

Foreign Direct Investment on China's Balance of Payments

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Abstract

With the acceleration of China's reform and opening-up process, the macro-economy is also developing rapidly, but in recent years, changes in the internal and external situation have all been seen as factors affecting the macro-economy, how to see the situation, how to formulate a reasonable policy to cope with the problem, has become the main task of the macro-economy. The balance of payments is an essential link in determining macroeconomic development. It is related to the balance and stability of domestic and foreign wealth, of which foreign investment is an essential part of China's opening up to the outside world, and most foreign investment is direct investment. The study of the impact of foreign direct investment on the balance of payments is of practical significance. Its main strategies of a trade conflict between China and the United States and the expansion of domestic demand in recent years can put forward valuable opinions, as well as guiding significance for stabilizing the exchange rate and guaranteeing the healthy development of the macroeconomy. This paper firstly summarizes and combs the research and theories on the impact of foreign direct investment on the balance of payments; secondly, it analyzes and summarizes the data on the status of FDI in China and China's balance of payments; then it conducts the theoretical, empirical analysis based on the theory; and finally, it draws the conclusions and realistic recommendations based on the above contents.

Keywords

Foreign direct investment, balance of payments, current account, imports and exports.

1. Introduction

Since China's reform and opening up, China and the world's economic pattern have undergone significant changes, along with economic globalization and the gradual relaxation of capital control in various countries. Each country began to realize international trade and cross-border flow of capital to set up factories in foreign countries and develop foreign markets. Foreign Direct Investment (FDI) appeared in developed countries, and FDI emerged in developing countries in the 1980s.

China's rapid economic development as a developing country, but in today's economic globalization, is still facing the research situation. The international economy has undergone dramatic fluctuations, coupled with the outbreak of the trade war between China and the United States and the changes in the global political situation, so China's macro-economy has exposed structural and institutional problems. For example, the trade friction between China and the United States began uninterruptedly as early as 2003. In 2018, the Trump administration insisted on announcing that it would be relaunched despite China's dissuasion and the outbreak of the trade war between China and the United States announced the change of China's economic periphery, and the world economic order has suffered a significant impact. China's economy has stepped into new economic normality amid numerous crises. 2014 President Xi Jinping launched the "Belt and Road" initiative to carry out in-depth multilateral

and bilateral production capacity cooperation. The realization of the "Belt and Road" initiative is related to developing China's international economy. In 2022, affected by the outbreak of the New Crown epidemic, with the withdrawal of stimulus policies in developed countries and the fragile recovery of some emerging and developing economies, the global economy is likely to fall back into a slow-growth trajectory with new divergences, and the current rapid spread of the omicron virus, the epidemic is still a key factor affecting China's economic growth.

Balance of payments is related to a country's macroeconomic development. Foreign investment is one of the capital account items, and its changes directly affect China's balance of payments. They will further affect the exchange rate and the stability of international trade.

The year 2022 is the third year that the global economy has been affected by the epidemic, and from the point of view of the changes in the world economy since the outbreak of the epidemic, the global economy experienced a sharp recession in 2020 and then ushered in a rapid recovery in 2021, but there are downside risks to the global economy in 2022. To cope with global macroeconomic changes, China needs to pay attention to changes in the balance of payments and stabilize exchange rate fluctuations.

The research theme of this paper is the impact of foreign direct investment (FDI) on the balance of payments. The significance of the study is that the current globalized economic situation is increasingly severe because of the epidemic's impact. The balance of payments will link the income and expenditure of a country's wealth and the relationship between a country's wealth inside and outside the balance. Foreign direct investment is an integral part of China's opening up to the outside world through the study of the impact of foreign direct investment on the balance of payments to grasp the changes in the balance of payments and then better stabilize the exchange rate of the renminbi and ensure the healthy development of the national macro economy has a practical significance. By studying the impact of foreign direct investment on the balance of payments, we can better grasp the changes in the balance of payments to stabilize the RMB exchange rate and ensure the healthy development of the national macro economy.

