

# ***Global Imbalances & Trade Liberalization: Analysis Based on Multinational Panel Data***

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**Abstract:** For global imbalances, scholars at home and abroad have given many explanations. Traditionally, they include double deficit theory, undervaluation of effective exchange rate theory, savings-investment gap theory, demographic structure theory and so on. In recent years, studies have focused on the rationality of developing countries' sustained surpluses and developed countries' deficits from the perspectives of financial development differences, international division of labor and even trade liberalization. The theory of financial development differences and international division of labor has been proved theoretically and empirically, while the newly proposed theory of trade liberalization still lacks empirical support. Using the index of trade freedom, this paper makes a fixed-effect regression on the cross-border panel data from 1995 to 2017 and finds that the empirical evidence does not support the theory of trade liberalization. In fact, we believe that trade liberalization will worsen a country's current account.

## **1. Background and Introduction**

At present, the United States has launched a new round of trade protectionism all over the world, aiming at reducing its expanding current account deficit and boosting the return of manufacturing industries to the United States. Unfortunately, since the late 1970s, there has been a widespread current account imbalance worldwide: the total global current account imbalance (the current account surplus of countries and the absolute deficit). The sum of equivalents, from about 2% of global GDP to the worst, reached 5.67% in 2006. The significant current account imbalance has become one of the important characteristics of the global economy for many years, and this imbalance is further represented by the deficit experienced by the developed countries represented by the United States and the surplus experienced by the developing countries represented by China. Given that the persistent and significant imbalances in the current account are considered to be the root cause of the subprime mortgage crisis in the United States and the subsequent global financial crisis, the "hindrance to recovery in the post-crisis era", or even the "brewing of the next crisis", those responsible for the imbalances in the current account will inevitably be internationally blamed. In fact, for many years, China has been regarded as a target of attack by the United States because of its huge current account surplus. During this period, the undervaluation of the RMB exchange rate has

become the perfect excuse for the United States to condemn China as the root cause of the imbalance. Then in 2012, Germany overtook China as the largest current account surplus country in the world, and the United States Treasury Department pointed its finger at Germany in October 2013. China blames Germany's huge surplus for deflationary pressures on the euro zone and the global economy; moreover, according to the Foreign Sector Report 2018 issued by the International Monetary Fund (IMF) in July 2018, about half of the countries are still in current account imbalances in 2017, with China's surplus contributing about one third of all surplus countries. So, for a long time, is it reasonable to identify and blame the party responsible for the current account imbalance? The response to this problem also needs to be attributed to the analysis of the determinants of current account imbalances.

From the existing literature, the analysis of the causes of the current account imbalance is undoubtedly the focus of domestic and foreign scholars' research, and there are some credible and authoritative explanations. Traditional theories include: double deficit theory caused by fiscal deficit, undervaluation of exchange rate theory, savings-investment gap theory and population structure theory. In particular, in recent years, more literatures have explained global imbalances from the perspectives of financial development differences, international division of labor and even trade liberalization. Among them, according to the theory of financial development differences and international division of labor, a large number of literatures have proved the rationality of developing countries experiencing surpluses and developed countries experiencing deficits both theoretically and empirically. The impact effect lacks empirical support. In terms of objective logic, the action mechanism of the theory of free trade (Wei & Ju, 2010) in current account imbalance and even global economic imbalance is that developing countries have comparative advantages in labor factors, so the object of trade protection is mainly capital-intensive industries. According to the Stolberg-Samuelson theorem (S-S theorem), trade liberalization will promote the capital of developing countries. In contrast, developed countries will experience a process of rising capital return, capital inflow and eventual current account deficit. Thus, a direct policy orientation of the hypothesis is that free trade in developing countries can improve their current accounts.

However, is that true? By choosing the Trade Freedom index provided by the Heritage Foundation and using the cross-border panel data from 1995 to 2017 composed of available data countries, this paper carries out full sample regression, sample regression from developing countries and sample regression from developed countries respectively. The results show that, contrary to the theoretical logic, trade is oriented. Increased freedom will generally worsen a country's current account, especially in developing countries.

