



Università
Ca' Foscari
Venezia

Master's Degree
in
Economics and Finance

Final Thesis

Analysis of the differences between U.S. financial markets and Chinese financial markets and their impact on economic growth

Supervisor

Ch. Prof. NARDON Martina

Graduand

Hui Zizhen
989989

Academic Year

2020 / 2021

Contents

Acknowledgement.....	1
Introduction.....	2
CHAPTER 1:	5
LITERATURE REVIEW ON FINANCIAL MARKET.....	5
1.1 Theory of financial structure.....	5
1.1.1 Gurley and Shaw's view of financial structure.....	7
1.1.2 Goldsmith's Theory of Financial Structure.....	9
1.1.3 McKinnon and Shaw's view of Financial Structure.....	17
1.1.4 The financial structure view of the endogenous financial growth theory.....	18
1.2 Financial Structure and Economic Development.....	19
1.3 Theories of Financial Structure and Economic Growth.....	21
1.3.1 Financial Structure and Economic Growth.....	21
1.3.2 Theoretical differences in the relationship between financial structure and economic growth	24
Financial structure has a role in economic growth.....	24
Financial structure does not support economic growth.....	25
1.3.3 Differences in the functional mechanisms of financial intermediation and financial markets for economic growth.....	26
CHAPTER 2:.....	29
FINANCIAL MARKETS IN CHINA AND THE UNITED STATES AND RELATED THEORETICAL ANALYSIS.....	29
2.1 The connotation and composition of the Chinese and American financial markets.....	29
2.1.1 The U.S. financial market.....	30
2.1.2 China Financial Market Composition.....	31
2.2 Differences between China's and America's financial systems.....	39
2.2.1 Structure of the United States Financial System.....	40
2.2.2 The Structure of the Chinese Financial System.....	41
2.3 The Comparison of China's financial regulation and United States financial regulation.....	44
2.3.1 Main Features of Financial Regulation in China.....	45
2.3.2 Main features of the United States Financial Regulatory System.....	45
2.4 Analysis and Comparison of Financial Market Innovation in China and the US.....	46
2.4.1 The development of China's financial innovation.....	47
2.4.2 The development of American financial innovation.....	48
CHAPTER 3:.....	50
ANALYZE THE VOLATILITY OF CHINESE AND U.S. FINANCIAL MARKETS AND THE RELATIONSHIP BETWEEN FINANCIAL MARKETS AND ECONOMIC GROWTH.....	50
3.1 Analysis and comparison of financial market volatility in the US and China under the impact of the epidemic.....	50
3.1.1 Analysis and comparison of the volatility of American and Chinese financial markets.....	51
3.2 Theoretical analysis of the mechanism of the role of financial markets and economic growth.....	58
CHAPTER 4: RESULTS AND DISCUSSION.....	62
4.1 Chinese Financial Market Results.....	62
4.2 U.S. Financial Market Results.....	69
Concluding remarks.....	75
Limitations.....	76
References.....	77

LIST OF FIGURES

Figure 2.1: The Chinese Bond Market.....	33.
Figure 2.2: The Chinese stock market structure.....	33.
Figure 2.3: Official China's gold reserves.....	35
Figure 2.4: The leading derivatives exchanges in the world.....	38
Figure 2.5: The structure of the Chinese financial system.....	42
Figure 3.1: U.S. main expenditure composition.....	54.
Figure 3.2: U.S. annual fisical deficit in goods and services.....	54
Figure 3.3: U.S. annual international tourism balance.....	55.
Figure 4.1: A and B share indices in Shanghai.....	64
Figure 4.2: Yearly return: stock market and bank deposits(%):1992-2018 Yearly stock returns (Shanghai composite) exclusive of dividends.	65
Figure Figure 4.3: Real Shanghai stock market index(in logarithm).....	66

List of tables

Table 1.1: The average volume and share in global commodities.....	37
Table 4.1: Rolling computation for one day and up to 10-year holding periods for Shanghai A-shares.....	67

Acknowledgement

I would like to express my gratitude to all those who helped me during the writing of this thesis.

My deepest gratitude goes first and foremost to Professor Martina Nardon , my supervisor, for her constant encouragement and instructive guidance. She has spent much time reading through each draft and provided me with inspiring advice. Without her patient instruction, insightful criticism and expert guidance, the completion of this thesis would not have been possible.

Special thanks should go to my friends, especially to Nhi, who gave me her help and time in listening to me and helping me work out my problems during the difficult course of the thesis.

I should finally like to express my gratitude to my beloved family for their loving considerations and great confidence in me all through these years.

Introduction

In today's globalization and financialization of the economy, economic operation and financial activities go hand in hand. In the process of financial promotion of economic development, total financial growth and structural changes work together, but total financial growth is more expressed as a quantitative expansion, while financial structure is an important indicator of a country's financial development level and becomes an endogenous driving force for economic growth. American economist Goldsmith first put forward the theoretical concept of financial structure, and believes that financial structure is the financial superstructure of a country, and financial development is reflected in the changes of financial structure. Changes in a country's financial structure have a considerable impact on the economy of that country and the global economy. Financial development is a change in the financial structure, according to financial development theory. Financial development is strongly tied to economic growth. A well-developed financial system can lower information and transaction costs, as well as share and manage risks, all of which are important for saving, investment, and economic growth. Information, transaction costs, and risk are all affected differently by diverse financial system structures, financial instrument structures, financial market structures, and financial institution structures. As a result, in order to investigate the role of finance on economic growth, one must first examine the financial structure.

In light of this, I intend to conduct a thorough examination of the financial markets in China and the United States, as well as a deeper investigation of the impact of U.S. and Chinese financial structures on economic growth and financial stability, in order to better understand and evaluate the strengths and weaknesses of the financial structures in China and the United States, and to make targeted policy recommendations for their development.

But what is the financial market, and what are its components? What is the connection between financial markets and economic growth? What are the characteristics and problems of the financial structures of China and the United States? These are the questions that this paper attempts to answer, and they are also the focus of this paper.

The purpose of this paper is to build a theoretical framework on the relationship between financial structure and economic growth based on existing research results, and to make a more systematic economic analysis and theoretical discussion on the financial markets in China and the United States. This paper mainly adopts a research method that combines theoretical analysis and practical experience. Along the logical line of "the

differences between the financial markets of China and the United States, the positive effects of financial structure (financial structure and economic growth), the theory of financial structure and financial development is outlined, and the advantages and shortcomings of the financial markets of China and the United States are analyzed in depth in a comprehensive manner, from which some regular lessons are drawn. In view of the wide range of contents covered by financial structure, the author focuses on two aspects of "financial structure and economic growth" and "deficiencies of financial markets" in the process of comprehensive analysis of financial structure. Firstly, "financial structure and economic growth" is an important issue in the field of financial development, and it has strong representativeness and persuasive power when analyzed in the context of the experiences of China and the United States. Secondly, the analysis of "problems in the financial market" is focused on the current situation of China's financial market in the context of China's stock market, which has a strong practical significance. Most of the problems that need to be solved in China's financial operation are related to the financial structure. From the actual situation of China's financial operation in recent years, the financial development has reached a certain scale in some aggregate financial indicators, but the financial structure suffers from uneven development, and the adjustment and optimization of the financial structure obviously lags behind the economic development. Therefore, an in-depth study of the financial structure of the United States is of great practical significance to help establish a financial structure suitable for China's national conditions and economic development.

According to the above research ideas, this paper is structured as follows.

Chapter 1: Literature review and related studies. It mainly introduces the classical theories of financial market and financial structure, so as to seek entry points for the study of financial structure and financial market issues in China and the United States.

Chapter 2: Theoretical framework related to financial markets. Introduces the relevant theories of financial markets in China and the U.S. and the differences that exist between them. The relationship between financial structure and economic structure is analyzed, and a model of financial structure determination, financial structure regulation and financial structure optimization is established to build a theoretical framework for financial structure optimization in general. The following chapters are all based on this theory.

Chapter 3: Financial market volatility and the relationship between financial markets and economic growth. In the context of the current epidemic, the volatility process of financial markets in China and the United States is analyzed; the relationship between financial markets and

economic growth is analyzed from the perspectives of financial market risk, financial market liquidity and financial market effectiveness.

Chapter Four: Research results on the impact of financial markets on economic growth in China and the U.S. Through the analysis of the development of the Chinese stock market and the financial market during the industrialization period in the United States, it is concluded that financial development and economic growth are inextricably linked.

CHAPTER 1: LITERATURE REVIEW ON FINANCIAL MARKET

This chapter introduces the analysis and development of theories related to financial structure, and reviews the theoretical and empirical studies on the relationship between financial structure, economic development and economic growth, which provide an important theoretical foundation for the research to be conducted in this thesis.

1.1 Theory of financial structure

Financial development theory suggests that the reduction of information and transaction costs, as well as the sharing and management of risk, are closely related to the degree of development of the financial system and that different financial structures have different effects on economic development. Therefore, the study of financial structure is an ideal way to study how finance affects economic development.

Economists researched financial structure as early as the 1950s. John G. Gurley and Edward S. Shaw co-authored two papers, "Financial Aspects of Economic Development (Gurley & Shaw, 1955)" and "Financial Intermediaries and the Saving-Investment Process (Gurley, 1956)", respectively, describing the role of various types of financial intermediaries in the saving and investment process, the relationship between finance and economic development, and other issues; Raymond W. Goldsmith also published a paper in 1955, "Financial Structure and Economic Growth in Developed Countries". Financial

Structure and Economic Growth in Developed Countries-An Experiment on the Comparative Approach to Financial Form", which argued that changes in the financial structure directly contribute to the development of finance, and that the law of change of financial structure from simple to complex and from lower to higher levels in all countries of the world contributes to the path of financial development in different countries, and because there is an obvious positive correlation between financial development and economic growth, all countries are moving on a common path. Ronald McKinnon and Edward Shaw examine and analyze the issue of financial structure and financial deepening in developing countries. The difference is that McKinnon started from the perspective of "financial repression", while Shaw took "financial deepening" as the starting point. In the 1990s, some financial development theorists constructed an endogenous financial development model by introducing asymmetric information, monitoring costs and uncertainty into the model. The model encompasses endogenous growth and endogenous financial intermediaries (banks or markets). Using this perspective to examine the financial structure, a country's financial system is often composed of two major parts: a financial system dominated by financial markets and a financial system dominated by bank intermediation. Among them, the United Kingdom and the United States are dominated by financial markets and are referred to as market-dominated financial systems or also called market-dominated financial structures, while Japan and Germany are dominated by bank intermediation and are therefore also categorized as bank-dominated financial systems or called bank-dominated financial structures.

1.1.1 Gurley and Shaw's view of financial structure

Gurley and Shaw presented an early view on financial structure with the publication of their book “Money in Financial Theory” in 1960. The book was a summary and development of John G. Gurley and Shaw's views on the relationship between finance and economic development, focusing on financial assets, financial institutions, and financial policy, and "an attempt to develop a theory of finance that incorporates a theory of money and a theory of financial institutions that incorporates a theory of banking (Gurley & Shaw, 1960)."

Although the concept of financial structure is not explicitly presented in their monetary and financial theory, it includes financial structure issues such as financial instruments, financial institutions, financing methods, and financial policies.

Gurley and Shaw extend money to diverse financial assets. They argue that money is not the only object of analysis in monetary and financial theory; monetary financial assets include at least primary securities, which are issued by non-financial spending units, and indirect securities, which are issued by monetary intermediaries and non-monetary financial intermediaries, and they have different effects on the demand for money by each holder of financial assets.

Gurley and Shaw also distinguish between direct and indirect financing and analyze the financing style structure. Gurley and Shaw classify economic units into surplus, equilibrium, and deficit sectors based on the balance of funds and point out that as long as there are deficits and surpluses in the balance of funds between economic sectors, investment and financing behavior will naturally arise. Investment and financing can take two forms: direct financing and indirect financing. Direct financing is carried out by the surplus sector through the direct purchase of primary securities issued by the deficit sector, while indirect financing is carried out by the surplus sector through the purchase of indirect securities issued

by financial intermediaries.

Gurley and Shaw comparatively analyze the similarities and differences between banks and non-bank financial institutions and raise the issue of the structure of financial institutions. They argue that financial intermediaries can be divided into two main categories: monetary systems and non-monetary intermediaries (Shaw,1988). What both types of financial intermediaries have in common is that they both play an intermediary role in the investment and financing process, triggering excess money supply through the creation of financial claims and loanable funds. The difference between the two lies in the different forms of financial claims created, as intermediaries of the monetary system create financial claims in the form of money and non- monetary intermediaries create financial claims in the form of indirect securities and act as substitutes for money (Shaw, 1988). Therefore, the development of non-bank financial institutions, on the one hand, creates great competitive pressure on commercial banks, which is conducive to the healthy development of financial institutions; on the other hand, it poses a challenge to the regulation of monetary policy.

Gurley and Shaw(1988) analyze the structure of monetary assets by distinguishing between "intrinsic money" and "extrinsic money". According to these authors, there are different types of monetary assets, which originate from different sources; the nominal expansion or contraction of different types of monetary assets has different effects on real economic activities. Assets that generally act as money (i.e., as a means of payment) are either the debts of the government or the debts of private financial institutions. Monetary assets resulting from government purchases of goods, services, or transfers are called "extrinsic money" because they are net debt "external to" the private sector. Because of the presence of "extrinsic money," changes in price levels affect the transfer of wealth between the private and government sectors. Monetary assets consisting of the debt of private financial institutions are called "intrinsic

money" because they represent the assets and liabilities that are "embedded" in the private sector. Thus, "intrinsic money" is "based on private internal debt." Changes in the real value of "intrinsic money" due to price level movements do not lead to wealth transfers between the private and government sectors, but only to wealth transfers between the two private sectors. Gurley and Shaw advocate a "total money theory" approach to the study of the relationship between money and the economy, considering both the role of "extrinsic money" in economic development and the role of "intrinsic money" in the economy, and identifying the differences between these two roles.

The research of Gurley and Shaw on financial structure is very important and groundbreaking, especially when the trend of diversification of financial institutions and financial instruments is just emerging, they are keenly aware of it and put it in an important position in financial theory, which deserves full recognition.

1.1.2 Goldsmith's Theory of Financial Structure

Goldsmith is the founder of modern comparative finance. In 1994, Goldsmith (Goldsmith, 1994) published the pioneering work of financial structure theory, "Financial Structure and Financial Development", which vertically spans more than 100 years of financial development history, puts forward the general proposition of the relationship between financial development and economic growth from the perspective of financial and economic integration, horizontally covers the financial statistics of 36 countries, and through systematic and meticulous cross-country comparative research, the concept and connotation of financial structure are clearly defined for the first time. Through systematic and meticulous cross-country comparative studies, the book defines the concept and connotation of financial structure for the first time, and lays the foundation of financial structure theory research.

Goldsmith suggests: "The duty of financial theory is to identify the main economic factors that determine a country's financial structure, the stock of financial instruments and the flow of financial transactions, and to explain how these factors interact to contribute to financial development (Goldsmith, 1994)." To this end, Goldsmith defines financial structure in quantitative terms. According to him, financial structure is "the relative size of various financial instruments and financial institutions." The changes in financial structure and the differences in its approach across countries are mainly reflected in the sequence of successive emergence of different financial instruments and financial structures, their relative growth rates, the degree of penetration into different sectors of the economy, and the speed and characteristics of their adaptation to changes in the structure of a country's economy." But perhaps most important for economic analysis is the size of financial instruments and the relationship between the funding of financial institutions and the corresponding economic variables (e.g., national wealth, national output, forms of assets and savings, etc.) ."

Goldsmith believed that the study of a country's financial structure should be described by quantitative relationships whenever possible. Therefore, he created eight indicators to measure the financial structure of a country (Goldsmith, 1994).

The financial interrelationship ratio (FIR) is the ratio of the value of all financial assets to the value of all physical assets (i.e., national wealth), and it is a widely used indicator of the relative size of the financial superstructure.