2. Theoretical Analysis of the Impact of FDI on the Balance of Payments

2.1. Relevant Concepts

Foreign Direct Investment (Foreign et al., referred to as FDI), also known as international or overseas direct investment, refers to foreign enterprises, economic organizations or individuals by the relevant policies and regulations of the host country, the use of foreign currency, in-kind, technology, etc. in the host country to set up a wholly foreign-owned enterprise, and China's domestic enterprises or economic organizations to jointly organize joint ventures, cooperative enterprises or cooperative development of resources. FDI is an essential way of international financial exchange, which benefits a country's balance of payments surplus in the short term. The advantages of FDI are: i. Creating employment opportunities, especially in the manufacturing industry, helps reduce a country's unemployment rate and thus promotes the country's economic development; ii. Introducing advanced technology, operational practice, and experience improves the industry's efficiency; iii. Contributing to a country's export increase, which contributes to the stability of the exchange rate, and in the short term, contributes to the stability of the exchange rate. In the short term, it contributes to the stability of the exchange rate and improves the country's capital flows due to capital inflows. At the same time, the disadvantages of FDI are i. it discourages investment in the country due to competition and hampers domestic demand; ii. it may lead to an unfavourable exchange rate in a country in the long run and may not be conducive to the balance of payments; and iii. foreign investment may be capital-intensive, which may be risky or economically unfeasible.

The balance of payments is the overall record of an economy's (country's) external economic trade over time. The subject of the balance of payments is a resident or non-resident of a

country, reflects transactions rather than payments, and is a flow indicator. Balance of Payments lists an economy's (country's) balance of payments in a statement suitable for economic analysis using accounting standards (debit and credit balances), mainly including current accounts, capital and financial items, and regulatory items. In this paper, capital and financial items are analyzed separately. The balance of payments is divided into the current account, capital account and financial items. The current account (Current Account, referred to as CA), also known as the cash account, is an integral part of a country's balance of payments, including goods (goods), services (services), income (income) and unilateral transfers (unilateral) four. Capital Account (referred to as KA) records the transfer of capital between residents and non-residents and the acquisition and disposal of non-produced, non-financial assets. Financial Account (FA) refers to all transactions involving financial assets and liabilities between residents and non-residents.

2.2. Theories Related to the Impact of FDI on the Balance of Payments

As early as the mercantilist period, scholars have begun to pay attention to the impact of foreign capital inflows on the balance of payments. Mercantilist representative Thomas Meng (1664) said the balance of payments surplus is essential for a country's wealth growth. However, the capital inflow will not produce a natural balance of payments surplus. Capital inflows for profit-making reasons would inevitably be followed by outflows after profit-making, which could not generate trade growth and export surpluses and were not conducive to the balance of payments. This gave rise to the theory of foreign direct investment in the earliest mercantilist period.

The mercantilist period of foreign capital inflow could be more conducive to the balance of payments point of view continued for an extended period. In the 1960s, in Latin America, many capital inflows to make up for the shortage of foreign exchange in Latin American countries. The mercantilist point of view makes it difficult to explain this phenomenon. At this time, the scholars will shift their attention to the FDI. Economists H. Chenery & A. Strout, in 1966, in the "International Foreign Aid and Economic Growth", put forward the "double gap model".

Gross national income (GNI) and gross national expenditure (GNE) are satisfied separately in the "double gap model":

$$Y = C + S + T + M \text{ (GNI = Consumption + Savings + Taxes + Imports)} \quad (1)$$

$$Y = C + I + G + X \text{ (Gross National Expenditure = Consumption + Investment + Government Expenditure + Exports)} \quad (2)$$

The realization of an equilibrium state of aggregate supply and demand needs to be satisfied:

$$C+S+T+M=C+I+G+X \quad (3)$$

Morphing has got to be:

$$(I+G)-(S+T)=M-X \quad (4)$$

Government balance case ($G=T$) :

$$I-S=M-X \quad (5)$$

That is, the difference between a country's investment and savings is equal to the difference between imports and exports, of which $(I-S)$ is called the "savings gap" and $(M-X)$ is called the "foreign exchange gap", constituting a "double gap". To eliminate the gap, both sides of the

equation must be equalized. If the adjustment from one side alone is inefficient and time-consuming, introducing foreign capital can precisely affect both investment and foreign exchange, which is a good tool for adjusting the gap. Developing countries generally have the problem of insufficient savings and foreign exchange; the "double gap theory" for the economic development of developing countries provides an excellent theoretical basis. Developing countries began to attract foreign investment vigorously.

