The Relationship between fiscal deficit and current account in China: Based on Vector Auto-regression models

ABSTRACT

The current global economic imbalances are characteristics of the increase in fiscal deficits and current account deficits. Due to the widespread current account deficit between developed and developing countries, the relationship of budget deficit and current account deficit has long been the focus of the theoretical community. Many attempts were made but no agreement was reached, including Keynes's absorption approach, IS-LM-BP model and Ricardian Equivalence Rule to Intertemporal Approach that applied to the study of current account. In the empirical tests of the mentioned theoretical models, researchers adopt different variables, samples and methods but they fail to obtain consistent outcomes: the correlations between budget deficit and current account deficit range from negative, positive to irrelevant. Seen in this light, the study on the relationship between the two variables has more to do with empirical research than theoretical analysis.

Since the 1980s, China's government had budget deficit in most years. After the Asian financial crisis in 1997 and the US subprime mortgage meltdown in 2009, the active fiscal policy is mainly adopted to fight deflation, address the shortage of domestic effective demands and promote economic growth. Different from developed countries, China's budget deficit is enlarged continuously while the current account is basically a surplus except in a few years. The long-term coexistence of budget deficit and current account surplus proposes the following questions:

First, is the relationship between budget deficit and current account more in line with "two deficits" hypothesis or Ricardian Equivalence Rule? Second, are the short-term and long-term influences of budget deficit on current account the same? Third, how does budget deficit affect current account if possible? Forth, how to evaluate budget deficit's contribution to the fluctuation of current account and whether there exist factors other than budget deficit contributing to the surplus of current account?

This article conducted in-depth research on the above issues in both theoretical and empirical way by using R (R package). In the chapter of theoretical analysis, we systematically examine all factors in the identity of current account and sorts out four correlation types between budget deficit and current account. Important papers on the four types are listed respectively for reference.

The chapter of empirical analysis is mainly divided into two parts:

The first part is a static study. Firstly, we validate the identity of current account with OLS regression equation. After that, our focus shifts to the cyclical nature of the government budget and the current account. We discover that budget deficit and current account are both affected by the output and thus deduct the "cyclical" and "non-cyclical or structural" components from the government budget deficit. So that the structural fiscal deficit is available and we can examine the effect of it on the current account and the real exchange rate.

The second part is a dynamic model involving more variables. Our basic identification scheme uses a vector autoregression model, which is based on five variables in the order as {Y, BD, CA, RIR, REER}[1]. The model uses the impulse responses and variance decomposition to analyze the dynamic effects of each variable on the current account. To improve the robustness of the conclusion, we built similar vector autoregressive models with five variables in different orders.

The results show that, in China, the government budget deficit can worsen the current account in the short term，but the long-term fluctuations of current account are not influenced by it. In a word, budget deficit cannot directly affect the current account. Nevertheless, the indirect effect of budget deficit on current account cannot be ignored. In the long run, current account surplus could be regarded as the result of excessive government expenditure and a reflection of the crowding-out effect of private investment.

Besides, the transmission mechanism—an increase in budget deficit leads to the rise of the interest rate, then RMB will appreciate, and then current account will worsen—unable to be realized in China. Simultaneously, the domestic and foreign financial flows are subject to a greater degree of control, which prevents the two financial variables - interest rates and exchange rates - from playing their roles. Therefore，we suggest that the government should revise the expenditure policy according to the investment situation of private sectors rather than merely considering the performance of macro-economy. Relaxing control on interest rate and exchange rate would also be welcomed. Only in this way, can the government reduce the influence of human factors that cause current account imbalance.

Keywords: budget deficit; current account; real effective exchange rate; output shocks; vector auto-regression model

[1] Y is the growth rate of real GDP, BD is budget deficit in related variables (% of GDP), CA is the current account (% of GDP), RIR is the real interest rate, REER is the real effective exchange rate index.