Investigating the Twin Deficits in Albania

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Abstract
This paper focuses on the direction of causality between budget deficit and current account deficit in Albania based on Granger causality tests. We use annual macroeconomic data for the period from 1992 to 2014. Before proceeding with the empirical analysis we test for unit root, the non-parametric Phillips-Peron test is conducted. The classical Granger test is extended including control variables such as private investment and savings, exchange rates, inflation rate, and interest rate. Empirical results support the evidence of a causal link between the twin deficits. In this sense fiscal budget cannot be considered as a fully controlled variable. A fiscal policy has important macroeconomic implications in the foreign trade indicators. To further investigate on the robustness of our results we examined the causal link between budget deficit and current account deficit based on the simultaneous equation. Results still persist in the bidirectional relationship between these two deficits.

Keywords: twin deficits, granger test, simultaneous equation

Introduction
Economic theory suggests that there is a link between the budget deficit and the current account deficit in an open economy. A first theoretical explanation of the relation between budget deficit and current account deficit is found in the Mundell-Fleming model (Blanchard, 2006). According to this model an increase in the budget deficit of an economy leads to an increase in its interest rates that, in turn will generate an appreciation of exchange rates. As a result exports become relatively more expensive and imports cheaper leading toward a current account deficit.

Friedman (2000) suggests that when deficits are used correctly, they are important to financing growth and reducing unemployment. However, many economists argue against the supposed benefits of deficit spending that increased deficit spending can only lead to higher inflation and a non efficient allocation of resources. Additionally, as deficits grow and governments begin financing their budgets with capital from foreign markets capital inflow increases and liabilities to foreign investors and governments increase.

Another theoretical explanation is the Keynesian absorption model. Issuing bonds to finance the budget deficit leads to higher consumption expenditure due to wealth effects and they raise interest rates. These higher interest rates appreciate the currency and, because of the resulting loss in competitiveness, worsen the current account balance. However, this traditional view is challenged by the Ricardian equivalence hypothesis (Barro, 1989) which states that an increase in a budget deficit will be compensated by increases in private savings.

Therefore, it is worth investigating on the link between current account and budget imbalances in transition countries, such as Albania. This country sustained high economic growth in the decade prior to the 2008 global financial crisis. During
1998-2008, annual growth averaged 6 percent in real terms with a fivefold increase in per capita GDP to above US$4,000, propelling Albania from being one of the poorest countries in Europe to middle income status (World Bank, 2015). Since 2008, the global financial crisis and the subsequent Eurozone crisis led to a significant slow-down in Albania’s growth. Albania was able to avoid a recession but GDP growth slowed to less than 3 percent on average between 2009 and 2013 as exports, remittances and inflows suffered. As growth slowed down, public debt surged and amount overdue accumulated. Albania’s public debt has surged from 54.7 percent in 2008 to 70.0 percent in 2013, the stock of external debt is shown in figure 1. High public debt are weighing heavily on Albania’s growth prospects and threatening to reverse the significant progress in reducing poverty. Domestic and external vulnerabilities are high and continue to pose risks to macroeconomic stability.

Figure 1- Trends of External Debt Stocks

![Graph showing trends of External Debt Stocks](image_url)

Source: World Bank, Debt Data 2014

Literature review

One of the earliest empirical studies examining the relation between budget deficit and current account deficit is that of Enders and Lee (1990). In their paper they developed a two-country model in which infinitely lived individuals view government debt as a future tax liability. The direct implication is that substitution of taxes for government debt issue does not result in a current account deficit. In their tests, the authors restricted the information set to include a limited number of variables. Aside from the consumption function, they did not estimate the structural equations of the model because they tested only the neutrality implication of the Ricardian equivalence hypothesis.

Using US annual data over the 1950 to 1988 period Biswas et al. (1992) further investigate on the relationship between budget deficit and current account deficit. In their study they made a distinction between structural and actual budget deficits. Instead of an arbitrary choice of lag structure, they used Hsiao minimum final prediction error criterion to determine the optimum lag lengths of the explanatory variables. Their analysis reveals a unidirectional causal relation running from structural budget deficits to net exports. However, findings indicate a bi-directional causal relation between actual budget deficits and net exports. Their findings suggest important policy implications.