Based on the "double gap model", Hirschman revised the model. He believes that the developing countries, in addition to the lack of foreign exchange and savings, also lack factors of production, and so put forward the "triple gap model". He thought that developing countries lacked factors of production in addition to foreign exchange and savings, so he proposed the "three-gap model". After that, Paul Streeten proposed the "four-gap model" based on this model and supplemented the "tax gap". Obviously, the "four-gap" is more in line with the actual situation of developing countries. However, both the double, triple and quadruple-gap theories have a premise assumption: the process of foreign direct investment should be entirely consistent with the host country's economic development, but in practice, it is challenging to realize this assumption. Moreover, it only considers the positive effects of FDI on the balance of payments in the short term. It does not take into account the effects on the balance of payments in the long term, such as those resulting from the acquisition of profits.

Afterwards, Latin American countries experienced balance-of-payments crises in the later stages of capital attraction, which gave rise to economic nationalism and economic dependence theory. Economic nationalism believes that FDI and the host country's economic development conflict with each other, especially in developing countries, because most of the enterprises that enter the host country as foreign capital are oligopolistic enterprises with a specific market position and strong competitiveness, which will inevitably hurt the host country's local enterprises after entering the host country, thus increasing their proportion in the host country's import and export trade, and therefore have a balance of payments balance Negative impact. The economic dependence theory believes that FDI will make the host country's enterprises dependent on foreign capital. Due to the profit-seeking nature of capital, FDI will obtain more and more profits, and more and more capital will be remitted to the country, leading to the balance of payments imbalance. In the long run, the dependence will become more and more serious, so the economic dependence theory is the opposite of the viewpoints of the "Double Gap Theory". Therefore, the economic dependence theory contradicts the "double gap theory". On the other hand, although the opposing viewpoints of economic nationalism and economic dependence theory are correct, they do not distinguish between types of FDI and the host country's economic development stage, so they have certain limitations.

The simple dynamic model, proposed by economists Kalecki and Sachs in the 1960s, argues that the impact of FDI on the balance of payments depends on a critical value $(1+1/R)$ years after the balance of payments is balanced. FDI will lead to a regional surplus in the balance of payments before $(1+1/R)$ years, and after $(1+1/R)$ years, it will lead to a deficit. A country cannot maintain its surplus impact on the balance of payments by controlling the stock of foreign investment.

The Kalecki model absorbed the ideas of the simple dynamic model and established a deterministic model, first proposed by Kalecki and Sachs (1966), which models the capital inflows and the repatriation of profits and earnings from FDI as variables. It is assumed that there are two ways in which FDI affects the balance of payments: first, through capital inflows, and second, through the profits and earnings generated. The model concludes that at the later stage of profit outflows, i.e. investment, profit remittances will exceed investment remittances, and the demand for foreign exchange will be greater than the supply of foreign exchange and therefore unfavourable to the balance of payments of the host country.

The Kaleski model is empirically examined with a large amount of data but assumes no short-term capital flows while ignoring the impact of FDI on a country's trade.

3. Research Design

3.1. Theoretical Models

This paper provides a theoretical derivation of the macroeconomics-based balance of payments equation to analyze how a country's balance of payments is balanced.

Gross National Expenditure (GNE) of an economy is composed of:

$$GNE = C + I + G \quad (6)$$

(Gross National Expenditure = Individual Consumption + Private Investment + Gross Government Expenditure)

A closed economy is assumed, so Gross National Expenditure (GNE) is equal to Gross National Income (GNI) and Gross Domestic Product (GDP):

$$GNE = GNI = GDP \quad (7)$$

Moreover, in an open economy, a country's GDP includes international trade, i.e.:

$$GDP = GNE + TB \quad (8)$$

where $TB = X - M$

TB is the Trade Balance, X is the total value of exports of goods and services (Exports), and M is the total value of imports of goods and services (Imports).

There are simultaneous flows of capital (factor services) in open economies, i.e.:

$$GNI = GDP + NFIA \quad (9)$$

Where $NFIA = EX - IM$

NIFA (Net Factor Income From Abroad) is Net Factor Income from Abroad, EX (Factor Service Exports) is Factor Service Exports and IM (Factor Service Imports) is Factor Service Imports.

A portion of the home country's GNI, in addition to the GNI, is transferred back to the country as foreign aid or is called Net Unilateral Transfer (NUT), which is taken into account as Gross National Disposable Income (GNDI), that is:

$$GNDI = GNI + NUT \quad (10)$$

Where $NUT = UT_{NI} - UT_{OUT}$

UT_{NI} For the value received by a country in a unilateral transfer. UT_{OUT} Value paid by a country in a unilateral transfer.

