, ranked as No.15, has chosen the Changjiang river area for its paper industry investment;[176] He Chen Xin Ye Company, ranked as No.23, has selected Wu county in Jiangsu province for its five hundred million Yuan investment project for bathroom equipment production.[177]

Guangdong together with Hong Kong and Taiwan have a triangular economic relationship not only because of their complementary economic interactions, but also because of the unique location which allows them to take advantage of other

---

[174] Young, Ian. "Special Economic Zones: China Opens Up--Foreign Investment Pours In." Chemical Week--Country Focus August 25-September 1 (1993): 30.

[175] ZhongYang RiBao (Taiwan)
"ShengChan ChenBan RiZheng, GuanLiao ZuoFeng RiSheng--Shenzhen Po Duo QiYe You Yi Wan Yi." 1993.7.9.

[176] ZhongYang RiBao (Taiwan)
"Yong Feng Yu Den Lu ChangJiang SanJiaoZhou Shi Zun Ai." 1993.4.5.

[177] ZhongYang RiBao (Taiwan)
"HeChen Jue Yin Jun DaLu WeiYu SheBei SiChang." 1992.2.21.

infraconnection supports in the GCECS. In other words, the rest of the areas in the Mainland have a relatively underdeveloped infraconnection in comparison to Guangdong. In this situation, firms from Hong Kong, Taiwan and Guangdong have interdependent relationship within this small local area--triangle area. As infraconnection is improving in some other areas, this interdependent relationship which was restricted to the triangle area gradually is beginning to loosen, and the economic development to spread into those areas.

As discussed in Chapter IV, the complementary setup is one of the major forces in driving the primary economic growth in the GCECS, since it provides an essential market linkage among the three actors in the GCECS. However, this setup only focuses on labor intensive industries. As the coast line of the Mainland becomes more industrialized, this complementary setup will shift from the coast line to the inland of the Mainland. If the inland becomes more industrialized, the complementary setup eventually will become less important in the determination of further economic growth. A question can be raised here: what will be the alternative instead of the complementary setup as an essential market linkage for future development of the GCECS? Some answers could be found in the continuing growth of the Chinese market itself.

The first one could be the modernization of the hardware of infraconnection in the GCECS which would provide a huge market not only within the GCECS, but also to the world. Take telecommunication as an example, one analyst estimates that some $100 billion will be needed to fund the massive expansion of telecommunication network, with at least $25 billion ultimately coming from direct foreign investment by

the end of this century.[178] According to the estimate of the U.S. Department of Commerce, the Mainland, Hong Kong and Taiwan together plan to spend approximately $560 billion on infrastructure-related equipment, technologies, and expertise during the next seven years. Of this between $140-$175 billion could be available for foreign participation. U.S. firms could bid on some $20-$25 billion in annual infrastructure-related projects in the Chinese Economic Area.[179]

This huge demand in the infraconnection modernization provides many commercial opportunities for developed countries like the United States and Japan, especially for long-term and high-tech projects. Here are some more examples:

Japanese government loans have helped finance projects such as the Hainan Island ring expressway and two bridges over the Yangtze at Huangshi and Tongling. For the Beijing-Hong Kong superhighway, financing, estimated at $8 billion, is to be provided by South Korean firms, such as Pohang Iron & Steel and Dong-Ah Construction.[180]

Also, foreign funds play an important role in the development of the Mainland seaports. In 1980s, the Mainland has received $1.8 billion in loans for port projects from the World Bank and the Asian Development Bank, and about 200 billion yuan ($1.9 billion) in loans from the Japan Overseas Cooperation Fund. The loans have been used to build 56 berths, of which 13 are deep-water. The combined capacity of the new

---

[178] Clifford, Mark. "A Question of Money." Far Eastern Economic Review 7 April 1994: 47. Goff, John "Needed: One billion telephones." Global Finance December (1993): 50-53.

[179] "The Chinese Economic Area: A Fast Growing Region in Asia." Business America March (1994): 7.

[180] Ibid., p.6.

facilities is 40 million tons and 700,000 standard-sized containers.[181]

Since the mid of 1980s, the Mainland has been a major purchaser of US aircraft, particularly from The Boeing Co. and McDonnell Douglas Corp. In 1993 Boeing has delivered over 100 planes to Mainland China; McDonnell Douglas has co-produced more than 25 MD-82s with the Shanghai Aviation Industrial Corp. and in 1992 signed a contract to co-produce 40 MD-90-30T trunk liners. In the first four months of 1993, Mainland China signed contracts for 12 European-made Airbus planes (with an option to buy another 13) and another additional 41 Boeing jets.[182]

Foreign telecom firms have also invested in the production of fiber optic cable systems in the Mainland. There are at least 100 plants and research institutes engaged in the development and production of fiber optic cable and transmission systems in the Mainland. Some foreign companies, such as Philips, Olex, and Furukawa Electronic Co. Ltd., have all invested in joint ventures in fiber optics in Wuhan, Xian, Shanghai, Guangzhou, and Beijing. Production of other cable used in industry--including coaxial, pair, trunk, and loop cable--is dominated by the Mainland's local industry. Some 30 plants provide an estimated 3.5 million km of cable per year for MPT's network expansion plans.

Currently, two foreign companies manufacture cellular network equipment in Mainland China. Sweden's L.M. Ericsson produces a cellular equipment in a joint venture with the Nanjing Radio Factory. It supplied the Mainland's first cellular networks (to Guangdong) in 1987-88, and claimed an estimated 60% of the Mainland's

---

[181] "Ports--Building A Network of Ocean and River Facilities." Institutional Investor 27 (1993): 16.

[182] Lee, Joseph W. "The Sky's the Limit." The Chinese Business Review May-June (1993): 18.

total cellular capacity in 1993. Industry analysts predict that Ericsson will soon have over 100,000 subscribers throughout the Mainland.[183]

The other industry leader, US-based Motorola Inc. teamed up with MPT's Hangzhou Telecommunications Equipment Factory in 1991 to produce cellular handsets, base systems, and switching equipment for the Chinese market. The licensing agreement could enable the company to gain a greater share of China's cellular market in the future.

With the surge of foreign direct investment (FDI) into the Mainland, the Mainland has been the world second investment recipient country after the United States. And the tendency of FDI is gradually shifting from "finding cheaper labor" to opening the huge Chinese infraconnection market.

A second answer in addition to the continuous fast economic growth, is a dramatic change in Chinese consumer market. First, retail demand is increasing tremendously. In the Mainland's major coastal cities, consumer demand growth has reached 15% to 25% per year.[184] Second, it is agreed that the Mainland market potential has probably been underestimated for a number of years. In any case, the proportion of disposable income in China is surprisingly high. Many basics such as housing and health care are heavily subsidized, leaving consumers with more disposable income.[185] And third, the structure of the consumer demand in the Mainland has also

---

[183] Gorham, Sid and Achmad M. Chadran. "Telecom Races Ahead." The Chinese Business Review March-April (1993): 20.

[184] Byrne, Patrick M., Kim Woodard and Johnson Chow. "Success in China Takes Patience." T & D April (1994): 53.

[185] Purves, William. "China and Greater China: The New Economic Reality." The World of Banking July-August (1993): 19.

changed. There are not only demands for the most essential goods for the daily life, but also demands for almost everything from blue jeans to electronic products to motorcycles, to processed food, as well as for all of the industrial products (e.g. chemicals and machinery) that feed consumption-based industries. Typically, the demand shares for durable goods (with more capital intensity) are increasing silently and considerably.

Accordingly, as the so-called complementary setup becomes less visible and the demand for capital intensive goods increases, those companies with high quality products and advanced technologies will have a greater advantage in the GCECS than those who only want to find cheaper labor resources. This tendency implies that the modernization of the infraconnection in the GCECS will help free GCECS from the old interdependent relationship--labor intensive complementary setup--to construct a better economic environment with more economic freedom for all the actors in the GCECS. In this transition process, Hong Kong and Taiwan have a priori advantages to penetrate the Mainland market and build a more solid common market relationship within the GCECS than the original "complementary setup."

2. From Reform Measures toward A New Economic Order

From a view of policy-orientation, the multi-integration process of the GCECS can be identified as economic system reforms in terms of the policy development among all the three actors, especially that in the Mainland. As discussed in Chapter V, the policy development not only includes the economic reform policies which mainly promote healthy economic growth; but also provide economic policies in order to crack down on economic crimes.

As discussed in Chapter III, every successful economic policy can only function well under certain circumstances. That is, in the economic reform process, a proper policy which is suited to an advanced stage may cause a worse result in an early stage. This is because different policies imply different stabilities in the reform process. To a large extent, the development of the GCECS can be considered as the **art** of policy development or strategy evaluation.

In the early stage, this system reform process is focused on economic reform policies, mainly represented by a series of economic reform measures, which are all carried out by the actors within the GCECS (see Appendix A.4.); but these measures can have some relative instabilities with short-term effects. As the multi-integration stage in the GCECS develops, these reform policies gradually move toward a legitimacy and eventually toward the new economic order which the **STRUCTURAL IDEALISM** describes. The policies in this stage thus become more stable with long-term effects.

Such a step-by-step transition process toward an economic order in the GCECS, especially in the Mainland, has proved successfully in comparison to the economic reform in Eastern Europe, especially in the former Soviet Union. William H. Overholt, in his book, The Rise of China's Economy, has explained the different economic performances between the Chinese Mainland and the former Soviet Union. According to Overholt, such differences mainly derive from profoundly different economic and political strategies.

The former Soviet Union neglected agriculture, was so ambivalent about foreign investment that it attracted very little, and devoted excessive attention to heavy industry. Russia went for shock therapy, sudden price decontrol and almost overnight privatization of state-run enterprises. The result of this process in the former Soviet

Union and in some other East European countries, most notably Poland, was a collapse of production simultaneous with unbearable inflation and a potentially catastrophic collapse of the currency. Poland's sudden liberation of prices produced inflation rates in excess of 2000% during the last four months of 1989. The former Soviet Union experienced 91% inflation in 1991, rates around 2000% in 1992, and an annual rate of around 3000% in January 1993.[186]

The Chinese Mainland, however, has adopted a much more skillful strategy in its economic reform. First, farms were given back to the farmers, generating huge increases in productivity, income, and output with negligible state investment; the state's role was largely limited to issuing a legal ruling and using the existing administrative apparatus to enforce its decision.

Second, the Chinese Mainland was very much more encouraging to foreign direct investment (FDI). The restrictions on FDI were first released on assembling and re-export industry, then gradually released on wide fields of productions and many important fields of infrastructure-related construction (see Appendix A.4), such as power supply, transportation, telecommunication and retail market, etc. Although the incentives and rules governing FDI have required continual refinement, they were sufficiently generous to attract the huge amounts of FDI into the Chinese Mainland.

Third, the Chinese Mainland gave priority to light and medium industry, where limited initial investment quickly yields a surge of output. Just as Taiwan and Hong Kong had flooded world markets with textiles, garments, shoes, toys, and consumer electronics in the 1960s and 1970s, the Mainland quickly became a global source for

---

[186] Overholt, William H. "The Rise of China's Economy." Business Economics April (1994): 33.

these same products for the 1980s and 1990s. In the major Western department stores the shoes, shirts, sweaters and toys that once carried labels saying "Made in Korea" or "Made in Taiwan" now mostly say "Made in China." Virtually none say "Made in Russia."

An important consequence of the above strategies is the generation of millions of jobs for people who needed them most; and the growth and income are focused on ordinary farmers and ordinary workers. This result laid a solid foundation for the further economic reform concerned with building a better economic order in terms of a market economy with more economic freedom.

Fourth, in order to avoid hyperinflation, currency collapse, and political disillusionment, the Chinese Mainland liberalized prices gradually. Like other Asian countries such as Indonesia, the Chinese Mainland has been careful to ensure that the prices of some necessary goods like rice and salt are not allowed to become so volatile as to endanger the lives of subsistence-level rural people.

Fifth and finally, the Chinese Mainland has been particularly cautious about privatization. If one privatized before price reforms have taken full effect, then many firms could be bankrupted not because they were inefficient but because their product prices were set below the market. For instance, it is not unusual in some socialist countries for prices of a commodity like coal to be set at only 5-10% of market levels; having to sell so far below market prices would quickly bankrupt the coal company if it suddenly loses subsidies and has to pay market prices for inputs.

Moreover, this problem is not really solved by "Big Bang" price liberalization, because an effectively liberalized price system does not mean just instant freeing of prices but also an infraconnection that can receive price signals, analyze trends, and take

appropriate action; such an infraconnection takes years to develop. In other words, an efficient national privatization program requires stock markets, analysts to assess the value of companies, and brokerages to communicate the analysis and to manage stock transactions. Without such an infraconnection for assessing the efficiency of companies, analyzing economic trends, communicating the findings widely, and trading efficiently, a free market economy cannot function and the result may be worse than the original central planning economy.

Hence, the Mainland has a policy of delaying many areas of privatization until it has successfully liberalized prices, created a national pension system, undertaken major banking reforms, and developed working stock markets. No policy has been more criticized in the West than the Mainland's caution regarding privatization. No policy, however, has been more central to the Mainland's success than its gradual but steady emplacement of the foundation stones for successful privatization. Briefly, while the reform policies of East European countries have focused on the destruction of the central planning and state enterprises, those of the Chinese Mainland have concentrated on the construction of market institutions, investment systems, stock and bond markets, workable price mechanisms, and modern banks.

In terms of the Mainland's economic reform, the above process only completes one step, i.e., from a central planning economy to a market economy with proper privatization. Within this step, these five strategies pertain to policy development. Such a step-by-step approach also sets up the tone for the whole GCECS policy development, especially in handling the complicated political situation, such as the Mainland-Hong Kong policies after 1997 and the "three direct connections" (direct communication; direct shipping or transport; and direct trade) policy between the Mainland and Taiwan.

Also, the establishment and improvement of laws and regulations which can help to reduce economic crimes in the GCECS cannot be neglected. The development of all these policies can eventually form a proper economic order for the fast and healthy economic development in the GCECS, though there may be many steps ahead.

3. From Traditional Family Style to Modern Team Work

As discussed in Chapter IV, the "five cultural geneses," especially the family ties, is one of the major forces that drive the primary economic growth in the GCECS. Moreover, the family network can be expanded into a *guanxi* system. Also as discussed in Chapter V, both family network and *guanxi* system have created a lot of obstacles or resistance to the modern business communication and economic cooperation.

Generally, Chinese society has been governed by "man," not by "law" for thousands of years. The philosophy or the sense of the "man," which is reflected either by the family relationship or the *guanxi*, is still deeply rooted in the GCECS as well as in the whole overseas Chinese society today. On the one hand, family ties and the *guanxi* function as lubrication in the movement of speeding up the economic interactions, especially when the other components of infraconnection in the GCECS are in their early developing stage; on the other hand, they tremendously increase internal costs, partially because building good *guanxi* is not costless, and partially because some key "man" in the family may perform irrationally. Hence, a continuous economic democratization will eventually touch its hardest line--changing the tradition from governing by "man" to governing by "law."

Fortunately, the modernization of the infraconnection hardware, improvement

of market structural relations and the formation of the proper economic order will help the transition from governing by "man" to governing by "law" in the GCECS. For instance, a well-developed banking system and stock market can help people in the GCECS handle money flow just as in the Western countries, not simply as family trust funds as before; well-developed trade and investment regulations can help both firms in the GCECS or foreign firms outside the GCECS to access the huge Chinese market without having to have access to *guanxi* as a prerequisite. Hence, a well-developed infraconnection could largely reduce the role of the *guanxi* system in the future development of the GCECS.

More important, fundamental changes have been happening within the Chinese family networks. This transition process is mainly represented by a learning process across cultures and across generations. The younger generation are now more multicultural and have had the opportunity to live and be educated abroad. While second- and third-generation Chinese still respect the family enterprise, these younger entrepreneurs have absorbed other values as well, particularly if they have lived in Western countries like the United States. They are as likely to speak English as well as Chinese. Their commonality lies in their shared business- or law-school background, not in their ancestral villages. Educated abroad, they are confident investing overseas in a way their fathers are not, though that confidence may not always lead to better decisions.

This generational divergence is, in fact, one of the most important forces within the overseas Chinese network. It extends well beyond differences in creative pursuits and is reshaping the network itself. Inside the Chinese family business networks, the traditional, intuitive and entrepreneurial style is increasingly at odds with the

professional management demands of what have become modern corporations. A successful transition of the Chinese business networks involves a shift from the autocratic, "father-knows-best" management methods to a modern cooperative team style. Accordingly, the transition from a family style business to a modern cooperative team style can significantly help to create a better economic environment with more economic freedom for all the actors.

To summarize the soft-net transitions as well as this Chapter, a profound transition process other than simply GDP growth has been undergoing in the GCECS. It includes several sub-transition processes regarding the development of infraconnection, both in its hardware and software, from a primitive stage to advanced ones. Among these processes, exploring the Mainland's huge market potential toward a common market might become the major focus in the future to attract and link all the actors in the GCECS as well as the rest of the world. Establishing a proper economic order is also crucial, since small changes in policy can cause the significant changes in the process. For instance, if the "Three Nos Policy" can be removed, the basic setup of the infraconnection in the GCECS will change in a direction that could realize the full potential of GCECS's infraconnection.

The multi-integration process of the GCECS involves three stages which are summarized in Table VI.1. The first stage is the economic take-off driven by three special features which represent the natural advantages in the primary infraconnection of the GCECS. The second stage is reflected by infraconnection changes under the high pressure caused by intensive economic interactions in the GCECS. Since hard-net improvements and soft-net improvements have different paces, this stage is the most

likely to be characterized by an improved hard-net under an existing setup by the original soft-net. The third stage should be represented by the achievement of

Table VI.1 The Model of Multi-Integration in the GCECS

Infraconnection	Stage I	Stage II	Stage III
Transportation	geographic closeness as the major advantage	improved hard-net without direct connection between the Mainland and Taiwan	full-scale developed hard-net
Communication	family tie is crucial	mixed developed hard-net; & family tie as a network facing challenges	consistent developed hard-net with team work relationship
Market system	complementary setup in labor intensive industries	distribution, retail & banking systems become more active; industrial transition spreads in the Mainland	the Mainland market fully opens to a common market in the GCECS
Policy set	openness-orientation	more openness toward cooperation and legitimation	a new economic order

infraconnection transitions in both hardware and software. These three stages together reflect a heathy development trend toward an ideal destination in terms of the STRUCTURAL IDEALISM.