Rosensweig and Tallman (1993) empirically investigated on two questions: do increased government deficits cause dollar appreciation, and do fiscal deficits lead to higher trade deficits? They examined these issues using a VAR system, generating probability bounds to assess significance. The results provided some evidence that growing government deficits appreciate the dollar, and support the “twin deficit” notion that government deficits contribute to current account deficits.
Using macroeconomic quarterly data for Brazil from 1973 through 1991, Islam (1998) examined empirically the causal relationship between budget deficit and trade deficit. This relationship is investigated using Granger’s test causality. The appropriate lag length was determined by using Akaike’s FPE criterion.

Using international data from a sample of twenty developed and developing countries Kouassi et al. (2004) found either unidirectional or bidirectional evidence between the twin deficits for some developing countries. However, the results for developed countries are less convincing. Following Engle and Granger they used a three step procedure to test for the direction of the causality.

Bagnai (2006) used time series data to evaluate the impact of structural breaks on the long-run and short-run relation between current account, government, and investments in 22 OECD countries. The author found that when allowing for possible existence of structural break, the data reveal more clearly a long-run relation between the current account and the variable controls. Since the techniques adopted account for only one change point, he tested the robustness of the empirical results by conducting the tests on a subsample excluding the two oil price shocks.

**Theoretical framework**

In a Keynesian open economy model, gross national product is the sum of private consumption expenditures, gross private domestic investment expenditure, government expenditure and exports over imports, as follow:

\[ Y = C + I + G + X - M \]

Otherwise, gross national income equals consumption expenditures, savings, and taxes:

\[ Y = C + S + T \]

Rearranging terms yields:

\[ X - M = (S - I) + (T - G) \]

The final equation suggests that net exports equal private and public savings. In an open economy with access to international financial markets there will be a relationship between the current account deficit and the government deficit.

**Data and methodology**

Macroeconomic data from the International Debt Data (World Bank, 2015) are used to give answers to the questions related with the relationship between the current account deficit and government deficit.

According to Granger a time series \( X_t \) causes another time series \( Y_t \). If current \( Y_t \) can be predicted better using past values of \( X_t \), than by not doing so then all other relevant information like past \( Y_t \) is taken into consideration in both case. Appropriate lag lengths of relevant variables for tests of causality were determined by Akaike’s final prediction error.
To further investigate the robustness of our results we examined the causal link between budget deficit and current account deficit based on the simultaneous equation. The test is extended including control variables such as private investment and savings, exchange rates, inflation rate, and interest rate.

**Empirical results**

The empirical results of Granger’s test are presented in table 1. The results of our long-run causality provide support for the importance of budget deficit in the presence of budget deficit.

<table>
<thead>
<tr>
<th>Causality test</th>
<th>Number of Lags</th>
<th>F statistic</th>
<th>Probability</th>
<th>Chi-square</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA does not Granger cause BD</td>
<td>4</td>
<td>1.38</td>
<td>0.38</td>
<td>5.52</td>
<td>0.24</td>
</tr>
<tr>
<td>BD does not Granger cause CA</td>
<td>4</td>
<td>1.97</td>
<td>0.26</td>
<td>7.88*</td>
<td>0.09</td>
</tr>
</tbody>
</table>

*Note: *** , **, and * indicate statistical significance, respectively at the 1, 5 and 10 per cent level, or better.*

While the F statistics as well as the associated probabilities do not allow us to reject the null hypothesis of no bi-directional causality between current account deficit and budget deficit, the chi-square shows a rejection of the null hypothesis. This means that while budget deficit Granger causes the current account deficit, the inverse is not statistically significant.

Results still hold in a bi-directional way when applying the simultaneous equation model. We further extend our analysis by adding other control variables such as; private investment and savings, exchange rates, inflation rate, and interest rate.

**Conclusions and comments**

This article analyses macroeconomic data from Albania for a period through 1991 to 2014 in order to capture the relationship between the current account deficit and the budget deficit. Results from the long-run Granger causality test are mixed. On one hand there is a statistically significant unidirectional causality from budget deficit to current account deficit. While on the other hand there is no statistical significance on the causal relation of current account deficit on the budget deficit. However, empirical results obtained from the simultaneous equation model seem to be more convincing in terms of bi-directional causality.

The results have policy implications, ways to reduce the current account deficit may be the raise of national savings by reducing the budget deficit and increasing the private savings. Even though fiscal policy has macroeconomic implications the budgetary impact of exogenous changes in the current account variable cannot be mistreated.
References


