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| **Chew Har Loke MASTER OF BUSINESS ADMINISTRATION 2020** | **Copy of INTI_IU_logo.jpg**  **The Impact of International Capital Flows on China's Financial Stability**  **Yang Shiyu I19017980**  **MASTER OF BUSINESS ADMINISTRATION**  **FACULTY OF BUSINESS, COMMUNICATION & LAW**  **INTI INTERNATIONAL UNIVERSITY**  **2020** |

**INTI INTERNATIONAL UNIVERSITY**

MASTER OF BUSINESS ADMINISTRATION

<The Impact of International Capital Flows on China's Financial Stability>

**Author: Yang Shiyu**

**Student No: I19017980**

**Supervisor:** **Chew Har Loke**

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# Abstract

Since China joined WTO, it has accepted the inflow of international capital into China with a more open attitude. The purpose of this study is to analyze the impact of international capital flows on China's financial stability. In this research, I will collect the data of long-term Capital flow including Foreign Direct Investment, Portfolio Investment and Foreign Debt，short-term capital flows, such as Hot Money, and Other Investment to analyze the flow of international capital into China. In addition, I will use four indicators including Bank Credit Amount, Supply of Money, Foreign Reserve Variation and Trade Surplus to study China's financial stability. Through data analysis by SPSS software, Pearson Correlation Test and Multiple Linear Regression will be used to verify the relationship between the two variables. After verification, I determined that international capital flows would affect Bank Credit Amount,Supply of Money,Foreign Reserve Variation and Trade surplus. Therefore, it is important to strengthen international capital controls. Finally, some suggestions on China's financial stability will be made.

**Key Words:** International Capital, China's financial stability, SPSS, Multiple Linear Regression

# Table of Content

[1 Introduction 1](#_Toc14310)

[1.1 Background 1](#_Toc13833)

[1.2 Problem Statement 2](#_Toc21968)

[1.3 Research Questions & Objectives 5](#_Toc2524)

[1.4 Hypothesis 5](#_Toc19909)

[1.5 Significance of the Study 6](#_Toc21328)

[1.6 Limitations 6](#_Toc14986)

[1.7 Scope of the Study 7](#_Toc6717)

[1.8 Ethical consideration 7](#_Toc1075)

[2 Literature Review 7](#_Toc3990)

[2.1 International capital flow 7](#_Toc9293)

[2.2 Financial Stability 11](#_Toc18804)

[2.2.1 Bank Credit Amount 14](#_Toc22601)

[2.2.2 Supply of Money 14](#_Toc30810)

[2.2.3 Foreign Reserve Variation 16](#_Toc7211)

[2.2.4 Trade surplus 17](#_Toc10139)

[2.3 Long-term Capital flow 18](#_Toc22480)

[2.3.1 Foreign Direct Investment 19](#_Toc27158)

[2.3.2 Portfolio Investment 21](#_Toc15174)

[2.3.3 Foreign Debt 24](#_Toc7582)

[2.4 Short-term capital flow-Hot Money 25](#_Toc27406)

[3 Research Methodology 27](#_Toc28896)

[3.1 Data Analysis 27](#_Toc7585)

[3.2 Reliability analysis 28](#_Toc23282)

[3.3 Validity analysis 28](#_Toc27698)

[3.1 Theoretical Perspective 29](#_Toc24841)

[3.2 Pearson Correlation 29](#_Toc15409)

[4 Data Analysis 32](#_Toc9057)

[5 Recommendation 38](#_Toc21196)

[6 Conclusion 40](#_Toc26826)

[Reference 42](#_Toc131)

[Appendix 42](#_Toc6381)

# 1 Introduction

## Background

There are many financial crisis in the history of entire world, include Asian Financial Crisis (Kabir, 2018; BARNETT, 2015; Krueger TH, 1999), Mexican Financial Crisis (Carstens, 1998; VIDAL, 2011; Kemme, Feb2017), and Global Financial Crisis (Mu Yang, 2012; Kabir, 2018; BARNETT, 2015). The important external factor of these financial crisis is international capital flow because the capital is profit-seeking, extremely sensitive to the fluctuation of the rate of return, and its movement logic lacks rationality. (Mu Yang, 2012; M.Mandel, 2004; Collinson, 2015) When the international community is bullish about a country's growth prospects, foreign capital rushes in with gusto. This massive influx ultimately outweighs the absorptive capacity of host countries, particularly in those countries where financial markets allocate resources inefficiently.

Before the outbreak of the southeast Asian financial crisis Thailand is the obvious example, before the crisis of 1993-1997, Thailand by way of FDI absorption the $11.466 billion of foreign capital, absorbed by way of equity securities investment of $9.657 billion, $10.945 billion securities investment bonds way, absorb $39.33 billion loan, the bank loan $34.514 billion from abroad, three times the FDI, large capital inflows caused the credit boom in Thailand, high price level, far higher than the same period of the United States.

When excessive capital flows into the host country, the host country's technology, labor force, infrastructure and other related supporting facilities are difficult to follow up, the real industrial sector cannot absorb excessive foreign capital, and the marginal return on investment will decrease. (M.Mandel, 2004) Investors are turning to the asset sector, pouring capital into property and equities. When a large amount of capital floods into the asset sector, a financial asset bubble will occur. Blanchard, Watson(1982) argued that a financial asset bubble occurs when speculators, knowing that a financial asset exceeds its basic value, still buy it in order to sell it for a gain when the price rises further. Over time, this bubble (measured in terms of the deviation of asset prices from their underlying value) will continue to grow, but could burst at any time. When bubbles collapse, the equilibrium of the financial system is broken.

Because excessive capital investment in the virtual economy sector cannot improve a country's actual output capacity, it will only bring about economic bubbles. When the bubble collapses, the wealth effect will reduce domestic consumption, and the collapse of the yield rate will accelerate the withdrawal of foreign capital. (Collinson, 2015) At present, China still carries out relatively strict control on capital account, which has played a prominent role in China's success in avoiding the Financial crisis in Southeast Asia and the world financial crisis in 2008. However, after China's accession to the World Trade Organization, the opening to the outside world has entered a comprehensive and in-depth stage, and various financial regulatory policies will inevitably be relaxed. Even the current tight controls on capital flows have not stopped a flood of arbitrage capital, especially in recent years as foreign speculative capital has poured into China in various ways in anticipation of renminbi appreciation and high interest rates on renminbi deposits. Speculative foreign capital helped fuel the stock market boom of 2007 and, in recent years, the rise in property prices.

## Problem Statement

According to International Advances in Economic Research(Canofari,2018), large inflows of foreign capital may increase the so-called twin risk crises, which mean balance-of-payments and bank or stock market surpluses coincide. There are many financial crisis in the history of entire world, include Asian Financial Crisis (Kabir, 2018; BARNETT, 2015; Krueger TH, 1999), Mexican Financial Crisis (Carstens, 1998; VIDAL, 2011; Kemme, Feb2017), and Global Financial Crisis (Mu Yang, 2012; Kabir, 2018; BARNETT, 2015). Take the financial crisis in southeast Asia financial crisis and Mexico as examples, Large capital inflows will bring its unprecedented prosperity, but with the investors to the country's economy is expected to decline, a mass withdrawal will lead to currency devaluation, the result was a currency crisis, a stock market crisis and the bursting of a housing bubble, which indirectly threatening the financial and economic stability of the country. (Kabir, 2018)

Guillermo A. Calvo, Alejandro Izquierdo, and Luis Fernando Mejai (2004) argued that the Mexican financial crisis in 1994-1995 fully explained that when foreign capital suddenly started to withdraw from the host country, it would cause financial chaos, sharp devaluation of currency and decrease economic growth rate. In addition, when the trend of capital flow is reversed, a large amount of capital is withdrawn and domestic resources are net exported to foreign countries, which makes the domestic investment level drop and thus affects output.

During the debt crisis of the 1980s, there was one thing in common: a nearly one-for-one decline in private investment and a decline in investment levels, accompanied by a net outflow of resources, led economists to shift the focus of currency crisis research to resource transfer. Sachs (1989) in debt piled up hypothesis explains the debt crisis in the 80 s, he compared the great depression of the 1930 s and 80 s debt crisis, the great depression, when almost all Latin American countries unilaterally delayed debt servicing, and in the 80 s, few debtors to stop foreign debts.