## **2. Literature Review**

### **2.1. Reasons for Current Account Imbalances**

For the reasons of global current account imbalance, scholars at home and abroad mainly explore the traditional theory, the theory of financial development differences, the theory of international division of labor and the theory of trade liberalization.

The first aspect is based on the interpretation of traditional theory. The traditional view is that the current account imbalance is caused by the improper policies and market distortions of the government, which is unreasonable and unsustainable. Therefore, there is one party to be blamed: Backus et al. (2005) proposed the double deficit theory that the government can adjust the current account by increasing or reducing the fiscal deficit; Erceg et al. (2006) found that fiscal deficit is positively correlated with trade deficit, but the correlation coefficient is only 0.2 when using the US data for empirical test. Further, Liu Wei et al. (2007) found that fiscal deficit has a short-term effect

on the deterioration of the current account through empirical analysis of China's data, while the expansion of fiscal deficit in the long run will improve trade balance; McKinnon & Schnabl (2009) believed that an artificial undervaluation of exchange rate will lead to a country's trade balance. Products gain competitive advantage, which leads to current account surpluses. Another traditional view supports the savings-investment theory that the current account imbalance should be attributed to the imbalance between savings and investment. For example, Chinn & Ito (2008) argues that insufficient investment is the cause of the continuing trade surplus in Southeast Asia. But more studies have focused on savings: Bernanke (2005) pointed out that excess savings in developing countries is the key reason for the imbalance; Clarida (2005) argued that the low savings rate in the United States is the constraint; Henriksen (2002) analyzed the savings factor more deeply into the population structure and found that the higher the dependency ratio, the lower the savings rate, and then put it into practice. This leads to a current account deficit.

The second aspect is to explain the differences in financial development from the perspective of differences in financial development; objectively speaking, the role of the factors of differences in financial development is based on the mechanism of savings affecting current account. Willen (2004) constructed an intertemporal model, pointing out that countries with better capital markets have stronger risk diversification ability and thus less preventive savings; Ferrucci & Mirall (2007) used panel data of 48 countries from 1980 to 2005 to make an empirical analysis, and found that the increase of financial deepening will reduce the savings rate; but Chinn & Ito (2007) is the medium-term determinant of positive current account. In the former model, after further controlling the factors of institutional development, it is found that the conclusion that the more developed financial market will lead to fewer savings and worsen the current account only applies to developed countries with perfect laws and open capital account. On the contrary, for developing countries, the higher the level of financial market development, the higher the savings rate and the larger the current account surplus. It is concluded that the effect of financial market development is opposite in developed and developing countries.

Third, the theory of international division of labor. The "savings-investment" gap is only a macro-manifestation of current account imbalances or can be called a passive result rather than a cause; global imbalances should be explained from the micro-level of international division of labor. Caballero et al. (2006) studied this aspect earlier. Based on the huge differences in financial market development between East Asian developing countries with sustained surpluses and the United States and Britain with sustained deficits, they proved that the United States holds the view of establishing a three-country international division of labor model based on the model that the United States provides financial assets to other countries and that other countries provide real products to the United States. The continuing deficit is not only the performance of the United States in providing financial assets to other countries, but also a balanced result under the imbalance of global financial development.

Finally, the theory of trade liberalization. This hypothesis was put forward by Wei & Ju (2010). Based on the revised H-O theory, they constructed a dynamic general equilibrium model and found that when trade reform can increase a country's capital intensity, its current account will deteriorate, and vice versa, its current account will improve, thus showing a negative correlation between capital intensity and current account. Finally, in view of the basic fact that developing countries and developed countries have comparative advantages in free trade, they conclude that trade liberalization will reduce the capital return rate of developing countries, and consequently the capital intensity. The decline will eventually lead to a current account surplus; at the same time, the return on capital in developed countries will rise, resulting in an increase in capital intensity, which will eventually lead to a current account deficit.