In this sense, the development of the infraconnection is a better indicator of genuine development for GCECS. Behind the phenomenon of fast economic growth in the GCECS, the development level of infraconnection determines the efficiency of the economic development in the GCECS. The distribution of infraconnection development directs the tendency of economic development. And the speed of infraconnection development affects the stability of economic growth. Briefly, the future of GCECS largely depends on whether its infraconnection can achieve a successful transition to economic modernization and economic democratization.

Conclusion

Facing the reality that the GCECS is continuously developing as one fast economic growth area in the world, there are at least two ways to explore its dynamics and implications: one is to follow the traditional approach in which nation-states and their natures are the foci; the other, an emphasis of this dissertation, is to explore some fundamental "backgrounds"--infraconnection. Since these two approaches are based on different preliminary theoretical foundations, they may generate quite different conclusions regarding the same case--the GCECS.

The approach which is generalized from the Westphalian nation-state system focuses on the two sovereignties. As Hedley Bull describes, "the starting point of international relations is the existence of *states*, or independent political communities, each of which possesses a government and asserts sovereignty in relation to a particular portion of the earth's surface and a particular segment of the human population. On the one hand, states assert, in relation to this territory and population, what may be called internal sovereignty, which means supremacy over all other authorities within that territory and population. On the other hand, they assert what may be called external sovereignty, by which is meant not supremacy but independence of outside authorities."[187]

In this framework, national interests and balance of power are the major issues regarding the externality of the nation-state; while government (or governance), economic growth (reflected by GDP growth), and development of political institutions

---

[187] Bull, Hedley. The Anarchical Society--A Study of Order in World Politics. New York: Columbia University Press, 1977. p. 8.

(democracy) are the dominant issues concerning the internality of the nation-state. Some other approaches, such as integration approach, infrastructure approach and interdependency approach, may not necessarily concentrate on nation-states. However, since most of their applications still center around nation-states, these approaches thus remain nation-state-oriented. By applying these approaches to examine the GCECS, a paradox of the GCECS development inevitably comes out. That is:

First, on one hand, if the GCECS developed into a political community, its continuous economic growth would be very likely transformed into a great power in the next century. This might bring some dangers to other nation-states, because according to the traditional nation-state approach, the GCECS, as a new power, would inevitably assume self-interest (or national interest) and national security, and rationality for interest maximization in the world. On the other hand, if the GCECS could not be developed into a political community because of the political barriers inside, still according to the nation-state approach, the GCECS would either remain a conflict state or have no political future in terms of being a great power.

Second, concerning the dynamics of integrating the society, the nation-state-oriented approaches stress the ideologies, such as the conflicts between the "democracy" and other ideologies. In this view, the actors in GCECS have very different performances in level and scale, because the process of its so-called Western democratization makes a slow progress, in particular in the Mainland. Consequently, there can hardly be any regional integration in this regard.

Third, nation-state-oriented approaches also stress the role of key decision-makers and their policies. Since it is hard to predict how the changes in this matter of

the Chinese Mainland will be after Deng Xiaoping, the future of the GCECS seems uncertain, even in danger.

Therefore, by using the theoretical approaches which are generalized from the Westphalian nation-state system to analyze the development of the GCECS, the conclusion is most likely to be pessimistic. However, the current GCECS development toward a peaceful and healthy direction makes many people wonder whether the nation-state-oriented approaches are applicable in this case.

To a large extent, the nation-state-oriented approaches stand on conflict assumptions, such as the conflicts between ideologies, institutions or nationalist ideas. But in the post-Cold War era and in many cases like the GCECS, sometimes who conflicts with whom in what ways can hardly be identified. The theorists with the nation-state-oriented approaches have no choice other than to assume that the Western model is universally applicable. As a result, the nation-state-oriented approaches are in fact losing their fundamental guide line. No wonder Fukuyama could advance a thesis of the "end of history."[188]

As a matter of fact, history is never ended but the way to describe the history can be changed. Fukuyama's thesis just indicates the embarrassment of the traditional nation-state-oriented approaches in the studies of IR and IPE. This research attempts to avoid such a difficulty in the nation-state-oriented approaches by introducing the infraconnection approach in the case study of the GCECS. As a conclusion of this dissertation, the infraconnection approach does provide some useful references in the studies of the GCECS as well as to the other cases in the world, though it cannot fully

---

[188] Fukuyama, Francis. The End of History and the Last Man. New York: Free Press, 1992.

replace the nation-state-oriented approaches. The reasons are the following:

First, a multi-integration process does exist in the GCECS. However, such a process is reflected not by an emergence of any kind of political community but by a continuously improved infraconnection--transportation networks, communication networks (including both its hard-net and soft-net), market system and economic policies, laws and regulations. This is because infraconnection is a capable force to hold all the actors together in the GCECS. In other words, when various interactions among the actors, such as investment, trade, tourism and cultural exchanges, are becoming more intensive, all the actors in the GCECS will be more reliant on the infraconnection of the GCECS.

Second, the major dynamics of integrating the GCECS is primarily not any ideologies but the three special features associated with the development of the infraconnection in the GCECS, i.e.,complementary setup, policy-openness orientation and five cultural geneses.

Third, the most important indicator for the development of the GCECS is not only the GDP growth, but also the improvement in the gap between the underdeveloped infraconnection and the fast economic growth in the GCECS. In this sense, on one hand, the future of the GCECS can hardly be determined by fluctuations of the GDP growth rate or some individual persons, but it can be determined by whether the transition processes of the infraconnection--economic modernization and economic democratization--are successful. On the other hand, a development path will be definitely affected by the government policies. A most successful development model for the GCECS may be an optimal development path of its infraconnection; and at the

same time, government policies should match this optimal path.

To summarize the infraconnection approach in the application of the GCECS, the major difference regarding the conclusions from the nation-state-oriented approaches is that the GCECS can be and has already been developed toward more advanced stages through the improvement of its infraconnection, though the improvement of infraconnection is not the only dynamic.

The logic behind this improvement process is just like a man to improve his body, since every component of infraconnection characterizes some vital features of the whole economic (body) system of the GCECS. Besides economic strengths can be regarded as the muscles of the GCECS, transportation networks are the arteries of the GCECS; communication channels are the veins of the GCECS; market systems are the bones of the GCECS; and economic order is the spirit of the GCECS. When the body becomes stronger, the will of the man becomes stronger as well; but when the body becomes weaker, the will probably will be more vulnerable.

Two more implications can be drawn from this research. First, the concept of infraconnection is abstracted from General System Theory. It is not a special design only for the GCECS, but it may be applicable to other cases in world development as well. Thus, the case of the GCECS may imply some validity in **STRUCTURAL IDEALISM**--international relations could be improved through improving associated infraconnection of the system.

It is worthy of note that the development of infraconnection in the GCECS may overlap on or have interface with other infraconnections in the different systems. For example, the development of the GCECS does not block Taiwan, South Korea and

Japan to develop a similar relationship if they can develop a relatively integrated infraconnection. In this sense, infraconnection approach will be valid as a major analytical tool.

Second, the infraconnection approach not only provides a new analytical tool at a system level in the study of the GCECS, but also indicates a practicable path for different societies smoothly and peacefully integrating and developing toward a better society. Also, this approach can be a guide line for the practice of international relations and international political economy--not only in the GCECS, but also in other regions of the world.

Appendix A.1. Statistics on the Taiwanese Investment in the Mainland*

Locations	Date	Enterprises w/ Taiwan Funds	Amt of Contract Capital Investmt.(S)
Cities:			
Shenzhen	January 1993	1026	$ 1.05 billion
Beijing	May 1993	750	$ 1.2 billion
Tianjin	July 1993	599	$ 700 million
Subei 6 cities (Xuzhou, Huiyin, Lianyunguang, Xianchen, Nantong, Yangzhou)	April 1993	477	$ 710 million
Nanjing	August 1993	429	
Quangzhou	Febuary 1993	356	$ 204 million
Jinan	April 1993	247	$ 287 milliom
Dalian	April 1993	214	$ 170 million
Wuhan	October 1993	173	$ 300 million
Wuxiang, Jiangsu	January 1993	108	$ 230 million
Tangshan	October 1993	74	$ 180 million
Quangshan Economic Zone, Jiangsu	April 1993	50	$ 170 million
Jian, Jiangxi	September 1993	22	$ 104 million
Provinces:			
Guangdong	June 1993	4429	$ 5.02 billion
Fujian	June 1993	2564	$ 5.97 billion
Jiangsu	July 1993	2200	$ 4.4 billion
Zhejiang	December 1993	1500	$ 3.0 billion
Shichuan	June 1993	600	$ 600 million
Liaonin	July 1993	398	$ 270 million
Hubei	January 1993	313	$ 470 million
Jiangxi	January 1993	205	$ 90 million
Hunan	June 1993	129	$ 230 million
Shanxi	January 1993	116	$ 200 million

Note: *It is interesting that from the sources which have been searched the statistics about the Taiwanese investment in Shaihai is not able to be found.

Source: ZhongGuo DaLu Yan Ju. (Taiwan) 36 (1993).
ZhongYang RiBao. (Taiwan) 1 December 1993-1 December 1994
RenMin RiBao.(DaLu) 1 June 1993-1 March 1994

Appendix A.2. **Cross-Straits Cultural Interactions (June 1992 - June 1994)**

Date	Place	Host	Title & Content of the Activities
6/29/92	Beijing, Nanjing, Shanghai	Danjiang Univeristy	Danjiang University Delegation to visite 10 mainland universities, including Chinese Academy of Science, University of International Business & Economics,Nanjing University, Fudan University, etc.
6/30/92	Taipei	Xiamen University	Xiamen University Delegation to have 10-day visit in Taipei, including Qihua University, Taiwan University, Zhong Hua Institution, Taiwan Document Institute, etc.
7/1/92	Taipei	China Movie Commentary Association	The Mainland movie commentary delegation to Taipei for "The Symposium of the Cross-Straits Movie Art"
7/1/92	Shanghai	Zhong Shi Evening News & Shanghai Xin Ming Evening News	Two news paper agencies to sign an agreement for future news exchange and cooperation
7/2/92	Beijing	Ya Zhou Yu Shi Jie She & Chinese Academy of Social Science	Headed by the former president of Zhenzhi University, O Yang Xun, 39-people delegation to Beijing for the "Conference of the Cross-Strait Relations"
7/2/92	Beijing, Shanghai	The Cross-Strait Relations Association	Headed by Prof. Zu Xinmin of Zhenzhi University, 12-people delegation of Taipei to meet with "the Cross-Straits Relations Association" in Beijing
7/5/92	Hong Kong	The Cross-Straits Research Foundation	The first Cross-Straits seismology conference
7/13/92	Beijing, Shanghai, Hangzhou	Zi Li Evening News	"Taiwan Children Journalists Delegation" with 20 participants to visit the Mainland
7/15/92	Hong Kong	Hong Kong University of Chinese, Beijing Taiwan Research Institute & Hong Kong Taiwan Committee of Commerce	"Symposium of the Cross-Straits Relations in the 1990s"
7/18/92	Beijing	Fu Mao Chang Pian	Taiwan singing star, Gen Chenqin, to have his concerts in Beijing
7/21/92	Beijing	Beijing International Chorus Center	"Taipei Artist Chorus" & "Taipei Women Chorus" to Beijing for "Beijing International Chorus Season"
7/23/92	Taipei, Guangzhou	China TV Company & Guangzhou TV Station	Two TV companies to have a co-TV program of singing competition
7/24/92	Taipei	National Scientific Association of Taiwan	The second Mainland cardiovascular expert, Qian Gunshen, to be invited to Taiwan for heart reseach program
7/24/92	Taipei	Taiwan Ju Qiao Media Co.	Fujian TV Station with 7 people to Taiwan for making TV program

Appendix A.2 (continued)

7/24/92	Taipei	Taiwan Ju Qiao Media Co.	Fujian TV Station with 7 people to Taiwan for making TV program
7/25/92	Taipei	Taipei She Jiao Guan	The Mainland artist, Chen Yingmin, to be invited to have his personal painting exhibition in Taipei
7/27/92	Beijing	Culture and Education Foundation of Shehui University & Beijing National Scientific Committee	Taiwan Hi-tech Delegation to visit various institutions of Beijing National Scientific Committee
7/28/92	Shangdong	Taiwan Movie Culture Enterprise, Ltd.	Taiwan movie producer, Chen Genhou, to Shangdong for making the movie of "Kong Zi Zhuang"
7/29/92	Shenzhen	Taiwan Commerce Delegation & China Council for the Promotion of International Trade	The Second Cross-Straits Youth Zhu Suan Competition in Shenzhen
7/30/92	Taipei	National Dentist Union	The Stomatogical Institute of Beijing Medical University Delegation with three particifpants to visit Taipei
8/2/92	Beijing, Nanjing, Shanghai	Beijing Youth Union	Taipei The First Public Girl School Band with 267 students to the Mainland for 14-day visit
8/4/92	Macao	Hao Zen Foundation	Government officials, politicians and businessmen from the Mainland, Taiwan, Hong Kong and Singapore to exchange their views about trade relations among the Chinese Mainland, HongKong and Taiwan
1/9/93	Taipei	Zhong Hua Wen Wu Association	Beijing Palace Museum delegation to be invited to Taipei for lectures
1/10/93	Taipei	China Cross-Straits Children Literature Association	"The Symposium about the Cross-Straits Children Literature"
1/12/93	Taipei	News Agency of Taipei Executive Institute	"The Cross-Straits Publication Exchange Conference"
1/12/93	Shanghai	The Mainland Movie Director Association	"The Second Cross-Straits & Hong Kong Movie Director Conference" with 100 participants
1/16/93	Taipei	Han Sen Press	Dai Qin, the former Mainland journalist of "Guan Min Ri Bao" to visit Taiwan
1/26/93	Beijing	Zhong Hua Friendship Shuo Chang Art Group	Taiwan Shuo Chang Group to visit the Mainland
2/3/93	Taipei	Bai Shi Media Enterprise, Ltd.	The Mainland Central TV Program to Taipei for making TV program of "Shen Zhuo Feng Cai"

Appendix A.2 (continued)

2/5/93	Shanghai	The Mainland Pingpang Association	Zhong Hua Pingpang delegation with 13 people to attend the First Asian PingPang Group Competition
2/12/93	Taipei	Bei Du Ying Xian Co.	The first Mainland movie to be produced in Taiwan , "Lei Lin Taipei," by Beijing Movie Production Co.
2/13/93	Beijing, Chendu, Guangzhou	Taiwan New Ancient Dancing Group	"Taiwan New Ancient Dancing Group" to be invited to present performance in the Mainland
2/16/93	Taipei	Taipei National Band	The Mainland National Band to be invited to attend "82 Nian Taipei Traditional Art Season"
2/22/93	Taipei	Education Ministtry	"The Law of the Mainland Fossil Exhibition in Taiwan" passed
2/26/93	Taipei	Zhong Hua Taipei Basketball Association	The Mainland Liaolin Men Basketball Team & Hebei Women Basketball Team to be invited to Taipei
2/28/93	Taipei	China Medical Institute	7 experts from Chinese Academy of Science, the Institute of Traditional Chinese Medicine, Chinese University of Pharmacology and Chendu Academy of Traditional Chinese Medicine to be invited to visit Taipei
3/1/93	Taipei	Institute of International Relations at Zhenzhi University	The Mainland theorist, Su Shaozhi, to visit Taipei
3/1/93	Taipei	National Culture Foundation	The Mainland composer, Wang Luobing, to visit Taipei
3/1/93	Taipei, Gao Xiong	Yan Huang Art-Culture-Education Foundation	The Mainland artist in oil painting, Luo Zhongli, to visit Taipei
3/1/93	Taipei	Hua Yi Book Bureau	China Book Export & Import Co. with its Guangzhou Branch delegation to be invited to visit Taipei
3/4/93	Taipei	Children Daily Agency & Beijing Children Center	The Third Cross-Straits Children Painting Exhibition
3/5/93	Taipei	News Agency of Executive Institute	"The Regulation for the Mainland Publication, Movie, TV Program to Taiwan" passed
3/11/93	Taipei	Zhong Yong Institution	The vice-president of Chinese Academy of Science, Wang Fusong, the president of China University of Technology and Science, Gu Caohou and other 7 outstanding scientists to be invited to visit Taipei
3/20/93	Taipei	China Cross-Straits Movie Association	The Mainland movie "Gone with the Old Memory" to be made in Taiwan
3/22/93	Taipei	Yong Chan International Co.	"Beijing Special Talented Children Group" to visit Taipei
3/23/93	Taipei	Wen Hua Zong Hui	The Mainland scholar group to visit Taipei
3/25/93	Chongqing, Yichang, Wuhan	The Straits Exchange Foundation & Sheng Chui Chi Wen Jiao Foundation	"Changjiang San Xia Culture and Resources Protection Gruop" to visit the Mainland

Appendix A.2 (continued)

3/26/93	Taipei	Shi Bao Guang Chang & Wei Tong Technology Ltd.	"The First Cross-Straits Stamp Exhibition"
4/2/93	Taipei	Wen Hua Zong Hui	Guizhou Local Opera Group to visit Taipei
4/10/93	Taipei	China Cross-Straits Movie Association & Taiwan Television Co.	"China Television Artist Association Delegation" to visit Taipei
4/12/93	Taipei	Zhong Hua Culture Development Foundation	Beijing Opera Group to visit Taipei
4/14/93	Taipei	Niu Er Art Co.	Hubei Local Opera Group to attend "Taipei Opera Season"
4/14/93	Taipei	Education Research Center of Normal University	"The Conference of the Mainland Middle School Education -- Its Policy and Contend"
4/20/93	Beijing, Xian, Shanghai	Zhong Hua Min Guo Tuan Jie Zi Qiang Association & China Author and Artist Union	"The Cross-Straits Culture Exchange Group" to visit the Mainland
4/24/93	Taipei	Xin Xiang Culture and Education Foundation	Shanghai Song & Dance Troupe to visit Taipei
4/26/93	Beijing	Economic News & Beijing Economic News	"The Conference of the Cross-Straits Third Industry", headed by former Minister of Financial Ministry, Lu Zuankang
5/3/93	Taipei	The Straits Exchange Foundation	"The Cross-Straits Hisorical Relic Exchange Conference" with 60 participants
5/6/93	Shen Mu Peak	China Mountaineering Association & Zhong Guo Mountain Association	"1993 Cross-Strait Mountaineering Group for Shen Mu Peak" together to climb up to the world first highest peak
5/9/93	Hong Kong	Zhong Hua Min Guo Branch of World Women Journalist and Author Association	"The Cross Straits & Women Culture Confenerce" with 80 participants from the Mainland, Hong Kong and Taiwan
5/10/93	Shanghai	Shanghai Municipal Committee	Taipei Delegation first to the Mainland to attend "the First East Asian Olympic"
5/12/93	Taipei	Fu Da Art Co. & Zhong Guo News	China Beijing Opera Group to visit Taipei
5/14/93	Taipei	Zhong Hua Min Guo Publication Association	"The Cross-Straits Publication Cooperation Conference" with over 100 participants