The distribution of total financial assets (financial instruments) among the components, especially between short-term and long-term debt and equity. The ratio of financial instruments issued by the financial apparatus to non-financial units is the most general indicator of the degree of institutionalization of the financial process.

The share of all financial intermediaries, and of all types of major financial institutions within them, in all major outstanding amounts

The share of non-financial units in all major financial instruments issued provides a more detailed picture of the institutionalization of the financial process.

The relative size of the main types of financial intermediaries is also an important indicator, especially the size of central banks, commercial banks, savings institutions and insurance organizations.

The degree of interconnectedness among existing financial institutions can be measured by the seven weights of total assets traded among financial institutions in relation to the total assets aggregated by the financial institutions. This weight can be referred to as the stratification ratio.

The relative size of internal and external financing conducted by the major nonfinancial sectors can similarly be used to measure a country's financial structure.

Among external financing, the share of each major financial instrument; among the various types of debt and equity outstanding, the share of foreign loans to major domestic sectors (especially financial institutions).

Among the eight indicators mentioned above, stock ratios and stock relations have certain flow indicators corresponding to them. The main features of the financial structure of a country in a given period are reflected in the distribution of total financial flows among various financial instruments, among various sectors of the economy, the share of financial transactions of financial institutions in the total flows of financial instruments and in the flows of each financial instrument, and the share of various financial instruments in the total financial transactions of each sector and subsector (Goldsmith, 1994).

Goldsmith uses the above-mentioned indicators of financial structure to describe the state of financial structure of a country at a certain point in time and the changes of this financial structure, and combines these indicators in an appropriate way to distinguish different types of financial structure, further revealing the state of the financial sector in the process of economic development and describing the trend of financial structure changes. This trend is concretely expressed in the transformation and upgrading of different levels and types of financial structures (Goldsmith, 1994).

Goldsmith classifies financial structure into three basic types according to financial-related ratios and other indicators:

The primary stage of financial structure.

At this stage, the financial correlation ratio is relatively low (about 0.2-0.5), and has the initial prototype of modern financial system, but the financial instruments are relatively single, debt instruments are much higher than equity instruments, and the dominant position in the structure of financial instruments, and the position of commercial banks in financial institutions is more prominent. This kind of financial structure appeared in Europe and North America in the middle of the 18th and 19th centuries, and belonged to the financial development of the early capitalist countries.

The intermediate stage of financial structure development.

At this stage, the financial correlation ratio is still low, and the structure of financial assets still accounts for the majority of total financial assets, and banks play a dominant role in financial institutions. However, this stage differs from the primary stage in that the government and government financial institutions play a greater role, thus reflecting that these economies and societies have a mixed character; at the same time, large joint stock companies have been present in large numbers; and then there is a higher ratio of financial intermediation. In short, this type of financial structure has changed significantly and increased in complexity in terms of the structure of financial institutions and financing structures compared to the first level type of financial structure. This type of financial structure was prevalent in most non-industrialized countries in the first half of the 20th century.

The maturity stage of the financial structure.

In this stage, the financial correlation ratio was relatively high and varied widely, ranging from 0.75 to 2.0, mostly around 1; the proportion of equity assets to total financial assets increased; the tendency to diversify

financial institutions increased, leading to a decline in the status of the banking system and a rise in the status of savings institutions and private and public insurance organizations. This type of financial structure has been more common in industrialized countries since the early 20th century.

Goldsmith believes that although the financial structure can be broadly classified into the above three types, but the development of a country's financial structure from one type to another requires a gradual process, and there are differences in the economic environment of different countries, which may appear in between the above three types of financial structure state.

According to Goldsmith, "financial development is the change of financial structure" (Goldsmith, 1994). Therefore, the process of financial structure evolution is also the process of financial development. The different types of financial structure evolution determine the different paths of financial development. However, the diversity of financial structure types does not determine the diversity of financial development paths. In fact, the differences in the types of financial structures are more due to the different starting points of development paths. The difference in starting point has two meanings: one is the different starting time, and the other is the different stage of economic development at the starting point. Therefore, Goldsmith points out that it is doubtful whether distinct financial development paths really exist, except for the fact that "centrally planned economies have followed a different financial development path. The available evidence is clearer than the hypothesis that there is only one major path of financial development. On this path, the financial correlation ratio, the share of financial institutions in the total financial assets, and the position of the banking system all show a certain regularity, with deviations only in times of war and inflation (Goldsmith, 1994). That is, the trend of changes in the financial structure is consistent with the path of financial development, which is neutral, except that there are two

trajectories in the path of financial development. The difference between the two main trajectories lies in: the degree of government ownership and involvement in the operation of certain financial institutions (both central and local governments) varies. In countries that followed the first trajectory, all financial institutions were privately owned and operated, except for the emergence of central banks and social insurance organizations at a later stage of financial development, even though central banks were privately owned. The United States is a typical representative of the development along this trajectory, in addition to Canada and Western European countries such as Belgium and the Netherlands, which also fall into this category. In countries that have developed along the second trajectory, several important financial institutions tend to be owned and operated by the government, either wholly or partially, either from their inception or after their development. These financial institutions include savings banks, mortgage banks, development banks, trust organizations, etc., and even some or most commercial banks in some countries. Most countries and regions outside of Western Europe and North America have developed along this trajectory.

According to the above analysis, Goldsmith has highly summarized the regularity of financial structure changes in a qualitative way, with 12 basic ideas (Goldsmith, 1994).

In the process of economic development of a country, the growth of financial superstructure is more rapid than the growth of the economic base structure expressed by national output and national wealth, which is manifested by the tendency of the financial correlation rate to increase.

The increase of financial correlation rate of a country is not endless. When the financial development reaches a certain stage, especially when the financial correlation rate reaches between 1 and 1.5, the ratio will stabilize. Western Europe and North America reached this level in the early 20th century.

The financial correlation rate of less economically developed countries is much lower than that of European and North American countries, which was only between 0.67 and 1.0 at that time (late 1960s), equivalent to the level of the United States and Western Europe in the second half of the 19th century.

The main factor determining the relative size of a country's financial superstructure is the degree of separation between the savings and investment functions among different business units and different economic groups. The greater the degree of such separation, the higher the ratio of new debt and securities issued by the non-financial sector to national output.

In most countries, the share of financial institutions in the issuance and holdings of financial assets has increased significantly as the economy has grown, even though a country's financial correlation rate has stopped growing.

The "institutionalization" trend of savings and ownership of financial assets has had different effects on the main financial instruments. The institutionalization rate of debt has increased faster than that of equity: among bonds, the institutionalization of long-term bonds is more pronounced than that of short-term bonds; and corporate stocks are mostly held by individuals.

Everywhere, the development of finance in the modern sense began with the development of the banking system and depended on the degree of spread of paper money in the economy. The ratio of currency (coins and bank notes) to national wealth rises and then levels off or even declines, and the ratio of bank money (checking deposits) follows a similar course, but with a time lag of a generation or even several generations between the two.

As the economy develops, the share of the banking system in the total assets of financial institutions tends to decline, while the share of new financial institutions in the total assets of all financial institutions and in the total financial assets increases. In the most economically developed countries, banking system assets are already lower than the total assets of all other financial institutions, while in less developed countries the opposite is true.

Foreign financing has played a significant role in most countries at some stage of development, either as a supplement to insufficient domestic resources or as an outlet for surplus domestic resources.

For the financial development of most countries, the demonstration role of advanced countries is probably as important as international capital flows. The diffusion of technical and managerial experience in financial instruments and financial institutions is easier to achieve than in many other areas.

In financially developed countries, the cost of financing, including interest rates and other fees, is significantly lower than in less developed countries.

In most countries, there is a roughly parallel relationship between economic and financial development. The size and complexity of the financial superstructure increases as real income and wealth, both in aggregate and per capita, increase. Periods of rapid economic growth are also periods of high financial development.

In summary, Goldsmith's research on financial structure changes focuses on the quantitative relationship between financial instruments and financial institutions in order to uncover the general pattern of financial structure changes in three important aspects: First, the change in the financial correlation ratio represents the change in scale between the financial superstructure and the economic infrastructure, i.e., the greater

the financial correlation ratio, the more developed the financial system is in the process of a country's economic development. The second factor is the evolution of financial instrument structure, which is evident in the growing number of financial instruments, the proportion of debt securities in the total financial instruments gradually decreases, while the proportion of equity securities gradually increases; the third is the change in the structure of financial institutions, which is reflected in the increasing number of financial institutions, the proportion of financial institutions in the total financial assets is increasing. The dominant position of the banking system in the overall financial institution system has been gradually weakened, while the position of non-bank financial institutions has been rising. It should be said that Goldsmith's description of the trend of financial structure changes is clear and consistent with the actual situation of financial development.

1.1.3 McKinnon and Shaw's view of Financial Structure

In 1973, McKinnon and Shaw published two books, "Money and Capital in Economic Development" and "Financial Deepening in Economic Development" respectively, which took developing countries as their research objects and put forward the theoretical views of "financial inhibition" and "financial deepening".

They point out that excessive government intervention in financial activities has suppressed the development of the financial system, and the lower-than-market equilibrium real interest rate has weakened the ability of financial institutions to gather and allocate financial resources rationally, thus creating a vicious circle of financial suppression and economic backwardness. The opinions of McKinnon and Shaw on developing countries' financial structures are reflected in the theory of financial deepening. "A dynamic domestic capital market, concentrated on the banking system, may be an enormously successful engine of economic development," say McKinnon and Shaw, emphasizing the

importance of financial market establishment and improvement. McKinnon (McKinnon, 1988). According to McKinnon and Shaw, developing countries should reduce government intervention in financial markets, promote continuous financial market improvement, and achieve coordinated development of interest rates, savings, investment, and economic growth through automatic market regulation, removing financial disincentives and moving toward financial deepening. McKinnon and Shaw are representatives of economic liberalism theory, and their theory of "financial deepening" is also the process of dynamic adjustment and optimization of financial structure, and provides a theoretical basis for developing countries to take the path of financial liberalization.

1.1.4 The financial structure view of the endogenous financial growth theory

The endogenous financial growth theory is a financial development theory developed in the 1990s based on the endogenous growth theory and has become the most influential financial structure theory after Goldsmith.

Based on the endogenous mechanism of bank intermediation and financial markets, this theory divides the financial structure into two models: bank (intermediation) dominated and financial market dominated, and compares the advantages and disadvantages of the two models. This comparison focuses on the financial market-led model represented by the UK and the US and the bank intermediary-led financial system represented by Germany and Japan, and then examines the role of different financial structures on financial development and economic growth. The endogenous financial economic growth theory covers a wide range of contents and research results. Among them, the most representative one is the paper "Bank-based and market-based financial systems - cross-country comparisons" published by American economists

Demirguc-Kunt and Levine (1999), which introduces standardized facts on the relationship between financial institutions and economic development as well as the financial structure of countries and the determinants of legal and regulatory policies, and examines the relationship between economic development and bank and non-bank and stock market development, the relationship between economic development and bank-dominated and market-dominated financial systems, and three international comparisons of the legal, regulatory, tax, and macroeconomic determinants of financial structure have brought the study of endogenous financial economic growth theory to its zenith. The monograph published by American economists Franklin Allen and Douglas Gale (2001): "Comparative Financial Systems", which takes the micro behaviors of investors, financial intermediaries and other economic agents as representatives of the financial systems of five countries, including the UK, US, Germany, Japan and France, and comprehensively analyzes the important roles played by financial markets and financial intermediaries in the financial system. The main features of bank-led and market-led financial structures and their effects on the allocation of financial resources are systematically compared.

1.2 Financial Structure and Economic Development

The relationship between finance and economic development is the core of the theory of financial development, which has been historically focused on and studied by economists.

The question of what kind of financial structure can maximize the financial function and financial efficiency has been a centuries-old debate in the theoretical community since Schumpeter (1934)

suggested that the development of a country's financial sector is positively related to its per capita income (BECK , 2000). —Schumpeter contends that instead of depending merely on adjusting the savings rate to impact economic development, the financial sector should allocate societal savings resources by finding and selecting enterprises with growth potential. With the post-World War II focus on developing countries, it was found that efficient financial intermediaries in developed countries provided a convenient channel for the flow of funds between savers and borrowers, but developing countries did not have a corresponding financial system in place. In their book *Money in Financial Theory*, published in 1960, Gurley and Shaw(1960) divided the exogenous financing of the economy into two main categories: direct financing and indirect financing. This analytical framework proposed by Gurley and Shaw was the first to study the financial system from a systemic perspective and can be considered as the prototype of the financial structure research paradigm.

Gerschenkron was the first to compare the impact of banks and financial markets on economic development (Gerschenkron, 1965). He stated that banks were better able to execute financial functions than financial markets in the early phases of economic development, when legal and accounting systems were not yet sophisticated enough to provide a favorable market environment, allowing industry to grow more swiftly. Despite the fact that financial markets and financial intermediaries have been studied in depth and a relatively familiar theoretical system has been gradually built, the study of financial structure is still partial and fragmented, and no comprehensive study has been conducted from a systematic perspective.

1.3 Theories of Financial Structure and Economic Growth

One of the motives of industrial restructuring is technological progress, which brings obvious promotion to financial innovation, and one of the manifestations of financial innovation for economic growth is the upgrading and optimization of industrial restructuring. Since the publication of Goldsmith's "Financial Structure and Financial Development", the relationship between financial structure and economic growth has become the focus of research in the field of finance.

1.3.1 Financial Structure and Economic Growth

Following the theoretical consensus on the causal relationship between financial development and economic growth, theoretical study has shifted to the impact of financial structure disparities on economic growth. By examining the disparities in financial structures generated by different size ratios of banks and financial markets, such studies attempt to determine which sort of financial structure is more beneficial to economic growth. The interest in financial structure differences stems from the fact that both the United Kingdom and the United States, which have adopted a financial market-led financial structure, and Germany, which has adopted a bank-led financial structure, have experienced significant economic growth; therefore, does the financial structure chosen affect economic growth?

To answer these questions, Levine and Zervos (1998) were the first to systematically examine the differences in the financial functions of the two types of financial structures and to confirm that financial structure is a significant factor influencing a country's economic development using cross-country empirical data. Following studies have developed two types of views: the bank-dominant view and the market-dominant view, which compare the two types of financial structures in terms of their ability to

accelerate long-term economic development by lowering information and transaction costs and promoting efficient resource allocation.

The "bank-led view" argues that financial intermediaries such as banks have advantages over financial markets in performing information production, improving corporate governance, and mobilizing capital, thereby facilitating resource allocation and economic development (Allen & Gale, 1999) while the "market-led view" argues that financial intermediation structures have an inherent tendency to be prudent, making such financial structures detrimental to firm innovation and growth. Market-led financial structures, on the other hand, have advantages in providing risk management (Wenger, 1998). In response to these arguments, Holmstrom and Tirole (Holmstrom & Tirole, 1997) suggest that the primary distinction between bank- and market-dominated financial arrangements is the amount of information produced. Boot and Thakor (Boot & Thakor, 2000) suggest that banks can better minimize firms' moral hazard problem by acting as supervisors. As a result, highly leveraged enterprises should rely on bank supervision more, and firms with a net worth bias should rely on financial market-based financing structures more.