As a result, the debtors cannot obtain the foreign financing on the one hand, on the other hand have to continue to repay the loan, resources show a net outflow of state, he thinks the resources outflow reduced investment incentives, as some investment income will be used to repay debt, thus resulting in a decline in investment and, in turn, is the current total demand, and investment is insufficient to cause long-term production capacity decline, ultimately affect the production capacity of ascension.

Take Thailand as an example again. In 1998-1999, after the outbreak of the financial crisis in Thailand, FDI inflow was basically unaffected. On the contrary, the inflow increased significantly. However, the capital inflow of portfolio investment has dropped significantly, but it is still an inflow on the whole. Bank loan capital flowed out of Thailand in large quantities, leaving us $2.517 billion in 1997, US $11.096 billion in 1998 and US $11.207 billion in 1999. This is because of the strong liquidity of bank loans. When the situation of the international financial market changes adversely, foreign banks recall the loans extended to Thai banks and enterprises one after another. In order to repay foreign debts, Thai banks and enterprises are forced to suspend investment, resulting in the decrease of domestic aggregate demand, thus affecting output. (Carstens, 1998)

Late in the night of December 19, 1994, the Mexican government suddenly announced a 15 per cent devaluation of its currency, the peso. The decision caused great panic in the markets. Foreign investors sold pesos and snapped up dollars, causing the peso to fall sharply. The exchange rate fell 13% to 3.925 pesos to the dollar on December 20th, from an initial 3.47 pesos. It fell another 15.3% on the 21st. Mexico's foreign-exchange reserves plunged nearly $4 billion in the two days after the peso fell and foreign investors withdrew their funds. Mexico's financial markets are in turmoil. In just three days from the 20th to the 22nd, the Mexican peso plunged 42.17% against the dollar, a rare drop in modern financial history. About 70 per cent of foreign investment in Mexico is in speculative, short-term portfolio investments.

The outflow of capital sent Mexico's stock market reeling. On December 30th Mexico's IPC index fell by 6.26%. On January 10, 1995, it plunged 11%. By 3rd March, the IPC index had fallen to 1500, down 47.94% from its pre-crisis peak of 2881.17 in 1994, more than the devaluation of the peso.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Date in 1994 | 28/12 | 27/12 | 26/12 | 23/12 | 22/12 | 21/12 | 20/12 | 19/12 | 16/12 |
| USD/MXN | -10.36% | 10.45% | 2.03% | 2.60% | 20.39% | 0.30% | 14.73% | 0.03% | 0.01% |

*Table 1. USD/MXN*

*Source：Data of the World Bank*

According to the World Investment Report, in 2019, two thirds of the global capital flows into Asia, among which more than 60% flows into China. The massive inflow of foreign capital may pose a threat to China's financial stability, or even cause a financial crisis, just like other countries before.(Mu Yang, 2012; Kabir, 2018; BARNETT, 2015)The financial system cannot convert the influx of capital into the productive capacity of the real economy, and the excessive capital will eventually crowd into the asset market such as the real estate market or the stock market, forming an asset bubble. At the moment of bubble collapse, a large amount of capital fled, leading to currency crisis, financial crisis and even economic, political and social crisis. (Mu Yang, 2012)

## Research Questions & Objectives

1.3.1 Research Objectives

To examine the relationship between International Capital Flow and China's Financial stability.

1.3.2 Research Questions

1. What is the relationship between International Capital Flow and Bank Credit Amount?
2. What is the relationship between International Capital Flow and Supply of Money?
3. What is the relationship between International Capital Flow and Foreign Reserve Variation per year?
4. What is the relationship between International Capital Flow and Trade surplus?

## 1.4 Hypothesis

1. There is a relationship between International Capital Flow and Bank Credit Amount

*There is a relationship between Foreign Direct Investment and Bank Credit Amount*

*There is a relationship between Portfolio Investment and Bank Credit Amount*

*There is a relationship between Foreign Debt and Bank Credit Amount*

*There is a relationship between Hot money and Bank Credit Amount*

*There is a relationship between Other Investment and Bank Credit Amount*

2. There is a relationship between International Capital Flow and Supply of Money

*There is a relationship between Foreign Direct Investment and Supply of Money*

*There is a relationship between Portfolio Investment and Supply of Money*

*There is a relationship between Foreign Debt and Supply of Money*

*There is a relationship between Hot money and Supply of Money*

*There is a relationship between Other Investment and Supply of Money*

3. There is a relationship between International Capital Flow and Foreign Reserve Variation per year

*There is a relationship between Foreign Direct Investment and Foreign Reserve Variation per year*

*There is a relationship between Portfolio Investment and Foreign Reserve Variation per year*

*There is a relationship between Foreign Debt and Foreign Reserve Variation per year*

*There is a relationship between Hot money and Foreign Reserve Variation per year*

*There is a relationship between Other Investment and Foreign Reserve Variation per year*

4. There is a relationship between International Capital Flow and Trade surplus

*There is a relationship between Foreign Direct Investment and Trade surplus*

*There is a relationship between Portfolio Investment and Trade surplus*

*There is a relationship between Foreign Debt and Trade surplus*

*There is a relationship between Hot money and Trade surplus*

*There is a relationship between Other Investment and Trade surplus*

## 1.5 Significance of the Study

To understand the current situation of financial stability and international capital flow in China, Measured Financial stability and international capital flow in China was Measured.

As China is the second largest economy in the world, its financial background is worth studying.Finally, based on the analysis of China's financial stability and international capital flows, the relationship between the two is verified.It also puts forward relevant suggestions on China's financial stability.The logical framework and theory adopted in this paper have certain reference value.

## 1.6 Limitations

* Data for the past 12 years（2008-2019） can be collected only because there are missing items in the data of some years
* China adopts monetary policy and economic policy to macro-control China's financial situation, so there is the situation of government intervention, this part of the analysis is insufficient.
* This study is limited to the study of the linear correlation of independent variables of dependent variables.

## 1.7 Scope of the Study

* Finance
* Descriptive Research
* Quantitative Analysis

## 1.8 Ethical consideration

In order to ensure academic rigor and avoid erroneous or misleading information appearing in this paper, I will strictly filter the data information to exclude missing items. To ensure the authenticity and validity of this study as much as possible. In conducting my research, I will use publicly published data and articles and will never use any confidential data without permission. Unauthorized data will not appear in this article. As the author, I promise not to cheat or exaggerate the purpose and results of the research. The aim of this study is for the author's academic research during his/her study at Indy University and is not for profit.

# Literature Review

## International capital flow

Financial capital is the internal retained earnings generated by an entity or the funds provided to a business by lenders and investors to purchase actual capital equipment or services to produce new goods and/or services. International capital flows are divided into long-term capital flows and short-term capital flows. (International Monetary Fund, 1992) Long-term capital flows include international lending, securities investment and direct investment. Short-term capital flow is the so-called speculative behavior, which mainly includes bank capital flow, capital flow of preservation and speculative capital flow. (Junjun Tan, 2013)

International capital either in the form of international lending, securities investment, or direct investment inflows, mostly involve currency exchange, where foreign currency is converted to local currency deposits, because in the process of exchange, need the local currency, but foreign manufacturers or residents to exchange the currency in the bank, so that the country's local currency deposit bank to reduce or increase the cancel each other out, just add the foreign currency deposit, so the bank balance sheets will be expanding in the country. (International Monetary Fund, 1992) The inflow of international capital leads to sufficient domestic funds. In this case, Banks tend to blindly expand bank credit and misallocate it, which increases the risks of the banking system.

The process of international capital inflow involves the exchange problem, which has a certain influence on the foreign exchange market. The inflow of international capital finally leads to the increase of bank loans and money supply. An increase in the money supply leads to a decrease in interest rates. The change of interest rate affects the change of stock price, and the frequent flow of international capital inevitably has certain influence on the stock market, which affects the stability of the stock market. There are various forms of short-term capital flows, and speculative capital flows such as international hot money are the most complex, whose flow trajectory is difficult to grasp. (Evans & Fund, 2012) With the help of financial derivatives and advanced electronic trading technology, instant trading can be realized, driving up the stock market and causing false prosperity. For example, the crisis in Mexico and the financial crisis in Southeast Asia, short-term capital flow is an important external cause of the crisis.