Appendix A.2 (continued)

5/18/93	Taipei	Xin Xiang Co.	"Beijing People's Art Opera" to visit Taipei
5/23/93	Shanghai	The Mainland Aviation Association & Shanghai Eastern Aviation Co.	"Taiwan Airline Delegation" to Shanghai for "The Cross-Straits Direct Airline Conference"
5/25/93	Taipei	The Straits Exchange Foundation	"The Cross-Straits Dramatist Conference", the Mainland participants including the president of Beijing People's Art Institute, Yu Sizi, Ying Ruochen and others
5/26/93	Taipei	Zhong Guo Broadcasting Co.	"The Mainland Broadcasting Program to Taiwan" Delegation to visit Taipei
5/27/93	Hong Kong	Hong Kong University of Chinese	"Symposium of the Literature Exchange between Cross-Straits with Hong Kong and Macao"
5/27/93	Beijing	Beijing Committee of Application for Hosting Olympic	"Together for Olympic Concert" in Beijing
6/1/93	Taipei	Institute of Literature at Taiwan University	"Beijing Youth Art and Drama Delegation" to visit Taipei
6/9/93	Taipei	The Cross-Straits Movie Art Association	8 Mainland movies to be shown in Taiwan during "the First Cross-Straits Movie View and Emulation"
6/9/93	Beijing	World Bank	"Taiwan Technology, Economic & Trade and Culture Delegation" to Beijing for "China Economic Reform Conference"
6/10/93	Taipei	China Culture University	"The Mainland Shao Lin Si Buddhist Group" with 22 people to visit Taiwan
6/12/93	Taipei	Taiwan Machinery Union & China Machinery Industrial Association	"The Mainland Machinery Industrial Delegation" to visit Taipei
6/13/93	Beijing, Xian, Shanghai	The Straits Exchange Foundation	"Culture Group of the Straits Exchange Foundation" to visit the Mainland
6/14/93	Jianxi	Nanchang University & Taiwan Yuan Jian Magazine	"The Conference of the Cross-Straits Economic and Trade vis World Technological and Scientific Developemnt"
6/15/93	Taipei	Taiwan Medical Assocaition & the Mainland Zhong Hua Medical Assocation	"The Cross-Straits Medical Exchange Conference"
6/18/93	Taipei	Self-supported to visit relatives	The Sensior adviser of the Association for Relations Across the Taiwan Straits, Chang Ke Hui, to Taiwan for the funeral.
10/15/94	Shanghai	Shanghai International Movie Season	Taiwan Movie, "The Scilent Hill," to have an award of "the Best Movie" from Shanghai International Movie Season
10/18/93	Taipei	Zhongyong University	"The Cross-Straits Hong Luo Culture Exchange Symposium"

Appendix A.2 (continued)

10/19/93	Taipei	Fu Da Art Co.	Shanghai National Orchestra with 79 participants to give performance in Taipei
10/22/93	the Mainland	Taiwan Modern Yun Men Dncing Group	Tanwan Yun Men Dancing Group first to the Mainland to give performance
10/22/93	Beijing	Taiwan Liu Li Gong Fong	Taiwan Liu Li Gong Fong to have an exhibition with more than 200 items in Beijing Palace Museum
10/25/93	Taipei	Taipei An Yue Culture and Education Foundation	"Inner Mongolian Youth Chorus" to visit Taipei
11/2/93	Taipei		"Beijing 2.7 Acrobatic Troupe of China Transportation Ministry" to present performance in Taipei
11/4/93	Beijing		"1993 Taiwan Book Exhibition" (with more 20,000 books) in Beijing
11/11/93	Taipei		The Cross-Straits Co-performed Beijing Opera "Die Lien Hua"
11/14/93	Taipei		The first Henan Yu Ju Troupe to give five performances in Taipei
11/15/93	Taipei		Shanghai Xitian Women Valleyball Team to visit Taipei
11/18/93	Taiepi	Taiwan Yue Ju actress, Gao Jing	Zejiang Xiao Bai He Yue Ju Troupe with 66 participants to Taipei performing "Hong Lou Mong" and "Xi Xiang Ji"
11/19/93	Taipei	China Researching Culture and Education Foundation	The Mainland Dinosaur Fossil Exhibition
11/28/93	Taipei		The Mainland well-known actor, Li Baotiang, in the movie of "Ju Dou" and other 29 movie stars to Taipei for the "Golden Horse Award"
12/16/93	Taipei	United Daily News Group	"The Symposium of the 40-Year Chinese Literature" with over 300 particiants
12/27/93	Taipei	Xin Xiang Culture and Education Foundation	Zejiang Kun Ju Troupe to visit Taipei
1/2/94	Taipei	Niu Er Art Co.	Shanghai Symphony Orchestra with 101 people to visit Taipei
1/6/94	Taipei	Fu Da Art Co.	China Beijing Opera with 61 people second time to visit Taipei
1/8/94	Taipei	Zhong Guo Si Bao	"Symposium of 40's - 90's Novels between the Cross-Straits with Hong Kong and Macao"
1/9/94	Taipei	Dong Wu Da Xue	"Symposium of the Cross-Straits Space Research"
1/11/94	Taipei	Xin Xiang Culture and Education Foundation	Beijing Zi Hua Si Musical Group with 16 to play Buddha music in Taipei
1/12/94	Taipei	Kai Tuo Culture Ltd.	Xiamen Ke Zai Drama Co. with 60 people to visit Taipei
1/16/94	Taipei	Taiwan Academy of Industrial Technology	"Conference of 1994 Cross-Straits Steel Material Technology," the president of Chinese Academy of Science, Zhou Guang Zhao, invited.
1/22/94	Taipei		"Conference of Cross-Straits Insurance" with over 300 participants

Appendix A.2 (continued)

1/24/94	Taipei	Taipei Zhong Hua Ocean Aviation Association	"Symposium of Cross-Straits Ocean Shipping Issues"
2/8/94	Taipei	Zhong Hua Min Su Art Foundation	Henan Shao Lin Marshal Art Group with 36 people
2/10/94	Taipei	Hua Xin Culture Center	Beijing China Acrobatic Troupe with 55 people
2/13/94	Taipei	Guang Nian Culture Ltd.	Shanxi Jiangzhou Drama Group with 45 people
3/4/94	Taipei	National Culture Foundation	The Central National Song & Dancing Troupe with 18 people
3/7/94	Taipei	Fu Da Art Ltd.	Chendu Fu Rong Hua Chuang Drama Group with 57 people
3/17/94	Taipei	Fan Mei Art Ltd.	Xiamen Jin Lian Bi Gao Jia Drama Group with 45 people
4/1/94	Taipei	Fu Da Art Ltd.	China Minority National Musical Instrument Performance Group with 24 people
4/2/94	Taipei	Rong Xing Chorus	China Puppet Show Group with 17 people
5/5/94	Taipei	Fu Da Art Ltd.	Shanghai Yue Ju Drama with 70 people
May-94	Taipei	Zhong Hua Culture and Development Foundation	Anhui Huang Mei Drama Group with 70 people
May-94	Taipei	Tang Ji Ke De Advertisement Co.	Shanghai Ballet Group with 86 people
May-94	Taipei	Hua Rong Yu Le Enterprise Ltd.	Fuzhou Min Drama Groupwith 47 people
6/15/94	Taipei	Taiwan Provicial Symphony Orchestra	Fujian Symphony Orchestra with 26 people
Jun-94	Taipei	National Art Institute	Fujian Li Yuan Drama Group with 35 people

Sources: "Briefing of Cross-Straits Art and Culture Exchange." Exchange (Bureau of Culture Service, the Straits Exchange Foundation) 5 (1992):28-29.
"Briefing of Cross-Straits Art and Culture Exchange." Exchange (Bureau of Culture Service, the Straits Exchange Foundation) 9 (1993):75-77.
"Briefing of Cross-Straits Art and Culture Exchange." Exchange (Bureau of Culture Service, the Straits Exchange Foundation) 10(1993):69-70.
"Briefing of Cross-Straits Art and Culture Exchange." Exchange (Bureau of Culture Service, the Straits Exchange Foundation) 13(1994):79-80.
"Briefing of Cross-Straits Art and Culture Exchange." Exchange (Bureau of Culture Service, the Straits Exchange Foundation) 14(1994):79-80.

Appendix A.3 **People's Movement vs. Capital Movement**

Year	Major Taiwan Policies on Trade, Investment and Relative Visits to the Mainland	Travel*		Trade** (Million$)		Investment***	
		HK/M/T	T	T.P->M	M.P->T	Proj.	Cap.
1977	No trade with the Mainland allowed.						
1978		156.15					
1979	Three Nos Policy--no contact, no negotiation, no compromise.	328.06		21.47	56.29		
1980		513.90		234.97	76.21		
1981		705.31		384.15	75.18		
1982		711.70		194.45	84.62		
1983		856.41		157.84	89.85		
1984	Relaxation on private indirect trade with the Mainland.	1,267.04		425.45	127.75		
1985	Three basic principles concerning trade with the Mainland--no direct trade; no manufacturers contacts; no government intervene in trade through a third country.	1,637.78		987.83	115.90		
1986		2,126.90		811.33	144.22		
1987	August--Relaxation on 29 indirect importation from the Mainland. November 2--(first time) Regular Taiwan residents to visit their mainland relatives allowed.	2,508.74		1226.53	288.94	80	140million
1988	July--KMT 13th National Congress policy: people-to-people contacts & indirect trade allowed. November--Participation to mainland academic conferences, cultural exchanges & other activities allowed.	2,977.33	437.700	2242.22	478.69	433	650million

Appendix A.3 (continued)

1989	**January**--40 more items are allowed to enter Taiwan through a third country. **April**--Public school faculties & staffs to their mainland relatives allowed. Journalists & artists to mainland allowed. **July**--Opening cross-straits indirect telecommunication and post services	2,297.19	541.000	2896.49	586.90	1560	1.7billion
1990	**January**--Low-ranking governmental officials to visit their mainland relatives allowed. Another 65 items allowed to be indirectly imported from the Mainland. **April**--All-level people's representatives to visit their mainland relatives allowed. **June**--All-level officials to see their mainland ill or dead relatives allowed. **August**--"Regulations Governing Indirect Export to the Mainland" announced.	2,562.31	947.600	3278.25	765.36	1308	3billion
1991	**February**--All-level officials to see their mainland ill or dead relatives expanding to the grandparents allowed.	3,050.63	946.632	4667.06	1125.07	1700	14billion
1992	The first group of service industries with 158 categories to invest in the Mainland allowed. **May**--Relaxation on the direct transferring money to the Mainland extending from individuals to business firms.	3,394.4		6287.90	1119.00	7191	20billion

Appendix A.3 (continued)

1993	**March**--"Regulations Governing Indirect Investment & Technological Cooperation in the Mainland" approved. **April**--"Regulations Governing Taiwan Residents Entering the Mainland Area" announced. 482 categories of goods import from the Mainland permitted. **May**--"Regulation on the Cross-Straits Financial Interactions" announced **July**--Business remittances to the Mainland allowed.			3644.60	521.20	10,000	25billion

Note: * HK/M/T = People from Hong Kong, Macoa and Taiwan to travel to the Mainland;
T = Taiwanese travel to the Mainland.
** T.P->M = Taiwan products export to the Mainland;
M.P->T = Mainland products export to Taiwan.
*** Proj. = Investment projects with Taiwanese funds;
Cap. = Amount of Taiwan capital investment.

Sources: Ma, Ying-jeou. "Si Nian Lai De DaLuZhengCe Yu liaoAnGuanXi." ZhongGuo DaLu Yan Ju 9 (1991):10-26.
Hsu, Song-ken. "Economic Policies Adjust to the Mainland." Free China Review January (1994): 24-29.
ZhongGuo TongJi NianJian. ZhongGuo GuoJiao TongJiJu, 1992.
ZhongGuo LuYun NianJian, 1992. ZhongGuo GuoJiao LuYunJu, 1992.
XinHua Mei Ri DianXun. (ZhongGuo XinHuaShe) 29 April 1993.
Tang, Yi. The Office of Taiwan Affairs, the State Council, PRC. Personal interview. Beijing. 5 May 1994.

Appendix A.4 The Mainland Policy Development

Year	The Mainland Policy Development
1978	"Open Door Policy" announced.
1979	"Joint Venture Law" (Law of the PRC on Joint Venture Using Chinese & Foreig Investment).
1980	4 Special Economic Zones (SPZs) established in Shenzhen, Zhuhai & Shantou in Guangdong province, and Xiamen in Fujian province.
1981	Hainan Island designated as the 5th SPZs.
1983	14 coastal cities announced as Coastal Open Cities (COC). Opening up financial system to foreign participation.
1984	Relaxation on foreign direct investment on post & telecommunication constructions.
1985	3 huge deltas in the Pacific coastal areas--Chiang Jiang, Zhu Jiang & Xiamen-Zhangzhou deltas areas opened as foreign trade resources districts. Relaxation on foreign direct investment in port facilities.
1988	*"The Rules for Encouraging Taiwan Investment with Favorable Conditions."*
1990	Shanghai Pudong area opened as a priority zone for heavy industry as well as a financial & trade center.
1991	"The Eight Five-Year Plan" (1991-1995) announced to have transportation reform--allow foreign direct investment in the construction of railway, highway and airport construction projects.
1992	Foreign participation in China's retail sector allowed. Relaxation on Foreign Joint Venture in large port construction. 7 more cities--Dalian, Tianjing, Quingdao, Nanjing, Ninbou, Fuzhou & Guangzhou--permitted to open foreign banks.
1993	"China's Company Law" passed, in which permits foreign companies to establish branch offices and to conduct a fairly broad range of business activities in China. Decision on the Reform of Accounting and Taxation.

Source: Park, John H. "Impact of China's Open-Door Policy on Pacific Rim Trade and Investment." Business Economics October (1993): 51-56.
Boreham, Gordon F. "Revisitin China's Banking System." Canadian Banker January-February (1993): 26-19.
Ho, David and Nancy Leigh. "A Retail Revolution." The Chinese Business Review January-February (1994): 22-27.
"Transportation--Ambitious Plans to Extend Road and Rail Links." Institutional Investor 27 (1993): 4-6.
"Ports--Building A Network of Ocean and River Facilities." Institutional Investor 27 (1993): 16-18.

Appendix B.1

LENGTH OF VARIOUS TRANSPORTATION ROUTES — 1,000 km. (The Chinese Mainland)

Year	Railways	Highways	Waterways	Piplelines	Civil Aviation
1978	48.6	890.2	136.0	8.3	148.9
1979	49.8	875.8	107.8	9.1	160.0
1980	49.9	888.3	108.5	8.7	195.3
1981	50.2	897.5	108.7	9.7	218.2
1982	50.5	907.0	108.6	10.4	232.7
1983	51.6	915.1	108.9	10.8	229.1
1984	51.7	926.7	109.3	11.0	260.2
1985	52.1	942.4	109.1	11.7	277.2
1986	52.5	962.8	109.4	13.0	324.3
1987	52.6	982.2	109.8	13.8	389.1
1988	52.8	999.6	109.4	14.3	373.8
1989	53.2	1,014.3	109.0	15.1	471.9
1990	53.4	1,028.3	109.2	15.9	506.8
1991	53.4	1,041.1	109.7	16.2	559.1
1992	53.6	1,056.7	109.7	15.9	836.6
Average:	51.7	955.2	110.9	12.3	345.5

INCREASING VOLUME (1,000 km.)