Allen and Gale (2001) use a comparative finance approach to study the advantages and disadvantages of various types of financial structures, and propose a new viewpoint from the perspective of the real economy: market-based and intermediary financial structures have their own advantages in terms of financial performance, and should be based on the specific characteristics of the real economy at different stages of development. The financial structure chosen should be based on the real economy's unique characteristics and financial requirements at various phases of development. Using a new cross-country financial structure database developed by the World Bank, Beck and Levine (2002) investigated whether different types of financial structures contribute to economic development by affecting the expansion of industrial firms

that rely on external financing, the creation of new firms, and the efficiency of capital allocation. Information collecting and risk transfer are significant methods via which financial structures contribute to economic growth, according to Allen and Oura (2004), but the role of securities markets and financial intermediaries in resource allocation is considerably different. Beck and Levine (2004) show that the results of cross-country regression econometric studies that classify nations based on different types of financial structures are not dependable and may overlook the estimation error of instrumental variables in a subsequent study. They analyze the degree of risk suppression of different financial structures, based on Carlin and Mayer's (2003) findings, and show that the kind of financial structure plays a vital role in economic development at various phases. Using annual panel data, they suggest that, while neither form of financial structure has a benefit or disadvantage, the key is to adopt the proper financial structure at various periods of economic development. The characteristics of the two types of financial structures dictate that different financial structures should be used at different stages of economic development. Yifu (2009) proposed the "optimal financial structure theory" from the perspective of the structural characteristics of factor endowments of economies at different stages of development. He argues that "the theoretical debate in the existing literature on the relationship between financial structure and economic growth ignores the intrinsic requirements of the real economy for financial structure, and the inconsistency between empirical findings and the evolution of financial structure is also rooted in this. The size and risk characteristics of enterprises with self-generating capacity are determined by the factor endowment structure of a country's economy at a certain stage of development, which in turn creates a specific demand for financial services, which is a fundamental factor determining the financial structure.

1.3.2 Theoretical differences in the relationship between financial structure and economic growth

The long history has shown that the relationship between a country's economic growth and its financial structure is inextricably linked, and there are currently two main views in the academic community that emphasize and ignore the role of financial structure in economic growth.

Financial structure has a role in economic growth

Empirical studies focus on the relationship between the degree of market-led or bank-led and economic growth.

Goldsmith (1969) used an empirical technique to comprehensively investigate the relationship between financial structure and economic development, highlighting the critical role that financial structure plays in supporting economic progress. In his 1969 book, *Financial Structure and Economic Development*, he compared historical data from 35 nations over the past century to analyze the relationship between financial structure and financial development. His findings show that when a country's economy increases, the financial system's structure changes. The type of financial structure has an impact on economic growth, and there is a strong link between financial development and economic growth. He discovers that changes in a country's financial structure begin to effect its economic growth rate after a period of economic growth, and that different combinations of financial markets and financial intermediaries affect economic development. Using cross-country regressions for the period 1976-1993, Levine and Zervos (1998) suggest that a market-led financial system can provide different services than a bank-led one. Beck and Levine (2004) argue that the development of stock markets and banks can have a significant economic effect on economic growth. Kul B. Luintel and Mosahid Khan (2008) use time series and dynamic heterogeneous panel data

methods to examine financial development and financial structure data for 14 countries provided by the World Bank and find that financial structure plays a significant role in explaining economic growth. Shanka Chakraborty and Tridip Ray (2006) use an endogenous growth model to examine the relationship between bank-led and market-led financial systems and economic growth, finding that the bank-led system is more beneficial for industrializing countries, but without determining which system is more beneficial for economic growth.

Financial structure does not support economic growth

Early empirical research concentrated on comparing market-led systems like the United Kingdom and the United States with bank-led systems like Germany and Japan. Levine underlines the difficulties of making broad conclusions from the financial statistics of these four countries alone when it comes to the long-run economic growth impacts of bank-led versus market-led systems.

Beck and Levine explore the hypothesis that the financial structure contributes to the growth of industries that rely on external finance by using panel data from 36 industries in 42 countries. By constructing three financial structure measures: (1) measuring the size of banks and stock markets; (2) measuring the extent to which banks are regulated; and (3) measuring the share of assets controlled by the government in a broad sense by the top ten banks. Its findings refute the hypothesis, and financial structure metrics are ineffective in explaining industry growth, new business formation, or efficient capital allocation. Overall financial development and the effectiveness of the judicial system, on the other hand, explain all variables. Demirguc-Kunt and Levine (2001) find through a case study that richer countries have more developed financial systems; countries with higher income levels have more dynamic and efficient stock markets relative to banks. Countries with common law systems have more market-driven financial systems,

whereas countries with civil law systems have less developed financial systems. They conclude that countries with developed market-dominated financial systems have developed banking systems, while countries with weaker market-dominated financial systems have weaker banking systems, using data from 44 industries and developing nations from 1986 to 1993. As a result, the study suggests that there is no significant difference between bank-led and market-led financial systems.

1.3.3 Differences in the functional mechanisms of financial intermediation and financial markets for economic growth

The impact of financial intermediation and financial markets on economic development has been systematically studied by academics. Empirical studies have found that the higher the level of per capita income of a country or region, the more active the financial market is in its financial system, and the more impact it has on financial intermediation. (Demirguc-Kunt and Levine, 2001). Due to the differences in the functional mechanisms of financial intermediation and financial markets for economic growth, both have their theoretical and economic bases. Both have their theoretical bases and economic environment, and although they compete, they are not completely substitutable.

Banks, as financial transaction intermediaries, raise funds from fund suppliers through deposits and release the funds to financing enterprises through loans, overcoming the contradiction between fund suppliers and demanders in terms of financing amount and maturity, realizing the transformation of savings into investment, and promoting economic growth by realizing the transformation of savings into investment. In the process of financial transactions with financiers, financial intermediaries can use their scale advantage to obtain the financial status and creditworthiness of financiers, overcoming the information asymmetry between savers and financiers, and not only protecting the investment rights and interests of savers. According to Diamond (1984), "banks can

centralize supervision costs and avoid duplication of supervision of borrowers by individual investors." Because banks are required to repay capital and interest to savers on time, lending firms are likewise required to repay capital and interest when due. Banks are most concerned with minimizing the risk of lending from a risk control standpoint, therefore they prefer to lend to established enterprises with stable operations, sufficient cash flow, and maturity, while being wary of investing in high-risk creative firms.

The functional mechanism of financial market for economic growth is embodied in: enterprises as capital demanders issue stocks and bonds in the financial market to raise funds directly from investors, who choose financial assets with different risks and returns according to their own risk tolerance, and reduce their investment risks through diversified investment allocation; for enterprises that issue stocks for direct financing, in order to solve the problems of information asymmetry and incentive. Therefore, financing in the stock market has greater economies of scale and is suitable for enterprises with large capital needs; investors become shareholders of the enterprise by purchasing shares and share the results of the enterprise's profit according to the proportion of equity. Due to the uncertainty of enterprise operation and development, the investment return of stock is not fixed, and it shows more of a dynamic claiming right, which also pays more attention to the value growth and growth potential of the enterprise, motivates the enterprise to choose technological innovation projects with high return on investment, enhances the core competitiveness of the enterprise, and has an inherent mechanism to stimulate the innovation development of the enterprise. From the viewpoint of development dynamics, economists believe that financial intermediaries and financial markets play different roles at different stages of economic development. Boyd and Smith (1998) explain the relationship between banks and financial markets and various levels of economic development, arguing that when economic development is low, banks will serve as the primary financing mode of the economy, while capital markets will emerge as economic development rises. Goldsmith (1969)

investigated the association between financial structure and economic growth in 35 nations using the ratio of total value of financial intermediation assets to GNP as an indication of a country's financial development. Goldsmith (1969) used the ratio of total value of financial intermediation assets to GNP as an indicator of a country's financial development and analyzed data for 35 countries over a 103-year period from 1860 to 1963 and found a "parallel relationship" between financial development and economic growth, but Goldsmith King and Levine (1993) extend and expand on Goldsmith's study by running cross-country regressions on panel data for 80 countries over 1960-1989, controlling for other factors related to economic growth, by constructing four indicators of financial development including the ratio of financial intermediaries' liquidity liabilities to GDP, the ratio of depository banks' domestic assets to all banks' assets, and the ratio of loans to private firms to total loans and GDP, respectively. Levine and Zervos (1998) further extend the above analysis by introducing some measures of stock market development, and by estimating the growth trends of banks, banks, and private firms. The authors (1998) extend the previous research by incorporating some indicators to evaluate stock market development in order to empirically investigate the relationship between banks, stock markets, and economic growth. They examined the relationship between financial intermediation, stock markets, and economic development, capital accumulation, and productivity growth in a sample of 47 nations between 1976 and 1994. The empirical findings show that bank development and stock market liquidity have significant positive correlations and predictors of economic growth, capital accumulation, and productivity growth, as well as that the relationship between stock market size and economic growth is unstable, in contrast to stock market liquidity.

CHAPTER 2: FINANCIAL MARKETS IN CHINA AND THE UNITED STATES AND RELATED THEORETICAL ANALYSIS

This chapter introduces the reader to the basic theory of financial markets in the United States and China and their differences. The chapter is divided into the following parts: the first part presents an in-depth discussion of the concept of financial markets and its components in the U.S. and China; then it analyzes the differences in the financial system (structure) and financial regulation between the U.S. and China; and finally it discusses the current status of financial innovation in the U.S. and China.

2.1 The connotation and composition of the Chinese and American financial markets

Finance is the financing of capital, or capital flow, the flow of material capital and monetary capital. The financial market is a market for specific commodities such as capital lending places, gold and foreign exchange trading places. It is the basis for the central bank to use monetary policy tools to indirectly regulate the economy. It is based on market positioning and is a prerequisite for rational allocation and utilization of the limited capital resources of the whole society and improving the efficiency of capital use. This is also a fast and flexible financing method: channels and places to convert savings into investment.

The formation of the financial market must meet the following conditions:

- (i) stable political and economic situation,
- (ii) loose financial policy,
- (iii) the banking institutions are relatively concentrated, and the financial system is developed,
- (iv) advanced international communication facilities and good geographical conditions,

- (v) high-quality financial market practitioners.

2.1.1 The U.S. financial market

The U.S. financial market has become the most developed market in the world due to its sound market structure, large trading scale and the continuous emergence of innovative financial instruments.

The U.S. financial market is known as the primary financial market (including money market, capital market, foreign exchange market, etc.).

Money market: It is a financial market for trading short-term monetary certificates within one year. It consists of the Treasury bill market, the federal funds market, the commercial paper market, the bankers' acceptances market and the repurchase agreement market. Low risk and high liquidity characterize money market financial instruments, and its domestic and foreign operations are strictly separated.

The capital market is defined as a financial market with a loan term of more than one year, and it is defined as the capital market, which mainly includes the stock and bond markets.

The bond market includes the federal government bond market, the federal government agency bond market, the state and local government bond market, and the corporate bond market. The main channel for the U.S. federal and state governments to raise funds is through the bond market, with a high percentage of federal government bonds.

The stock market is the most important capital market in the United States. Most of the larger companies are publicly traded joint stock companies. Over the years, the U.S. stock market has become dominated by value and growth investing. Market Model. The operating performance and economic expectations of most companies can be more realistically reflected by changes in the stock market.

The U.S. derivative financial market has the financial ability to continuously invent commodities, such as foreign exchange futures and interest rate futures. Due to the continuous updating of electronic trading systems and information technology, the over-the-counter financial derivatives market has become the main arena for financial derivatives trading, and its scope has been expanding. The U.S. financial derivatives

market has a great impact on financial institutions. Financial derivatives have reduced transaction costs and facilitated the transformation of commercial banks' financial models.

2.1.2 China Financial Market Composition

The Chinese financial market largely comprises of money market, stock market, bond market, agency share transfer system, stock quotation, and transfer system, gold market, foreign exchange market, commodity futures market, and the financial derivatives market.

Money Market

The current China money market encompasses the interbank lending market, bond repurchase agreement (repo) market, short-term bond market, and bill discount market. The interbank lending market is the fundamental aspect of the money market. The capital market has surpassed trillions, the interbank lending market is trillions, and the bill market is hundreds of billions in terms of the size of the annual transactions.

China launched the Shenzhen and Shanghai Stock Exchanges in 1992 and 1991 respectively, and the capital markets are relatively mature. The first developed money market submarket (the interbank lending market) only developed significantly in 1986, while the development of other submarkets lagged even further behind. The stock and treasury markets have fluctuated, while overall development has been stable and positive.

In contrast, the lending market's growth has been very uneven. The bills market is still in its infancy.

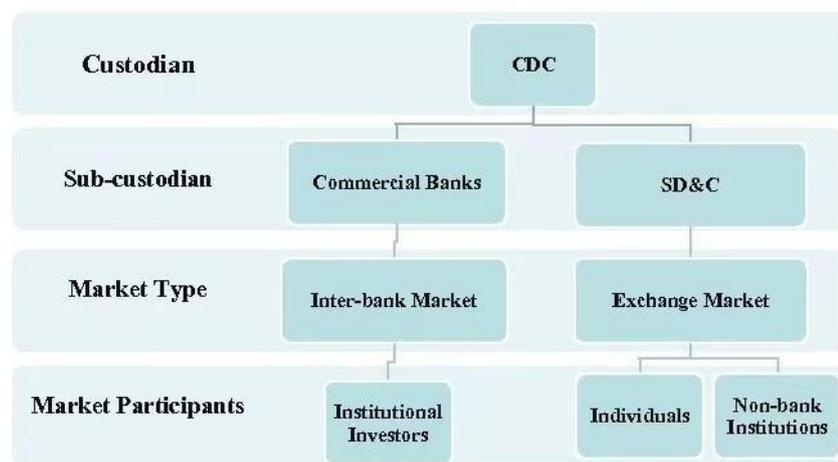
Bond market

The Chinese bond market has been a winding road from when the treasury bonds began to be issued in 1981. In late 1996, there was the formation of the central bond custodian which ushered in a period of fast advancement of the Chinese bond market. The bond market has now evolved into a tiered and integrated market system. The tiers comprise three sub-markets: (a) inter-bank market, (b) the exchange market, and (c) the commercial bank counter market. The Chinese bond market has grown into a

hierarchical and unified market structure incorporating three sub-markets: exchange, interbank and commercial bank counter market.

Figure 2.1 illustrates how the bond market in China is stratified into; the (a) on-the-counter (OTC) and (b) over-the-counter (OTC) markets.

The over-the-counter market denotes the interbank bond market and the commercial bank over-the-counter trading market, while the on-the-counter market refers to the bond trading market of exchanges (this includes the Shenzhen and the Shanghai Stock Exchanges). The interbank bond market is the most popular trading venue in the Chinese Bond market; making it a vital component of China’s bond market.