First of all, the massive inflow of international capital enables China to obtain direct investment, solves the problem of insufficient funds, makes up for the hollowing out of the real industry, and promotes the development of the virtual economy. Secondly, the inflow of international capital plays an important role in improving the internationalization level of China's financial market. The transfer of capital among countries promotes the development of transnational Banks and the transfer of RMB purchasing power among countries. Global capital flows, on the other hand, improve the level of the internationalization of the financial market, provides the study object and the reference for the domestic financial industry system, based on the foreign management experience, customer service, marketing method, the study of financial products, help to promote their financial reforms, enhance competitiveness, improve operation efficiency and management level. The inflow and outflow of international capital helps to perfect China's information disclosure system and improve the quality of information disclosure. (Feldstein, 1999) Moreover, the inflow of international capital has improved the competitive mechanism of financial markets. However, international capital flows also have adverse effects on China. For example, they increase the instability of financial markets, and changes in foreign financial markets may cause changes in domestic financial markets. (OECD, 2011)

Moreover, a large amount of international capital will cause the price fluctuation of domestic capital market. Profits from trading investments and real estate development, and capital gains from renminbi appreciation.

In their classic book Foreign Aid and Economic Development, Chenery and Strout (1966) believed that international capital flows could fill the gap of foreign exchange and savings of a country, thus promoting the economic growth of a country. Many literatures focusing on the effect of international capital flows on economic growth were derived from this theory. The drivers of capital flows are, as Charles Kindleberger, an economic historian, said, driven by panic and mania. Especially after the outbreak of the crisis, in order to keep foreign capital in the country, the host country will often raise interest rates significantly, which will lead to domestic economic contraction. At the same time, foreign investors began to dump domestic assets, causing the domestic asset market to collapse. For example, after the outbreak of the Financial crisis in Southeast Asia, a large amount of capital flowed out. In 1996, the total private international capital flowed into Indonesia, Malaysia, Thailand and the Philippines amounted to $93 billion dollars. In 1997, the above-mentioned countries saw a net capital outflow of $12 billion dollars.

China's economists Kun Rong, GengQiang (2000) : the increase of FDI to promote China's export, through the external drive economic growth, while foreign direct investment on product demand pull the upgrading of industrial structure, drive the related supporting production enterprises, through the localization of intermediate inputs, promote the development of a hierarchical industry. In addition, FDI also has technology spillover effect on China. Through cooperation with foreign capital, joint ventures and introduction of foreign technologies and processes, The products of Chinese enterprises have reached a new level.

Zhu Mengnan and Guo Xiaoyan (2007) made a quantitative analysis of the economic growth effect of international capital flows and found that when the net inflow of international capital increased by 50%, the domestic total output increased by 1.467%.

Although international capital flows have played an important role in promoting China's economic growth, their impact on China's financial stability has also attracted academic attention. (Su, Oct2017)

First, international capital flows restrict the implementation of China's monetary policy. The Research group on International Capital Flow of Graduate University of the Chinese Academy of Sciences (2008) believes that the rapid accumulation of foreign exchange reserves, including international capital inflow, makes the outstanding funds of foreign exchange become the main channel for the supply of base money, which restricts the independence of China's monetary policy. Due to the increasing outstanding funds of foreign exchange, it has become the main task of the central bank's monetary policy to take measures to manage liquidity and control the growth of money and credit, which undermines the stability foundation of monetary policy. Cao Yong (2005) pointed out that in Krugman's "impossible triangle", China chose fixed exchange rate, stricter capital control and greater monetary policy independence, but with the increasing scale of international capital flows, capital control was more and more likely to be broken, which led to the gradual loss of China's monetary policy independence. Lu Chunyi (2006) also believed that under the guidance of multiple interests, under the background of gradual opening of China's capital account and RMB exchange rate reform, foreign capital continued to enter China in large quantities, which brought great impact on China's monetary system and enhanced the possibility of financial and economic crisis in China.

Second, international capital flows have had an impact on the stability of China‘s Banks. Wang Guimei and Lu Qian (2005) believed that large international capital inflows would lead to an increase in the base money of the central bank, and then the deposit reserve of commercial Banks would also increase accordingly. With the expansion of credit scale, adverse selection and moral hazard problems will become more serious. On the other hand, with the international capital flow, foreign banks enter into China in a large scale, and the competition among Banks will become increasingly fierce, which leads to the reduction of loan interest rate and financial crisis of China’s Banks. (Lane PR, 2014) Fourth, international capital flows will have an impact on the RMB exchange rate. Xi Junyang (2002) believes that in the first half of the 1990s, especially from 1993 to 1996, as China's interest rate was much higher than the international market, a large amount of international capital flowed into China, which led to the appreciation pressure on the RMB exchange rate in the foreign exchange market. However, from 1996 to 2001, due to the low domestic interest rate and the southeast Asian financial crisis, RMB devaluation was expected, and a large amount of capital flowed out of the country, exerting pressure on the RMB exchange rate depreciation. As for the quantitative impact of international capital flows on RMB exchange rate, Shi Jianhuai and Yu Haifeng (2005) and Gu Yu, Gao Tiemei and Fu Xuewen (2008) respectively conducted empirical studies, proving that the inflow of foreign capital did indeed create upward pressure on RMB exchange rate.

Finally, the impact of international capital flows on the RMB asset market including the real estate market and the stock market. Liu Lia (2008) believes that hot money from overseas has significantly promoted the rise of the housing price index, especially the high-end housing price index. Mei Pengjun and Pei Ping (2009) believed that there is a positive correlation between international capital flows and stock market price index. When capital infiltrates in a large scale, stock price index rises, and vice versa.

## Financial Stability

About financial stability, Tommaso Padoa Schioppa (2002) argues that "financial stability is a kind of state, in this state, when a unfavorable external shocks, financial system is able to deal with, at the same time the financial system convert savings into investment mechanism and payment systems are not significantly weaken", a financial system on the basis of this definition includes all the financial intermediary and financial market infrastructure and regulatory agencies, this definition focuses on the financial system as a whole will be the function of savings into investment.

According to Frederic S. Mishki（1999）, the definition of financial stability is given from the opposite perspective of financial instability. The basic function of financial markets, he argues, is to transfer funds from savers to individuals or institutions with the investment opportunity, if the financial system can't display this function, so the performance of the economy and the economic growth rate will decline, in the process of the function, the free flow of information in order to avoid the risk of moral hazard and adverse selection problem is very important, when external shocks lead to financial systems in information transfer, problem of moral hazard and adverse selection problems, do not be willing to undertake financing, financial institutions and savings is hard to translate into investment, the financial system to become unstable.

From the perspective of financial stability concept, the most important part of financial stability is that the financial system can maintain the ability to convert savings into effective investment. The main channel of China's monetary fund financing is the bank, so commercial banks are stable.

The People's Bank of China said about China Financial Stability in《2005 China Financial Stability Report》, Financial stability refers to the state in which the financial system is able to perform its key functions effectively. In this state, the macro-economy can run healthily, the use of monetary and fiscal policies is stable and effective, the financial ecological environment can be continuously improved, and financial institutions, financial markets and financial infrastructure can play such key functions as resource allocation, risk management, payment and settlement.The financial system as a whole operated smoothly even when it was hit by internal and external factors.(China Financial Stability Analysis Group, 2005)

Graciela Kaminsky, Saul Lizondo and Carmen M. Roinhart (1997) believed that when the speculative attack on a country's currency in the financial market caused a substantial devaluation of the currency or a sharp decline in foreign exchange reserves or both, the currency crisis would break out. Jeffrey A. Frankel and Andrew K. Rose(1996) quantified the definition of currency crisis and pointed out that when A country's currency depreciates by more than 25% within one year and the fluctuation rate is more than 10% over the previous year, the currency crisis breaks out. The latter standard is designed to distinguish those countries with inflation tendency from the definition. To sum up, the currency crisis has three key components: speculative shock, sharp depreciation of exchange rate caused by shock, and decline of foreign exchange reserves. The currency crisis mainly occurs in the currency market and is characterized by the decrease of reserves and the drastic fluctuation of exchange rate, while the financial crisis may be triggered by the currency crisis. Concept is different, currency crisis and the financial crisis, Frederic s. Mishkin (1997) by adverse selection theory provides a concept: the financial crisis of the financial crisis is a kind of nonlinear of financial market disruption, adverse selection and moral hazard in the process of this interruption question is extremely serious, so that financial markets can not capital allocation to the most effective investment opportunities. There are many literatures on the mechanism of currency crisis and financial crisis caused by international capital flows, which are summarized as "three generations of currency crisis theory" in academic circles. These currency crisis theories lay a theoretical foundation for understanding the impact of international capital flows on financial stability.