Summing up the income of the home country is:

$$Y = GNDI = GNE + TB + NFIA + NUT = C + I + G + (X - M) + (EX - IM) + (UT_{NI} - UT_{OUT}) = GNE + CA \quad (11)$$

This paper analyzes the current, financial, and capital accounts in the balance of payments. The current account denoted by EXA denotes the total value of financial assets acquired by the rest of the world from the home country, which can be regarded as the claims of other countries on the assets of the home country and is called the external liability of the home country (External Liability); within denotes the total value of financial assets acquired by the home country from the rest of the world, which can be regarded as the claims of the home country on the assets of

other countries, and is called the external assets of the home country (External Asset). Using H to denote the home country's assets and F to denote the home country's liabilities, then:

$$FA = EX_A - IM_A \quad (12)$$

Defined for FA.

$$FA = (EX_A^H - IM_A^H) + (EX_A^F - IM_A^F) \quad (13)$$

It is the division of net output into home country assets and foreign assets.

$$FA = (EX_A^H - IM_A^H) - (IM_A^F - EX_A^F) \quad (14)$$

Indicates that the net input of foreign assets is the negative of the net output of foreign assets.

EX_A^H Export of assets for the home country; IM_A^H Import of assets for the home country; EX_A^F for exporting assets from a foreign country; IM_A^F for importing foreign assets.

Then, add the value of the home country's net sales of foreign assets to the previous item:

$$(EX_A - KA_{OUT}) - (IM_A - KA_{IN}) = EX_A - IM_A + KA_A - KA_{OUT} = FA + KA \quad (15)$$

KA_{IN} For capital transfers received; KA_{OUT} For capital transfers paid.

Calculate the total value of resources available to the home country for expenditures equal to the total value of expenditures on final goods and services in the home country, i.e.:

$$GNE + CA + FA + KA = GNE \quad (16)$$

Organizing gives:

$$CA + KA + FA = 0 \quad (17)$$

This is the Balance of Payments Constant (BOP Identity).

Then extend equation to a micro perspective:

$$(X - M) + (EX_F - IM_F) + (UT_{IN} - UT_{OUT}) + (KA_{IN} - KA_{OUT}) + (EX_A^H - IM_A^H) + (EX_A^F - IM_A^F) = 0 \quad (18)$$

As a result of the above analytical arguments, it can be seen that X, EX, UT_{IN} , KA_{IN} , EX_A^H , and EX_A^F positively affect the balance of payments. In contrast, M, IM, UT_{OUT} , KA_{OUT} , IM_A^H , and IM_A^F hurt the balance of payments.

Order:

$$GAP = (X - M) + (EX_F - IM_F) + (UT_{IN} - UT_{OUT}) + (KA_{IN} - KA_{OUT}) + (EX_A^H - IM_A^H) + (EX_A^F - IM_A^F) \quad (19)$$

The inflow of FDI can affect the EX_A^H . The FDI inflow can affect the GAP, which represents the output assets of the home country and the target of FDI, so it can be introduced that an increase in FDI increases the GAP. A decrease in FDI decreases the GAP.

In practice, there are inflows and outflows of foreign capital. The inflow of foreign capital occurs mainly at the initial stage when a large inflow of funds results in a financial account surplus. At this time, the host country uses exports to stimulate economic growth. Subsequently, the volume of exports grows significantly due to the inflow of foreign capital. At the same time, foreign direct investment enterprises have a substitution effect on imports, and local production reduces the demand for imports, in which case imports decrease and exports

increase, resulting in a current account surplus and a financial account surplus, also known as a "double surplus".

The results of the impact of FDI on each item of the Balance of Payments are different; however, if FDI inflows alone are considered, the impact on the Balance of Payments is positive, the same as the theoretical derivation above.

The impact of the balance of payments on GDI is mainly reflected in the exchange rate. Balance of payments deficit, that is, a country's international expenditure is greater than the inflow, so that the country's foreign exchange market supply is less than demand, so the yuan depreciation at this time, foreign capital tends to flow into the domestic, because then the same foreign currency can buy more domestic assets; On the contrary, when the balance of payments surplus, that is, expenditure is less than the inflow of the foreign exchange market supply is more significant than demand, the yuan appreciated, at this time, the foreign tendency to invest in the reduction.