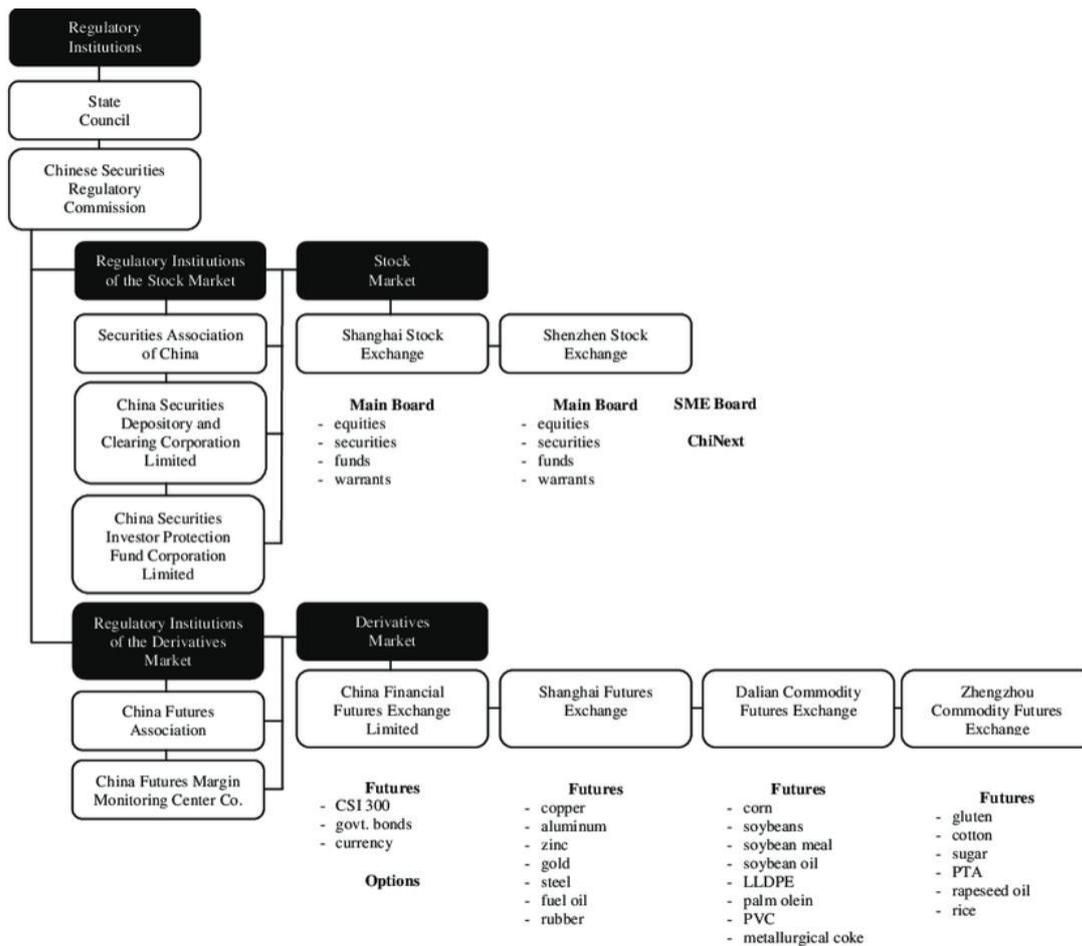


Source: ChinaBond

Figure 2.1: The Chinese Bond Market

Securities market

Figure 2.2 shows that the Chinese securities market consists of the following five parts:



Source: own elaboration

Figure 2.2: The Chinese stock market structure

Main Board Market: This is located at the top of a country's capital market with the highest listing standards, mainly for large companies, In China, they include; the Shanghai Stock Exchange and the Shenzhen Stock Exchange. Both stock exchanges possess almost identical organizational systems with the same listing standards, trading practices, and regulatory structures. They mainly provide listing services for established Chinese state-owned medium-sized and large enterprises.

Second Board Market: This market has lower listing standards than those of the Main Board Market. As a result, it primarily serves small and medium-sized enterprises in China.

It is a subsidiary of the Shenzhen Stock Exchange and adheres to the rules of the Main Board.

The three boards market: They comprise the local property rights exchange and the "Agency Share Transfer System" markets. It mainly provides circulation channels for small, low-standard stocks. It serves the more junior SMEs for financing and belongs to the basic part of the capital market. The listing conditions of the third board market are lower than those of the exchange, and some of them do not even stipulate listing conditions. Shares of companies that do not meet the listing conditions for companies can be transferred here.

Agency share transfer system refers to the provision of shares to non-listed companies through electronic trading approved by the China Securities Association and reported to the China Securities Regulatory Commission for the record. Such shares are traded through the securities companies despite being unlisted in the stock exchange market.

A stock quotation and transfer system is a technical facility in the proxy stock transfer system specifically used to provide a quotation and transfer services for the stocks of unlisted companies.

According to the law and the scope of business, the property rights exchange is not a securities trading venue, but some property rights exchanges carry out equity transfer business for non-listed joint-stock companies, thus becoming an over-the-counter securities market.

Foreign exchange market

The Chinese foreign exchange market is a two-tier market system in which banks and other enterprises, or banks and other banks apply the foreign exchange trading network system to realize trading behavior. The foreign exchange market is vital in enhancing the mechanisms used in the formation of exchange rates, advocating for the change of macroeconomic regulation and control, serving financial institutions, promoting the convertibility of RMB, and improving the financial market system. At present, the RMB foreign exchange market includes onshore (CNY) and offshore (CNH) markets.

The gold market

In October 2002, Shanghai Gold Exchange was officially opened. The

gold exchange facilitated the marketization of gold production in China, its consumption, and the circulation system applied in the trade-in China's domestic gold market. From Figure 2.3, we can see that China's gold market is developing rapidly and the product types are relatively abundant. However, China's gold market has several shortcomings, including a flawed legal structure. Because China's gold trading began later than the rest of the world, many legal systems in China still have gaps when compared to those in other countries; the trading system is comparatively simple. The trading structure still needs to be improved, as the Shanghai Gold Exchange's primary trading system mainly relies on physical trading in the field, while its influence is smaller in the field, and the sales contact network also needs to be improved, as the secondary system of regional trading centers, the trading varieties are single, leaving consumers with little choice, which does not encourage people to fully participate in the gold market.



Source: World Gold Council

Figure2.3: Official China's gold reserves

The Chinese gold market comprises two segments: over-the-counter and off-the-counter markets. The over-the-counter gold trading market encompasses the Shanghai Futures Exchange and the Shanghai Gold Exchange. The latter principally facilitates gold spot trading, while the latter mainly conducts gold futures delivery. Judging from the current scale of trading, China's gold market is expanding and its influence on the world gold market is increasing.

Commodity futures market

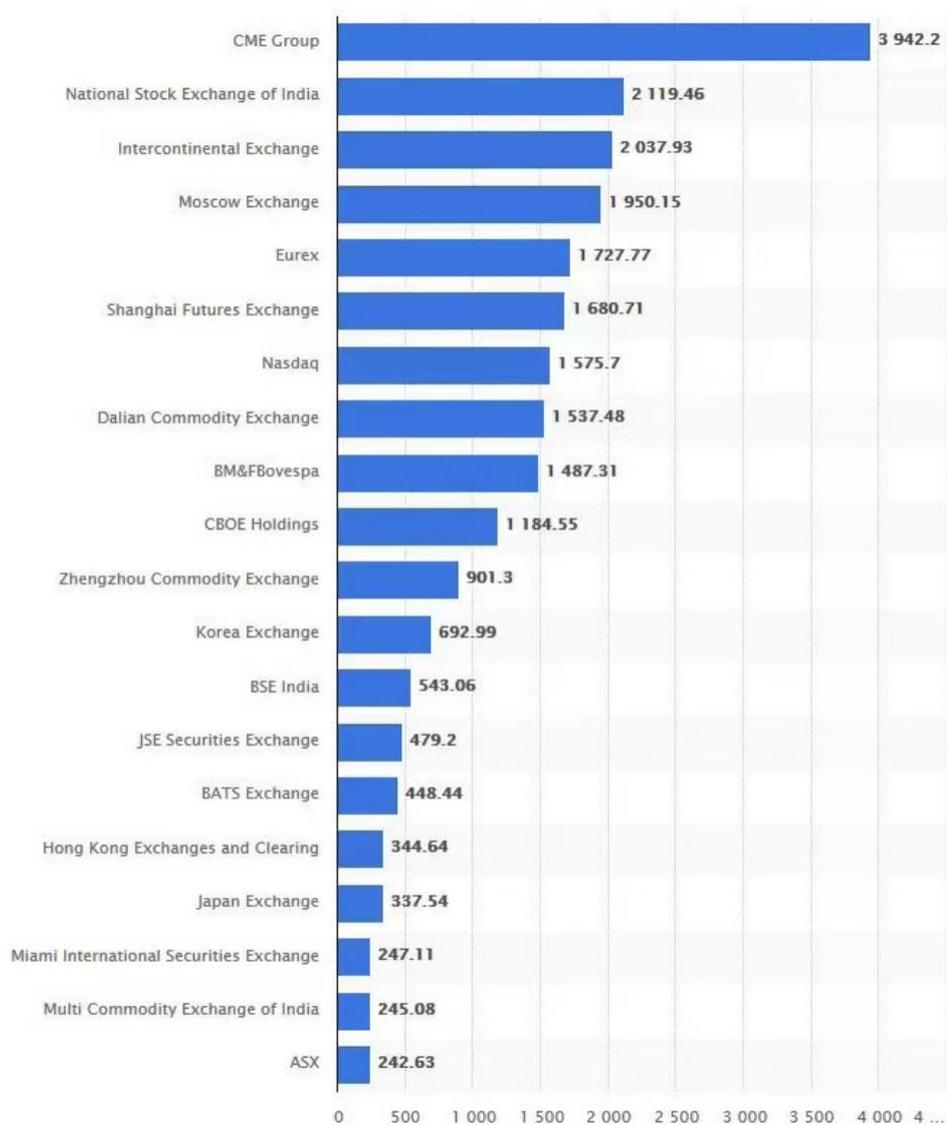
Commodity futures are the subject matter of a commodity futures contract, is a standardized agreement on the sale of commodities traded in a certain number of both sides agreed to a future date when signing the agreed price. The Chinese market economy promotes the sequential growth of the Chinese futures market and has so far has undergone the following four important stages theoretical preparation and preliminary stages of the futures market; futures market (1988-1991) pilot development stage (1992-1994) regulate and adjust the phase of the futures market (1994.5-2001); recovery and development stage of the futures market (2002-now) .

Figure2.4 shows the growth of the Chinese Commodity market since October 1990 when the first Chinese commodity futures exchange (Zhengzhou Commodity Exchange) was launched. China's commodity futures market has developed rapidly.

	Average number of contracts		Average share per the global volume	
	2005-2007	2008-2012	2005-2007	2008-2012
PRC	248,300,000	976,700,000	0.245	0.402
United States	463,500,000	793,100,000	0.457	0.326
United Kingdom	186,600,00	356,900,000	0.184	0.147
India	41,000,000	221,300,000	0.40	0.91
Japan	57,800,000	31,000,000	0.57	0.13
Russia	1,800,000	19,000,000	0.01	0.08
France	1,000,000	7,600,000	0.01	0.03
Malaysia	2,100,000	4,900,000	0.02	0.02
Canada	2,800,000	4,100,000	0.03	0.02
Brazil	1,800,000	3,100,000	0.02	0.01
South Africa	2,100,000	2,500,000	0.02	0.01
Netherlands	4,200,000	200,000	0.04	0.00
Cumulative volume	1,013,500,000	2,430,000,000		

Source: Global Liquidity

Table 2.1: The Average volume and share in global commodities derivatives market from 2005 to 2012



Source: Development of derivative trading on financial market and agribusiness sector in Serbia

Figure 2.4: The leading derivatives exchanges in the world in 2016 by trading volume in contracts (in millions)

Figure 2.4 shows that China has three core commodity futures exchanges which are; the Dalian Commodity Exchange, the Shanghai Futures Exchange, and the Zhengzhou Commodity Exchange. The expansion of trading varieties in China's commodity futures market has started to accelerate in the recent past. By the end of 2019, there were 58

commodity futures trading varieties and 10 commodity options, covering mainstream traded products in international markets such as energy, chemicals, agricultural products, and metals.

By the end of 2018, the Shanghai Futures Exchange had become the world's largest futures market dealing in ferrous metals and the second-largest non-ferrous metals futures market. Also, the annual trading volume of agricultural commodities futures on the Dalian Commodity Exchange overtook that of the Chicago Mercantile Exchange Group; making it the largest agricultural futures market in the world.

Financial Derivatives Market

China's foreign exchange derivatives market began in 1997, with foreign exchange swaps trading at a much higher volume than foreign exchange forwards, currency swaps, and foreign exchange options. The China Financial Futures Exchange was listed in Shanghai on September 8, 2006. Later on September 6, 2013, the treasury bond futures were officially listed for trading. The China Foreign Exchange Trade Center launched standardized RMB Foreign exchange swap transactions on February 16, 2015.

2.2 Differences between China's and America's financial systems

As the backbone of the economy, finance is of vital importance to a country's economic development and even national security. After the financial crisis, various countries have attached great importance to the construction and reform of their financial systems. However, different countries of the world operate under varying financial systems, and it is difficult to apply a standard model for generalization. As two of the three largest economies in the world, the financial systems of China and the United States are also important factors in the development of the world economy. Here we compare the respective financial systems of China and the United State. Here I make some comparisons, but before doing that, it is important to recall some definitions:

The primary foundation for capital flows in an economy is the financial system. It comprises a variety of financial aspects such as capital flow

instruments (financial assets), the market's participants (intermediaries), and mechanisms applied in the transactions (markets). A financial system is made up of various interconnected parts (Sylla, 2000). The financial sector consists of a wide range of financial entities and markets that offer financial services to the economy's non-financial sectors.

The financial practices and basic financial instruments of people, enterprises, and governments, as well as the organizational framework that coordinates the interests of all corporate actors, are referred to as financing models and corporate governance.

The regulatory system aids in the adaptation and coordination of the various components of the financial system.

2.2.1 Structure of the United States Financial System

The United States' financial system primarily comprises of the (a) Federal Reserve Bank, (b) the commercial banks, and (c) the non-banking financial entities (Baer, 1992).

The key mission of the Federal Reserve Bank of the US is to formulate and implement the monetary and financial policies of the United States, to conduct macroeconomic regulation following financial operations, and to assume the functions of issuing currency, acting as an agent of the Treasury Department, and supervising and regulating commercial banks. The Federal Reserve is responsible for monetary policy, including regulating the reserve requirement ratio, approving the discount rate, and managing and supervising the 12 federal banks, holding companies, and member banks of the Federal Reserve Banks. The Board of Governors is mandated to formulate and implement the monetary policy, as well as supervise and manage the regional branches, member banks, and commercial banks.

The Federal Reserve Banks

The Federal Open Market Committee (FOMC) is the executive body, which is primarily responsible for implementing open market operations and thus leading the overall implementation of monetary policy.

Commercial banks

Commercial banks in the United States are divided into two systems: the

state and the national banks. The Federal Deposit Insurance Corporation provides insurance to national banks, which have a membership with the Federal Reserve banking system. The Treasury Department's Office of Monetary Oversight registers and approves national banks, which were established before national banks and are registered in the states in which they operate. It is usually smaller in size. State banks are classified as members or non-members based on their participation in the Federal Reserve Banking System

Non-banking financial institutions

There is a huge number of non-banking financial institutions in the United States, including primarily financial institutions serving private individuals, such as savings and loan associations and thrifts; and financial institutions serving businesses, such as sales finance companies, commercial finance companies, commercial paper companies, and investment banks.

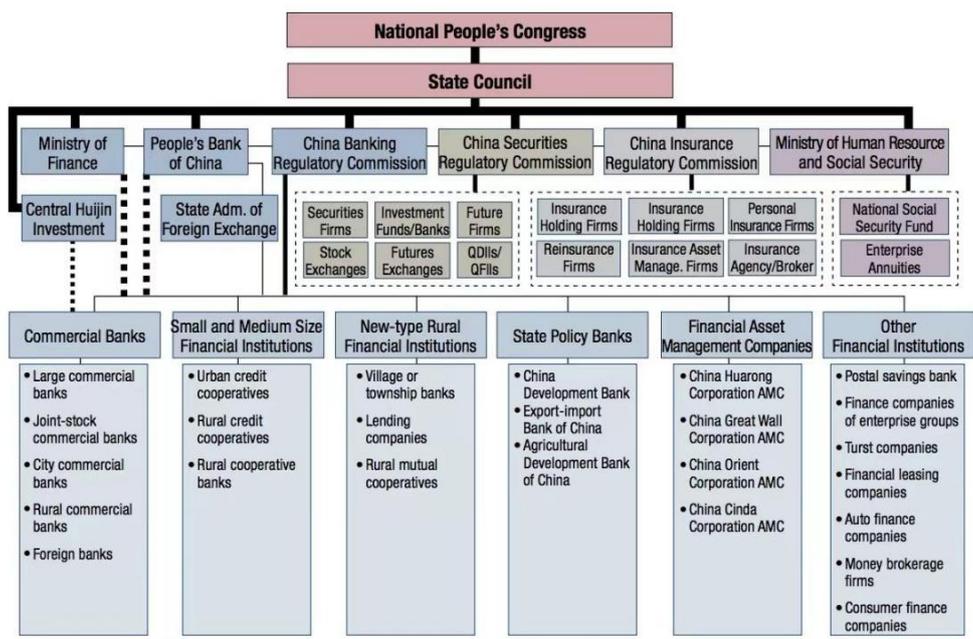
Government credit institutions

There are two main types of specialized government credit institutions: those that provide credit to residential homebuyers and those that provide credit to farmers and small businesses.