Year	Railways	Highways	Waterways	Piplelines	Civil Aviation
78-79	1.20	-14.40	-28.20	0.80	11.10
79-80	0.10	12.50	0.70	-0.40	35.30
80-81	0.30	9.20	0.20	1.00	22.90
81-82	0.30	9.50	-0.10	0.70	14.50
82-83	1.10	8.10	0.30	0.40	-3.60
83-84	0.10	11.60	0.40	0.20	31.10
84-85	0.40	15.70	-0.20	0.70	17.00
85-86	0.40	20.40	0.30	1.30	47.10
86-87	0.10	19.40	0.40	0.80	64.80
87-88	0.20	17.40	-0.40	0.50	-15.30
88-89	0.40	14.70	-0.40	0.80	98.10
89-90	0.20	14.00	0.20	0.80	34.90
90-91	0.00	12.80	0.50	0.30	52.30
91-92	0.20	15.60	0.00	-0.30	277.50
Average:	0.36	11.89	-1.88	0.54	49.12

INCREASING RATE

Year	Railways	Highways	Waterways	Piplelines	Civil Aviation
78-79	2.47%	-1.62%	-20.74%	9.64%	7.45%
79-80	0.20%	1.43%	0.65%	-4.40%	22.06%
80-81	0.60%	1.04%	0.18%	11.49%	11.73%
81-82	0.60%	1.06%	-0.09%	7.22%	6.65%
82-83	2.18%	0.89%	0.28%	3.85%	-1.55%
83-84	0.19%	1.27%	0.37%	1.85%	13.57%
84-85	0.77%	1.69%	-0.18%	6.36%	6.53%
85-86	0.77%	2.16%	0.27%	11.11%	16.99%
86-87	0.19%	2.01%	0.37%	6.15%	19.98%
87-88	0.38%	1.77%	-0.36%	3.62%	-3.93%
88-89	0.76%	1.47%	-0.37%	5.59%	26.24%
89-90	0.38%	1.38%	0.18%	5.30%	7.40%
90-91	0.00%	1.24%	0.46%	1.89%	10.32%
91-92	0.37%	1.50%	0.00%	-1.85%	49.63%
Average:	0.70%	1.24%	-1.36%	4.85%	13.79%

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.2

VOLUME OF FREIGHT TRAFFIC MEASURED IN TONS Million tn. (The Chinese Mainland)

Year	Total	Railways	Highways	Waterways	Pipelines	Civil Aviation
1978	2,489.46	1,101.19	851.82	432.92	103.47	0.064
1979	5,375.08	1,118.93	3,710.36	432.29	113.42	0.080
1980	5,465.37	1,112.79	3,820.48	426.76	105.25	0.089
1981	5,237.64	1,076.73	3,636.63	414.90	109.29	0.094
1982	5,482.05	1,134.95	3,792.05	443.29	111.66	0.102
1983	5,768.87	1,187.84	4,014.13	450.58	116.20	0.116
1984	7,169.07	1,240.74	5,333.82	468.92	125.44	0.150
1985	7,457.62	1,307.08	5,380.62	633.22	136.50	0.195
1986	8,535.57	1,356.35	6,201.13	829.62	148.25	0.224
1987	9,432.29	1,406.53	7,114.24	809.79	151.43	0.299
1988	9,821.95	1,449.48	7,323.15	892.81	156.18	0.328
1989	9,802.68	1,514.90	7,258.29	872.77	156.41	0.310
1990	9,706.02	1,506.81	7,240.40	800.94	157.50	0.370
1991	9,857.93	1,528.93	7,339.07	833.70	155.78	0.452
1992	10,094.66	1,576.27	7,500.00	870.00	147.84	0.550
Average:	7,449.75	1,307.97	5,367.75	640.83	132.97	0.23

INCREASING VOLUME Million tn.

Year	Total	Railways	Highways	Waterways	Pipelines	Civil Aviation
78-79	2,885.62	17.74	2,858.54	-0.63	9.95	0.02
79-80	90.29	-6.14	110.12	-5.53	-8.17	0.01
80-81	-227.73	-36.06	-183.85	-11.86	4.04	0.01
81-82	244.41	58.22	155.42	28.39	2.37	0.01
82-83	286.82	52.89	222.08	7.29	4.54	0.01
83-84	1,400.20	52.90	1,319.69	18.34	9.24	0.03
84-85	288.55	66.34	46.80	164.30	11.06	0.05
85-86	1,077.95	49.27	820.51	196.40	11.75	0.03
86-87	946.72	50.18	913.11	-19.83	3.18	0.08
87-88	339.66	42.95	208.91	83.02	4.75	0.03
88-89	-19.27	65.42	-64.86	-20.04	0.23	-0.02
89-90	-96.66	-8.09	-17.89	-71.83	1.09	0.06
90-91	151.91	22.12	98.67	32.76	-1.72	0.08
91-92	236.73	47.34	160.93	36.30	-7.94	0.10
Average:	543.23	33.93	474.87	31.22	3.17	0.03

INCREASING RATE

Year	Total	Railways	Highways	Waterways	Pipelines	Civil Aviation
78-79	115.91%	1.61%	335.58%	-0.15%	9.62%	25.00%
79-80	1.68%	-0.55%	2.97%	-1.28%	-7.20%	11.25%
80-81	-4.17%	-3.24%	-4.81%	-2.78%	3.84%	5.62%
81-82	4.67%	5.41%	4.27%	6.84%	2.17%	8.51%
82-83	5.23%	4.66%	5.86%	1.64%	4.07%	13.73%
83-84	24.27%	4.45%	32.88%	4.07%	7.95%	29.31%
84-85	4.02%	5.35%	0.88%	35.04%	8.82%	30.00%
85-86	14.45%	3.77%	15.25%	31.02%	8.61%	14.87%
86-87	11.09%	3.70%	14.72%	-2.39%	2.15%	33.48%
87-88	3.58%	3.05%	2.94%	10.25%	3.14%	9.70%
88-89	-0.20%	4.51%	-0.89%	-2.24%	0.15%	-5.49%
89-90	-0.99%	-0.53%	-0.25%	-8.23%	0.70%	19.35%
90-91	1.57%	1.47%	1.36%	4.09%	-1.09%	22.16%
91-92	2.40%	3.10%	2.19%	4.35%	-5.10%	21.68%
Average:	13.11%	2.63%	29.50%	5.73%	2.70%	17.08%

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.3

VOLUME OF PASSENGER TRAFFIC MEASURED IN NUMBER OF FERSONS — Million persons. (Mainland)

Year	Total	Railways	Highways	Waterways	Civil Aviation
1978	2,539.93	814.91	1,492.29	230.42	2.31
1979	2,896.65	863.89	1,786.18	243.60	2.98
1980	3,417.03	921.22	2,227.99	264.39	3.43
1981	3,847.63	592.19	2,615.59	275.84	40.10
1982	4,289.64	999.22	3,006.10	279.87	44.50
1983	4,706.14	1,060.44	3,369.65	272.14	39.10
1984	5,302.17	1,133.53	3,903.36	259.74	55.40
1985	6,202.06	1,121.10	4,764.86	308.63	74.70
1986	6,882.11	1,085.79	5,442.59	343.77	99.70
1987	7,464.22	1,124.79	5,936.82	389.51	13.10
1988	8,095.92	1,226.45	6,504.73	350.32	14.42
1989	7,913.73	1,138.05	6,445.08	317.78	12.83
1990	7,726.82	957.12	6,480.85	272.25	16.60
1991	8,060.48	950.81	6,826.81	261.09	21.78
1992	8,494.93	996.93	7,200.00	269.00	29.00
Average:	5,855.96	999.10	4,533.53	289.22	31.33

INCREASING VOLUME — Million persons

Year	Total	Railways	Highways	Waterways	Civil Aviation
78-79	356.72	48.98	293.89	13.18	0.67
79-80	520.38	57.33	441.81	20.79	0.45
80-81	430.60	-329.03	387.60	11.45	36.67
81-82	442.01	407.03	390.51	4.03	4.40
82-83	416.50	61.22	363.55	-7.73	-5.40
83-84	596.03	73.09	533.71	-12.40	16.30
84-85	899.89	-12.43	861.50	48.89	19.30
85-86	680.05	-35.31	677.73	35.14	25.00
86-87	582.11	39.00	494.23	45.74	-86.60
87-88	631.70	101.66	567.91	-39.19	1.32
88-89	-182.19	-88.40	-59.65	-32.54	-1.59
89-90	-186.91	-180.93	35.77	-45.53	3.77
90-91	333.66	-6.31	345.96	-11.16	5.18
91-92	434.45	46.12	373.19	7.91	7.22
Average:	425.36	13.00	407.69	2.76	1.91

INCREASING RATE

Year	Total	Railways	Highways	Waterways	Civil Aviation
78-79	14.04%	6.01%	19.69%	5.72%	29.00%
79-80	17.96%	6.64%	24.73%	8.53%	15.10%
80-81	12.60%	-35.72%	17.40%	4.33%	1069.10%
81-82	11.49%	68.73%	14.93%	1.46%	10.97%
82-83	9.71%	6.13%	12.09%	-2.76%	-12.13%
83-84	12.66%	6.89%	15.84%	-4.56%	41.69%
84-85	16.97%	-1.10%	22.07%	18.82%	34.84%
85-86	10.96%	-3.15%	14.22%	11.39%	33.47%
86-87	8.46%	3.59%	9.08%	13.31%	-86.86%
87-88	8.46%	9.04%	9.57%	-10.06%	10.08%
88-89	-2.25%	-7.21%	-0.92%	-9.29%	-11.03%
89-90	-2.36%	-15.90%	0.55%	-14.33%	29.38%
90-91	4.32%	-0.66%	5.34%	-4.10%	31.20%
91-92	5.39%	4.85%	5.47%	3.03%	33.15%
Average:	9.17%	3.44%	12.15%	1.54%	87.71%

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.4

VOLUME OF FREIGHT TRAFFIC MEASURED IN TON-KILOMETERS — Billion tn.km. (The Mainland)

Year	Total	Railways	Highways	Waterways	Piplelines	Civil Aviation
1978	982.9	534.5	27.4	377.9	43.0	0.10
1979	1,138.5	559.9	74.5	456.4	47.6	0.12
1980	1,202.6	571.7	76.4	505.3	49.1	0.14
1981	1,214.3	571.2	78.0	515.0	49.9	0.17
1982	1,304.9	612.0	94.9	547.7	50.1	0.20
1983	1,405.4	664.7	108.4	578.8	53.4	0.23
1984	1,569.4	724.8	153.6	633.5	57.2	0.31
1985	1,812.6	812.6	169.3	770.0	60.3	0.42
1986	2,014.8	876.5	211.8	864.8	61.2	0.48
1987	2,222.8	947.1	266.0	946.5	62.5	0.65
1988	2,382.5	987.8	322.0	1,007.0	65.0	0.73
1989	2,559.1	1,039.4	337.5	1,118.7	62.9	0.69
1990	2,620.7	1,062.2	335.8	1,159.2	62.7	0.82
1991	2,798.6	1,097.2	342.8	1,295.5	62.1	1.01
1992	2,900.7	1,157.6	350.0	1,330.0	61.7	1.35
1993	3,040.5	1,193.6	417.5	1,367.2	60.6	1.60
Average:	1,948.1	838.3	210.4	842.1	56.8	0.6

INCREASING VOLUME — Billion tn.km.

Year	Total	Railways	Highways	Waterways	Piplelines	Civil Aviation
78-79	155.60	25.40	47.10	78.50	4.60	0.02
79-80	64.10	11.80	1.90	48.90	1.50	0.02
80-81	11.70	-0.50	1.60	9.70	0.80	0.03
81-82	90.60	40.80	16.90	32.70	0.20	0.03
82-83	100.50	52.70	13.50	31.10	3.30	0.03
83-84	164.00	60.10	45.20	54.70	3.80	0.08
84-85	243.20	87.80	15.70	136.50	3.10	0.11
85-86	202.20	63.90	42.50	94.80	0.90	0.06
86-87	208.00	70.60	54.20	81.70	1.30	0.17
87-88	159.70	40.70	56.00	60.50	2.50	0.08
88-89	176.60	51.60	15.50	111.70	-2.10	-0.04
89-90	61.60	22.80	-1.70	40.50	-0.20	0.13
90-91	177.90	35.00	7.00	136.30	-0.60	0.19
91-92	102.10	60.40	7.20	34.50	-0.40	0.34
92-93	139.80	36.00	67.50	37.20	-1.10	0.25
Average:	137.17	43.94	26.01	65.95	1.17	0.10

INCREASING RATE

Year	Total	Railways	Highways	Waterways	Piplelines	Civil Aviation
78-79	15.83%	4.75%	171.90%	20.77%	10.70%	20.00%
79-80	5.63%	2.11%	2.55%	10.71%	3.15%	16.67%
80-81	0.97%	-0.09%	2.09%	1.92%	1.63%	21.43%
81-82	7.46%	7.14%	21.67%	6.35%	0.40%	17.65%
82-83	7.70%	8.61%	14.23%	5.68%	6.59%	15.00%
83-84	11.67%	9.04%	41.70%	9.45%	7.12%	34.78%
84-85	15.50%	12.11%	10.22%	21.55%	5.42%	35.48%
85-86	11.16%	7.86%	25.10%	12.31%	1.49%	14.29%
86-87	10.32%	8.05%	25.59%	9.45%	2.12%	35.42%
87-88	7.18%	4.30%	21.05%	6.39%	4.00%	12.31%
88-89	7.41%	5.22%	4.81%	11.09%	-3.23%	-5.48%
89-90	2.41%	2.19%	-0.50%	3.62%	-0.32%	18.84%
90-91	6.79%	3.30%	2.08%	11.76%	-0.96%	23.17%
91-92	3.65%	5.50%	2.10%	2.66%	-0.64%	33.66%
92-93	4.82%	3.11%	19.29%	2.80%	-1.78%	18.52%
Average:	7.90%	5.55%	24.26%	9.10%	2.38%	20.78%

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.5

VOLUME OF PASSENGER TRAFFIC MEASURED IN PERSON-KM. Billion person-km. (Mainland)

Year	Total	Railways	Highways	Waterways	Civil Aviation
1978	174.3	109.3	52.1	10.1	2.8
1979	196.8	121.6	60.3	11.4	3.5
1980	228.1	138.3	73.0	12.9	4.0
1981	250.0	147.3	83.9	13.8	5.0
1982	274.3	157.5	96.4	14.5	6.0
1983	309.5	177.7	110.6	15.4	5.9
1984	362.1	204.6	133.7	15.4	8.4
1985	443.7	241.6	172.5	17.9	11.7
1986	489.7	258.7	198.2	18.2	14.6
1987	541.8	284.3	219.0	19.6	18.9
1988	620.9	326.0	252.8	20.4	21.7
1989	607.3	303.7	266.2	18.8	18.7
1990	562.8	261.3	262.0	16.5	23.0
1991	617.8	282.8	287.2	17.7	30.1
1992	676.1	315.2	303.0	18.0	39.9
1993	780.7	350.5	358.2	20.5	51.5
Average:	446.0	230.0	183.1	16.3	16.6

INCREASING VOLUME Billion person-km.

Year	Total	Railways	Highways	Waterways	Civil Aviation
78-79	22.50	12.30	8.20	1.30	0.70
79-80	31.30	16.70	12.70	1.50	0.50
80-81	21.90	9.00	10.90	0.90	1.00
81-82	24.30	10.20	12.50	0.70	1.00
82-83	35.20	20.20	14.20	0.90	-0.10
83-84	52.60	26.90	23.10	0.00	2.50
84-85	81.60	37.00	38.80	2.50	3.30
85-86	46.00	17.10	25.70	0.30	2.90
86-87	52.10	25.60	20.80	1.40	4.30
87-88	79.10	41.70	33.80	0.80	2.80
88-89	-13.60	-22.30	13.40	-1.60	-3.00
89-90	-44.50	-42.40	-4.20	-2.30	4.30
90-91	55.00	21.50	25.20	1.20	7.10
91-92	58.30	32.40	15.80	0.30	9.80
92-93	104.60	35.30	55.20	2.50	11.60
Average:	40.43	16.08	20.41	0.69	3.25

INCREASING RATE

Year	Total	Railways	Highways	Waterways	Civil Aviation
78-79	12.91%	11.25%	15.74%	12.87%	25.00%
79-80	15.90%	13.73%	21.06%	13.16%	14.29%
80-81	9.60%	6.51%	14.93%	6.98%	25.00%
81-82	9.72%	6.92%	14.90%	5.07%	20.00%
82-83	12.83%	12.83%	14.73%	6.21%	-1.67%
83-84	17.00%	15.14%	20.89%	0.00%	42.37%
84-85	22.54%	18.08%	29.02%	16.23%	39.29%
85-86	10.37%	7.08%	14.90%	1.68%	24.79%
86-87	10.64%	9.90%	10.49%	7.69%	29.45%
87-88	14.60%	14.67%	15.43%	4.08%	14.81%
88-89	-2.19%	-6.84%	5.30%	-7.84%	-13.82%
89-90	-7.33%	-13.96%	-1.58%	-12.23%	22.99%
90-91	9.77%	8.23%	9.62%	7.27%	30.87%
91-92	9.44%	11.46%	5.50%	1.69%	32.56%
92-93	15.47%	11.20%	18.22%	13.89%	29.07%
Average:	10.75%	8.41%	13.94%	5.12%	22.33%

Sources: ZhongGuo TongJi NianJian. 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.6

DENSITY OF FREIGHT TRAFFIC MEASURED IN TONS/KM — tn./km. (The Chinese Mainland)

Year	Railways	Highways	Waterways	Piplelines	Civil Aviation
1978	22,658.23	956.89	3,183.24	12,466.27	0.43
1979	22,468.47	4,236.54	4,010.11	12,463.74	0.50
1980	22,300.40	4,300.89	3,933.27	12,097.70	0.46
1981	21,448.80	4,051.96	3,816.93	11,267.01	0.43
1982	22,474.26	4,180.87	4,081.86	10,736.54	0.44
1983	23,020.16	4,386.55	4,137.56	10,759.26	0.51
1984	23,998.84	5,755.71	4,290.21	11,403.64	0.58
1985	25,087.91	5,709.49	5,804.03	11,666.67	0.70
1986	25,835.24	6,440.72	7,583.36	11,403.85	0.69
1987	26,740.11	7,243.17	7,375.14	10,973.19	0.77
1988	27,452.27	7,326.08	8,160.97	10,921.68	0.88
1989	28,475.56	7,155.96	8,007.06	10,358.28	0.66
1990	28,217.42	7,041.14	7,334.62	9,905.66	0.73
1991	28,631.65	7,049.34	7,599.82	9,616.05	0.81
1992	29,408.02	7,097.57	7,930.72	9,298.11	0.66
Average:	25,214.5	5,528.9	5,816.6	11,022.5	0.6

INCREASING VOLUME — tn./km.