From the perspective of financial stability concept, the most important part of financial stability is that the financial system can maintain the ability to convert savings into effective investment. The main channel of China's monetary fund financing is the bank, so commercial banks are stable. In China's financial stability in the core position. Secondly, given the forward-looking nature of financial stability, the fluctuations of some core indicators of the financial system, such as consumer price index, exchange rate and asset price, may affect the functioning of the financial system as a whole. Therefore, it is necessary to pay attention to the stability of these core indicators. In this study, I identified 4 items to measure China Financial Stability, including：Bank Credit Amount, Supply of Money, Foreign Reserve Variation per year, Trade surplus. (Wang, Jul/Aug2019)

### 2.2.1 Bank Credit Amount

New loans, a statistic released by the People's Bank of China on a regular basis, are used to reflect the increase in renminbi-denominated loans extended by China's financial institutions to businesses and residents.

*Table 2. Bank Credit Amount(2008-2019)*

*Source：China Statistical Yearbook 2020*

Between 2008 and 2011, total new bank loans tripled from $735.63 billion in 2008 to $1439.15 billion in 2009.After two years of slight decline, the value increased year by year, showing a linear growth state. By 2019, the total amount of new bank loans in China reached us $2,532.52 billion.

### 2.2.2 Supply of Money

Money supply is also called money stock or supply. It is the sum of the amount of cash in circulation and the amount of deposits in a given period of time. Money supply is one of the key economic statistical indicators compiled and published by central banks. The central bank generally divides the money supply into different levels according to the needs of macro-control and liquidity level. (Brunner, 2018)

1. Cash in circulation (M0) means the sum of cash on hand per unit and cash residents own.

Unit means enterprises, organs, organizations, troops, schools and other units outside the banking system.

2. The narrow measure of money supply (M1) is the meaning of the demand deposits with M0 plus units payable by checks in banks.

3. Broad money supply (M2) is the sum of M1 and units of time deposits in banks, various savings deposits of urban and rural individuals in banks and customer deposits of securities companies.

Among them, since July 2001, the People's Bank of China has included the margin of clients of securities companies into M2, the broad money supply.

Under the condition of open economy, the money supply equation of central bank is: M=D+R

M stands for total money supply, D for domestic money, and R for foreign exchange reserves. (Brunner, 2018)

*Table 3. Money Supply of China (2008-2019)*

*Source：China Statistical Yearbook 2020*

According to the Statistical Yearbook of China, I draw the table above, and we can see from the line chart that China's money supply M2 increases year by year.By 2019, China's total money supply reached $29,797.34 billion.

### 2.2.3 Foreign Reserve Variation

Foreign exchange reserves are assets held centrally by central banks and other government agencies in various countries to meet the needs of balance of payments and can be converted into foreign exchange at any time. Generally, foreign exchange reserves come from trade surpluses and capital inflows. These funds are concentrated in the Central Bank of China to form foreign exchange reserves, including short-term overseas deposits, government or other overseas cashable means of payment, such as overseas securities, checks, overseas bank promissory notes, foreign currency bills, etc. Its main function is to make up the balance of payments deficit. Specifically, when the domestic currency is sold off in large quantities, the government or country uses foreign exchange reserves to buy the domestic currency in order to maintain the exchange rate of the domestic currency, thus intervening in the foreign exchange market. (International Monetary Fund , 2020)

*Table 4. Foreign Exchange Reserve (2008-2019)*

*Source：China Statistical Yearbook 2020*

China's reserves topped $100bn for the first time at the end of 1996 and have risen relatively steadily over the next four years. Since 2000, China's foreign exchange reserves have been growing rapidly. By the end of 2005, it had grown to us $818.872 billion, the second highest in the world. In February 2006, China's foreign exchange reserves peaked at $853.7 billion, overtaking Japan and becoming the world's largest holder. By March 2010, China's foreign exchange reserves had reached us $247.084 billion, ranking the first in the world. On July 15, 2014, the People's Bank of China released data showing that China's foreign exchange reserves reached $3.99 trillion at the end of June. The delicate figure of just $0.01trillion short of the new round mark reflects a quiet and significant new shift in China's vast foreign exchange reserves. China's foreign exchange reserves stood at $3,154.4bn at the end of July 2020, up $42.1bn or 1.4 per cent from the end of June.

It can be seen from the meaning of foreign exchange that the relationship between foreign exchange reserves and exchange rate is very close. The increase in foreign exchange reserves is due to increased net exports of foreign exchange reserves and capital inflows from foreign investment. Foreigners need more of their own currency to buy their net exports or their own assets, so foreign demand for their own currency increases. The foreign exchange earned by exporters needs to be converted into national currency to purchase raw materials in the domestic market, thus creating a demand for domestic currency in the domestic market. Changes in exchange rates do not affect net capital outflows, so a country's money supply in the foreign exchange market remains unchanged. Therefore, when the demand for domestic currency increases, the trend of currency appreciation can be obtained. As foreign exchange reserves increase, the central bank of China holds too many foreign current assets but does not use them for circulation. Foreign countries need to maintain balance of payments and liquidity, which needs to trigger more currencies, leading to depreciation of foreign currencies and relative appreciation of domestic currencies. As a result, foreign exchange reserves increase and the exchange rate of the local currency rises. (HARGRAVE, 2020)

### 2.2.4 Trade surplus

A trade surplus is a positive sum of a country's exports minus its imports in a given year. A trade surplus is a unit of time (on an annual basis) in which trading parties buy and sell a wide variety of goods to each other, namely imports and exports.For both countries, if country A exports more than it imports, it is a trade surplus.If country B imports more than it exports, it has a trade deficit. (Irwin, 2018) A large trade surplus does not imply a positive effect.Excessive trade surpluses are a dangerous thing, which means that growth is too dependent on external demand.Because of the trade surplus, foreign capital will be more willing to flow into the country.

*Table 5. China’s Trade Surplus (2008-2019)*

*Source：China Statistical Yearbook 2020*

In fact, from 2008 to 2019, China ran a trade surplus, meaning that it exported more than it imported. China's trade surplus fell every year from 2008 to 2011, when it was about half of what it was in 2008. From 2011 to 2015, China's trade surplus increased significantly. In 2015, China's trade surplus reached $539 billion, reaching the highest level in the history of China's trade. In 2018, it dropped to $404.6 billion, but the decline returned to $519 billion in 2019.