2.2.2 The Structure of the Chinese Financial System

The structure of China's financial system comprises of; (a) the central bank, (b) the banks, and (c) the non-banking financial institutions (Allen, 2007).

China is currently establishing a financial institution structure that consists of; (a) the People's Bank of China which is the central bank, (b) state-owned commercial banks as part of the major body, (c) numerous financial institutions coexisting, and labor division and collaboration.



Source: Elliott and Yan (2013)

Figure 2.5: The Structure of the Chinese Financial System

The above Figure 2.5 illustrates that China's financial system comprises of the following seven parts:

The Central Bank; the People's Bank of China

A central bank is a sole financial institution that is mandated by the government to formulate and implement monetary policies, control the macroeconomic sector of the national economy, and oversee and control financial entities and the financial services industry. The Chinese government formed this entity to gain control of the country's money supply and credit conditions. Also, this move was vital for the government to supervise the financial system, especially the commercial banks and other smaller financial institutions. The People's Bank of China represents the Chinese government in the majority of international financial operations.

State-owned commercial banks

There are five state-owned commercial banks in China. They include; (a) the Industrial and Commercial Bank of China, (b) the Agricultural Bank of China, (c) the Bank of Communications, (d) the China Construction Bank, and (e) the Bank of China. These banks are the principal players in

China's financial intermediary in the banking system. As a highly influential state-owned commercial bank, they play a crucial role in the planning system. Monopoly operation, bloated institutions, and excessive staff hinder the improvement of efficiency.

Joint-stock commercial banks

There are 12 joint-stock commercial banks in China, which currently experiencing rapid growth. More and more local banks absorb local deposits, such as salary payments, utility bill payments, and other services, to support local financial and economic development.

Policy banks

The China Agricultural Development Bank and China Exim Bank are Chinese policy banks that do not serve specific sectors for profit. It is a bank established by government investment, not for profit, and dedicated to enriching policy-oriented financial services based on government decisions and intentions. However, with the development of the economy, all banks are faced with the task of reform and transformation. According to the needs of the situation, policy banks have adopted corresponding reform measures to further improve and strengthen their operation and management system.

The China Development Bank

The China Development Bank began its operations on March 17, 1994. Its fundamental responsibility is to finance large and medium-sized infrastructure, technological transformation, and other policy projects and support China's infrastructure, primary industries, and pillar industries. The business scope of China Development Bank is mainly to invest in industrial projects that restrict the development of the national economy, significant projects in pillar industries that can directly enhance comprehensive national strength, major business projects in high-tech sectors, and multiple policy projects across regions.

Non-banking financial institutions

A non-banking financial institution is a financial entity that raises funds through issuing bonds and trading stocks, providing insurance services, and accepting credit mandates. Non-banking financial institutions use the funds raised for long-term investments. Mainly include:

- insurance firms,
- securities companies,

- trusts and investment firms,
- financial leasing corporations,
- investment funds,
- corporate finance companies,
- postal savings institutions.

Foreign banks, and foreign-related financial institutions

Foreign-funded financial institutions are financial entities approved to begin their operations in China following relevant Chinese laws and regulations. They exist in three main forms; (a) Foreign banks which are wholly owned by foreign entities, foreign banks' branches, and sino-foreign joint ventures; (b) Foreign financial firms, which are either exclusively foreign-owned firms or sino-foreign joint ventures; (c) International insurance companies, which also include wholly foreign-owned insurance, branches of foreign insurance companies and sino-foreign joint ventures.

2.3 The Comparison of China's financial regulation and United States financial regulation

The United States adopts a "two-line multi-head" sectoral regulatory system. This institutional pattern is well-matched with the nation's federal political system. The United States' regulatory system dates back to more than 100 years, and since then, they have formulated more mature regulatory mechanisms and institutional settings (LinPu, 2008). On the other hand, in China, the construction of the entire regulatory system in the real sense began in the reform and opening up and has 20 years of history, and various systems are not mature, but in the stage of exploration and improvement.

2.3.1 Main Features of Financial Regulation in China

The key feature of the current financial regulatory system in China is the separation of regulations.

The supervisory authority of China's finance sector is bestowed upon the People's Bank of China. The Peoples' Bank of China works closely with the China Insurance Regulatory Commission and China Securities Regulatory Commission to prevent and control financial risks (Zhu). Currently, the Chinese financial supervision is primarily still at the level of individual supervision. However, this kind of separate supervision is favorable in ensuring adequate supervision of their respective regulatory objects. As a result, fragmentation has occurred among various regulatory agencies due to a lack of effective coordination. It has been difficult to strengthen the operability of financial supervision due to inconsistencies in regulatory policies and incomplete implementation of primary financial laws. At the same time, the seriousness of financial supervision and implementation of authority are not optimal. Financial risk awareness creation is not well implemented among the concerned groups, financial risk mitigation methods are not effective, and risk prevention capabilities are not in the optimal state. Financial supervision does not have an early warning and control over financial risks, therefore, cannot effectively apply supervision information. Risk prevention is often done incorrectly.

2.3.2 Main features of the United States Financial Regulatory System

In the United States, the financial regulatory system has undergone three broad evolutions. These are the initial formation of financial regulation to full regulation (from the mid-19th century to the 1920s and 1930s to the end of the 1970s), the deregulation phase (the financial innovation wave in the late 1970s to the Asian financial crisis of 1997), and the financial re-regulation phase (the Asian financial crisis of 1997 to the present). The United States currently has a dual, multi-pronged financial regulatory system.

Financial regulators are numerous and have overlapping powers. The U.S. financial regulatory framework consists of numerous federal and state regulators with overlapping powers. When financial crises occur, in most cases, federal and state lawmakers choose to create new regulators to deal with them rather than expand the jurisdiction of existing regulators, so the number of agencies continues to grow.

The legal system is strict and robust. The United States attaches great importance to financial legislation. It has the strictest and most complex financial regulations in the world. Both the federal government and state legislatures have enacted relevant financial regulatory statutes, and there are rules to follow in all areas of finance, including banking, securities, and insurance.

Regulatory competition is extensive. Under a multi-regulatory system, it is challenging to avoid competition among U.S. financial regulators for regulatory authority and resources, and while this has created conditions for financial innovation to some extent, financial risks have increased.

The exchange of regulatory information has been enhanced, but with limited effect. There is a poor exchange of information between federal and state regulators. The United States state governments fail to disclose financial regulatory information in their jurisdictions to other states. This notion is based on the grounds of protecting trade secrets.

Emphasis on self-regulation of financial institutions and industry self-regulation. U.S. regulators believe that financial institutions have internal risk forecasting, measurement and control capabilities, and extensive operating experience. Therefore, their regulatory principle is to relax restrictions on financial operations and financial innovation as much as possible and allow institutions to exercise risk control.

2.4 Analysis and Comparison of Financial Market Innovation in China and the US

Financial innovation is the recombination and creative transformation of elements of finance in the financial sector to obtain potential profits that are not available in the existing financial system and financial instruments

(Silber, 1983). Specifically, it refers to the financial business innovation, financial system reform and financial system improvement activities carried out by financial institutions and financial management departments driven by their economic interests (Performance of financial institutions: efficiency, innovation, regulation, 2000). The rational use of financial innovation can bring huge benefits to investors, financial institutions, and financial management departments. However, excessive financial innovation led to the expansion of a fictitious economy, which eventually evolved into a financial crisis and spread from the United States to various parts of the world in the recent past. The financial crisis unearthed weak points in the U.S. financial innovation system, which is widely considered to be the most robust, well-established, and representative, and thus prompted serious thinking about financial innovation.

2.4.1 The development of China's financial innovation

The Chinese financial innovation is grounded on the government guiding the innovative behavior of micro-entities. It is a top-down financial reform and innovation movement that adheres to prudential regulation and encourages innovation in parallel.

Since 1979, China has broken up its highly centralized banking system and eventually formed a financial organization system that guarantees the co-existence of the central bank as the core and state-owned commercial banks and other financial institutions of various ownership. From this system, China has offered the required organizational guarantee for the establishment of a financial system that suits the market economy.

Some of China's innovations in the financial markets include: (a) money market innovations, including four sub-markets: the bill discount market, the inter-bank lending market, the government bond repo market, the large-denomination certificate of deposit market; (b) innovations in the capital market, where the stock market has grown from non-existent to unregulated to gradually regulated, and the launching of the Shenzhen and Shanghai Stock Exchanges has provided enterprises with broad financing

channels.

China has made innovations in financial control measures. The People's Bank of China has solely performed the tasks of a central bank since 1984. It has since then gradually developed a set of regulatory standards for legal deposit reserves, rediscounting, interest rates, open market operations, etc. The regulatory effect is obvious.

The aforementioned innovations in the finance sector have immensely facilitated the growth of the Chinese finance industry.

-a, a wide variety of credit cards, money transfer systems, and online banking have become essential payment methods and settlement tools.

-The diversification of innovative financial instruments has increased the freedom of fundraisers and investors and significantly improved the structure of the financing system.

- The securities regulator was changed from local government leadership to vertical leadership with the establishment of the China Banking Regulatory Commission as well as the China Insurance Regulatory Commission.

2.4.2 The development of American financial innovation

The U.S. promotes financial liberalization reform through financial deregulation and financial innovation and has formulated a series of financial laws and regulations to protect the smooth implementation of the reform. (PeterTufano, 2003) The U.S. has formulated a series of financial laws and regulations to protect the smooth implementation of the reform.

Major economic changes in the demand for financial services were an early cause of innovation. The previous rules and regulations lacked the necessary flexibility in the face of the effects of inflation and rising interest rates. From 1965 to 1972, Citibank designed a "large negotiable certificate of deposit" to meet this need. Soon after, the "money market mutual fund" emerged in the securities industry as an institutional innovation.

The dollar, which had been overvalued since the mid-1940s, was now facing unprecedented inflationary pressures. The combination of tight

monetary conditions and surging oil prices have led to a price explosion. In this context, markets responded to the need for financial stability by inventing new financial instruments, with options on financial assets and asset futures being two of the most important innovations.

After the 1980s, a series of financial laws in the United States aimed to deregulate banking, remove barriers to mergers and acquisitions, and encourage orderly market competition in the banking industry. Several banking laws enacted in the 1980s influenced policy in various ways. However, there has been no significant deregulation in numerous key areas, including bank interstate operations, cross-industry mergers and acquisitions, and bank interstate mergers. Traditional technological advances and inflationary pressures have rarely influenced innovation; instead, mergers in restructured industries and the financial sector have. Since the 1980s, many "benchmark acquisitions" have occurred and the scope of corporate mergers and acquisitions has expanded, requiring banks to increase the size of their capital. The rapid accumulation and concentration of financial assets and the increased financialization of the economy provided a good environmental incentive for the banking sector to expand.

CHAPTER 3: ANALYZE THE VOLATILITY OF CHINESE AND U.S. FINANCIAL MARKETS AND THE RELATIONSHIP BETWEEN FINANCIAL MARKETS AND ECONOMIC GROWTH

The chapter is divided into the following sections: the first section describes the implications for U.S. and Chinese financial markets and provides a literature review of the risks in U.S. and Chinese equity markets, discusses the volatility of U.S. and Chinese equity, bond, currency, and commodity markets and the countermeasures taken; then it analyzes the mechanisms by which financial markets act on economic growth.

3.1 Analysis and comparison of financial market volatility in the US and China under the impact of the epidemic

Covid-19 is now largely under control in China, but is still on the rise or in outbreak in many countries. As a result of the "pandemic" impact of the epidemic, the world economy has fallen into recession in 2020 and the international financial markets have continued to shake violently (JD, 2020).

In the short term, the world economy and financial trends are dominated by the epidemic and the global trade and investment landscape is facing reshaping. Driven by the "America First" policy, the US economy has performed particularly well in recent years. Some macro indicators (GDP growth, employment, etc.) are doing extremely well, and the U.S. stock market is doing even better. As of Feb. 14, 2020, the S&P 500 had a p/E of 24.74 and an average price-to-book ratio is more than 3.65. It's the highest for nearly a decade. Meanwhile, the Dow Jones Industrial Average trades at 23.09 times earnings and an average price-to-book ratio of more than 5.06

times: the Nasdaq trades at 36.42 times. The average price-to-book ratio exceeded 5.11 times. However, a sudden outbreak of COVID-19 hit the US and even the global stock market on January 21, 2020. At that time, the US CDC announced that they were preparing for a novel Coronavirus pandemic. Global capital markets began a frenzied downward pattern. The three major U.S. stock indexes experienced four primary circuit breakers from March 9 to 18, 2020. As the world's largest stock market, the turmoil in the U.S. stock market is bound to have an impact on global stock markets. As the world's second largest stock market and the largest emerging market, China's stock market not only reflects the information of peripheral markets such as the US stock market, but also has the ability to influence peripheral markets. Like the US market, the Shanghai Composite index fell 4.5% in March 2020 due to the epidemic, especially in the US. The 9.8% decline in the first quarter was the worst monthly performance since May 2019 and the worst quarterly performance since the fourth quarter of 2018.

The earliest literature to study Chinese and American stock markets in China is about the comparison and analysis of secondary market risks in Chinese and American stock markets (Wang Zihong, 1996). Most of the later papers were about the contagiousness of risk between Chinese and American stock markets, but the terms correlation, correlation, coactivity and spillover were used interchangeably. In these papers on risk contagiousness, there is simply a change in the sample index or an update of the sample range. Some are to improve the research methods (Zhang Dongxiang et al., 2015), and conclusions are often inconsistent. Zhang Bing et al. (2010) and Gong Jinguo et al. (2015) analyzed the internal mechanism of cross-border risk spillover effect in the stock market from different theoretical perspectives and tested it with the data of The Chinese and American markets. These are rare documents on mechanism analysis in the early years.

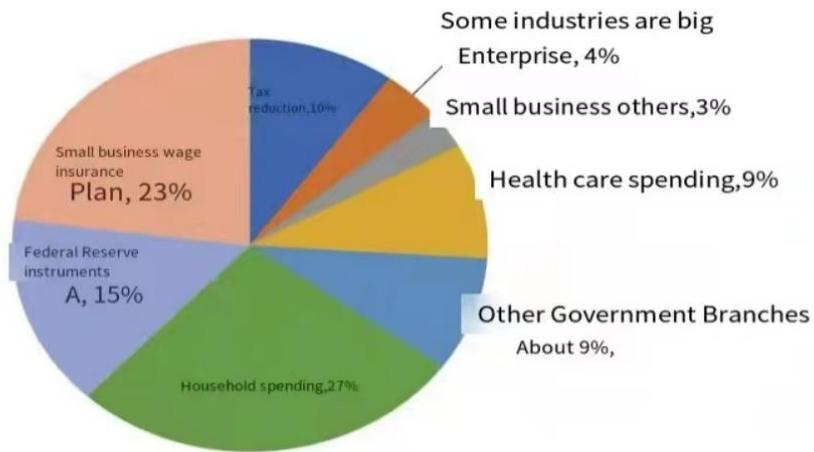
3.1.1 Analysis and comparison of the volatility of American and Chinese financial markets

With the spread of the epidemic, most of the recent economic indicators in developed economies have repeatedly hit the lowest in recent years, and even set new historical records. In the US, for example, consumer confidence in March 2020 was at a record low for nearly three and a half years, the unemployment rate rose to 4.4% from 3.5% in the previous month, and the drop in non-farm payrolls was the largest in 11 years. A wave of mass unemployment also arrived in the US, with the unemployment rate exceeding 10% in the second quarter and economic growth falling into recession. JP Morgan predicted GDP growth of -1.8%, -3.4% and -1.3% for the US, Europe and Japan respectively in 2020, while Goldman Sachs revised down the GDP growth for the US and Europe to -6.2% and -9% respectively in 2020.