Year	Railways	Highways	Waterways	Piplelines	Civil Aviation
78-79	-189.76	3,279.65	826.88	-2.53	0.07
79-80	-168.07	64.35	-76.84	-366.04	-0.04
80-81	-851.60	-248.93	-116.34	-830.69	-0.02
81-82	1,025.45	128.92	264.93	-530.47	0.01
82-83	545.90	205.68	55.70	22.72	0.07
83-84	978.68	1,369.17	152.65	644.38	0.07
84-85	1,089.07	-46.23	1,513.82	263.03	0.13
85-86	747.33	731.24	1,779.33	-262.82	-0.01
86-87	904.88	802.44	-208.23	-430.66	0.08
87-88	712.16	82.91	785.83	-51.51	0.11
88-89	1,023.29	-170.12	-153.90	-563.40	-0.22
89-90	-258.15	-114.82	-672.45	-452.62	0.07
90-91	414.23	8.21	265.20	-289.61	0.08
91-92	776.37	48.23	330.90	-317.94	-0.15
Average:	482.13	438.62	339.11	-226.30	0.02

INCREASING RATE

Year	Railways	Highways	Waterways	Piplelines	Civil Aviation
78-79	-0.84%	342.74%	25.98%	-0.02%	16.33%
79-80	-0.75%	1.52%	-1.92%	-2.94%	-8.86%
80-81	-3.82%	-5.79%	-2.96%	-6.87%	-5.47%
81-82	4.78%	3.18%	6.94%	-4.71%	1.75%
82-83	2.43%	4.92%	1.36%	0.21%	15.51%
83-84	4.25%	31.21%	3.69%	5.99%	13.85%
84-85	4.54%	-0.80%	35.29%	2.31%	22.03%
85-86	2.98%	12.81%	30.66%	-2.25%	-1.81%
86-87	3.50%	12.46%	-2.75%	-3.78%	11.25%
87-88	2.66%	1.14%	10.66%	-0.47%	14.19%
88-89	3.73%	-2.32%	-1.89%	-5.16%	-25.14%
89-90	-0.91%	-1.60%	-8.40%	-4.37%	11.14%
90-91	1.47%	0.12%	3.62%	-2.92%	10.73%
91-92	2.71%	0.68%	4.35%	-3.31%	-18.68%
Average:	1.91%	28.59%	7.47%	-2.02%	4.06%

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992. ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992. China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.7

DENSITY OF PASSENGER TRAFFIC MEASURED IN PERSONS/KM — person/km (Mainland)

Year	Railways	Highways	Waterways	Civil Aviation
1978	16,767.70	1,676.35	1,694.26	15.51
1979	17,347.19	2,039.48	2,259.74	18.63
1980	18,461.32	2,508.15	2,436.77	17.56
1981	11,796.61	2,914.31	2,537.63	183.78
1982	19,786.53	3,314.33	2,577.07	191.23
1983	20,551.16	3,682.28	2,498.99	170.67
1984	21,925.15	4,212.11	2,376.40	212.91
1985	21,518.23	5,056.09	2,828.87	269.48
1986	20,681.71	5,652.88	3,142.32	307.43
1987	21,383.84	6,044.41	3,547.45	33.67
1988	23,228.22	6,507.33	3,202.19	38.58
1989	21,391.92	6,354.21	2,915.41	27.19
1990	17,923.60	6,302.49	2,493.13	32.75
1991	17,805.43	6,557.30	2,380.04	38.96
1992	18,599.44	6,813.67	2,452.14	34.66
Average:	19,277.9	4,642.4	2,622.8	106.2

INCREASING VOLUME — person/km

Year	Railways	Highways	Waterways	Civil Aviation
78-79	579.49	363.13	565.48	3.11
79-80	1,114.13	468.67	177.03	-1.06
80-81	-6,664.71	406.16	100.85	166.21
81-82	7,989.92	400.03	39.45	7.46
82-83	764.63	367.94	-78.08	-20.57
83-84	1,373.98	529.83	-122.59	42.25
84-85	-406.91	843.98	452.48	56.57
85-86	-836.52	596.79	313.45	37.95
86-87	702.13	391.53	405.13	-273.76
87-88	1,844.38	462.92	-345.26	4.91
88-89	-1,836.30	-153.12	-286.78	-11.39
89-90	-3,468.32	-51.73	-422.28	5.57
90-91	-118.16	254.82	-113.10	6.20
91-92	794.01	256.36	72.11	-4.29
Average:	130.84	366.95	54.13	1.37

INCREASING RATE

Year	Railways	Highways	Waterways	Civil Aviation
78-79	3.46%	21.66%	33.38%	20.05%
79-80	6.42%	22.98%	7.83%	-5.70%
80-81	-36.10%	16.19%	4.14%	946.40%
81-82	67.73%	13.73%	1.55%	4.06%
82-83	3.86%	11.10%	-3.03%	-10.75%
83-84	6.69%	14.39%	-4.91%	24.75%
84-85	-1.86%	20.04%	19.04%	26.57%
85-86	-3.89%	11.80%	11.08%	14.08%
86-87	3.39%	6.93%	12.89%	-89.05%
87-88	8.63%	7.66%	-9.73%	14.58%
88-89	-7.91%	-2.35%	-8.96%	-29.52%
89-90	-16.21%	-0.81%	-14.48%	20.47%
90-91	-0.66%	4.04%	-4.54%	18.93%
91-92	4.46%	3.91%	3.03%	-11.02%
Average:	2.72%	10.80%	3.38%	67.42%

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.8

DENSITY OF FREIGHT TRAFFIC MEASURED IN TONS-KM/KM — 1,000 tn-km/km. (Mainland)

Year	Railways	Highways	Waterways	Piplelines	Civil Aviation
1978	10,997.94	30.78	2,778.68	5,180.72	0.67
1979	11,242.97	85.07	4,233.77	5,230.77	0.75
1980	11,456.91	86.01	4,657.14	5,643.68	0.72
1981	11,378.49	86.91	4,737.81	5,144.33	0.78
1982	12,118.81	104.63	5,043.28	4,817.31	0.86
1983	12,881.78	118.46	5,314.97	4,944.44	1.00
1984	14,019.34	165.75	5,795.97	5,200.00	1.19
1985	15,596.93	179.65	7,057.75	5,153.85	1.52
1986	16,695.24	219.98	7,904.94	4,707.69	1.48
1987	18,005.70	270.82	8,620.22	4,528.99	1.67
1988	18,708.33	322.13	9,204.75	4,545.45	1.95
1989	19,537.59	332.74	10,263.30	4,165.56	1.46
1990	19,891.39	326.56	10,615.38	3,943.40	1.62
1991	20,546.82	329.27	11,809.48	3,833.33	1.81
1992	21,597.01	331.22	12,123.97	3,880.50	1.61
Average:	15,645.0	199.3	7,344.1	4,728.0	1.3

INCREASING VOLUME — 1,000 tn-km/km

Year	Railways	Highways	Waterways	Piplelines	Civil Aviation
78-79	245.03	54.29	1,455.09	50.05	0.08
79-80	213.94	0.94	423.38	412.91	-0.03
80-81	-78.43	0.90	80.67	-499.35	0.06
81-82	740.33	17.72	305.47	-327.02	0.08
82-83	762.97	13.83	271.69	127.14	0.14
83-84	1,137.56	47.29	481.01	255.56	0.19
84-85	1,577.59	13.90	1,261.77	-46.15	0.32
85-86	1,098.31	40.34	847.19	-446.15	-0.04
86-87	1,310.47	50.84	715.28	-178.71	0.19
87-88	702.63	51.31	584.53	16.47	0.28
88-89	829.26	10.61	1,058.55	-379.89	-0.49
89-90	353.79	-6.18	352.08	-222.17	0.16
90-91	655.43	2.71	1,194.10	-110.06	0.19
91-92	1,050.20	1.95	314.49	47.17	-0.19
Average:	757.08	21.46	667.52	-92.87	0.07

INCREASING RATE

Year	Railways	Highways	Waterways	Piplelines	Civil Aviation
78-79	2.23%	176.37%	52.37%	0.97%	11.68%
79-80	1.90%	1.11%	10.00%	7.89%	-4.42%
80-81	-0.68%	1.05%	1.73%	-8.85%	8.68%
81-82	6.51%	20.39%	6.45%	-6.36%	10.32%
82-83	6.30%	13.21%	5.39%	2.64%	16.81%
83-84	8.83%	39.92%	9.05%	5.17%	18.67%
84-85	11.25%	8.39%	21.77%	-0.89%	27.17%
85-86	7.04%	22.45%	12.00%	-8.66%	-2.31%
86-87	7.85%	23.11%	9.05%	-3.80%	12.86%
87-88	3.90%	18.95%	6.78%	0.36%	16.90%
88-89	4.43%	3.29%	11.50%	-8.36%	-25.13%
89-90	1.81%	-1.86%	3.43%	-5.33%	10.66%
90-91	3.30%	0.83%	11.25%	-2.79%	11.65%
91-92	5.11%	0.59%	2.66%	1.23%	-10.67%
Average:	4.98%	23.41%	11.67%	-1.91%	7.35%

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.9

DENSITY OF PASSENGER TRAFFIC MEASURED IN PERSONS-KM/KM 1,000 person-km/km.

Year	Railways	Highways	Waterways	Civil Aviation
1978	2,248.97	58.53	74.26	337.35
1979	2,441.77	68.85	105.75	384.62
1980	2,771.54	82.18	118.89	459.77
1981	2,934.26	93.48	126.95	515.46
1982	3,118.81	106.28	133.52	576.92
1983	3,443.80	120.86	141.41	546.30
1984	3,957.45	144.28	140.90	763.64
1985	4,637.24	183.04	164.07	1,000.00
1986	4,927.62	205.86	166.36	1,123.08
1987	5,404.94	222.97	178.51	1,369.57
1988	6,174.24	252.90	186.47	1,517.48
1989	5,708.65	262.45	172.48	1,238.41
1990	4,893.26	254.79	151.10	1,446.54
1991	5,295.88	275.86	161.35	1,858.02
1992	5,880.60	286.74	164.08	2,509.43
Average:	4,255.9	174.6	145.7	1,043.1

INCREASING VOLUME 1,000 person-km/km

Year	Railways	Highways	Waterways	Civil Aviation
78-79	192.80	10.33	31.49	47.27
79-80	329.78	13.33	13.14	75.15
80-81	162.72	11.30	8.06	55.69
81-82	184.55	12.80	6.56	61.46
82-83	324.99	14.58	7.90	-30.63
83-84	513.65	23.41	-0.52	217.34
84-85	679.79	38.77	23.17	236.36
85-86	290.38	22.81	2.29	123.08
86-87	477.32	17.11	12.14	246.49
87-88	769.30	29.93	7.97	147.92
88-89	-465.60	9.55	-13.99	-279.07
89-90	-815.39	-7.66	-21.38	208.13
90-91	402.62	21.07	10.25	411.48
91-92	584.72	10.88	2.73	651.41
Average:	259.40	16.30	6.42	155.15

INCREASING RATE

Year	Railways	Highways	Waterways	Civil Aviation
78-79	8.57%	17.64%	42.40%	14.01%
79-80	13.51%	19.36%	12.43%	19.54%
80-81	5.87%	13.75%	6.78%	12.11%
81-82	6.29%	13.70%	5.17%	11.92%
82-83	10.42%	13.71%	5.91%	-5.31%
83-84	14.92%	19.37%	-0.37%	39.78%
84-85	17.18%	26.87%	16.45%	30.95%
85-86	6.26%	12.46%	1.40%	12.31%
86-87	9.69%	8.31%	7.30%	21.95%
87-88	14.23%	13.42%	4.46%	10.80%
88-89	-7.54%	3.77%	-7.50%	-18.39%
89-90	-14.28%	-2.92%	-12.39%	16.81%
90-91	8.23%	8.27%	6.78%	28.45%
91-92	11.04%	3.94%	1.69%	35.06%
Average:	7.46%	12.26%	6.46%	16.43%

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.10

CARGO HANDLED AT MAJOR SEAPORTS

Million tn. (The Chinese Mainland) Note: Q.H.D. = Qing Huang Dao; L.Y.G. = Lian Yun Gang; G.Z. is Guangzhou, also named Huangpu before 1987.

Year	Total	Dalian	Q.H.D.	Tianjin	Yanta	Qingdao	L.Y.G.	Shanghai	Ningbuo	G.Z.	Zanjiang	Haikou	Others
1984	275.49	40.16	35.79	16.11	6.74	24.22	9.00	100.66	5.97	16.68	11.95	1.31	6.90
1985	311.54	43.81	44.19	18.56	6.89	26.11	9.29	112.91	10.40	17.72	12.31	1.70	7.65
1986	371.80	44.29	48.73	18.18	6.91	28.01	9.49	126.04	17.95	19.17	12.96	1.74	38.33
1987	396.81	46.08	53.78	17.23	6.94	30.28	8.94	128.08	19.43	26.05	14.14	2.28	43.58
1988	439.03	48.53	58.12	21.09	7.80	31.09	11.14	133.20	20.02	47.35	15.31	2.41	42.96
1989	470.17	50.92	65.65	24.27	7.03	31.12	11.26	146.04	22.09	47.03	15.57	3.56	45.63
1990	483.21	49.52	69.45	20.63	6.68	30.34	11.37	139.59	25.54	41.63	15.57	2.88	70.01
1991	532.20	54.72	72.36	23.78	8.33	30.55	12.13	146.79	33.90	46.68	16.67	3.21	83.08
1992	604.06	59.09	81.21	29.29	11.14	31.25	13.59	162.97	43.67	54.64	16.44	4.13	96.64
Average:	**431.59**	**48.57**	**58.81**	**21.02**	**7.61**	**29.22**	**10.69**	**132.92**	**22.11**	**35.22**	**14.55**	**2.58**	**48.31**

INCREASING VOLUME Million tn.

Year	Total	Dalian	Q.H.D.	Tianjin	Yanta	Qingdao	L.Y.G.	Shanghai	Ningbuo	G.Z.	Zanjiang	Haikou	Others
84-85	36.05	3.65	8.40	2.45	0.15	1.89	0.29	12.25	4.43	1.04	0.36	0.39	0.75
85-86	60.26	0.48	4.54	-0.38	0.02	1.90	0.20	13.13	7.55	1.45	0.65	0.04	30.68
86-87	25.01	1.79	5.05	-0.95	0.03	2.27	-0.55	2.04	1.48	6.88	1.18	0.54	5.25
87-88	42.22	2.45	4.34	3.86	0.86	0.81	2.20	5.12	0.59	21.30	1.17	0.13	-0.62
88-89	31.14	2.39	7.53	3.18	-0.77	0.03	0.12	12.84	2.07	-0.32	0.26	1.15	2.67
89-90	13.04	-1.40	3.80	-3.64	-0.35	-0.78	0.11	-6.45	3.45	-5.40	0.00	-0.68	24.38
90-91	48.99	5.20	2.91	3.15	1.65	0.21	0.76	7.20	8.36	5.05	1.10	0.33	13.07
91-92	71.86	4.37	8.85	5.51	2.81	0.70	1.46	16.18	9.77	7.96	-0.23	0.92	13.56
Average:	**41.07**	**2.37**	**5.68**	**1.65**	**0.55**	**0.88**	**0.57**	**7.79**	**4.71**	**4.75**	**0.56**	**0.35**	**11.22**

INCREASING RATE

Year	Total	Dalian	Q.H.D.	Tianjin	Yanta	Qingdao	L.Y.G.	Shanghai	Ningbuo	G.Z.	Zanjiang	Haikou	Others
84-85	13.1%	9.1%	23.5%	15.2%	2.2%	7.8%	3.2%	12.2%	74.2%	6.2%	3.0%	29.8%	10.9%
85-86	19.3%	1.1%	10.3%	-2.0%	0.3%	7.3%	2.2%	11.6%	72.6%	8.2%	5.3%	2.4%	401.0%
86-87	6.7%	4.0%	10.4%	-5.2%	0.4%	8.1%	-5.8%	1.6%	8.2%	35.9%	9.1%	31.0%	13.7%
87-88	10.6%	5.3%	8.1%	22.4%	12.4%	2.7%	24.6%	4.0%	3.0%	81.8%	8.3%	5.7%	-1.4%
88-89	7.1%	4.9%	13.0%	15.1%	-9.9%	0.1%	1.1%	9.6%	10.3%	-0.7%	1.7%	47.7%	6.2%
89-90	2.8%	-2.7%	5.8%	-15.0%	-5.0%	-2.5%	1.0%	-4.4%	15.6%	-11.5%	0.0%	-19.1%	53.4%
90-91	10.1%	10.5%	4.2%	15.3%	24.7%	0.7%	6.7%	5.2%	32.7%	12.1%	7.1%	11.5%	18.7%
91-92	13.5%	8.0%	12.2%	23.2%	33.7%	2.3%	12.0%	11.0%	28.8%	17.1%	-1.4%	28.7%	16.3%
Average:	**10.4%**	**5.0%**	**10.9%**	**8.6%**	**7.4%**	**3.3%**	**5.6%**	**6.4%**	**30.7%**	**18.6%**	**4.1%**	**17.2%**	**64.9%**

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.11

NUMBER (& LENGTH) OF POST OFFICES & TELEPHONE LINES (The Chinese Mainland)

Year	Post offices (1,000 unit)	Mailing Lines (1,000 km.)	Long Distance phones (lines)	Telephones (1,000)
1978	49.6	4,863.3	18,801	8,430
1979	49.6	4,812.3	20,307	8,785
1980	49.5	4,737.1	22,011	9,146
1981	49.6	4,660.2	23,909	8,808
1982	49.7	4,676.3	25,961	9,178
1983	50.2	4,720.9	28,637	9,467
1984	51.5	4,830.6	32,354	9,685
1985	53.1	4,982.1	37,551	9,916
1986	52.8	5,042.0	44,085	10,150
1987	52.9	5,033.0	53,416	10,564
1988	52.9	5,000.8	68,460	11,764
1989	53.1	4,915.4	87,137	11,391
1990	53.6	4,983.1	112,437	11,687
1991	54.0	4,974.8	151,779	11,933
1992	54.9	4,978.7	234,276	12,338
Average:	51.80	4,880.71	64,074.73	10,216.13

INCREASING VOLUME

Year	Post offices	Mailing Lines	Long Distance phones	Telephones
78-79	0.00	-51.00	1,506.00	355.00
79-80	-0.10	-75.20	1,704.00	361.00
80-81	0.10	-76.90	1,898.00	-338.00
81-82	0.10	16.10	2,052.00	370.00
82-83	0.50	44.60	2,676.00	289.00
83-84	1.30	109.70	3,717.00	218.00
84-85	1.60	151.50	5,197.00	231.00
85-86	-0.30	59.90	6,534.00	234.00
86-87	0.10	-9.00	9,331.00	414.00
87-88	0.00	-32.20	15,044.00	1,200.00
88-89	0.20	-85.40	18,677.00	-373.00
89-90	0.50	67.70	25,300.00	296.00
90-91	0.40	-8.30	39,342.00	246.00
91-92	0.90	3.90	62,497.00	405.00
Average:	0.38	8.24	15,391.07	279.14