## 2.2. The Impact of Trade Freedom on Current Account

However, what is the real impact of trade liberalization on the current account? There are few empirical analyses on this aspect, and few studies are mainly aimed at a specific country or region. This situation is mainly caused by the difficulty in measuring the degree of freedom of trade. UNCTAD (1999) and Santos & Thirlwall (2004) respectively studied the relationship between trade freedom and trade balance of 15 and 22 developing countries from 1972 to 1997, and found that trade liberalization has a significant negative effect on trade balance, that is, trade liberalization will deteriorate the trade balance of developing countries. However, in view of the fact that Santos & Thirlwall (2004) mainly focuses on tariff changes, but seldom considers non-tariff barriers, Shao (2009) uses Li (2004) and Wacziarg & Welch (2003) for reference to re-measure trade freedom. The results show that when using Wacziarg & Welch (2003) measurement method, the measurement results are as follows. There is a significant and robust negative correlation between trade liberalization and the current account, which is not so significant when Li (2004) is used as the criterion.

Undoubtedly, both Li (2004) and Wacziarg & Welch (2003) have taken non-tariff barriers into account to some extent when measuring trade freedom, but due to the time span (tariff is still the main means of trade protection during the period under investigation), their calculation method is still based on tariff barriers. Since the late twentieth century, tariffs have been at a fairly low level worldwide, and the means of trade protection have shifted more to non-tariff barriers. Therefore, the measurement method of trade freedom must be improved accordingly. In fact, the degree of freedom of trade measured by the Heritage Foundation is a widely used measure of trade liberalization, which is generally credible in recent years. This paper will use this index to measure the degree of trade liberalization and use cross-border panel data from 1995 to 2017 to empirically test the relationship between trade freedom and current account balance.

## 3. Empirical Analysis

### 3.1. Data and Methodology

In this paper, the current account imbalance is measured by the ratio of current account balance to GDP (CA), and the trade freedom provided by the Heritage Foundation is used to explain the variable trade liberalization. Specifically, based on a comprehensive study of weighted average tariff rates and non-tariff barriers, the index gives 186 countries a score from 0 to 100. The higher the score of a country, the higher the degree of trade liberalization. The calculation method of this index is as follows:

$$TF_i = (Tariff_{max} - Tariff_i) / (Tariff_{max} - Tariff_{min}) * 100 - NTB_i \quad (1)$$

Among them,  $TF_i$ ,  $Tariff_i$  and  $NTB_i$  are respectively the degree of trade freedom, weighted average tariff rate and the deduction of non-tariff barriers of country  $i$ ;  $Tariff_{max}$  and  $Tariff_{min}$  are the upper and lower limits of tariff rate, where  $Tariff_{min}$  is set to 0, and  $Tariff_{max}$  is set to 50 (%). However, NTB (Non-Tariff Barrier) deduction criteria refer to the official website of the American Heritage Foundation. The larger the value, the greater the NTB.

Further, combined with the existing research on the influencing factors of current account, this paper will choose the following control variables: 1. The proportion of government budget (surplus or deficit) to GDP, the larger the value of this index, the larger the surplus of government budget; 2. Real effective exchange rate index, which is used to test the effect of undervaluation of real exchange

rate on current account; 3. The adjusted percentage of net national savings to GNI to control the impact of the "savings-investment" gap; 4. Population dependency ratio to control the demographic structure; 5. Financial development level, using the sum of the proportion of private credit to GDP and the proportion of total stock market to GDP; 6. Financial openness, using Chinn & Ito (2008) Capital Account Opening Index in the database is quantified. The larger the index, the greater the degree of financial openness. 7. Per capita GDP is used to control the impact of economic development on current account. Except for special instructions, they are from the World Bank Development Index (WDI) Database. Fixed-effect model is selected to test, and the regression equation is set as follows:

$$CA_{it} = \alpha TF_{it} + \beta X_{it} + \gamma_i + e_{it} \quad (2)$$

Among them,  $CA_{it}$  is the explanatory variable represented by the ratio of current account balance to GDP;  $TF_{it}$  is the core explanatory variable, i.e. trade freedom;  $X_{it}$  is the set of controlling variables;  $\gamma_i$  represents the unique intercept term (i.e. individual fixed effect) of individuals, which controls the differences that countries cannot observe and do not change with time; and  $e_{it}$  is the random perturbation term.