## 2.3 Long-term Capital flow

### 2.3.1 Foreign Direct Investment

Direct investment refers to the investment that investors seek for an effective voice in foreign enterprises. According to the China statistical yearbook, the definition of foreign direct investment means that according to China’s relevant policies and regulations, China's foreign enterprises and economic organizations or individuals in China with cash, physical and technology set up a wholly foreign owned enterprise in China, with the enterprise or economic organizations within the territory of China of sino-foreign joint venture, cooperative enterprises or cooperation development resources investment, and for projects approved by the relevant government departments, the head office shall invest in the country.. Foreign direct investment (FDI) remains the largest source of external funding for developing economies. Foreign direct investment accounted for 39% of total inflows to developing economies as a whole. (World Investment Report 2018)

|  |  |  |  |
| --- | --- | --- | --- |
| Group of economies/region（Billions of dollars） | 2017 | 2018 | 2019 |
| World | 1 700 | 1 495 | 1 540 |
| Developed economies | 950 | 761 | 800 |
| Europe | 570 | 364 | 429 |
| North America | 304 | 297 | 297 |
| Developing economies | 701 | 699 | 685 |
| Africa | 42 | 51 | 45 |
| Asia | 502 | 499 | 474 |
| Latin America and the Caribbean | 156 | 149 | 164 |
| Transition economies | 50 | 35 | 55 |

*Table 6. International Capital Flow of Entire World*

*Source：World Investment Report 2020*

FDI is a very important way of international capital flow, and countries pay special attention to its scale and trend. Because the composition of international capital flow is very important for the stability of the international capital flow, it is generally believed that FDI forms of international capital flow is more stable, and short-term international capital flows the most unstable. FDI can bring local technology spillover effect, this also cannot be compared to the short-term capital flows. The more important points are as follows: the inflow of FDI directly increases the investment of host countries and drives local employment. FDI sectors are generally more technologically advanced than local ones, thus increasing local exports and alleviating local foreign exchange gaps. But FDI may also squeeze local investment, creating monopolies in some industries and hampering their development.

*Table 7. International Capital Flow of developing country*

*Source：World Investment Report 2020*

From 2017 to 2019, the global foreign direct investment gradually declined, and the total inflow of FDI into developed economies declined in the past two years compared to 2017, mainly in Europe and North America. Total FDI flows to developing countries fell slightly, with 69 per cent going to Asia and 66 per cent to China. However, FDI inflows into countries in transition account for only a small proportion of the total. Foreign direct investment (FDI) remains the largest source of external funding for developing economies. (World Investment Report 2020)

*Table 8. China’s FDI and GDP (2008-2019)*

*Source：China Statistical Yearbook 2020*

As can be seen from the above table, China's foreign direct investment inflow is increasing year by year. By 2019, China's foreign direct investment reached 1.54 trillion US dollars. Moreover, The performance of China's GDP has shown a gradual linear rise. According to the World Investment Report 2020 released by the United Nations Trade Organization, COVID-19 will lead to a sharp decline in foreign direct investment. This will manifest itself in 2020 and worsen even further in 2021.According to its projections, global FDI flows will fall by about 40%.Even before the COVID-19 outbreak, the organisation used UNCTAD models to predict this decline due to political and trade tensions and general uncertainty about the macroeconomic outlook.

## 2.3.2 Portfolio Investment

investors such as legal persons and natural persons buy and sell securities such as stocks, bonds, fund bonds and derivatives of these securities in order to get price difference, interest and capital gains. (World Bank, 2020) It is an important form of indirect investment. China's equity portfolio, last valued at $44,906.05 million in 2019.

*Table 9. Overseas Stock Issuance（2008-2018）*

*Source：China Statistical Yearbook 2020*

*Table 10. China Portfolio Investment Inflow（2008-2019）*

*Source：China Statistical Yearbook 2020*

China's stock offerings include shares A, B, N, H and S. The official name for A shares is Renminbi common stock. It is a common stock issued by a company within the territory of China for domestic institutions, organizations or individuals (except the investors from Taiwan, Hong Kong and Macao) to subscribe for and trade in Renminbi. The official name for B shares is Renminbi special stock. It is denominated in Renminbi, subscribed for and traded in foreign currencies, and listed on the Domestic such as Shanghai and Shenzhen Stock Exchange. Its investors shall be limited to natural persons, legal persons and other organizations of foreign countries. In addition, It is including Hong Kong, Macao,Taiwan and Chinese citizens residing abroad, other investors prescribed by the China Securities Regulatory Commission also. At the present stage, the investors of B shares are mainly the institutional investors in the above-mentioned categories. B - share companies are registered and listed in China, but the investors are outside China or in Hong Kong, Macao and Taiwan. H shares are foreign capital shares registered in the mainland and listed in Hong Kong. The shares listed in New York are called N shares and the shares listed Singapore called S shares respectively. China's overseas stock issuance reached the highest in 2015, reaching 709.012 billion RMB. From 2017 to 2019, the issuance of stocks was all less than 200 billion RMB. From 2008 to 2019, the inflow of securities investment in China was uneven. From 2008 to 2010, there was a rising trend, but in 2011, there was a significant decline. From 2011 to 2014, the inflow of Securities investment in China increased significantly. However, in 2015, the amount of investment dropped sharply, from 93.2 billion Dollars down to 6.7 billion Dollars. By 2019, the amount of investment was more than 20 times that of 2015, reaching 147.4 billion Dollars.

## 2.3.3 Foreign Debt

External debt is an important form for China to utilize international capital flow. The stock index of external debt is reflected in the statistical table of External debt. Foreign debt is a broad concept, and its composition includes: a foreign government loan, international financial organizations and foreign Banks and other financial institutions, the buyer's credit, loans to foreign exporters, foreign enterprise or private borrowing, foreign bond issues, related to trade credit, a non-resident deposits, international financial leasing, compensation trade is, in cash to repay debt, trade credit and other items. (International Monetary Fund, 2003)

*Table 11. Foreign Debt of China(2008-2019):Billion Dollars*

*Source：China Statistical Yearbook 2020*

Before 2013, both the inflow and outflow of China's external debt were less than 1,000 billion U.S. dollars. China's external debt inflow reached its highest level in 2014, at 2,353.4 billion U.S. dollars. In 2015, the value dropped by half to 1205.13 billion DOLLARS. In the past five years, the inflow of foreign debt has not exceeded 2,000 billion dollars. By 2019, it was worth 1700.94 billion dollars. As the outflow of foreign debt was higher than the inflow, China's net external debt inflow was negative in 2009, 2012 and 2015, among which the net external debt inflow in 2015 was -394.41 billion USD. By the end of 2019, China's outstanding external debt stood at 2,057.28 billion dollars.

## 2.4 Short-term capital flow-Hot Money

Generally speaking, the inflow channels of hot money include: current account inflow, inflow through capital and financial accounts, and inflow through underground banks. Hot money is usually defined as

Hot money = increase in foreign exchange reserves - trade surplus - net FDI inflows

Hot money is considered important in international capital flows. Qing-yuan Sui assumed that the current account balance was approximately equal to the trade surplus. In her research on hot money, Qing-yuan Sui converted the equation into:

Hot money＝capital account＋errors and omissions－portfolio investment－other investment－financial derivatives

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| (0.1 billion Dollar) | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| Capital Account | 31 | 39 | 46 | 54 | 43 | 31 | 0 | 3 | -3 | -1 | -6 | -3 |
| Portfolio Investment | 349 | 271 | 240 | 196 | 478 | 529 | 824 | -665 | -523 | 295 | 1,069 | 579 |
| Other Investment | -1,126 | 803 | 724 | 87 | -2,601 | 722 | -2,788 | -4,340 | -3,167 | 519 | -204 | -759 |
| Financial Derivatives | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -21 | -54 | 4 | -62 | -24 |
| Errors and omissions | 188 | -414 | -529 | -138 | -871 | -629 | -669 | -2,130 | -2,295 | -2,130 | -1,787 | -1,981 |
| Hot Money | -558 | 699 | 481 | 199 | -2951 | 653 | -2633 | -7153 | -6042 | -1313 | -990 | -2188 |

*Table 12.Hot Money and Other Investment*

*Source：China Statistical Yearbook 2020*

# Draw the following line graph according to the obtained data.

# 

*Table 13.Hot Money and Other Investment*

*Source：China Statistical Yearbook 2020*

# China's international hot money inflow has been negative in the past five years. First, any capital outflow is likely to be caused by diminishing overall returns on investment, which is also reflected in the slower growth of foreign direct investment attracted by the manufacturing sector and the increase in overseas remittances in the first half of the year. The second is that all the arbitrage capital betting on the appreciation of the RMB yuan may have gone to China. According to the chart, the inflow of other investments showed a "V" trend from 2013 to 2017, which was worth -75.9 billion dollars in 2019.