INCREASING RATE %

Year	Post offices (1,000 unit)	Mailing Lines (1,000 km.)	Long Distance phones (lines)	Telephones
78-79	0.00%	-1.05%	8.01%	4.21%
79-80	-0.20%	-1.56%	8.39%	4.11%
80-81	0.20%	-1.62%	8.62%	-3.70%
81-82	0.20%	0.35%	8.58%	4.20%
82-83	1.01%	0.95%	10.31%	3.15%
83-84	2.59%	2.32%	12.98%	2.30%
84-85	3.11%	3.14%	16.06%	2.39%
85-86	-0.56%	1.20%	17.40%	2.36%
86-87	0.19%	-0.18%	21.17%	4.08%
87-88	0.00%	-0.64%	28.16%	11.36%
88-89	0.38%	-1.71%	27.28%	-3.17%
89-90	0.94%	1.38%	29.03%	2.60%
90-91	0.75%	-0.17%	34.99%	2.10%
91-92	1.67%	0.08%	54.35%	3.39%
Average:	0.73%	0.18%	20.38%	2.81%

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Appendix B.12

POSTAL & TELECOMMUNICATION SERVICES LEVEL (National Level) (The Chinese Mainland)

Year	Annual Average Number of Letters Mailed per Capita	Annual Average Number of News-paper & Magazine Subscribers per 100 Persons	Average Number of Telephones per 100 Persons	Average Number of Long Distance Telephone Lines from Beijing to Provincial Capitals	Percentage of Cities at County Level & Above Equipped with Auto Telephone Exchanges
1983	3.4	22.4	0.5	34.5	37.4
1984	3.8	27.2	0.5	37.1	38.3
1985	4.5	28.7	0.6	43.7	40.3
1986	4.7	27.0	0.7	67.2	44.1
1987	5.1	28.7	0.8	73.9	49.4
1988	5.5	25.0	0.9	89.0	54.6
1989	5.0	16.0	1.0	102.4	61.0
1990	4.8	17.4	1.1	156.0	70.0
1991	4.5	20.1	1.3	232.0	77.0
1992	4.9	22.2	1.6	362.6	85.5
Average:	4.6	23.5	0.9	119.8	55.8
INCREASING VOLUME					
Year period					
83-84	0.40	4.80	0.03	2.60	0.90
84-85	0.70	1.50	0.07	6.60	2.00
85-86	0.20	-1.70	0.07	23.50	3.80
86-87	0.40	1.70	0.08	6.70	5.30
87-88	0.40	-3.70	0.11	15.10	5.20
88-89	-0.50	-9.00	0.14	13.40	6.40
89-90	-0.20	1.40	0.11	53.60	9.00
90-91	-0.30	2.70	0.18	76.00	7.00
91-92	0.40	2.10	0.32	130.60	8.50
Average:	0.17	-0.02	0.12	36.46	5.34
INCREASING RATE %					
Year Period					
83-84	11.76%	21.43%	6.00%	7.54%	2.41%
84-85	18.42%	5.51%	13.21%	17.79%	5.22%
85-86	4.44%	-5.92%	11.67%	53.78%	9.43%
86-87	8.51%	6.30%	11.94%	9.97%	12.02%
87-88	7.84%	-12.89%	14.67%	20.43%	10.53%
88-89	-9.09%	-36.00%	16.28%	15.06%	11.72%
89-90	-4.00%	8.75%	11.00%	52.34%	14.75%
90-91	-6.25%	15.52%	16.22%	48.72%	10.00%
91-92	8.89%	10.45%	24.81%	56.29%	11.04%
Average:	**4.50%**	**1.46%**	**13.98%**	**31.32%**	**9.68%**

Sources: ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Bibliography

A. English References

Data References

Area Handbook Series--China: A Country Study. USA: Federal Research Division Library of Congress, 1988.

China Data for Decision. Hong Kong: Business International Asia/Pacific Ltd., 1988.

China Statistical Abstract, 1990. Compiled by the State Statistical Bureau of People's Republic of China, Praeger Publishers, 1991.

Direction of Trade Statistics Yearbook. International Monetary Fund, 1975-1991.

Hsueh, Tien-tung, ed. China's Provincial Statistics--1949-1989. Westview Press, 1993.

Hong Kong in Statistics. Hong Kong: Published by Government Information Service, 1993.

Hong Kong--Asia's Business Centre. Hong Kong: Published by Government Information Service, 1993.

Hong Kong: The Facts--Tourism. Hong Kong Government Information Service, April 1993.

Hong Kong: The Facts--Telecommunications. Hong Kong Government Information Service, September 1992.

Hong Kong Annual Digest of Statistics, 1988. Hong Kong: Census and Statistics Department.

Monthly Bulletin of Statistics. United Nations Publication, 1970-1993.

National Accounts Statistics: Main Aggregates and Detailed Tables. United Nations Publication, 1990.

New Book of World Rankings. Facts on File, Inc., 1991.

Statistical Yearbook for Asia and the Far East. United Nations Document, 1975-1992.

Statistical Abstract of the United States, 1992. U.S. Department of Commerce, Economics and Statistics Administration, and Bureau of the Census, 1992.

Statistical Yearbook, 1990/1991. United Nations Publication, 1993.

Statistical Yearbook of Republic of China. The Republic of China: Directorate-General of Budget, Accounting and Statistics, Executive Yuan, 1991.

Statistical Yearbook of China. The State Statistical Bureau of the People's Republic of China, 1986.

Industry of Free China--Taiwan Economic Statistics. Taiwan Executive Yuan: Council for Economic Planning and Development, 1990-1994.

The Economic Book of Vital World Statistics, 1990. Robert J. Samuelson, the Economist Book Ltd. Random House, 1990.

The World Factbook. USA: Central Intelligence Agency, 1994.

World Facts and Figures. John Wiley & Sons, Inc., Victor Showers, 1989.

World Tables, 1993. Published for the World Bank, the Johns Hopkins University Press, 1992.

Journal Articles

Anonymous. "China's Banks--Building Site." The Economist 27 March 1993: 84.

-----. "China's Diaspora Turns Homeward." The Economist 27 November 1993: 33-34.

-----. "Chinese Get Share in Cargo Business." Aviation Week & Space Technology 6 December 1993: 34.

-----. "Hong Kong: Stepping Stone into China." Canadian Business 67 (1994): ss9-ss11.

-----. "Human Reunification." Business Asia 29 August 1994: 5-6.

-----. "It's Already 1997 in Hong Kong." The Economist 18 December 1993: 36-38.

-----. "On Chinese TV, Heir Time Reserved for Likely Successors to Deng." The State (Columbia, S.C.) 22 January 1995: A8.

-----. "Ports--Building A Network of Ocean and River Facilities." Institutional Investor 27 (1993): 16-18.

-----. "Quick off the Blocks--With Five Years to Go Before the Official Hand-Over Date Hong Kong is Already Exploiting China's Business Potential." The Banker December (1992): 56.

-----. "Sea Change." Business Asia Autumn (1993): 9-10.

-----. "Skirting the Pothples--Hopewell Wins Chinese Vote of Confidence." Far Eastern

Economic Review 3 December 1993: 62.

-----. "The Chinese Economic Area: A Fast Growing Region in Asia." Business America 115 (1994): 7-8.

-----. "The Conquest of China." The Economist 31 August 1991: 29.

-----. "The Overseas Chinese--A Driving Force." The Economist 18 July 1992: 21-24.

-----. "The Value of Connections." Far East Economic Review 3 December 1992: 51.

-----. "Transportation--Ambitious Plans to Extend Road and Rail Links." Institutional Investor 27 (1993): 4-6.

Bailey, Murray. "Gearing Up for 'Greater China'." Asian Business February (1989): 54-57.

Baldinger, Pamela. "The Birth of Greater China." The China Business Review 19 May-June 1992: 13-17.

Baldwin, David A. "Money and Power." The Journal of Politics 33 (1971): 578-614.

Bangsberg, P.T. "Hong Kong Port Operator Pursues Venture in China." Journal of Commerce and Commercial 31 March 1994: 9.

-----. "Hong Kong Retains No. 1 Spot among Global Boxports." Journal of Commerce and Commercial 28 February 1994: 7.

Barsony, Andre. (1991) "Co-operation with the Dynamic Asian Economies." OECD Observer February-March (1991): 14-21.

Batson, Bryan. "In Taiwan, Transportation Bidding Slightly Out of Sync." Global Trade & Transportation May (1993): 14.

Baum, Julian. "A Difficult Age." Far Eastern Economic Review 30 June 1994: 56.

-----."Bridge in Space--China and Taiwan to Build Satellite." Far Eastern Economic Review 25 March 1993: 69-70.

-----."Strait Expectations: Taiwan Businessmen Prepare for Direct Trade with China." Far Eastern Economic Review 6 June 1991: 40-41.

Blass, Anthony. "Crime: Smugglers' Outpost." Far Eastern Economic Review 24 June 1993: 34-35.

Blustein, Paul. "Forging 'Greater China'--Emigres Help Build An Economic Power." The Washington Post 1 December 1992: A1-A30.

Booth, David. "Development Research: From Impasse to A New Agenda." Beyond the Impasse--New Directions in Development Theory. Ed. Frans J. Schuurman. London: ZED Books, 1993. 49-76.

Bow, Josephine. "Booming Trade Taking Slow Boat to China." Distribution March (1994): 26-28.

Brams, Steven J. "Transaction Flows in the International System." American Political Science Review 60 (1966): 880-898.

Brekke, William A. "Hong Kong: A Window on China." Business America 18 November 1991: 6-7.

Burdman, Pamela. "Commuting Between Hong Kong and Guangzhou." The Chinese Business Review January-February (1991): 38-40.

Byme, Patrick M., Kim Woodward and Johnson Chow. "Success in China Takes Patience." T & D April (1994): 53-58.

Caplen, Brian and Mike Levin. "The New Pacific Capitalism." Asian Business 28 (1992): 18-22.

Chadran, Achmad. "Deregulation: The Great East Asian Cataiyst." Satellite Communications May 1993: 20.

Chu, Bob. "Taiwan: Maturing Economy Demands More Sophisticated Products." Business America 19 April 1993: 49-50.

Clifford, Mark. "A Question of Money." Far Eastern Economic Review 7 April 1994: 47-48.

Cooke, Kieran. "Chinese on the Rebound." Australian Business Monthly 13 (1993): 122-123.

Dahlberg, Kenneth A. "Regional Integration: the Neo-Functional Versus a Configurative Approach." International Organization 24 (1970): 122-128.

Davis, Ian. "Transportation and Utilities." Overseas Business Reports March (1993): 21-27.

-----. "Trade Regulation." Overseas Business Reports March (1993): 36-41.

Deutsch, Karl W. "The Propensity to International Transactions." Political Studies 8 (1960): 147-155.

Delia-Loyle, Donna. "China: 'Riding the New Trade Winds." Global Trade May (1992): 33-34.

Do Rosario, Louise. "Port of Convenience." Far Eastern Economic Review 1 September 1994: 22-23.

Einhorn, Bruce and Lynne Curry. "Mainland Fever Hits the Island." Business Week 10 August 1992: 38.

Engardio, Pete. "Asia's Wealth." Business Week 29 November 1993: 100-108.

-----., et. al. "Global Banker." Business Week 24 May 1993: 50-52.

-----. "The Wild, Wild East." Business Week 28 December 1992: 50-51.

Etzioni, Amitai. " The Dialectics of Supranational Unification." American Political Science Review 56 (1962): 927-935.

Flannery, Russell. "A Difficult Balance." Asian Business December (1993): 26-29.

-----. "Taiwan Banks Look at China." Asian Business June 1992: 60-62.

Franke, Richard H., et.al. "Cultural Roots of Economic Performance: A Research Note." Strategic Management Journal 12 (1991): 165-173.

Garten, Jeffrey E. "Asia and the New Economic Order." Far Eastern Economic Review 11 April 1991: 54.

Goff, John. "Needed: One Billion Telephones." Global Finance December (1993): 50-53.

Goldberg, Michael A. "Toward A Pacific Rim Property Market." Canadian Appraiser 36 (1992): 33-38.

Goldstein, Carl. "Strait Talking." Far Eastern Economic Review 3 December 1992: 46-48.

-----. "Skirting the Potholes--Hopewell Wins Chinese Vote of Confidence." Far Eastern Economic Review 3 December 1992: 62-63.

Gorham, Sid and Achmad M. Chadran. "Telecom Races Ahead." The Chinese Business Review March-April (1993): 18-25.

-----. "Communicating on the Go." The Chinese Business Review 26-March-April (1993): 26-30.

Greeway, H.D.S. "Greater China's Growing Clout." State (South Carolina State News Paper) 5 April 1993.

Haas, Ernst B. and Philippe C. Schmitter. "Economics and Differential Patterns of

Political Integration: Projections about Unity in Latin America." International Organization 18 (1964): 705-737.

Haas, Ernst B. "The Challenge of Regionalism." International Organization 12 (1958): 440-458.

Hamlin, Kevin. "Greater China." International Business 7 (1994): 66-76.

Harding, Harry. "The US and Greater China." The China Business Review 19 May-June 1992: 18-22.

Harvcey, David. "Population, Resources, and the Ideology of Science." Global Resources--Challenges of Interdependence. Ed. Martin I. Glassner. New York: Praeger, 1983. 97-103.

Ho, David and Nancy Leigh. "A Retail Revolution." The Chinese Business Review January-February (1994): 22-27.

Hock, Tan Lee. "OCBC Group Backs Direct Investments." Asian Finance August (1991):73.

Holsti, K. J. "The Concept of Power in the Study of International Relations." Background of World politics 7 (1964): 179-194

Hongyu, Qin. "China: 15 Years of Reform." Beijing Review 25-31 October 1993: 20-24.

Hornik, Richard. "Bursting China's Bubble." Foreign Affairs 73 (1994): 28-42.

Huntington, Samuel P. "The U.S.--Decline or Renewal?" Foreign Affairs Winter (1988-89): 76-96.

Janssen, Peter. "China's Window of Opportunity." Asian Business 30 (1994): 40-41.

Johnstone, Bob."Great Leap Forward." Far Eastern Economic Review 8 April 1993: 5

Jue, Stanton. "Economic Integration of South China and Its Implications for U.S.-China Relations." Asian Affairs Summer (1994): 108-127.

Kao, Jeffrey. "Phoning Home." The Chinese Business Review July-August (1992): 6-10.

Kao, John. "The Worldwide Web of Chinese Business." Harvard Business Review March-April (1993): 24-36.

Kaye, Lincoin. "Business Booms Across the Taiwan Strait--Netting A Quick Profit." Far Eastern Economic Review 16 November 1989: 68-69.

Keatley, Robert. "East Asia's Spending on Infrastructure is Bonanza to World's Manufacturers." The Wall Street Journal 21 January 1994: A8.

Keohane, Robert O. and Joseph S. Nye. "International "Interdependence and Integration." International Relations Theory--Realism, Pluralism, Globalism. Ed. Paul R. Viotti and Mark V. Kauppi. New York: Macmillan Publishing Company, 1987. 361-378.

Kim, Duk-Choong. "Open Regionalism in the Pacific: A World of Trading Blocs?" The American Economic Review 82 (1992): 79-83.

Kraar, Louis. "A New China without Borders." Fortune 5 October 1992: 112-132.

Lampton, David M. et.al. "The Emergence of 'Greater China': Implication for the United States." (A Report on A Project of the National Committee on U.S.-China Relations., Inc. with the Support of the Henry Luce Foundation). National Committee China Policy Series 5 (1992): 1-25.

Lee, Dinah. "Asia: The Next Era of Growth." Business Week 11 November 1991: 56-60.

Lee, Dinah and Dori Jones Yang. "Asia's New Fire-Breather--The Rise of Greater China as an Economic Power." Business Week 10 October 1989: 54-55.

Lee, Joseph W. "The Sky's the Limit." The Chinese Business Review May-June (1993): 12-18.

Li, David K.P. "Evolution of the Greater China Productivity Triangle." The World of Banking September-October (1992): 10-14.

Li, Ning. "China's Expanding Highway Network." Beijing Review 4-10 October 1993: 11-22.

Liang, Jun. "Shanghai Receives Top-Notch Mobile Phone System." China Daily 13 January 1994: 2.

Ma, Chenguang."Chinese Overseas Travel Increases." China Daily 1 February 1994: 1.

Mechaw, Michael. "Travel Boom Outpaces Hong Kong's Kai Tak." Aviation Week & Space Technology 4 April 1994: 37-38.

Mutch, Andrew J. "Connecting to the Far East." Site Selection 38 (1993): 763-766.

Nau, Henry R. "From Integration to Interdependence: Gains, Losses, and Continuing Gaps." International Organization 33 (1977): 119-147.

Nye, Joseph S. "Comparative Regional Integration: Concept and Measurement."

International Organization 22 (1968): 855-879.

-----. "Patterns and Catalysts in Regional Integration." International Organization 19 (1965): 870-884.

Odrich, Barbara. "Growing the Intra-Asian Shipping Business." Global Trade & Transportation January (1994): 24-27.

Overholt, William H. "The Rise of China's Economy." Business Economics April (1994): 29-34.

Pan, Zhongming. "Telecom Equipment Worth $7m on Its Way." China Daily 10 January 1994: 2.

Puchala, Donald J. "International Transactions and Regional Integration." International Organization 24 (1970): 732-763.

-----. "Of Blind Men, Elephants and International Integration." Journal of Common Market Studies 10 (1972): 267-284.

-----. "The Pattern of Contemporary Regional Integration." International Studies Quarterly 12 (1968): 38-64.

Purves, William. "China and Greater China: The New Economic Reality." The World of Banking July-August (1993): 18-20.

Reinfeld, William. "Infrastructure and Its Relation to Economic Development: The Cases of Korea and Taiwan." Industry of Free China August (1994): 51-97.

Reinganum, Julie and Tina Helsell. "To Market, To Market." The Chinese Business Review January-February (1994): 31-34.

Roberts, William. "Deadly Serious." The Banker November (1993): 80-82.

Rowley, Anthony. "Borderless Asia." Far Eastern Economic Review 17 September 1992: 77.

Roy, Barun. "A Bridge across the Straits: What Next?" Asian Finance (Hong Kong) 15 December 1988: 32-34.

Savage, I. Richard and Karl W. Deutsch. "A Statistical Model of the Gross Analysis of Transaction Flows." Econometrica 28 (1960): 551-572.

Selwyn, Michael. "SE Asian Chinese Head for Home." Asian Business 29 (1993): 24-29.