Since the spread of the epidemic in Europe and the United States, the global stock, bond, currency and commodity markets have been on a roller coaster ride, with volatility greater than during the 2008 international financial crisis and unprecedented market panic. The world's major stock indices have melted down several times, the longest bull market in US stock history has ended and crude oil prices have plummeted; US bond yields have hit record lows, and the US dollar index and international gold prices have strengthened overall. As a result of the panic, investors not only sold off risky assets, but also safe-haven assets at one point due to a lack of liquidity. The US introduced an unprecedented bailout policy by introducing a US\$2 trillion fiscal stimulus bill, and the Federal Reserve responded by relaunching the commercial paper financing facility, implementing an "uncapped" QE policy and setting up temporary currency repurchase agreements with foreign central banks after the emergency interest rate cut and the restart of QE, which eased market liquidity to some extent. The tightness of the market. Recently, panic has eased compared to the previous period and the financial markets have been relatively stable for the time being.

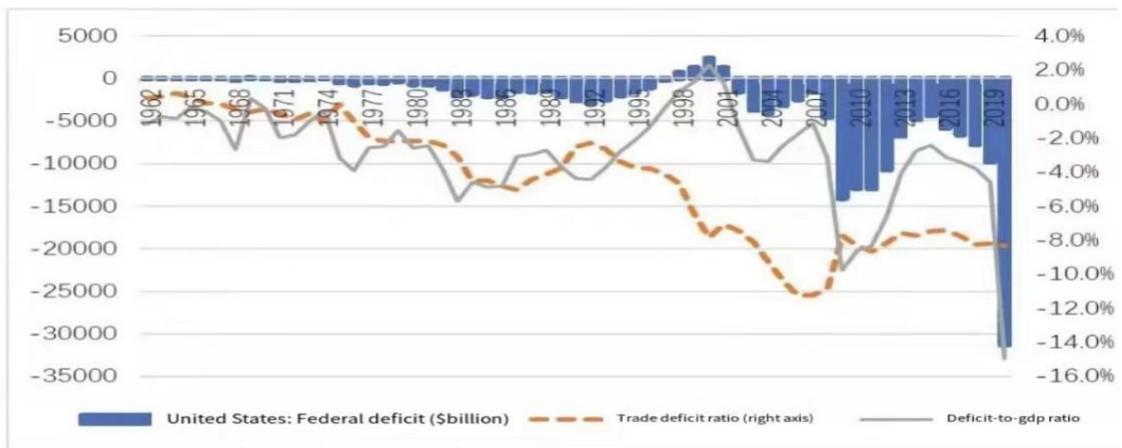
Faced with the shock of an economic shutdown caused by the Newcastle

pneumonia epidemic, the US government adopted an unprecedented fiscal stimulus, with the fiscal deficit rate jumping 10.4 percentage points from the previous year to 15.0% (Figure 3.1). In particular, nearly half of the funds from the first four rounds of fiscal bailouts were spent on giving money to households and providing protection for small business payrolls (Figure 3.2). Therefore, although the uncertainty caused by the epidemic caused the private sector savings rate in the US to rise, government leverage smoothed out the downside of the economy better (Group, 2020). In 2020, the US economic growth rate fell back by 5.7 percentage points compared to the previous year. Of this, personal consumption expenditures and private investment pull back 4.3 and 1.2 percentage points respectively, while government spending pull back only 0.2 percentage points. In response to the epidemic shock, the Fed also offered a "zero interest rate + unlimited quantitative loosening" bomb. 2020 saw a US\$3.20 trillion expansion in just one year, with the Fed's total assets to nominal GDP ratio jumping by 15.7 percentage points; in the last crisis response, in the seven years from 2008 to 2014, the "It took zero interest rates + three rounds of quantitative easing to expand the table by US\$3.61 trillion and a jump of 19.5 percentage points in the Fed's total assets to nominal GDP . The increase in net capital inflows to the US was due to the widening of the current account deficit, which is the mirror image of the capital account balance, and had nothing to do with the rise in the dollar exchange rate. In fact, the 10-year US bond yield, the anchor of global risk-free asset pricing, fell to below 0.6% in 2020 as a result of the Fed's big release. In the fourth quarter of 2020, the quarterly average spread between 10-year US and German Treasury yields retreated by 70 basis points year-on-year and the quarterly average spread between US and Japanese Treasury yields converged by 104 basis points; the Intercontinental Exchange (ICE) US



Source: federalreserve.gov/

Figure 3.1: U.S. main expenditure composition of four financial rescue measures before 2020

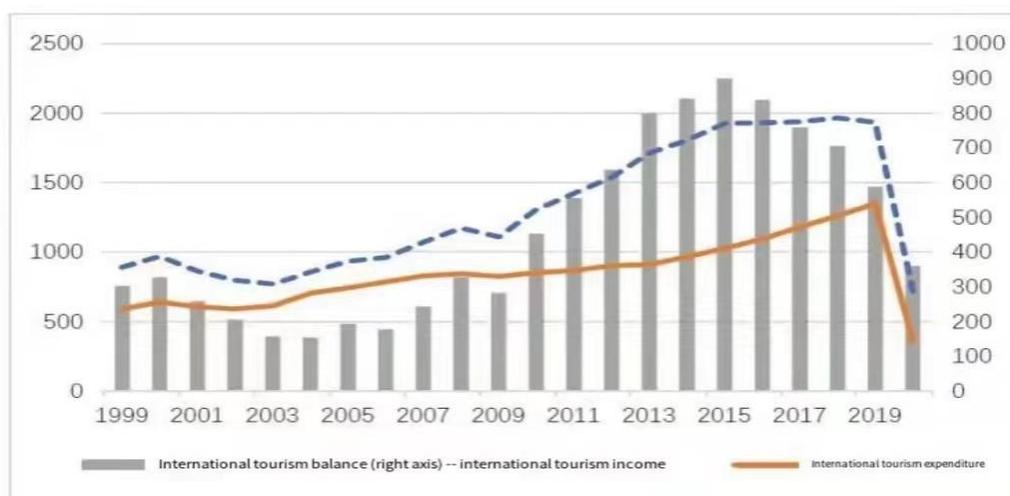


Note: Trade deficit refers to the trade deficit in goods and services on the basis of balance of payments.

Source: data.iimedia.cn/

Figure 3.2: U.S annual fiscal deficit in goods and services on the basis of balance of payments

The Intercontinental Exchange (ICE) US Dollar Index rose and then fell, with a cumulative decline of 6.7% for the year.



Source: www.imf.org/

Figure 3.3: U.S annual international tourism balance(unit:US \$100 million)

US international tourism receipts and spending fell by 63% and 73% respectively in 2020 due to disruptions in cross-border people movements, reducing the tourism surplus by US\$22.7 billion and contributing 58% of the reduction in the services surplus (Figure 3.3)

The US is the world's largest net external debtor, but investment returns are perennially positive, mainly because the return on outward investment is higher than the cost of utilising foreign investment. in 2020, as a result of the global plunge into the worst post-war recession caused by the pandemic and the low interest rate environment, the US return on outward investment is 3.1%, down 1.0 percentage points from the previous year; the return on inward investment is 1.8%, down 0.6 percentage points; US investment income receipts and expenditures decreased by 16% and 13%, respectively, and the investment income surplus decreased by \$57.6 billion, contributing

1.05 times the reduction in the primary income surplus.

Since 2020, the new crown epidemic has caused downward pressure on the Chinese economy and increased volatility in Chinese financial markets. Currently, China has achieved phased success in the prevention and control of the epidemic, and economic and social order has been restored at an accelerated pace, but the rapid spread of the epidemic overseas is creating a secondary shock to China. GDP fell by 6.8% year-on-year in the first quarter, with all major economic indicators registering negative growth. In the first quarter, industrial value added and corporate profits above designated size fell by 8.4% and 36.7% year-on-year respectively; fixed asset investment completed fell by 16.1%; total retail sales of consumer goods fell by 19.0% in nominal and 22.0% in real terms; and the total value of import and export of goods in US dollar terms fell by 8.4%, with exports and imports falling by 13.3% and 2.9% respectively. All of the above indicators narrowed from the previous February's level. In terms of prices, the Consumer Price Index (CPI) rose by 4.3% year-on-year in March, down 0.9 percentage points from the previous month, driven mainly by a fall in food prices; the Industrial Producer Price Index (PPI) fell by 1.5% year-on-year, an increase of 1.1 percentage points from the previous month, indicating that deflationary pressures in the industrial sector continued to rise. and the non-manufacturing business activity index both rebounded sharply above the 50% "Rong Kuk" line, but as the PMI is a chain data, it only indicates that economic activity improved in March compared to February, and does not mean that it has returned to normal levels.

At present, China's foreign trade shows some structural characteristics. First, among the major trading partners, the growth of developed economies is relatively sluggish, and China's exports to the United States, the European Union, Japan and other major trading partners have dropped at a larger rate; ASEAN has become China's top trading partner, mainly due to factors such as avoidance of the US tariff hike and industrial chain shift. Secondly, general trade and some high technology products exports are in relatively good condition, processing trade and labour-intensive products with

traditional advantages have seen a large drop in exports, and industries such as textiles and garments, mechanical and electrical products are under greater pressure (Zhang, 2020). Third, there is a certain rigidity in the import of essential goods, and the import of bulk commodities and meat is growing faster.

In the coming period, the situation of China's foreign trade growth may be more severe. On the one hand, demand from the more serious areas of the epidemic and countries that rely on crude oil and other bulk commodity exports has fallen sharply, and China's foreign trade orders face the risk of further decline, and demand for materials and equipment related to epidemic prevention has increased sharply but is limited in volume. On the other hand, the intensification of the epidemic overseas and the escalation of preventive and control measures have halted the production of some foreign manufacturers and intensified the disruption of international logistics, which has affected China's imports of intermediate goods through the global industrial chain, thereby adversely affecting related industrial production and exports of finished goods. Although the fall in crude oil prices will help reduce China's import costs and the impact of the decline in foreign trade on the trade deficit pressure and net exports in GDP accounting may not be significant, the simultaneous reduction in imports and exports directly affects industrial production and employment, especially in processing trade and labour-intensive industries, which in turn affects domestic investment, consumption and foreign investment.

Since the outbreak of the epidemic, China has introduced a series of fiscal, monetary and financial policy responses. Unlike Western countries such as the US, where monetary policy tools have almost been exhausted, China has more than enough macro policy space (Qirong, 2015). In terms of fiscal policy, the Chinese government's debt burden is relatively low, with a government debt ratio of 38.5% at the end of 2019, which is lower than the levels of major developed countries and emerging market countries. In addition to supporting the prevention and control of the epidemic, fiscal policy can help enterprises and residents tide over the difficult times through

precise and targeted relief, by reducing taxes and fees and issuing subsidies, as well as providing the necessary guarantees for financial services to the real economy through policy-based finance and loan guarantee funds. In terms of monetary policy, the loan market quotation rate (LPR) and deposit reserve ratio still have some room for downward movement and can depress the cost of corporate financing by lowering the comprehensive cost of funds for financial institutions during special periods.

3.2 Theoretical analysis of the mechanism of the role of financial markets and economic growth

The financial market, represented by the stock market, has five main mechanisms for economic growth: providing liquidity, spreading risk, obtaining information, exercising corporate control and mobilizing social savings, which will be discussed in detail in this paper.

Financial markets have enough liquidity to support the financing demands of medium- and long-term investment projects.

Many high-yielding projects require long-term capital investment in order to operate, but investors are generally hesitant to invest in longer-term projects due to liquidity concerns, and commercial banks' credit allocation is limited to short- and medium-term investment areas, with interest rates increasing as loan maturity increases. As a result, high-yielding long-term investment projects face funding challenges in the absence of financial arrangements that improve liquidity. Individual investors and bank credit are limited by the stock market's liquidity, which allows investors to keep stocks, a cashable financial asset, and swiftly dispose them when liquid funds are required. At the same time, publicly traded corporations can raise funds by issuing long-term shares. The stock market successfully solves the problem of funding long-term high-yield projects, optimizes the allocation of social capital, and so supports economic growth through the aforementioned

operating mechanism. Of course, a liquid stock market can exhibit some speculative behavior, which is mostly determined by the maturity of the stock market's development and the regulatory system's soundness. Strategic investors based on the long-term value return of listed businesses will become mainstream in a well-run stock market, and will also play a constructive role in stock market stability and long-term economic growth.

Financial Market Risk Diversification and Economic Growth

While financial markets offer high-risk, high-yield financial products, they also allow investors to diversify their investment risks by putting their money into a portfolio of securities assets, increasing rewards. The overall risk of an asset portfolio is inversely proportional to the types of assets in the portfolio, according to asset portfolio theory, and unsystematic risk can be successfully minimized by allocating less linked diverse assets. Risk and return are proportional in single-security investments, with a higher return implying a higher risk. The organic integration of numerous assets can lower risk and help the asset portfolio reach its ideal condition of optimal overall return. Financial markets' purpose of diversifying investment risks alleviates people's concerns while making decisions. Financial markets' risk diversification function is beneficial to supporting technological innovation. Companies have a strong incentive to develop since technical innovation can result in significant operational profits and greater market share. Individual investors, on the other hand, are frequently put off by the substantial risks connected with technical progress. The financial market mitigates investment risk by diversifying investments in creative ventures, particularly through the formation of the venture capital mechanism, which provides effective financial support for high-risk, high-return, and high-tech projects. For example, during the emergence of the ICT-led "new economy" in the United States, the NASDAQ stock market, with its flexible trading format and strong risk diversification mechanism, has successfully nurtured such well-known multinational firms as Microsoft, Yahoo, Dell, Qualcomm, and Intel.

Market Effectiveness and Financial Market Information

The information problem in capital transfers gives rise to financial markets. The prices of financial assets, which are controlled by the supply and demand of funds, reflect information about the worth and scarcity of funds throughout the operation of financial markets, and prices maximize the effective deployment of economic resources through their guiding role. In an efficient financial market, the price of a security can completely and accurately reflect all information about that asset and its issuer, according to the efficient market theory. Four conditions must be met for a financial market to be efficient: effective information disclosure, effective information transmission, effective investors' information judgment, and successful investment decisions. Financial markets are divided into three categories by efficient market theory: weakly efficient markets, semi-strongly efficient markets, and strongly efficient markets. Due to the lag in the process of disclosure, interpretation, and decision-making of information relevant to the price of securities in the real economy, the likelihood of satisfying all four characteristics of efficient financial markets at the same time is very minimal. Economists found through practical research on financial markets in developed and developing countries such as the United States and the United Kingdom that financial markets in developing countries generally belong to weakly efficient markets, and even in economies with mature and standardized financial markets such as the United Kingdom and the United States, only semi-strongly efficient markets exist, i.e., to ensure that securities prices can reflect past and present publicly disclosed information. As a result, establishing a required information disclosure mechanism for listed corporations is critical to improving the financial market's effectiveness. Investors will be able to make rational judgments and decisions on the investment value of securities only when information about corporate operations and financial statements of listed companies is publicly disclosed in a true and accurate manner, forming the equilibrium market price of securities and guiding the effective allocation of funds in the

financial market through price signals. The price signal will direct the financial market to allocate capital effectively, and the market equilibrium price of securities will be produced.

The framework of corporate governance is improved by financial markets.

The principal-agent problem arises in the course of firm management as modern enterprises adopt the separation of ownership and management rights. By linking the company's operating performance with managers' remuneration, the financial market effectively mitigates the conflict of interest between owners and operators of listed companies. The movement of stock prices shows the company's operating performance and development potential because stocks are openly traded in the financial market. Shareholders can effectively guide operators from pursuing the company's short-term performance to focusing on the company's long-term value appreciation by using the market performance of the company's stocks as an important factor in the compensation incentive for managers, realizing the consistency of the company's shareholders and operators' interests, and enabling both parties to share the dividends of the company's long-term development. In addition to this, the financial market also strengthens the corporate governance structure through the constraint mechanism of corporate M&A. M&A of publicly traded companies has been growing fast since the financial market provides a broad platform and operating mechanism for corporate M&A. Corporate mergers and acquisitions have exploded in popularity since the 1970s. In 1980, nearly one-tenth of the Fortune 500 companies in the United States were bought in hostile transactions. Because corporate M&A transactions are becoming more common, the supervisory business is always at risk of being bought. Because the operator will lose his or her job as a result of the company's acquisition, the constraint mechanism of corporate M&A will encourage the operator to work harder to improve the company's operating performance and market competitiveness, and to better align the interests of the shareholders and the company's operator. In conclusion, by resolving the principal-agent dilemma between listed company owners and operators, a well-functioning financial

market may strengthen corporate governance structure and promote corporate operating efficiency and economic growth.