# 3 Research Methodology

Aim to analyze the impact of international capital flows on China's financial stability. Quantitative research will be applied to analyze the relationship between international capital flows and China's financial stability. Here I will select Bank Credit, Supply of Money, Interest rate, RMB exchange rate as dependent variables, international capital flow is analyzed as an independent variable. In this study, the data are from the public data released by the Ministry of Finance, Bank of China and International Monetary Fund. On the basis of reading a large number of Chinese financial reports and statistical reports, as well as the analysis of China's capital inflow and financial stability, some research ideas and logic are sorted out, so as to put forward the research direction of this paper.A large amount of literature research and data collection have laid a foundation for the research of this paper. Since this research needs a large number of official documents as the analysis basis, a large number of official documents will be quoted, mainly in the form of secondary data. After that, SPSS will be used to analysis the relationship between dependent variables and independent variables.

IVs：International Capital Flow including: Foreign Direct Investment, Portfolio Investment, Foreign Debt, Hot money, Other Investment

DVs：China’s Financial Stability including: Bank Credit Amount, Supply of Money, Foreign Reserve Variation, Trade surplus

## 3.1 Data Analysis

The key part of this study is to analyze the data through the Social Science Statistical Software Package (SPSS) launched by IBM. It is a powerful analytical tool for help data management and calculate to produce analytical results. The version I use is SPSS 23, which will be used for descriptive analysis, factor analysis and inference analysis.

## 3.2 Reliability analysis

Secondhand data, it is to point to specific investigator to collect according to original purpose, collate all sorts of ready-made data, call secondary data again, be like yearbook, report, document, periodical, anthology, database, report form to wait. It is interdependent and complementary with field investigation, observation and other methods of collecting original data. I found the data from 2008 to 2019 from the State Administration of Foreign Exchange and the National Bureau of Statistics of China, including: foreign direct investment, China's foreign debt inflow amount, China's GDP, RMB exchange rate, the amount of overseas issuance of stocks, China's import and export balance, China's money supply, China's new credit scale and other data.

## 3.3 Validity analysis

Validity is generally divided into content validity and structure validity. Reliability refers to the degree of reliability and consistency of data, which can reflect the stability and concentration of data. Validity refers to the ability of measuring tools to accurately measure the real situation of things, which can reflect the accuracy of data. Content validity is a qualitative evaluation criterion, mainly through empirical judgment, mainly through experts and experienced insiders of the evaluation method. In addition, the questionnaire can be used in a small scope before formal use, and the items can be modified in combination with the results to illustrate the effectiveness of the questionnaire. In general, SPSS is not required for data analysis of content validity, but the guidance of experts and authoritative teachers is required. The pre-test modification process is also required. Finally, the content validity of the questionnaire is explained. Structural validity refers to the corresponding relationship between the measurement item and the measurement direction, and its measurement method is factor analysis. The data calculation theory of factor analysis is quite complicated. Here, I put forward hypothesis on the impact of International Capital Flow on China's financial stability.

After KMO and Bartlett tests, factors with significance greater than 0.05 were excluded. After testing, five items were accepted and correlated for factor analysis. It includes Trade surplus, The GDP of China, Bank Credit Scale, Supply of Money and Stock Price. Kaiser gives the common KMO metric: 0.9 or above is a good fit, 0.8 means suitable, 0.7 means average, 0.6 means not very suitable. Any less than 0.5 will be rejected.

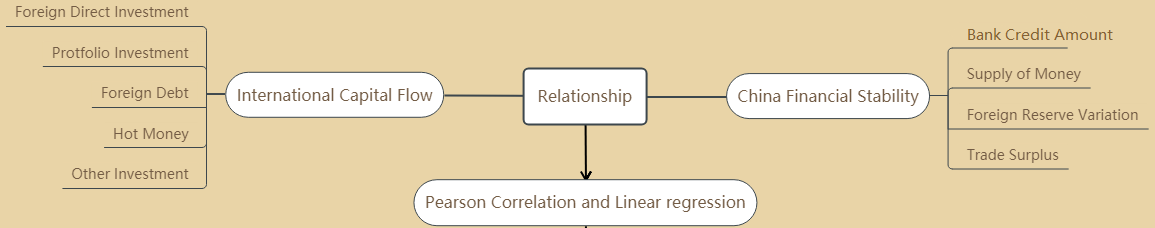
|  |  |  |
| --- | --- | --- |
|  | | |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .804 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 103.399 |
| df | 15 |
| Sig. | .000 |

*Table 14.KMO and Bartlett's Test*

Here, KMO =0.804 and Sig <0.05 after correction, indicating that this factor can be tested. It illustrates that this analysis has structural validity.

## 3.1 Theoretical Perspective

This study will be the first to put forward problem, and review the literature, on the basis of in-depth study of international capital flow’s influence on China's financial markets, analysis of the influence of the Chinese financial market logically. Finally, in this article's conclusion, to maintain China's financial stability the institutional framework and policy, suggestions are put forward.



*Table 15.Theoretical Perspective*

## 3.2 Pearson Correlation

The relationship between two variables can be analyzed or measured by the correlation coefficient. Its value is from -1 to 1. In the natural sciences, this coefficient is widely used to measure the degree of correlation between two variables. It was developed by Karl Pearson from an idea put forward by Francis Galton in the 1880s. (SPSS Tutorials, 2020)

The simple correlation coefficient, also known as Pearson correlation coefficient, describes the degree of closeness between two distance variables. The simple correlation coefficient of samples is generally expressed by R, and the calculation formula is: Where n is the sample size, and is the observed value and mean value of the two variables respectively. R describes the degree of linear correlation between two variables.

The value of r is between -1 and +1. If r> is 0, it indicates that the two variables are positively correlated, that is, the greater the value of one variable, the greater the value of the other variable.

If r<0, it indicates that the two variables are negatively correlated, that is, the greater the value of one variable, the smaller the value of the other variable.

The greater the absolute value of R, the stronger the correlation, and it's important to note that there's no causal relationship here.

If r=0, it indicates that there is no linear correlation between the two variables, but it may be related in other ways (such as curve mode). If the correlation coefficient of the sample is used to infer whether the two variables are related in the population, the null hypothesis that the correlation coefficient of the population is 0 can be tested with T statistics. If the T test is significant, the null hypothesis is rejected, that is, the two variables are linearly correlated. If the T test is not significant, the null hypothesis cannot be rejected, that is, the two variables are not linearly correlated (Weisstein, 2020) The purpose of Pearson correlation is to test or determine the linear relationship between the two data. Pearson correlation coefficient between two variables is defined as the quotient of covariance and standard deviation between two variables:

IMG_256

The above formula defines the overall correlation coefficient, with as the representative symbol. To estimate the covariance and standard deviation of the sample, the sample correlation coefficient (the sample Pearson coefficient) can be obtained.

IMG_257

And the expression equivalent to the above formula can be obtained:

IMG_259

|  |
| --- |
|  |
|  | | | Supply of Money  (M2) | Bank Credit Amount | Foreign Reserve Variation | TradeSurplus |
| Foreign Debt Inflows | | Pearson Correlation | .772\*\* | .665\* | -.513 | .722\*\* |
| Hot Money | | Pearson Correlation | -.444 | -.306 | .935\*\* | .628\* |
| FDI | | Pearson Correlation | .956\*\* | .825\*\* | -.643\* | -.500 |
| Portfolio Investment | | Pearson Correlation | .803\*\* | .825\*\* | -.192 | .463 |
| Other Investment | | Pearson Correlation | -.205 | -.035 | .805\*\* | -.715\*\* |

IMG_260are the standard score, sample mean and sample standard deviation of the sample. (SPSS Tutorials, 2020)

*Table 16. Pearson Correlation*

Items marked with an asterisk indicate relevance. \*\* means that Pearson Correlation is significant at the 0.01 level (2-tailed).\* means Pearson Correlation is significant at the 0.05 level (2-tailed). Therefore, based on the Pearson test, I have verified the following hypothesis.

* There is a relationship between FDI and Bank credit amount, Supply of Money and Trade Surplus.
* There is a relationship between Foreign Debt inflows and Bank Credit Amount, Supply of Money and Trade Surplus.
* There is a relationship between Portfolio Investment and Bank Credit Amount, Supply of Money.
* There is a relationship between Hot Money and Foreign Reserve Variation, Trade Surplus.
* There is a relationship between Other Investment and Foreign Reserve Variation, Trade Surplus.