### 3.2. Empirical Outcomes

Column 1 in Table 1 shows the regression results for the whole sample. We find that the degree of trade liberalization has a significant negative effect on the current account, which indicates that with the increase of trade liberalization, the current account deficit will expand or the surplus will decrease for any country with economic development level, thus trade liberalization will deteriorate the current account significantly and steadily. In fact, this conclusion is consistent with that of UNCTAD (1999), Santos & Thirlwall (2004) and Yi & Li (2008) when they choose Wacziarg & Welch (2003), but different from that of Yi & Li (2008) when they choose Li (2004). Further, in view of Wei & Ju (2010) that trade liberalization will improve the current account of developing countries and worsen the current account of developed countries, it is of great practical significance to classify the sample countries into developing and developed countries and examine them.

Table 1: Empirical Outcomes.

Explanatory variable: CA			
	All-sample (1)	Developing (2)	Developed (3)
Trade Freedom	-0.0425** (0.0176)	-0.0777*** (0.0240)	-0.00439** (0.0244)
Controls	Yes	Yes	Yes
N	696	367	339
R <sup>2</sup>	0.352	0.370	0.427
Countries	59	30	29

Note: \*, \*\* and \*\*\* are significant at 10%, 5% and 1% respectively. The controlling variables include: government budget, real effective exchange rate index, percentage of net national savings to GNI, dependency ratio, financial development, financial openness and per capita GDP.

Column 2 & 3 in Table 1 shows the results of sample regression for developing and developed countries. It is not difficult to see that the basic results of the sample regression are similar to the first column, which shows that whether developing countries or developed countries, the increase of trade

freedom will worsen their current accounts; however, in terms of the impact intensity, the two show great differences: compared with developed countries, the deterioration degree of developing countries is greater (expressed as the absolute coefficient before trade freedom, and the p-value is smaller. In addition, we can also find that the regression results of developing countries in Table 2 are contrary to those of Wei & Ju (2010). So far, we can conclude that trade liberalization will promote the expansion of current account deficit in both developed and developing countries, and the extent or intensity of this effect will be greater in developing countries.

In summary, through the fixed-effect regression of cross-border panel data from 1995 to 2017, we empirically tested the important impact of trade liberalization on current account imbalances and drew a different conclusion from the trade liberalization hypothesis proposed by Wei & Ju (2010). In fact, we found that trade liberalization does not have heterogeneous effects on current accounts of different types of countries. Therefore, whether for developed or developing countries, trade liberalization will worsen their current account, and the deterioration of developing countries will be more serious. At this level, the general theoretical logic of Wei & Ju (2010) seems unsupported, that is, the surplus of developing countries and the deficit of developed countries are not the inevitable result of trade liberalization. So far, our research can undoubtedly also provide an answer to the current practice that the United States, on the one hand, builds high barriers to trade protection, on the other hand, threatens emerging market countries to open more markets to reduce their trade deficits.

#### 4. Conclusions and Suggestions

From the empirical results, we can see that trade liberalization, capital account liberalization and developed financial markets can all be important reasons for a country's current account deficit. The United States is in the leading position in the world in the above aspects. Therefore, it is reasonable and inevitable to regard its long-term and huge current account deficit as the result of its own economic development. So, it is worth discussing that the United States accuses Germany, China and other current account surplus countries: after all, the surplus countries are different, but the United States is always the largest deficit country, which seems to be the reason for which is self-evident. At this level, this study also provides an empirical basis for the United States not to blame other countries arbitrarily because of its huge deficit.

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