CHAPTER 4: RESULTS AND DISCUSSION

I will present here the results of the study on the impact of Chinese and US financial markets on the economy. Here, I will show the results of two studies that came out in: the first one is the impact of Chinese financial markets, represented by the Chinese stock market, on the economic development and present the related recommendations; the second is the result of the role of financial development in promoting economic growth in the United States, in the sense that I want to demonstrate that financial development is a key component of economic growth.

4.1 Chinese Financial Market Results

China remains to be the second-largest economy after the United States economy. This unprecedented growth is characterized by increased volatility in the stock prices which are categorized as A and B shears respectively. According to E Girardin & Zhenya Liu (2019), china's stock market typically revolves around three major anomalies which are independent of each other. The inherent speculative nature of the market (recurrent bubbles), Exotic seasonality, and segmentation are clear definitions of china's stock market. Nonetheless, it's also rare for an economy to grow as first as that of china since the introduction of high bride states in the 1980s which allowed a free market trade. Amidst communist countries, China has recorded the highest growth in terms of trade and infrastructure. This is thanks to the introduction of free-market trade in cities such as Shanghai, Beijing, and Hong Kong. Shenzhen, and Taiwan.

Furthermore, the Chinese market is still growing hence it is hardly

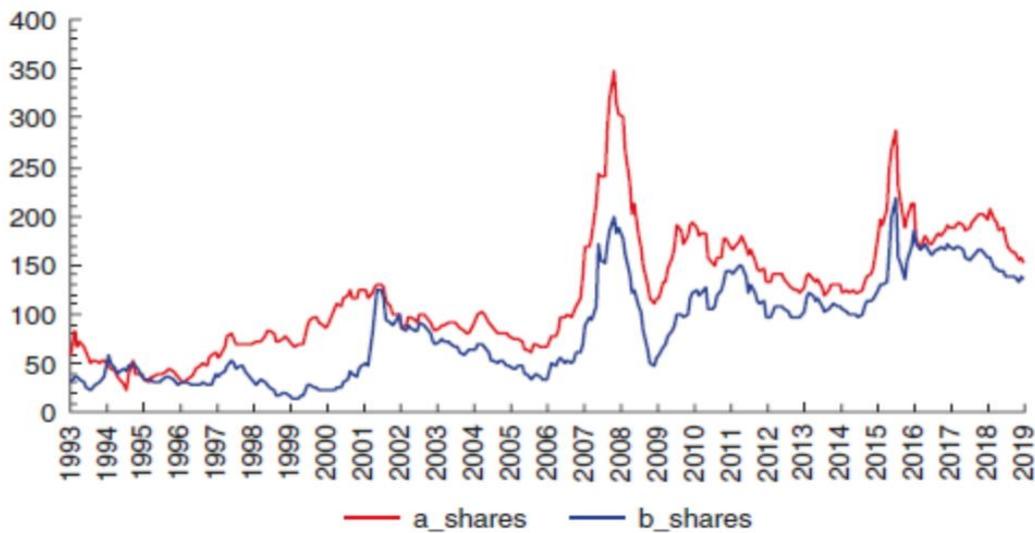
impossible for the market to comply with the theory of informationally-efficient markets. This is following several reforms and anomalies which affect shares prices in the market. The possible stability of these anomalies is quite unlikely given the fact that several variables affect the predictability of prices. For example, 2021 was not a good year and in 2022 china still had a rocky start (Guthrie, Xiao, & Wang, 2007). The question would be what would be the probable causes? Without mentioning the pandemic which was also a probable course, global reforms, the behavior of investors towards the market as well the significance of institutional investors were also among predominant concerns in the depreciation of china's stock.

What is the relationship of China's stock market to the real economy? The external financial openness does not necessarily affect domestic stock prices however theoretically protection of the domestic stock market through capital control does not prevent financial openness. In summary, the relationship between finance and economy in china is entail based on inflows and outflows which have mostly been as a result of large capital inflows mainly through FDI and outflows but also foreign exchange reserves. In other words, the lowered prices of the domestic stock, as opposed to international stock, do not necessarily have a direct impact on china's economy because the stock market is mainly derived from capital inflows and foreign exchange reserves.

When looking at the resilient, source of inefficiency in major markets around the world also known as the January effect where stock returns are relatively higher in January as compared to other months (E Girardin & Zhenya Liu, 2019). In China, the theory does not apply basically because high stock returns are recorded during spring , this is a total opposite of how the real economy operates. When comparing this china's stock market to that of the west there is one common trait which is the segmentation of the market into different segments. In China, the stock market has two main segments (i.e., 'A' markets which were entirely denominated in RMB and offered inexperienced local investors to bid and the 'B' market specifically

meant for foreign investors).

Nonetheless, the price difference between domestic stock and international stock has since puzzled the majority of investors. Despite the identical right measured in the same currency, E Girardi & Zhenya Liu, (2019), prices of “A” share were high when compared to prices of B share within 10 years in the market of 1990s. The graph below is a Prof of how A and B shares traded over that given period

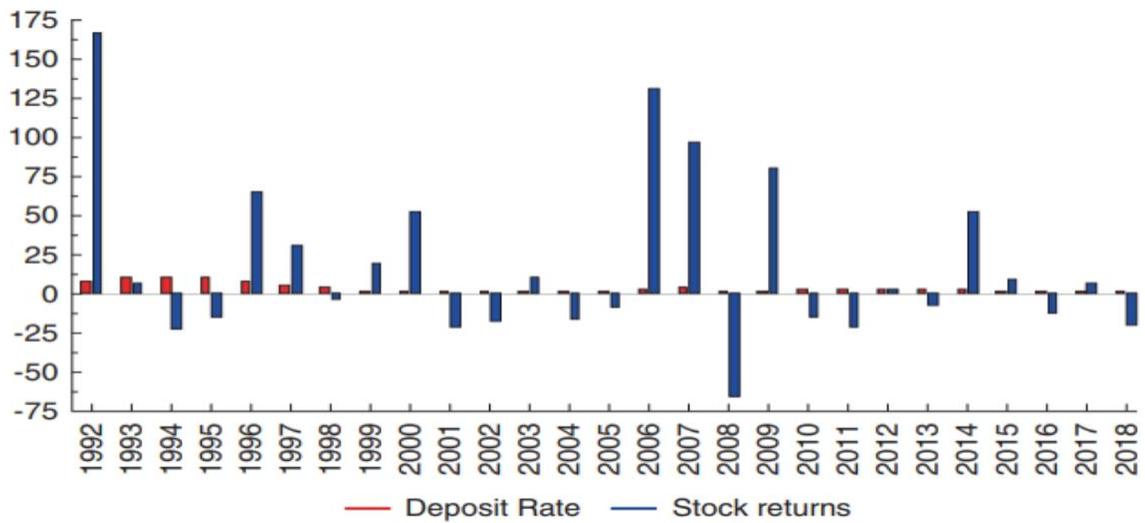


Source:Wind

Figure 4.1: A- and B-share indices in Shanghai. Monthly data 1993(1)-2018(12). The base is 2001 (12) -100. A and B indices in RMB

Internationally traded stocks have since been accompanied by higher dividends as opposed to the locally traded stock. However, the majority of China’s stock is owned by the Chinese with only 5% of the stock owned by international investors. Similar cases are different when looking at the United States stock market which is almost evenly balanced between local and international investors. Stock pricing is also regulated to eliminate the huge gap between the two sectors. From the above observation, it's quite evident how the two financial systems operate. According to data retrieved

from figure 4.2, real economic growth is determined by the rate of inflows and outflows in the stock market which are theoretically balanced. In cases where one is greater than the other, the margin is not as big as that witnessed in the Chinese stock market. Growth in a real economy is based on capital gains which are mainly from foreign investments. The Chinese financial system is entirely dominated by banks that are controlled by the government. This explains why a majority of shares are owned by the Chinese as opposed to international investors. Only a few IPOs are publicly owned while the rest are owned by the banks. This means that bank deposits have been higher than individual stock returns.



Source: Bloomberg

Figure 4.2: Yearly return: stock market and bank deposits(%):1992-2018
 Yearly stock returns (Shanghai composite) exclusive of dividends

When looking at the even distribution of shares, 95% of China's stock market shares are locally owned while only 5% are owned internationally. This also means the long-run buy-and-hold strategy as applied in other

markets will result in zero cumulative returns over two and a half decades as shown in Figure 4.3. It shows the real shanghai stock market index from 1990 to the year 2019(12)



Figure 5

Source: Bloomberg

Figure 4.3: Real Shanghai stock market index(in logarithm):
1990(12)-2018(12). Monthly data.

When analyzing shanghai shares based on the shape ratio in the table below, the holding period for shares is a quarter or half a year depending on the adjusted and unadjusted Sharpe ratio. Based on this data pick returns would vary hence resulting in a waiting period of four to five years depending on the Sharpe ratio.

Investment horizon	Annualized return	Sharpe ratio annualized	Annualized excess return after fee	Sharpe ratio annualized on excess returns and net of fee
Day	18.4	47.2	-36	-92
Week	19.9	43.3	5.9	13.3
Month	18.9	39.9	12.5	26.4
Quarter	21.2	37.3	16.4	28.7
Semester	21.7	37	17.3	29.5
1 year	25.9	28.8	21.7	24.1
2 years	23.5	23.6	19.4	19.4
3 years	15.8	27	11.7	19.9
4 years	14.4	30.9	10.3	22
5 years	13.8	31.5	9.8	22.3
6 years	10.5	17.1	6.5	10.5
7 years	14	22.2	10	15.9
8 years	13.7	23	9.7	16.3
9 years	15.4	19.7	11.4	14.6
10 years	16.2	17	12.2	12.8

Source: Wind

Table 4.1: Rolling computation for one day and up to 10-year holding periods for Shanghai A-shares (January 1991-February 2019)

Conclusion

The above-collected data is a suggestive partner of the speculative nature of the Chinese stock market making it entirely unpredictable. The possibility of uncertainty is far vast when compared to what can be observed in other stock markets. Several financial theories do not apply in this case given the fact that the country's financial system is rather centralized. According to figure

4.9, A and B shares have had an impact on the county's financial system as well as its economy. The bubble effect has resulted in reduced capital gain over 10 years during the 1990s investors are forced to jump on signs of bubbles. In a real economy observers often look at the market in two dimensions. The first is possible entry time which is less of speculations and more of possible trends and the exited period when an investor would close a sale. However, the Chinese market is quite opposite when it comes to trends and patterns hence does not conform to common financial theories.

China's financial markets and its economic growth are inextricably linked. The rapid development of China's financial markets has greatly contributed to the country's high economic growth during the same period. The stock market has evolved in a volatile manner, and the development of the banking sector and the stock market as the main means of corporate financing have complemented each other.

China's financial assets are unevenly distributed, with the banking sector having the advantage of determining the market, high concentration and insufficient competition, and the securities market being relatively underdeveloped. Therefore, China's financial sector must adhere to the path of steady and efficient development, take the time to adjust and improve its financial structure, enhance its strength and upgrade the level and level of financial development in order to gain its rightful position in the international competition and maintain its own security and stability.

The financial efficiency of China is low. The financial structure is inefficient not just in mobilizing savings, but also in transforming savings into investment, distributing financial resources, and technological innovation, all of which have direct implications for finance's contribution to economic growth.

China has transitioned from a closed domestic financial system to an open financial system, but overseas financing has shrunk in recent years. The entry of foreign financial institutions is the mainstay of financial openness, however the rate at which Chinese financial institutions exit the country and enter the international financial market is rather slow, which is not in

accordance with the trend of economic globalization.

Suggestions for the development of China's financial markets

Proactive financial structure adjustment, the building of a sound and diversified financial market, the efficiency of financial structure allocation through the market mechanism, and the overall improvement of China's financial development's competitiveness and safety.

Improve the fundamental conditions for the formation of the financial structure, strengthen the construction of financial infrastructure, improve financial laws and regulations, strengthen the social credit base and credit system, promote information exchange, and reduce the moral hazard associated with the financial industry's information asymmetry.

Improve the financial supervision system, enhance supervision, strengthen the supervision of financial markets and financial institutions, gradually establish a financial system that is coordinated with sustainable economic development, and promote the coordinated and stable development of the financial sector.

4.2 U.S. Financial Market Results

In this thesis, I will examine the process of financial system and financial structure evolution in the United States during the industrialization era, as well as the role of financial development in fostering economic growth, in order to infer a causal relationship between the two. The key rationale for selecting the United States' industrialization stage as the study's subject is that this period coincides with the establishment and improvement of the country's financial system, making it easier to evaluate the relationship between financial development and economic growth.

The United States is the most economically advanced country of our time, but its economic progress is inextricably related to the development of its

financial system and the evolution of its financial structure, thus studying the evolution of the US financial system is more effective. The United States' industrialization stage is characterized by the most rapid development of its financial system, as well as the most rapid evolution and improvement of its financial structure. This is most evident in the following areas:

The number of financial institutions and financial assets has changed

The number of financial institutions and assets increased at a rapid rate. Commercial banks, mutual savings banks, savings and loan organizations, mortgage businesses, securities companies, life insurance companies, and other insurance companies were the seven major types of financial institutions in the US financial system in 1860. By 1910, the United States had grown to 12 main financial institutions, with new additions such as trust firms, postal savings banks, and sales finance companies.

Financial institutions' total assets grew substantially from \$1.2 billion in 1870 to \$34 billion in 1912, a 28.3-fold increase. In 1861-1880, 6.4 percent in 1881-1900, and 6.5 percent in 1901-1913, the average annual growth rate of financial institutions' assets was 6.7 percent, making it one of the fastest growing eras in history (Goldsmith, 1969).

In 1850, all types of savings deposits (including demand, time, and other deposits) taken by all types of banks in the United States totaled \$370 million, rising to \$11.26 billion in 1900 and \$23.54 billion in 1912. The year 1912 was six times higher than the year 1850 (Goldsmith, 1985).

Banks' share of total financial assets is steadily decreasing.

Banks are the country's oldest financial institutions. The banking industry in the United States grew significantly during the industrialization period, but its share of total financial assets declined as other types of financial organizations grew more quickly. Commercial banks in the United States had total assets of \$800 million in 1860, accounting for 71.4 percent of all financial institutions' total assets.

By 1912, overall financial assets held by US banks had grown to \$21.8

billion, but their percentage of total assets held by all US financial institutions had shrunk to 4.3 percent. Between 1860 and 1912, financial assets owned by U.S. securities firms increased from less than \$100 million to \$1.0 billion, mortgage companies increased from less than \$100 million to \$4.4 billion, and life insurance companies increased from \$0.2 billion to \$4.4 billion, accounting for 1.79 percent of total assets (美国联邦统计局, 1975).

These data show that commercial banks in the United States used to hold a significant position in the country's financial system, but other types of financial institutions developed more quickly at the time, resulting in a decrease in the number of financial assets owned by the banking sector as a percentage of all financial assets.