**3.3** **Multiple linear regression**

Monadic linear regression is one of the main influencing factors as the independent variable to explain the change of the dependent variable, in the real problems in the study, the change of the dependent variable is often influenced by several important factors, at this point you need to use two or more than two factors as the independent variable to explain the change of the dependent variable, the multiple regression is also called multiple regression. When there is a linear relationship between multiple independent variables and dependent variables, the regression analysis is called multivariate regression.(Cohen, 2013) If y is the dependent variable, T1, T2 and Tk are independent variables, and the relationship between independent variables and dependent variables is linear, then the multiple linear regression model is:

1608780382(1)

Where, b is a constant term, b1, b2...bk is the regression coefficient. If the two independent variables X are linearly correlated with the same dependent variable Y, it can be described by the binary linear regression model as:

1608780468(1)

In order to ensure that the regression model has excellent explanatory ability and prediction effect, attention should be paid to the selection of independent variables when establishing multivariate regression model. The criteria are as follows∶

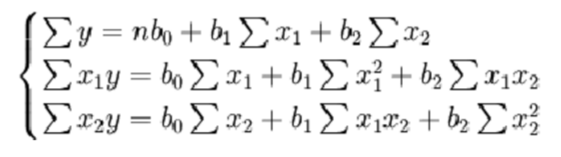
(1) Independent variables must have significant influence on dependent variables and show close linear correlation;

(2) The linear correlation between independent variables and dependent variables must be real rather than formal;

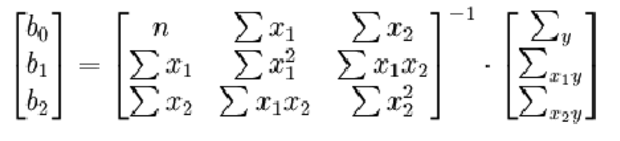
(3) The dependent variable should be mutually exclusive to some extent, that is, the correlation degree of the independent variable should not be higher than the correlation degree of the independent variable and the cause of the dependent variable;

(4) Independent variables should have complete statistical data, and their predicted values are easy to determine.

The parameter estimation of multivariate regression model is the same as the linear regression equation of element, and the least square method is also used to solve the parameter on the premise that the error sum of squares is the minimum.Taking the two-linear regression model as an example, the standard equations for solving regression parameters are



Solve this equation to find the values of b0, b1 and b2. It can also be obtained by the following matrix method



Multicollinearity refers to the strong linear relationship between independent variables in the multiple linear regression equation. If this relationship exceeds the linear relationship between dependent variables and independent variables, the stability of the regression model will be damaged and the regression coefficient estimation is inaccurate.

It should be pointed out that multicollinearity is unavoidable in multiple regression models, as long as multicollinearity is not too serious. To determine whether there is a severe multicollinearity in the multiple linear regression equation, the coefficient center of determination between each two independent variables can be calculated separately. If 8 > R or close to R, the influence of multiple linear factors should be reduced.

The conditional number k= lambda, which can also be used to calculate the eigenvalue of the correlation coefficient matrix between independent variables.

If k= λ1/λp, (λ1 is the maximum eigenvalue,λp is the minimum eigenvalue), k100, there is no multicollinearity. If 100≤k≤1000, there is strong multicollinearity among the independent variables. if k>1000, there is serious multicollinearity among the independent variables. Multicollinearity can be reduced mainly by converting the values of independent variables, such as absolute logarithms to relative numbers or averages, or by replacing other independent variables.

# Data Analysis

In order to verify The Impact of International Capital Flow, I applied linear regression to calculate The linear relationship between International Capital Flow and China's financial stability.

Hypothesis 1：*There is a relationship between International Capital Flow and Bank Credit Amount.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Coefficientsa | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 9375.352 | 8538.395 |  | 1.098 | .314 |
| FDI | .279 | 8.813 | .008 | .032 | .976 |
| Foreign Debt Inflows | -.023 | .201 | -.026 | -.114 | .913 |
| Hot Money | -2.532 | .797 | -1.220 | -3.179 | .019 |
| Other Investment | 2.829 | 1.083 | .946 | 2.613 | .040 |
| Portfolio Investment | 7.217 | 2.230 | .730 | 3.237 | .018 |
| a. Dependent Variable: Bank Credit Amount | | | | | | |

*Table 17. Coefficientsa of Bank Credit Amount*

Credit Scale = -2.532 Hot Money + 2.829 Other Investment + 7.217 Portfolio Investment

According to statistics, the scale of bank credit is significantly correlated with hot money, securities investment and other investments, showing a linear correlation. FDI and foreign debt inflow had little influence on the scale of bank credit.

After verification, the following conjecture is true:

* There is a relationship between Portfolio Investment and Bank Credit Amount
* There is a relationship between Hot money and Bank Credit Amount
* There is a relationship between Other Investment and Bank Credit Amount

Hypothesis 2：*There is a relationship between International Capital Flow and Supply of Money.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Coefficientsa | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | -136296.810 | 43802.049 |  | -3.112 | .021 |
| FDI | 221.368 | 45.208 | .449 | 4.897 | .003 |
| Foreign Debt Inflows | -.023 | 1.030 | -.002 | -.022 | .983 |
| Hot Money | -19.146 | 4.086 | -.663 | -4.686 | .003 |
| Other Investment | 17.918 | 5.554 | .431 | 3.226 | .018 |
| Portfolio Investment | 60.951 | 11.438 | .443 | 5.329 | .002 |
| a. Dependent Variable: M2 | | | | | | |

*Table 18.Coefficientsa of M2*

M2=-136296.81+221.368\*FDI-19.146\*Hot Money+17.918\*Other Investment +60.951\* Portfolio Investment

According to statistics, from 2008 to 2019, China's Money supply has a linear correlation with FDI, Hot Money, Portfolio Investment and Other Investments. Moreover, Hot money has a negative linear correlation with Supply of Money.

After verification, the following conjecture is true:

* There is a relationship between Foreign Direct Investment and Supply of Money.
* There is a relationship between Portfolio Investment and Supply of Money.
* There is a relationship between Hot money and Supply of Money.
* There is a relationship between Other Investment and Supply of Money.

Hypothesis 3：*There is a relationship between International Capital Flow and Foreign Reserve Variation per year.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 6707.614 | 4679.415 |  | 1.433 | .202 |
| FDI | -2.051 | 4.830 | -.096 | -.425 | .686 |
| ForeignDebtInflows | -.064 | .110 | -.119 | -.579 | .584 |
| HotMoney | 1.278 | .437 | 1.017 | 2.928 | .026 |
| OtherInvestment | -.315 | .593 | -.174 | -.531 | .615 |
| PortfolioInvestment | -.348 | 1.222 | -.058 | -.285 | .786 |
| a. Dependent Variable: Foreign Reserve Variation per year | | | | | | |

*Table 19.Coefficientsa of Foreign Reserve Variation per year*

Foreign Reserve Variation（Per Year）=1.278\*Hot money, It indicates that the annual change of Foreign Exchange Reserves has a positive linear relationship with Hot Money. In the Pearson Correlation, there is a relationship between Foreign Reserve Variation（Per Year） with Other Investment also, but this relationship is not linear.

After verification, the following conjecture is true:

* There is a relationship between Hot money and Foreign Reserve Variation per year.

In addition, through literature review, I found that foreign exchange reserve would affect the RMB exchange rate. Through SPSS, I further analyzed the linear relationship between foreign exchange reserve and the RMB - US dollar exchange rate.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 796.827 | 29.943 |  | 26.611 | .000 |
| foreign exchange reserve （0.1billion dollar） | -.005 | .001 | -.832 | -4.746 | .001 |
| a. Dependent Variable: USD exchange Rate | | | | | | |

*Table 20. Coefficientsa of USD exchange Rate*

The exchange rate of RMB against US dollar is negatively correlated with foreign exchange reserves, and the increase of foreign exchange reserves will cause the depreciation of RMB.