To summarize, the balance of payments is as close to zero as possible, i.e., to a state of balance of payments, and an increase in foreign direct investment will worsen the balance of payments.

3.2. Modeling and Data Selection

What this paper examines is the impact of OFDI on EXAH (output of assets from the home country) and IMAH (input of assets from the home country), two items in the balance of payments, according to the previous theoretical analysis:

$$GAP = (X - M) + (EX_F - IM_F) + (UT_{IN} - UT_{OUT}) + (KA_{IN} - KA_{OUT}) + (EX_A^H - IM_A^H) + (EX_A^F - IM_A^F) \quad (20)$$

Combining the items in CA and KA, because this paper only focuses on the impact of foreign business on the balance of payments, so it does not talk about CA and KA into the scope of empirical analysis, the above equation becomes:

$$GAP = CA + (EX_A^H - IM_A^H) + (EX_A^F - IM_A^F) + KA \quad (21)$$

Order $OFDI = EX_A^F - IM_A^F$, where OFDI is the amount of China's outward foreign direct investment.

EX_A^H , IM_A^H , and OFDI were modelled as explanatory variables and GAP as an explanatory variable:

$$GAP = \alpha + \beta_1 EXHA_t + \beta_2 IMHA_t + \beta_3 OFDI_t \quad (22)$$

β_1 , β_2 and β_3 are the coefficients of EXHA, IMHA, and OFDI, respectively, and it is hypothesized that EXHA is positively correlated with GAP, which is β_1 is positive.

According to the needs of the model, the following are selected from the Balance of Payments: the difference between China's outward direct investment in the financial account, the difference of foreign direct investment in China in the financial account, the difference in net errors and omissions, and the amount of actual utilization of foreign direct investment, because the data of 2021 are not yet released, the data in this paper have a time cutoff of 2000 - 2020. The time cutoff for the data in this paper is 2000-2020. Data (in billions of dollars) are from the National Statistical Yearbook of the National Bureau of Statistics and the State Administration of Foreign Exchange.

The variable EXHA selected in this paper (EX_A^H) is actually "actual utilization of foreign direct investment", "difference of foreign direct investment in China in financial projects" is($EX_A^H - IM_A^H$) While IMHA(IM_A^H) is "actual utilization of FDI", "difference of foreign direct investment in China in financial projects" isIMAH) is "actual utilization of FDI amount" - "the difference of foreign direct investment in China in financial projects" is derived.

3.3. Empirical Analysis

This paper empirically analyzes the data using Stata, which is characterized in the table below:

Table 1: Data Characterization					
Variable	Obs	Mean	Std. Dev.	Min	Max
EXHA	21	982.0386	319.5058	496.7	1.443.69
IMHA	21	26.60571	40.57073	-0.05	186.45
OFDI	21	752.27	636.7301	10	1.961.49
GAP	21	-1497.202	2487.667	-4795.391	4436.646

According to the above table, the standard deviation of the balance of payments GAP is more significant, indicating that the balance of payments is more volatile and less stable. The standard deviation of EXHA, IMHA and OFDI is relatively minor and more stable.

The steps of empirical analysis in this paper are specified below:

First, the ADF test is used to view the smoothness of the four variables EMHA, IMHA, OFDI and GAP. If the variables are smooth, they can be modelled by the least squares method; if they are not smooth, they can be obtained by the difference operation to obtain the same end of the single integer smoothness of the series.

Second, Granger causality tests test whether a variable and its lagged terms have a long-run relationship with other variables.

Thirdly, the cointegration test determines whether the variables have a long-run cointegration relationship. A cointegration equation can be derived if there is a long-run cointegration relationship.

3.3.1. ADF test

For time series regression, care should be taken to detect the smoothness of the variable data, and the premise of cointegration analysis for non-smooth time series variables is that these variables are all single-integrated in the same order. Therefore, the first step is to determine the smoothness of these time series variables. If they are not smooth, they should be differenced, and the ADF test should be performed on the differenced series until they are smooth. The ADF test in this paper uses the critical value at the 5% confidence interval level as the standard of comparison.

Table 2 below shows the results of the ADF test on the variable EXHA, which shows that the ADF value of the original series of EMHA is larger than the critical value at the 5% confidence level, indicating that the original series of EMHA is a non-stationary series. However, after the EXHA variable is subjected to first-order differencing, its ADF value is smaller than the critical value at the 5% confidence level, indicating that it is a smooth series at this point.