Changes in the organization of financial institutions, financial assets, and financial instruments in the United States from 1850 to 1912 were strongly tied to the characteristics of the country's urgent development, which were primarily represented in:

During this time, commercial banks, being the most important financial institutions, experienced a relatively rapid development. Commercial bank development in the United States was intimately linked to a series of legal actions adopted by the United States government at the time to encourage the expansion of the financial system. The number of securities firms, as well as the volume of issuing and trading of company shares, has exploded, and securities now account for a significant portion of total financial assets. The rise of industrialization, the emergence of the corporate system, and the mergers and acquisitions of corporations in the United States are all inextricably linked to this change. Simultaneously, this phenomenon reflects the fact that stocks, as a financial asset, are an appropriate investment and financing tool for the formation of modern enterprises, and that stocks, as a new type of financial asset, have played a significant role in promoting the United States' industrialization and economic development.

Bank loans of all kinds continue to be the primary source of funding for a wide range of businesses. Bank loans of all kinds have remained a roughly steady share of overall financial assets in the United States during this time.

This shows that debt financial assets have always played a significant role in economic growth. Savings deposits of all kinds have gradually increased their share of total financial assets. The increase in the number of deposits and their percentage of financial assets provided the required sources of financing for the development of the US economy during this time, and was a key component in the country's fast industrialization.

Conclusion

Between 1850 and World War I, the rise of financial assets in the United States was extremely rapid. The speedy completion of industrialization and the rapid economic development of the United States can be attributed to the financial development and evolution of the financial structure of the United States.

The increase in the number of financial institutions can provide the society with better savings and investment alternatives, as well as attract a big amount of capital for investment.

Finance is the link between production, circulation, exchange, and consumption, and it connects the movement of funds of all economic agents in society. Financial institutions' core activities include taking deposits, providing loans, issuing and trading securities, money lending, fund management, financial information and consulting, insurance, risk avoidance, asset value evaluation, and merger and restructuring (Engerman, 1977). Commercial banks and securities institutions have a common trait in that they accept relatively modest quantities of money from a variety of consumers and pool these small amounts of money to generate large-scale investment funds. The increase in the number of financial institutions indicates a deepening of financial services and a broader spectrum of services, which is better suited to the absorption of socially idle funds. The number of financial institutions is growing, and the diversity of financial institutions is expanding as well. Diverse types of financial institutions provide different services to society based on their specific business areas of

competence, and so may better suit the preferences and demands of various capital suppliers and capital demanders, attracting more savings and investment funds. The rapid expansion in the amount of financial assets controlled by US financial institutions coincided with the significant growth in the number of US financial institutions during this time period. Although the growth of a country's total financial assets is primarily due to an increase in social labor productivity, without a large number of different financial institutions that can meet the various needs of social production and life, and without financial services that can be tailored to the needs of different levels, the surplus of production created by the increase in labor productivity cannot be fully transformed into savings and other enjoyable activities. At this time, the rapid development of financial institutions in the United States absorbed, accumulated, and provided a considerable amount of capital for industrialization, increased financial circulation channels, and aided national economic development.

The expansion of the types of financial institutions and financial instruments fitted to changes in the organizational structure of American businesses, making it easier to finance industrialisation and new forms of businesses. The fast increase in the quantity and variety of financial institutions, as well as innovation in the forms of financial instruments, satisfied the needs of fund suppliers in the United States during the industrialization era. It also offers a wide range of financing tools and services to customers who require funding. In order to meet the needs of both parties, a successful financial system should be able to provide appropriate services for both demand and supply of funds. From 1850 to the First World War, the number and variety of financial institutions, financial markets, and financial instruments in the United States increased dramatically, opening up a wide range of channels for the flow of funds and attracting and concentrating a large amount of money from both domestic and international sources. These funds flowed into the hands of productive firms and other capital demanders through the intermediation of financial institutions in the form of various financial instruments.

The birth of the joint stock company, which quickly became the most important form of contemporary corporate organization, represented the industrialization of the United States. The joint-stock firm raises cash by issuing shares and is frequently involved in large-scale production. In certain sense, it would have been difficult to adjust to the needs of the development of productive forces and to achieve industrialization in a reasonably short period of time without the joint-stock company form. Raising capital was the most direct and fundamental challenge that joint-stock corporations and other enterprises faced in adjusting to the increased productivity criteria. Ability to raise sufficient finances is, to a considerable extent, the key to the operation, survival, and development of contemporary firms, and thus the key to a society's and country's economic progress. The level of a country's financial development and the functions that its financial system can supply have a big role in its economy's sustained and steady growth.

Between 1850 and World War I, the United States' financial expansion was consistent with the advancement of industry, and it played a very good role in supporting and advancing the country's industrialisation. The growth of the securities industry in the United States, as well as the increase in the proportion of financial assets, reflects changes in the content and focus of US financial activities during this time period, indicating that the capital market has evolved into a modern important part of the economy.

The rapid development of financial markets facilitates and promotes the free flow of money and the rational use of resources, thereby increasing labor productivity. Money and various financial assets are the general equivalents in a market economy. The possession of financial assets is equivalent to the possession of productivity. As a result, the flow of financial assets mirrors the flow of production factors. Under other circumstances, the better the flow of financial assets, the more sensible the resource allocation, and the faster the growth of productivity. A sufficient flow of financial assets is a necessary for market economy development, as well as a precursor for market economy development. A solid financial market, a diverse set of financial institutions engaged in financial services, and a variety of financial products that may

suit the needs of different levels are all necessary for adequate flow of funds. Along with the evolution of the financial structure, the development of finance and the advanced financial structure necessitates a process. The financial system is always improving and increasing its contribution to economic growth as the financial structure advances.

To conclude, financial development is a key component of economic growth; financial development and economic growth rate are inextricably related; without quick financial development, there would be no rapid economic growth; without financial modernization, there will be no economic modernization. As a result, there is a reason why finance must be prioritized. This argument applies not only to the United States in its early stages of industrialization, but to all countries committed to economic system change and progress in an open economy.

Concluding remarks

By examining the interactions between financial structure, financial development, and economic growth in China and the United States, this paper concludes that the financial systems' contribution to economic growth in China and the United States cannot be overlooked, and that we must affirm the financial systems' significant role. The following study can also help to explain why researchers refer to the United States as a bank-driven financial system rather than a market-driven financial system. The favorable influence of the financial market on China's economic growth is confirmed by the analysis of the stock market and economic growth in China, but the government's restriction on financial deepening has hindered the Chinese financial market from playing its full role. The financial structure must undoubtedly be altered in order for China's finance to continue to contribute to economic growth. Distinct financial structures lead to different financial development directions and degrees, and diverse financial development degrees have different consequences on economic growth. While the degree of financial development is beyond the Chinese government's direct control,

administrative policies can confine the financial structure, pushing the financial structure to the forefront of inquiry. Financial structure and development are influenced by other economic sectors, institutional development, and economic growth itself, but we must have a comprehensive understanding of the evolution and function of the financial system to gain better insight into the relationship between financial development and economic growth.

Limitations

The shortcomings of this paper are: the financial structure covers a wide range of contents, and the systematic study of the financial structure of China and the United States in this paper needs to be further expanded and deepened, such as enriching from the aspects of financial structure and financial efficiency, financial structure, etc. Meanwhile, in terms of theoretical analysis, equal to my limited knowledge accumulation and experience, the theoretical research content of this paper needs to be further improved.

References

- Allen Franklin, and Gale Douglas. (1999) Diversity of Opinion and Financing of New Technologies. *Journal of Financial Intermediation*, vol. 8, 68-89.
- Allen, F., and Gale, D. (2001) *Comparing Financial Systems*. The MIT press.
- Allen, F., Qian, J., & Qian, M. (2010) China's financial system: Past, present, and future. *China's Great Economic Transformation*, 506–568.
- Allen, Franklin and Oura, Hiroko, (2004) "Sustained Economic Growth and the Financial System ", *Monetary and Economic Studies* , Institute for Monetary and Economic Studies, Bank of Japan, vol. 22(S1), 95-119, December.
- Baer, H. L., & Mote, L. R. (1992) The United States Financial System. *Banking Structures in Major Countries*, 469–553.
- BECK T, L. R. (2000) Finance and the Sources of Growth. *Journal of financial economics*, 261-300.
- Beck, Thorsten, and Levine, Ross. (2004) Stock markets, banks, and growth: Panel evidence. *Journal of Banking & Finance*, vol. 28(3), 423-442.
- Boot, A. W., and Thakor, A. V. (2000) Can Relationship Banking Survive Competition? *The Journal of FINANCE*, 679-713.
- Boy J., Smith B. (1998) The evolution of debt and equity markets in economic development. *Economic Theory* 12, 519–560
- Carlin Wendy, and Mayer Colin. (2003) Finance, investment, and growth.

- Journal of Financial Economics, vol 69, Issue 1 , 191-226.
- Chakraborty, Shanka and Ray, Tridip. (2006) Bank-based Versus Market-based Financial Systems: A Growth-theoretic Analysis. Journal of Monetary Economics , Elsevier, vol. 53(2), 329-350.
- Demirguc-Kunt and Maksimovic, VojislavAsli. (2001) Firms as Financial Intermediaries : Evidence from Trade Credit Data. Policy Research Working Paper Series 2696, 124-145. The World Bank.
- Demirguc-Kunt, A., and Levine, R. (1999) Bank-based and market-based financial systems - cross-country comparisons. *Policy Research Working Paper Series 2143, The World Bank.*
- Demirgüç-KuntAsli, and Levine Ross. (2004) Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development. The MIT Press.
- Ding Xiaoya, and Ligang, Zhong. (2020) Challenges and Opportunities in China's Financial Markets, *The Chinese Economy*, 53:3, 217-220.
- Douglas W. Diamond. (1984) "Financial Intermediation and Delegated Monitoring ," *Review of Economic Studies* , Oxford University Press, vol. 51(3), 393-414.
- Economics of Finance, 2003, Vol. 1, Part A, 307-335.*
- EngermanL.Stanley. (1977) Review: Douglass C. North's the Economic Growth of the United States, 1790-1860 Revisited. *Social Science History*, 248-257.
- G.R.King and R.Levine. (1993) Financial intermediation and economic development. *Capital markets and financial intermediation*, 156-189.
- Gerschenkron Alexander. (1965) *Economic Backwardness in Historical Perspective*. Belknap Press.
- Girardin, E. & Liu, Z. (2019). *Demystifying China's stock market: the hidden logic behind the puzzles*. Palgrave Macmillan.
- Goldsmith, R. W. (1985) *Comparative national balance sheets : a study of twenty countries, 1688-1978*. University of Chicago Press.
- Goldsmith. (1969) *Financial Structure and Development*. Yale University Press.

- Goldsmith. (1969). *Financial Structure and Development*. Yale University Press.
- Goldsmith. (1994) *Financial Structure and Financial Development* (3). Shanghai Sanlian Bookstore.
- Goldsmith. (1994) *Financial Structure and Financial Development* (44). Shanghai Sanlian Bookstore.
- Goldsmith. (1994) *Financial Structure and Financial Development* (44-45). Shanghai Sanlian Bookstore.
- Goldsmith. (1994) *Financial Structure and Financial Development* (3). Shanghai Sanlian Bookstore.
- Goldsmith. (1994) *Financial Structure and Financial Development* (25). Shanghai Sanlian Bookstore.
- Goldsmith. (1994) *Financial Structure and Financial Development* (28-30). Shanghai Sanlian Bookstore.
- Goldsmith. (1994) *Financial Structure and Financial Development* (35). Shanghai Sanlian Bookstore.
- Goldsmith. (1994) *Financial Structure and Financial Development* (38-42). Shanghai Sanlian Bookstore.
- Goldsmith. (1994) *Financial Structure and Financial Development* (32). Shanghai Sanlian Bookstore.
- Gurley, J. G. and Shaw, E. S. (1956) FINANCIAL INTERMEDIARIES AND THE SAVING-INVESTMENT PROCESS. *The Journal of Finance*, 257-276.
- Gurley, J. G. and Shaw, E. S. (1960) Money in a Theory of Finance. *The Economic Journal*, 568–569.
- Gurley, J. G. and Shaw, E. S. (1960) Money in a Theory of Finance. *The Economic Journal*, 568–569.
- Gurley, J. G., and Shaw, E. S. (1955) Financial Aspects of Economic Development. *The American Economic Review*, Vol. 45, No. 4, 515-538.
- Guthrie, D., Xiao, Z., & Wang, J. (2007). *Aligning the Interests of Multiple Principals: Ownership Concentration and Profitability in China's*

- Publicly-Traded Firms. Leonard N. Stern School of Business.*
Stern Working Paper, EC-07-32.
- Harker, P. T., & Zenios, S. A. (2000) *Performance of financial institutions: Efficiency, innovation, regulation.* Cambridge University Press.
- Holmstrom, B., and Tirole, J. (1997) Financial Intermediation, Loanable Funds, and the Real Sector. *The Quarterly Journal of Economics*, 663-691.
- Ju, Jiandong. (2020) The Epidemic of a Century, the US-China Trade Dispute and the Restructuring of the Global Order. *Tsinghua Financial Review* (5), 3, 52-54.
- Kaserer, Christoph and Wenger, Ekkehard, German Banks and Corporate Governance - a Critical View (1997) Available at SSRN: "<https://ssrn.com/abstract=11353>"
- Levine, Ross and Zervos, Sara. (1998) Stock Markets, Banks, and Economic Growth. *The American Economic Review*, Vol. 88, No. 3. , 537-558.
- Levine, Ross and Zervos, Sara. (1998) Stock Markets, Banks, and Economic Growth. *The American Economic Review*, Vol. 88, No. 3, 537-558.
- Levine, Ross and Zervos, Sara. (1998) Stock markets, banks, and economic growth. *American economic review*, 537-558.
- Levine, Ross. (2002) Bank-Based or Market-Based Financial Systems: Which Is Better? ,*Journal of Financial Intermediation* , Elsevier, vol. 11(4), 398-428.
- Lin, Pu. (2008) The Trend of Financial Supervision System in America and Its Lessons to China. *当代经济管理*, 86-89.
- Luintel, Kul B. & Khan, Mosahid & Arestis, Philip & Theodoridis, Konstantinos,(2008) Financial structure and economic growth ,*Journal of Development Economics* , Elsevier, vol. 86(1), 181-200.
- McKinnon, Ronald. (1988) Money and capital in economic development (150). Shanghai Sanlian Bookstore.
- Peter, Tufano. (2003) Chapter 6 - Financial Innovation. Handbook of the Puhuyongdao Financial Sector Group. (2020) Comparison of loan

- impairment in the banking sector in the US, China and Europe under the new crown epidemic and insights. *China Banking Industry*, No.80(08), 86-88.
- Rosenthal, J.L. (2000) The state, the financial system, and economic modernization. *The Journal of Economic History*, 60(2), 592–593.
- Schumpeter, J. A. (1934) *The Theory of Economic Development*. Harvard U. Press.
- Shaw, G. Gurley and Edward S. John. (1988) *Money in a Theory of Finance* (172). Shanghai Sanlian Bookstore.
- Shaw, G. Gurley and Edward, S. John. (1988) *Money in a Theory of Finance* , 175. Shanghai Sanlian Bookstore.
- SilberL, William. (1983) The Process of Financial Innovation. *The American Economic Review*, 1983, *Vol. 73, No. 2*, 89-95
- Suzuki, Y. (1987) *The Japanese Financial System*. Oxford University Press.
- Thorsten, Beck and Ross, Levine. (2002) " Industry Growth and Capital Allocation: Does Having a Market-or Bank-Based System Matter? ," NBER Working Papers 8982, National Bureau of Economic Research, Inc.
- Yi, FuLin. (2009) Second-round effects of the financial crisis. *Chinese market*, 40-41
- Zhang, Monan. (2020) Global changes behind the restructuring of the US-China industrial chain. *Finance and Economics* (5), 1-1.
- Zheng, Qirong. (2015) China-US cooperation in global governance holds great promise. *Guangming Daily*.
- Zhu, Lingxiao. (2019) Exploration of China's Financial Supervision Reform. *World Scientific Research Journal* ,108 - 114
- 美国联邦统计局. (1975) *历史统计资料:从殖民地时代到 1970 年*. 华盛顿.