Hypothesis 4：*There is a relationship between International Capital Flow and Trade Surplus.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 3619.115 | 3444.331 |  | 1.051 | .334 |
| FDI | -2.067 | 3.555 | -.218 | -.581 | .582 |
| Foreign Debt Inflows | .077 | .081 | .325 | .946 | .381 |
| Hot Money | -.885 | .321 | -1.596 | -2.755 | .033 |
| Other Investment | .757 | .437 | .947 | 1.734 | .134 |
| Portfolio Investment | .753 | .899 | .285 | .838 | .434 |
| a. Dependent Variable: Trade Surplus | | | | | | |

*Table 21. Coefficientsa of Trade Surplus*

Trade Surplus=-0.885\*Hot money,

It indicates that Trade surplus has a negative linear relationship with Hot money.

After verification, the following conjecture is true:

* There is a relationship between Hot money and Trade surplus.

The main reason why international capital flows affect financial stability is that the capital flows are driven by "animal spirits". Such enthusiasm is sometimes irrational. When a large amount of international capital floods into the host country, the base money supply increases greatly, and the country has exuberant investment and a credit boom. (EVANS & FUND, 2012) When a large amount of capital is crowded in the real economy sector, with the increase of investment, the marginal rate of return on investment of these sectors will decline, and the surplus capital will be invested in the asset sector such as real estate and stock market, leading to the rise of asset prices and the formation of asset bubbles. Finally, the bubble collapsed, asset prices plunged, wealth plummeted, capital outflow, currency crisis and even a comprehensive financial crisis. (Collinson, 2015)

# 5 Recommendation

First of all, financial regulatory authorities should stabilize macro financial expectations and short-term financial market expectations in order to deal with such emergencies as China-Us trade conflict, COVID-19 and financial crisis, which may lead to a large outflow of capital. (Martin Feldstein, 1980) To keep macroeconomic expectations stable, monetary and fiscal policies should work in concert to give priority support to supply-side reform and enterprise innovation, and use technological innovation to drive economic growth to make up for the negative impact of changes in foreign trade on the economy.(Jeffrey, 1996)

China's financial market system is not perfect. In the future, we must further deepen the reform of the financial system, open the financial market wider to the outside world, realize the connection with the international financial market, and enhance the ability to absorb and accept international short-term floating capital.(Tornell Aaron, 1992)

China should strengthen reform of the financial market, especially the capital market, and guide the capital market to support the real economy and scientific and technological innovation. (Rudiger, 1976) China should strictly monitor the flow of international capital into and out of China's capital markets in different forms, and in particular track the flow of international capital into China's financial markets. (Kindleberger,1937)

Taking the international capital management tools of other countries as an example, Malaysia adopted quantitative measures, including a fixed exchange rate system, restrictions on overseas trading of its currency and a requirement that non-residents cannot remit out of Malaysia the proceeds of selling shares and dividends within one year after purchasing Malaysian shares.(Steven, 1998) Domestic financial institutions are not allowed to provide credit to non-resident banks and stock exchange intermediaries (previously they could provide up to 5 Million RM). There are also restrictions on domestic residents: in addition to normal merchandise import and export trade, transfer payments from domestic residents to foreign residents are limited to 1,000 Ringgit or equivalent in foreign exchange (previously 10,000 RM).Outbound investment requires pre-approval. Residents are also barred from receiving ringgit fixed credit from non-residents. Malaysia's capital controls are mainly aimed at securities trading, normal imports and exports and direct investment.

From the perspective of price control, Brazil adopts direct taxation system. To hedge against the appreciation caused by large capital inflows, a transaction tax of 2% was imposed on international portfolio investments into Brazil (buying equities and fixed income bonds).With the implementation of the regulation, the amount of portfolio investment into Brazil through shares has decreased.(Eliana, 1997)

The Chilean government began to implement an interest-free reserve system to limit capital inflows. The policy was aimed at new foreign credit, requiring residents who borrowed foreign debt to deposit 20% of the foreign debt in the central bank without interest. The term of deposit varies from 90 days to one year depending on the term of foreign debt. This measure increases the cost of speculative capital and reduces the inflow of speculative capital. The initial purpose of the establishment of the zero-interest reserve system is to reduce the amount of capital inflow, enhance monetary autonomy and avoid currency appreciation. In fact, the implementation of this approach has not significantly changed the scale of capital injection, but the structure of international capital inflows has changed, with the proportion of short-term external debt falling from 19.4% in 1990 to 5.4% in 1998.

For short-term international capital flows, China should improve the financial security monitoring system, timely prevent and counter the possible crisis, prevent the entry of malicious short funds. China should liberalize the restrictions on financial market access, reform state-owned Banks, break the monopoly of state-owned Banks, gradually realize the transformation of financial institutions' business from separate management to mixed management, and increase the competition of domestic banking industry.(Michael,1995)

In the face of the crisis, the central bank should take various measures to intervene in the exchange rate, moderately raise the domestic interest rate, and prevent the decline of the RMB exchange rate caused by excessive capital outflow. (Maurice, 1994) In the initial stage of the financial market opening, it should formulate some rigid restrictive policies to limit the short-term capital flows.

At present, China has the conditions to gradually open up the capital account. From the perspective of macro economy, China's GDP grew by 7.7% in the first quarter of 2013, which is a relatively high economic growth rate in the world. From the perspective of the financial market, by the end of 2013, China's foreign exchange reserves stood at $3.82 trillion. China has also signed currency swap agreements with major countries, and has acquired a certain capacity to deal with the emergency of international payments.

Foreign exchange control was relaxed, foreign exchange was allowed to be freely convertible, and capital was allowed to flow freely across borders. This makes the foreign exchange market tends to perfect, thus forming the real RMB exchange rate. At the same time, the entry of foreign capital into the stock market also enables the securities market to obtain sufficient sources of funds, which is conducive to promoting the development of China's capital market.(M.Mandel, 2004) In the real economy, it can attract more investment and promote the growth of China's economy. With the increase of foreign investment, more technical equipment will be introduced and more technical personnel will be trained, so as to improve China's production efficiency.(Mu Yang,2012)

Capital account liberalization is like a "double-edged sword", which not only brings benefits to China's economic development, but also brings disadvantages to it.The opening of capital account increases the difficulty of government macro-control and weakens the role of administrative means in stabilizing national economy. The aggravation of the fluctuation of RMB exchange rate hinders the development of economy.（Junjun, 2013) At present, China's capital market is still weak in shock resistance, which may lead to capital flight through capital account.

# 6 Conclusion

In this research, I collected the data of long-term Capital flow including Foreign Direct Investment, Portfolio Investment and Foreign Debt，short-term capital flows, such as Hot Money, and Other Investment to analyze the flow of international capital into China. In addition, I used four indicators including Bank Credit Amount, Supply of Money, Foreign Reserve Variation and Trade Surplus to study China's financial stability. Through data analysis by SPSS software, Pearson Correlation Test and Multiple Linear Regression were used to verify the relationship between the two variables. After verification, I determined that international capital flows would affect Bank Credit Amount, Supply of Money, Foreign Reserve Variation and Trade surplus. Therefore, it is important to strengthen international capital controls. Finally, some suggestions on China's financial stability had been given.

At present, there are still many outstanding problems to be solved in China's capital market. For example, supervision of the capital market should be strengthened so that the capital market will not be greatly affected in the face of the sudden impact of international hot money. In the face of a more open international economic environment, we should strengthen the construction and supervision of the capital market and establish a set of mechanisms to guard against financial risks. In the face of more complicated international and domestic environment and in the process of economic globalization and integration, it is necessary to strengthen the international regulatory cooperation on transnational financial institutions, integrate with international financial statistics, strengthen the international cooperation on accounting information disclosure, and maintain the security and stability of China's financial market. There is a contribution of this study. This research can help The Chinese financial sector to better understand the impact of different sources of foreign capital on the country's financial stability and lay a foundation for future research. However, there are some lacks also. Such as data for the past 12 years（2008-2019） can be collected only because there are missing items in the data of some years. The government intervention factors in China's financial market are relatively large, and the policy factors analyzed may not be comprehensive enough. This study is limited to the study of the linear correlation of independent variables of dependent variables.

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