Table 2: ADF Test for EXHA					
Difference in the number of times	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Reach a verdict

0	-2.747	-4.380	-3.600	-3.240	non-stationary
1	-6.137	-4.380	-3.600	-3.240	smoothly

Table 3 shows the results of the ADF test for the variable IMHA, which shows that the ADF value of the original series of IMHA is less than the critical value of the 5% confidence interval level, indicating that the original series of IMHA is smooth.

Table 3: ADF Test for IMHA					
Difference in the number of times	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Reach a verdict
0	-12.075	-4.380	-3.600	-3.240	smoothly
1	-11.532	-4.380	-3.600	-3.240	smoothly

Table 4 shows the results of the ADF test on the variable OFDI, which shows that the ADF value of the original series of OFDI is greater than the 5% confidence interval level critical value, indicating that the original series of OFDI is a non-stationary series. After the first-order differencing of the variable OFDI, its ADF value is smaller than the 5% confidence level critical value, indicating that it is a smooth series.

Table 4: ADF Test for OFDI					
Difference in the number of times	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Reach a verdict
0	-2.127	-4.380	-3.600	-3.240	non-stationary
1	-3.868	-4.380	-3.600	-3.240	smoothly

Table 5 shows the results of the ADF test on the variable GAP, which shows that the ADF value of the original series of GAP is greater than the 5% confidence interval level critical value, indicating that the original series of GAP is a non-stationary series. After the first-order differencing of the GAP variable, its ADF value is smaller than the 5% confidence level critical value, indicating that it is a smooth series at this point.

Table 5: ADF Test for GAP					
Difference in the number of times	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Reach a verdict
0	-2.257	-4.380	-3.600	-3.240	non-stationary
1	-4.393	-4.380	-3.600	-3.240	smoothly

Through the above ADF test for each variable, all of them except IMHA exhibit first-order monotonicity. Least squares cannot be estimated, but since they are all monotonic of the same order, the cointegration test can establish the long-run equilibrium relationship.

3.3.2. Granger Causality Test

Granger causality is not causality in the usual sense of the word. However, it refers to a time series situation where two economic variables X and Y are considered to be Granger-causal for variable Y if the prediction of variable Y is better than the prediction of Y from the past information of Y alone, i.e. if variable X helps to explain the future change of variable Y. cause. In short, if the change of variable X can contribute to the prediction of Y, it indicates the existence of Granger causality between variables X and Y. The effect of FDI on the balance of payments in this paper is equivalent to studying whether the former's prior information affects the latter's later information.

The premise of the Granger causality test is that all the variables are smooth series. From the above ADF test, all the variables are smooth in the first-order lag, so the Granger causality test is done on the first-order lag of all the variables. The following table shows the test results at first order lag and 5% confidence level:

Table 6: Results of the Granger Causality Test		
Null Hypothesis	Prob.	Reach a verdict
Reasons why EXHA is not the GAP Granger	0.03<0.05	Rejection of the hypothesis
Granger reasons why the GAP is not EXHA	0.280>0.05	Acceptance of the hypothesis

Therefore, under the first-order lag condition, the empirical results reject the hypothesis that EXHA is not a Granger cause of GAP, indicating that EXHA lag significantly affects GAP.

3.3.3. Cointegration Johansen Test

The purpose of the cointegration test is to decide whether a linear combination of a set of non-stationary series has a stable equilibrium relationship. The basic idea is that if two or more variables are non-stationary. However, their same-order differences are stationary. It can be tested to see whether there is a long-run cointegration relationship between these variables, i.e., whether a change in one variable causes a change in the other variable.

According to the results of the ADF test, all the variables are second-order single-integrated so that the cointegration test can be performed.

According to the results of the cointegration test, it can be concluded that there is a cointegration relationship between the variables EXHA, IMHA, OFDI and GAP at the 5% confidence level, and a cointegration regression yields the relationship equation (standard deviation in parentheses):

$$\text{GAP}=151.9597+2.02491\cdot\text{EXHA}+10.57466\cdot\text{IMHA}+5.874479\cdot\text{OFDI}$$

(631.3747) (8.150829) (13.98789) (2.57455)

(23)

The above equation shows that EXHA positively affects GAP, and the hypothesis is valid. The smoothness of the residuals is then as follows:

Table 7: Residual Smoothness Test Results

Variable	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	difference in the number of times	Reach a verdict
e	-6.789	-3.750	-3.000	-2.630	0	smoothly

The results of the residual test show that the residual e is a smooth series at the 5% confidence level, so there is a long-run equilibrium relationship between EXHA, IMHA, OFDI, and GAP.