Sender, Henny. "Money Machines--China's Banks Are Forced to Act as Government

Cashiers." Far Eastern Economic Review 15 July 1993: 74-75.

-----. "Hong Kong: Cash Dispenser--Fast-Moving Money Underpins Economy." Far Eastern Economic Review 22 October 1992: 26-28.

-----. "Looking Ever Northwards." Far Eastern Economic Review 24 September 1992: 58-62.

-----. "Inside the Overseas Chinese Network." Institutional Investor September (1991): 37-42.

Shell, Adam. "Communications Revolution Reaches China." Public Relations Journal July (1993): 4.

Sihao, Xiong. "Keeping China's Development on Track." Beijing Review 15-21 November 1993: 13-17.

Silk, Mitchell A."Cracking Down on Economic Crime." The China Business Review May-June 1994: 21-28.

-----. "Reaching Across the Water." The China Business Review November-December (1988): 10-15.

Simmons, J.E.L. "Future Manufacturing Development in Taiwan." Work Study 43 (1994): 24-27.

Siu-Yin, Vera Lung. "The China Tourism Triangle." The China Business Review September-October (1993): 52-53.

Sklarewitz, Norman. "New Roads to the Chinese Kingdom." International Business November (1993): 42-47.

Steinberg, Carol. "The Road to China." World Trade 7 (1994): 30-38.

Stier, Kenneth J. "Experts Tell Asia-Pacific to Hike Telecom Spending." Journal of Commerce and Commercial 27 March 1991: 5A.

Stoltenberg, Clyde D. "China's Links to Southeast Asia." The Chinese Business Review May-June (1990): 33-38.

Tanzer, Andrew. "The Bamboo Network." Forbes 18 July 1994: 138-144.

-----. "Greater China, Greater Profit." Forbes 3 August 1993: 84-85.

-----. "The Chinese Way." Forbes 28 September 1992: 42-43.

-----. "The Three Chinas Boom." Forbes 6 July 1992: 47.

Tideman, Sander G. "Dealing with Nonconvertibility and Other Financial Aspects of Doing Business in China." East Asian Executive Reports July (1993): 16-22.

Tollison, Robert D. and Thomas D. Willett. "International Integration and the Interdependence of Economic Variables." International Organization 27 (1973): 255-271.

U.S. Department of Commerce. "The Chinese Economic Area: A Fast Growing Region in Asia." Business America March (1994): 7-8.

-----. Overseas Business Reports. March (1993): 1-53.

Vaughan, Roger J. "Rebuilding America--Financing Public Works in the 1980s" Rebuilding America's Infrastructure--An Agenda for the 1980s. Ed. Michael Barker. Durham, N.C.: Duke University Press, 1984. 101-286.

Westlake, Michael. "A Boost for Ports." Far Eastern Economic Review 10 March 1994: 32-34.

-----. "Commerce: Too Many Ships, Too Little Cargo." Far Eastern Economic Review 19 November 1992: 48-49.

Whitley, Richard D. "The Social Construction of Business Systems in East Asia." Organization Studies 12 (1991): 1-28.

Wu, Naitao. "China's 10 Key Railway Projects." Beijing Review 18-24 October 1993: 15-19.

-----. "China Eases Railway 'Bottlenecks'." Beijing Review 18-24 October 1993: 11-15.

Wu, Yunhe. "China to Slow Down GDP Growth." China Daily Supplement 3 January 1994: 1.

Xie, Liangjun. "Telecom to Get $6b Boost." China Daily 13 January 1994: 2.

Xie, Yicheng. "Rail Sector Tries Out Bold Corporate Reform." China Daily 18 January 1994: 1.

Young, Ian. "Special Economic Zones: China Opens Up--Foreign Investment Pours In." ChemicalWeek--Country Focus 25 August/1 September 1993: 30-32.

Zhen, Xui-ru. "The East Asian Miracle--Government Involvement in the Economic Growth." Industry of Free China June (1994): 27-32.

Books

Abraham, M. Francis. Perspectives on Modernization: Toward A General Theory of Third World Development. University Press of America, 1980.

Alker, Hayward, Jr. and Donald Puchala. Trends in Economic Partnership: The North Atlantic Area, 1928-1963. New York: The Free Press, 1967.

Apter, David E. Rethinking Development--Modernization, Dependency, and Postmodern Politics. California: Sage Publications, 1987.

Arad, Ruth W. and Uzi B. Arad, et.al. Sharing Global Resources. New York: McGraw-Hill Book Co, 1979.

Balassa, Bela. The Theory of Economic Integration. Illinois: Richard D. Irwin, Inc., 1961.

Baldwin, David A. Economic Statecraft. New Jersey: Princeton University Press, 1985.

Boyd, Gavin. Structural International Economic Cooperation. New York: St. Martin's Press, 1991.

Bull, Hedlay. The Anarchical Society: A Study of Order in World Politics. New York: Columbia University Press, 1977.

Caruth, Donald L. and Steven Austin Stovall. NTC's American Business Term and Dictionary. Illinois: National Textbook Co., 1994.

Chapman, J.D. Geography and Energy: Commercial Energy Systems and National Policies. Longman Scientific & Technical, 1989.

Chatterji, Manas. ed. Energy and Environment in the Developing Countries. New York: John Wiley & Sons, 1981.

Choudhury, Masudul A. Comparative Development Studies--In Search of the World View. New York: St. Martin's Press, 1993.

Clark, John G. The Political Economy of World Energy--A Twentieth-Century Perspective. Chapel Hill: The University of North Carolina Press, 1991.

Cline, Ray S. World Power Assessment--A Calculus of Strategic Drift. Washington D.C.: Georgetown University Press, 1975.

Collins, Michael J. Western European Integration. New York: Praeger, 1992.

Deutsch, Karl W., et.al. Political Community and the North Atlantic Area: International Organization in the Light of Historical Experience. New Jersey: Princeton

University Press, 1957.

-----., et.al. France, Germany and the Western Alliance: A Study of Elite Attitudes on European Integration and World Politics. New York: Charles Scribner's Sons, 1967.

Dorner, Peter. ed. Resources and Development--Natural Resource Policies and Economic Development in an Interdependent World. The University of Wisconsin Press, 1977.

Dougherty, James E. and Robert L. Pfaltzgraff. Contending Theories of International Relations. New York: Harper & Row, Publishers, Inc., 1990.

Douhet, Giulio. The Command of the Air. New York: Arno Press, 1972.

Etzioni, Amitai. Political Unification--A Comparative Study of Leaders and Forces. New York: Holt, Rinehart and Winston, Inc., 1965.

Feld, Warner J. International Relations: A Transnational Approach. California: Alfred Publishing Co., 1979.

Fukuyama, Francis. The End of History and the Last Man. New York: Free Press, 1992.

Galenson, Walter. ed. China's Economic Reform. San Francisco: The 1990 Institute, 1993.

Gill, Stephen and David Law. The Global Political Economy. Baltimore: Johns Hopkins University Press, 1988.

Gilpin, Robert. The Political Economy of International Relations. New Jersey: Princeton University Press, 1987.

Glassner, Martin I., ed. Global Resources--Challenges of Interdependence. New York: Praeger, 1983.

Graham, Daniel. High Frontier--A Strategy for National Survival. New York: Tom Doherty Associates, Inc., 1983.

Grathwohl, Manfred. World Energy Supply--Resources, Technologies, Perspectives. New York: Walter de Gruyter, 1982.

Haas, Ernst B. The Uniting of Europe--Political, Social, and Economic Forces, 1950-1957. California: Stanford University Press, 1958.

-----. Beyond the Nation-State: Functionalism and International Organization. California: Stanford University Press, 1964.

Hart, H. L. A. The Concept of Law. Oxford: Clarendon Press, 1961.

Heilbroner, Robert L. The Nature and Logic of Capitalism. New York: W.W.Norton, 1985.

Holsti, K.J. International Politics: A Framework for Analysis. New Jersey: Prentice-Hall, 1967.

Hughes, Barry B., et.al. Energy in the Global Arena--Actors, Values, Policies, and Futures. Durham, N.C.: Duke University Press, 1985.

Huntington, Samuel P. Political Order in Changing Societies. Yale University Press, 1968.

Hoffmann, Stanley, et.al. Contemporary Theory in International Relations. New Jersey: Prentice-Hall, Inc., 1960.

Infrastructure Policies for the 1990s. Washington D.C: Organization for Economic Co-operation and Development, 1993.

Investing, Licensing & Trading Conditions Abroad--China, 1994. The Economist Intelligence Unit, 1994.

Investing, Licensing & Trading Conditions Abroad--Taiwan, 1993. The Economist Intelligence Unit, 1993.

Investing, Licensing & Trading Conditions Abroad--Hong Kong, 1992. The Economist Intelligence Unit, 1992.

Keohane, Robert O. and Joseph S. Nye. Power and Interdependence: World Politics in Transition. Boston: Little, Brown and Company, 1977.

Kindleberger, Charles P. Power and Money: The Politics of International Economics and the Economics of International Politics. New York: Basic Books, 1970.

Lasswell, Harold D. World Politics and Personal Insecurity. In A Study of Power. Illinois: The Free Press, 1950.

Lee, Keun. New West Asian Economic Development--Interacting Capitalism and Socialism. New York: M.E.Sharpe, 1993.

Link, Albert N. International Dictionary of Business Economics. Chicago: Probus Publishing Co., 1993.

Mackinder, Halford. Democratic Ideals and Reality. New York: Norton, 1962.

Mahan, Alfred Thayer. The Influence of Seapower Upon History, 1660-1783. New

York: Hill and Wang, 1957.

McClelland, Charles A. Theory and the International System. New York: The Macmillian Co., 1966.

The McGraw-Hill Dictionary of Modern Economics. New York: McGraw-Hill Book Co., 1983.

Merriam, Charles E. Political Power. In A Study of Power. Illinois: The Free Press, 1950.

Morgenthau, Hans J. Politics Among Nations. New York: Knopf, 1978.

Niebuhr, Reinhold. Moral Man and Immoral Society. New York: Scribner's, 1947.

Nye, Joseph S. International Regionalism. Boston: Little, Brown and Company, 1968.

O'Leary, James P. Systems Theory and Regional Integration: The "Market Model" of International Politics. University Press of America, 1978.

Overholt, William H. The Rise of China--How Economic Reform Is Creating A New Superpower. New York: W.W. Norton & Company, 1994.

Parker, Geoffrey. The Logic of Unity. New York: Longman, 1981.

Pentland, Charles. International Theory and European Integration. New York: The Free Press, 1973.

Rabushka, Alvin. The New China--Comparative Economic Development in Mainland China, Taiwan, and Hong Kong. Colorado: Westview Press, 1987.

Ricardo, David. On the Principles of Political Economy and Taxation. Washington D.C.: J. Milligan, 1819.

Rosecrance, Richard N. The Rise of the Trading State: Commerce and Conquest in the Modern World. New York: Basic Books, 1986.

-----. Action and Reaction in World Politics. Boston: Little Brown, 1963.

Rosenau, James N. Turbulence in World Politics--A Theory of change and Continuity. New Jersey: Princeton University Press, 1990.

Rutherford, Donald. Dictionary of Economics. New York: Routledge, 1992.

Smil, Vaclav. China's Environmental Crisis--An Inquiry into the Limits of National Development. New York: An East Gate Book, 1993.

Smith, Adam. An Inquiry into the Nature and Causes of the Wealth of Nations. Oxford: Clarendon Press, 1976.

Spero, Joan E. The Politics of International Economic Relations. New York: St. Martin's Press, 1981.

Sprout, Harold and Margaret Sprout. The Ecological Perspective on Human Affair--With Special Reference to International Politics. Princeton University Press, 1965.

-----. Toward A Politics of the Planet Earth. Van Nostrand Reinhold Company, 1971.

Spykman, Nicholas J. America's Strategy in World Politics. New York: Harcourt Brace Jovanovich, 1942.

Strange, Susan, ed. Paths to International Political Economy. London: George Allen & Unwin, 1984.

Sullivan, Michael P. International Relations: Theories and Evidence. New Jersey: Prentice-Hall, 1967.

Swift, Adam. Global Political Ecology. London: Pluto Press, 1993.

Tassey, Gregory. Technology Infrastructure and Competitive Position. Kluwer Academic Publishers, 1992.

Thomas, Raju G.C. and Bennett Ramberg, ed. Energy & Security in the Industrializing World. The University Press of Kentucky, 1990.

Viotti, Paul R. and Mark V. Kauppi. International Relations Theory--Realism, Pluralism, Globalism. New York: Macmillan Publishing Company, 1987.

Wade, Robert. Governing the Market--Economic Theory and the Role of Government in East Asian Industrialization. New Jersey: Princeton University Press, 1990.

Waltz, Kenneth N. Man, the State and War. New York: Columbia University Press, 1959.

Willrich, Mason, et.al. Energy and World Politics. New York: The Free Press, 1975.

Yeung, Yue-man and Xu-wei Hu, ed. China's Coastal Cities--Catalysts for Modernization. Honolulu: University of Hawaii Press, 1992.

Zimmermann, Erich W. World Resources and Industries. New York: Harper & Bros. Publishers, 1951.

B. Chinese References
(中文索引)

(Note: Chinese PinYin is used in the Chinese References and Chinese characters are included in order to make readable for Chinese readers.)

TongJi ZiLiao
(統計資料)

1. ShiJie ZhuYao GuoJia He DiQui SheHuiFaZhan BiJia TongJiZiLiao. ZhongGuo GuoJia TongJiJu XinXi ZhongXing Bian, 1990.
【世界主要國家和地區社會發展比較統計資料】，中國國家統計局國際統計信息中心編，１９９０

2. ZhongGuo TongJi NianJian, 1992. ZhongGuo GuoJia TongJiJu, 1992.
【中國統計年鑒，１９９２】，中國國家統計局，１９９２

3. ZhongGuo TongJi GaiLan. ZhongGuo GuoJia TongJiJu, 1980-1992.
【中國統計概覽】，中國國家統計局，１９８０－１９９２

4. ZhongGuo LuYun NianJian, 1992. ZhongGuo GuoJia LuYunJu, 1992.
【中國旅游年鑒，１９９２】，中國國家旅游局，１９９２

5. 1990 LaiHua LuYunZhe ChouYang DiaoCha ZiLiao. ZhongGuo GuoJia LuYunJu JiHua TongJiSi Bian, 1991.
【１９９０來華旅游者抽樣調查資料】，中國國家旅游局計劃統計司編，１９９１

6. ZiYou ZhongGuo Zi GongYe. Taiwan XingZhengYun JingJi JianShe Wei YuanHui, 1990-1995.
【自由中國之工業】，台灣行政院經濟建設委員會，１９９０－１９９５

BaoKan WenChang
(報刊文章)

XinHua MeiRi DianXun (ZhongGuo XinHuaShe)
【新華每日電訊】（中國新華社）

7. "GuanYu 1993 NianGuoMinJinJi He SheHuiFaZhanJiHuaZhiXingQingKuang Yu 1994 Nian GuoMin JinJi He SheHuiFaZhan JiHuaCaoAn De BaoGao."(Guo Jia JiHua WeiYuangHui ZhuRen, Chen JingHua), 1994.3.25.
“關于１９９３年國民經濟和社會發展計劃執行情況與１９９４年國民經濟和社會發展計劃草案的報告”（國家計劃委員會主任 陳錦華），１９９４年３月

8. "Zhong Hua RenMin GongHeGuo GuoJia TongJiJu GuanYu 1993 Nian GuoMin JinJi He SheHui FaZhan De TongJi GongBao, 1994.3.1."
“中華人民共和國國家統計局關于１９９３年國民經濟和社會發展的統計公報，１９９４年３月１日”

9. "GuanYu 1992 Nian GuoMinJinJi He SheHuiFaZhan JiHua ZhiXingQingKuang Yu 1993 Nian JiHuaCaoAn De BaoGao."(GuoWuYuan FuZhongLi Jian GuoJia JiHua WeiYuangHui ZhuRen, Zou JiaoHua), 1993.4.4.
"關于１９９２年國民經濟和社會發展計劃執行情況與１９９３年計劃草案的報告"（國務院副總理兼國家計劃委員會主任 鄒家華），１９９３年４月４日

10. "GuoJia TongJiJu Guan Yu 1992 Nian GuoMinJinJi He SheHui FaZhan De TongJi GongBao, 1993.2.19."
"國家統計局關于１９９２年國民經濟和社會發展的統計公報，１９９３年２月１９日"

11. "WoGuo YiDong TongXinYe FaZhanShiTou Meng--PingJun MeiTianYouQian Bu `DaGeDa' TouRuo ShiYong." 1993.10.10.
"我國移動通信業發展勢頭猛－平均每天有千部大哥大投入使用"，１９９３年１０月１０日

12. "Taiwan ShiShi LiangAn MaoYi Xin De `XuKeBianFa'." 1993.4.29.
"台灣實施兩岸貿易新的'許可辦法'"，１９９３年４月２９日

13. "WoGuo BB Ji YongHu 133.7 Wan ZongShu Jui ShiJie Di Si." 1992.7.12.
"我國ＢＢ機用户１３３．７萬總數居世界第四"，１９９２年７月１２日

XinWen Gao (ZhongGuo XinHuaShe)
【新聞稿】（中國新華社）

14. "GuoJia TongJiJu YinRi Fabu GuanYu 1991 Nian GuoMinJinJi He SheHui FaZhan De TongJi GongBao." 1992.2.29.
"國家統計局今日發布關于１９９１年國民經濟和社會發展的統計公報"，１９９２年２月２９日

15. "ZhongHua RenMin GongHeGuo GuoJia TongJiJu GuanYu 1990 Nian GuoMin JinJi He SheHui FaZhan De Tongji GongBao." 1991.2.23.
"中華人民共和國國家統計局關于１９９０年國民經濟和社會發展的統計公報"１９９１年２月２３日

16. "1989 Nian GuoMinJinJi He SheHuiFaZhan De TongJi GongBao." 1990.2.21.
"１９８９年國民經濟和社會發展的統計公報"，１９９０年２月２１日

XinWen Gao (ZhongGuo XinWenShe)
【新聞稿】（中國新聞社）

17. "Taiwan 15 Jia YingHang KaoChaTuan QiChen Fu DaLu." 1993.5.6.
"台灣１５家銀行考察團啓程赴大陸"，１９９３年５月６日

18. "Taiwan GongBu LiangAn JinRong WanLai XuKe BanFa." 1993.5.5.
"台灣公布兩岸金融往來許可辦法"，１９９３年５月５日

19. "Taiwan JueDing FaKuan Dui DaLu JianJie HuiKuan XianZhi." 1993.5.28.
"台灣決定放寬對大陸間接匯款限制"，１９９２年５月２８日

20. "Taiwan JinJiBu LieZhun 146 Xiang FuWuYe ShangYe TouZhi DaLu." 1992. 5.20.
“台灣經濟部列準１４６項服務業商業投資大陸”，１９９２年５月２０日

21. "Li LanQing Tan HaiXiaLiangAn JinMao GuanXi." 1992.5.6.
“李嵐清談海峽兩岸經貿關系”，１９９２年５月６日

22. "HaiXiaLiangAn YouDianYeWuLiang ZhuNian DafuDu ShangSheng." 1992.1.31.
“海峽兩岸郵電業務量逐年大幅度上升”，１９９２年１月３１日

RenMin RiBao (DaLu)
【人民日報】（大陸）

23. "WoGuo YouDian TongXin LianXu 9 Nian KuaiSu ZengZhang." 1994.1.18.
“我國郵電通信連續九年快速增長”，１９９４年１月１８日

RenMin RiBao (DaLu, HaiWaiBan)
【人民日報】（大陸，海外版）

24. "ZhongGuo XiNan MinHang JiaoKuai JiChang JianShe." 1992.12.26.
“中國西南民航加快機場建設”，１９９２年１２月２６日

25. "ShanXi BaoJi Shi JianLi LuGang KouAn." 1992.12.26.
“陝西寶鷄市建立陸港口岸”，１９９２年１２月２６日

26. "JiNan XiYin WanZi ZhuNian DiZheng." 1992.8.10.
“濟南吸引外資逐年遞增”，１９９２年８月１０日

27. "Wo Jiang YunXu LiYong WanZi Jian TieLu." 1992.7.16.
“我將允許利用外資建鐵路”，１９９２年７月１６日

28. "ZhongGuo ChuXian QuanFangWei KaiFang GeJu." 1992.6.5.
“中國出現全方位開放格局”，１９９２年６月５日

XinHuaShe NeiCan: TaiGangAo QingKuang (DaLu)
【新華社內參：台港澳情況】（大陸）

29. "TouShi TaiShang DaLu TouZi." 1992.6.16.
“透視台商大陸投資”，１９９２年６月１６日

30. "Taiwan JinJiFaZhan De JinYan Yu LiangAnGuanXi FaZhan." 1992.6.2.
“台灣經濟發展的經驗與兩岸關系發展”，１９９２年６月２日

31. "HongKong DianXun FaDa ShiJie YiLui." 1991.12.10.
“香港電訊發達世界一流”，１９９１年１２月１０日

JianShe Bao (DaLu)
【建設報】（大陸）

32. "1993 Nian ChengShiJianShe TongJiGongBao."(ZhongGuo JianSheBu JiHua CaiWuSi), 1994.4.21.
“１９９３年城市建設統計公報”（中國建設部計劃財務司），１９９４年４月２１日

ZhongGuo JiaoTongBao (DaLu)
【中國交通報】（大陸）

33. "Yan ChangJiang Jiang Jian TieLu GangXian." 1993.8.18.
“沿長江將建鐵路干綫”，１９９３年８月１８日

GongShang ShiBao (DaLu)
【工商時報】（大陸）

34. "WoGuo ChuanYe YingHang Jiang BianChen ShangYe YingHang." 1993.8.11.
“我國專業銀行將變成商業銀行”，１９９３年８月１１日

MeiChuo WenZhai (DaLu)
【每周文摘】（大陸）

35. "XiWang LiangAn LianHe DaJiFanZui, Tai Ni Pai TuiXiuJingGuan FuDaLu." 1993.8.18.
“希望兩岸聯合打擊犯罪，台擬派退休警官赴大陸”，１９９３年８月１８日

JinJi RiBao (DaLu)
【經濟日報】（大陸）

36. "TongXin Shi JinJiFaZhan De YiGe QiDian--YouDianBu BuZhang WuJiChuan Fang Tan Lu." (Song Xiaomin). 1994.4.19.
“通信是經濟發展的一個起點 － 郵電部部長吳基傳訪談録”，（宋曉明），１９９４年４月１９日

JinJi CanKao (DaLu)
【經濟參考】（大陸）

37. "WoGuo XinYongKa FaXing ShuLiang NianDi Da 700 Wan Chang." 1994.3.3.
“我國信用卡發行數量年底達７００萬張”，１９９４年３月３日

You Dian Bao (DaLu)
【郵電報】（大陸）

38. "13 ShengSi JiaoHuanJi RongLiang Guo BaiWan."(ZhongGuo YouDianBu), 1994.3.19.
“１３省市交換機容量過百萬”，（中國郵電部），１９９４年３月１９日

39. "1993 Nian YouDian ShiYe FaZhanQingKuang TongJiGongGao."(ZhongGuo YouDianBu JiHua JianShe Si), 1994.4.14.
“１９９３年郵電事業發展情況統計公告”，（中國郵電部計劃建設司），１９９４年４月１４日

HaiNan RiBao (DaLu)
【海南日報】（大陸）

40. "Taiwan TieLu." 1992.4.8.
“台灣鐵路”，１９９２年４月８日

41. "SiTong BaDa De Taiwan GongLu." 1992.2.15.
“四通八達的台灣公路”，１９９２年２月１５日

GuoWuYuan GongBao (ZhongGuo GuoFa [1993] 91 Hao)
【國務院公報】（中國國發［１９９３］９１號）

42. "GuoWuYuan GuanYu JingRong TiZhi GaiGe De JueDing." 1994.1.29.
“國務院關于金融體制改革的決定”，１９９４年１月２９日

SheHuiZhuYi ShiChang JinJi LiLu XiLie JiangZuo Zi 6
【社會主義市場經濟理論系列講座之六】

43. "GuanYu CaiShuiTiZhi GaiGe."(ZhongGuo CaiZhengBu BuZhang: LuiZongLi), 1994.4.2.
“關于財稅體制改革”，(中國財政部部長 劉仲藜)，１９９４年２月

44. "ZhongGong ZhongYang GuanYu SheHuiZhuYi ShiChang JinJi TiZhi RuoGan WenTi De JueDing." 1993.11.14.
【中共中央關于社會主義市場經濟體制若干問題的決定】，１９９３年１１月１４日

XueSu DongTai (ZhongGuo SheHui KeXueYuang KeYanJu)
【學術動態】（中國社會科學院科研局）

45. "GaiGe KaiFa YiLai NaGe Sheng Shi FaZhan Kuai." 1994.2.18.
“改革開放以來哪個省市發展快”，１９９４年２月１８日

MinTai JiaoWang YanJiu (ZhongGuo MinTai JinJi WenHua JiaoWang CuJinHui DiaoYan ZiLiao Shi)
【閩台交往研究】（中國閩台經濟文化交往促進會調研資料室）

46. "Taiwan 1993 Nian JinJi QingKuang ZongSu." 1994.2.17.
“台灣１９９３年經濟情況綜述”，１９９４年２月１７日

ZhongYang RiBao (Taiwan)
【中央日報】（台灣）

47. "You Zheng ZongJuZhang: TouDi DaLu KuaiJieYouJian SanTian DiDa." 1994.8.7.
“郵政總局長：投遞大陸快捷郵件三天抵達”，１９９４年８月７日

48. "ZhongGong GuiHua Yu XinJian Nan Bei YunShuWang." 1993.9.9.
“中共規劃興興建南北運輸網”，１９９３年９月９日

49. "ShengChan ChenBan RiZheng, GuanLiao ZuoFeng RiSheng--Shenzhen Po Duo QiYe You Yi Wan Yi." 1993.7.9.
“生產成本日增，官僚作風熾盛－ 深圳頗多企業有意外移”，１９９３年７月９日

50. "YuYan, XinYang, WenHua XiangTong, MinTaiLiaoDi 'ShenJiao' YiJiu." 1993.5.23.
“語言、信仰、文化相同，閩台兩地‘神交’已久”，１９９３年５月２３日

51. "Dalian Yin TaiGang TouZi XuQiu, HuanYing TaiGang YingHang KaiShe FenHang." 1993.5.22.
“大連應台港投資需求，歡迎台港銀行開設分行”，１９９３年５月２３日

52. "ZhengDun JinRong Ci Xu, NuZhuang HunLun JuMian." 1993.5.22.
“整頓金融秩序，扭轉混亂局面”，１９９３年５月２２日

53. "WuYunYinSu ZhuJianDanChu, CongBai QiJu ZhaiYinTaiZi." 1993.5.21.
“五緣因素逐漸淡出，重擺棋局再引台資”，１９９３年５月２１日

54. "JinMao DaQiao, HuLi GongRong--YingZao LiaoAn JinMao ShuangYin GeJu TanJu." 1993.5.21.
“經貿搭橋，互利共榮－ 營造兩岸經貿雙贏格局探究”，１９９３年５月２１日

55. "ZhongGong ZhengZhiJu Tong Guo 16 Tiao JinJi TiaoKong CuoShi." 1993.5.14.
“中共政治局通過１６條經濟調控措施”，１９９３年５月１４日

56. "ZhiZhi TongHuoPangZhang, BiMian JinJi ShiKong." 1993.5.14.
“制止通貨膨脹、避免經濟失控”，１９９３年５月１４日

57. "Yong Feng Yu Den Lu ChangJiang SanJiaoZhou Shi Zun Ai." 1993.4.5.
“永豐餘登陸長江三角洲是最愛”，１９９３年４月５日

58. "XinDong DianHua ShiChang LiJi Po Bei KaiHao." 1993.3.18.
“行動電話市場利基頗被看好”，１９９３年３月１８日

59. "Taiwan BaiDaFuHao Pai Hang Bang." 1993.3.9.
“台灣百大富豪排行榜”，１９９３年３月９日

60. "Tai Shang Nan HaiJin YuYi Zan Jian Wen-Fu TieLu." 1993.2.6.
“台商南戡瑾有意再建溫福鐵路”，１９９３年２月６日

61. "ZhiXunYe DaZhongGuo JinJiQuan Yi Jian ChenXin." 1992.12.13.
“資訊業大中國經濟圈已漸成形”，１９９２年１２月１３日

62. "TaiShang Fu DaLu TouZi GaoDa 36 Yi MeiYuan." 1992.11.16.
“台商赴大陸投資高達３６億美元”，１９９２年１１月１６日

63. "HeChen Jue Yin Jun DaLu WeiYu SheBei SiChang." 1992.2.21.
“和成決進軍大陸衛浴設備市場”，１９９２年２月２１日

64. "Sichuan TaiShang QiYe Yu 5 Bai Jia." 1992.2.21.
“四川台商企業逾五百家”，１９９２年２月２１日

ZhongGuo DaLu YanJiu (Taiwan GuoLi ZhengzhiDaXue GuoJiGuanXi YanJiu ZhongXin)
【中國大陸研究】（台灣國立政治大學國際關系研究中心）

65. Li Ming-hui & Yang Ming-hsien. "Taiwan DiQu MinZhong DaLu De LuYou XingWei Yu HuanJing RenZhi Zhi YanJu." Vol.36, No.7, 1993.7.
李明輝 楊明賢 “台灣地區民衆大陸的旅游行爲與環境認知之研究”，第３６卷，第７期，１９９３年７月

66. Chen Deshen. "ZhongGong De ZhengJin GaiGe HuDong GuanXi Yu Ying Xiang." Vol.36, No.4, 1993.4.
陳德升 “中共的政經改革互動關系與影響”，第３６卷，第４期，１９９３年４月

67. Liang Yu-ying. "Hongkong Yu Guangdong De JinJi HuLaiGuanXi." Vol.36, No. 2, 1993.2.
梁玉英 “香港與廣東的經濟互賴關系”，第３６卷，第２期，１９９３年２月

68. Zhu Yen-min "DaLu TieGongLu JianShe Yu ShiYe JiHua Zhi BiJiao." Vol.36, No.2, 1993.2.
朱言明 “大陸鐵公路建設與實業計劃之比較”，第３６卷，第２期，１９９３年２月

69. Wang Ling-ling. "Lun TaiHaiLiaoAn De XinWen JiaoLiu." Vol.35, No.9, 1992.9.
王玲玲 “論台海兩岸的新聞交流”，第３５卷，第９期，１９９２年９月

70. "Taiwan DiQu Yu DaLuDiQu RenMinGuanXi TiaoLi." Vol.35, No.9, 1992.9.
“台灣地區與大陸地區人民關系條例”，第３５卷，第９期，１９９２年９月

71. Ding Sufan "KaiFang TanQin Yi Lai ZhongHuaMinGuo DaLu ZhengCe De FaZhan." Vol.35, No.8, 1992.8.
丁樹範 “開放探親以來中華民國大陸政策的發展”，第３５卷，第８期，１９９２年８月

72. Yeh Chih-ying. "DaLu XueZhe Kan LiaoAn JinMao GuanXi." Vol.35, No.7, 1992.7.
葉楨英 “大陸學者看兩岸經貿關系”，第３５卷，第７期，１９９２年７月

73. Wu Anjia. "'ZhongHua JinJi XieZuo XiTong' De ZhengZhi HanYi." Vol.35, No.2, 1992.2.
吳安家 “‘中華經濟協作系統’的政治意涵”，第３５卷，第２期，１９９２年２月

74. Sun Kuo-ch'en. "ZhongHuaMinGuo DaLu ZhengCe Yu ZhongGong Dui Tai Zheng Ce De BiJiao PingGu." Vol.35, No.1, 1992.1.
宋國誠 “中華民國大陸政策與中共對台政策的比較評估”，第３５卷，第１期，１９９２年１月

75. Ma Ying-jeou. "Si Nian Lai De DaLuZhengCe Yu LiaoAnGuanXi." Vol.34, No.12, 1991.9.
馬英九 “四年來的大陸政策與兩岸關系”，第３４卷，第１２期，１９９１年９月

76. Chang Hu. "Cong TaiHai LiaoAn ZhengZhi FaZhan Kai DaLu TanQi Zi ZhengZhi YingXiang." Vol.31, No.8, 1989.2.
張 虎 “從台海兩岸政治發展看大陸探親之政治影響”，第３１卷，第８期，１９８９年２月

ZhongGuo DaLu YueKan (Taiwan)
【中國大陸月刊】（台灣）

77. Cheng Chaoze. "'ZhongHua JingJi XieZuo XiTong' ChuTan." 1994.2.
程超澤 “‘中國經濟協作系統’初探”，１９９４年２月

DaLu, Taiwan, Hongkong JinJiHeZuo QuXiang YanTaoHui LunWenJi. (Beijing, 1993.9.)
【大陸、台灣、香港經濟合作趨向研討會論文集】（北京，１９９３年９月）

78. Chen Wenhong. "Dui LianAn DouZi MaoYi De Zai ShiKao."
陳文鴻 “對兩岸投資貿易的再思考”

79. Dai Yuanchen. "DaLu He GangAoTai JinJi LianXin De QuShi Ji Ying Yi BuDe SheXiang."
戴園晨 “大陸和港、澳、台經濟聯系的趨勢及進一步的設想”

80. Fang Sheng. "ZhongGuo DaLu, Taiwan, Hongkong De JinJiHeZuo."
方 生 “中國大陸、台灣、香港的經濟合作”

81. Guo Yiyao. "HaiXia LianAn SanDi JinJiHeZuo YiTiHua De YiXie ChangQi GuanDian."
郭益耀 “海峽兩岸三地經濟合作一體化的一些長期觀點”

82. Hou JiaJu. "HuaRen jinJiQuan ShiXian KeNenXin Zi PingGu."
侯家駒 “華人經濟圈實現可能性之評估”

83. Ji Congwei. "DaLu, Taiwan, Hongkong JinMiHeZuo, ZhenXinZhongHua, GongChuangFanRong."
季崇威 “大陸、台灣、香港緊密合作，振興中華，共創繁榮”

84. Li Chen. "Lao Gong ZhengCe Yu TaiGangLu JinJi De HeZuo."
李 誠 “勞工政策與台港陸經濟的合作”

85. Li Jiaquan. "LianAn JinMaoGuanxi XianZhuang Yi FaZhan QuXiang TanTao."
李家泉 “兩岸經貿關系現狀及發展趨向探討”

86. Li Xinyu. "LuGangTai JinJi XieZuo XiTongZi'ZhenTi BaoZhang' ChuTan."
李新玉 “陸港台經濟協作系統之‘整體保障’初探”

87. Wang Renhong. "CongTaiwan LiChang KaiTaiwan Yu DaLuDe JinMao GuanXi."
王仁宏 “從台灣立場看台灣與大陸的經貿關系”

88. Xu Songgen. "Tai Shang Yu LianAn jinMao FaZhan."
許松根 “台商與兩經貿發展”

ChanKao ShuMu
參考書目

89. GuoFu QuanJi. (Vol.2). Taiwan, 1981.
【國父全集】，（第二册），台灣，１９８１

90. KanDeJian De Shou--ShiChangJingJi Zhong De ZhengFeZhiNeng ShangHaiRenMin ChuBanShe, 1993.
【看得見的手－市場經濟中的政府質能】，上海人民出版社，１９９３

91. Xin Shui Fa ShiYong ZhiNan. ZhongGuo FaZhan ChuBanShe, 1994.
【新稅法實用指南】，中國發展出版社，１９９４年

92. Xin Shui Zhi FaGui ji ShiShi XiZe XuanBian. DiZhi ChuBanShe, 1993
【新税制法規及實施細則選编】，地質出版社，１９９３年

93. WaiGuo ZhiJie TouZi. ShangHai RenMin ChuBanShe, 1993.
【外國直接投資】，上海人民出版社，１９９３年

94. WaiShang LaiHua TouZi ShiWu. "JingJi RiBao" ChuBanShe, 1994.
【外商來華投資實務】，“經濟日報”出版社，１９９４年

95. ZhongGuo TouZi.ZhongGuo ShangYe ChuBanShe, 1993.
【中國投資】，中國商業出版社，１９９３