3.3.4. Empirical Findings

In this paper, the original series of the selected data are not smooth series except IMHA, after the first-order difference processing, i.e., the ADF test becomes smooth series, avoiding the emergence of pseudo-regression; after Granger causality test, the result rejects the hypothesis that EXHA is not the causality of GAP, so it can be assumed that the pre-period of EXHA has a significant effect on the GAP in the current period, i.e., changes in FDI can be predicted to changes in balance of payments; after that, the cointegration test shows that EXHA coefficient is positive, indicating that EXHA has a positive effect on GAP in the long run. Difference: After that, the cointegration test (3-20) regression relationship shows that the coefficient of EXHA is positive, which indicates that the long-term impact of EXHA on GAP is positive. In addition, the coefficient of OFDI is also positive, which indicates that there is also a positive correlation between OFDI and GAP, i.e., the amount of actual utilization of foreign capital and the difference between China's outward FDI has an effect on the balance of payments difference and it is positive.

4. Conclusion and recommendations

4.1. Conclusions of the Study

Through the above theoretical and empirical analysis, FDI will significantly impact China's balance of payments. This paper takes the balance of payments constant equation as the basis of derivation, uses the balance of payments data of the last 20 years, studies the impact of FDI on the balance of payments, and the main conclusions drawn are:

Changes in foreign direct investment have a homogeneous effect on the balance of payments. In the empirical analysis, the coefficient of EXHA in the model is positive. That is, increasing foreign direct investment can expand the balance of payments. However, at the same time, the theoretical model deduces that the absolute value of the balance of payments difference is as small as possible. Hence, the excessive increase of FDI harms the balance of payments.

Moderate FDI inflow is positive for the balance of payments, but China is still passive. FDI mainly depends on the intention of foreign enterprises, so once the FDI change is too significant, it will hurt the domestic economy.

4.2. Policy Recommendations

4.2.1. Promoting Fair Competition among Domestic and Foreign Enterprises

Considering China's primary national conditions and current economic development to develop the calibre of FDI entry, at the same time to encourage FDI to make long-term investments in China, formulate policies to protect the legitimate rights of FDI better, and reduce the possibility of divestment.

Different policies have been formulated for different types of FDI, such as adjusting market access thresholds for different industries and scales, introducing high-quality factors of production such as technology, human resources and management that our country needs, and

guiding reinvestment by divested enterprises to make better use of foreign investment to promote the development of the national economy.

4.2.2. Optimizing the Structure of China's Balance of Payments

The structure of FDI should be actively adjusted to promote the improvement of the structure of export trade and further optimize the structure of China's balance of payments.

China's international trade surplus mainly comes from the manufacturing industry, generally concentrated in labour-intensive industries, which generally belong to the smaller-scale processing industry. In the international market, competition is fierce. China's international competitiveness could be more substantial than capital and technology-intensive industries. To encourage FDI enterprises to flow to China's primary and tertiary industries, optimize the distribution of FDI industries within the manufacturing industry. After joining the WTO, China's opening has been expanding, and it is necessary to actively guide the flow of FDI to China's service and financial industries to improve the international competitiveness of China's tertiary industry.

First of all, we should actively seek large transnational corporations to invest in our country and combine them with our large-scale backbone enterprises; large-scale transnational corporations have muscular financial strength and advanced technological equipment, research and development capabilities, and if they are combined with China's modernized industrial structure, they can realize complementary advantages. Secondly, we should boldly carry out the innovation of investment mode, actively encourage foreign investors to acquire, merge and lease some of our enterprises, which are currently in difficulties but have excellent development prospects, and effectively utilize the scale of foreign investment to accelerate the adjustment of China's economy.

4.2.3. Strengthening the Monitoring and Management of FDI Earnings

As the scale of FDI investment expands, so do the risks, which may harm the current account. It is necessary to establish a complete set of mechanisms to effectively control the profits and scale of foreign investment in China, mainly the profits earned by foreign investors, and the foreign exchange administration can grasp their profitability through the foreign investment statistics report, cautiously analyze the situation of profit remittance, control the level of profit remittance, and reasonably and legally guide the remittance of profits.

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