Journal of Economic Sciences
Volume 2, Issue 1
https://www.jesciences.com

Twin Deficits Revisited: The Role of Fiscal Institutions in Pakistan

Sana Waheed[1], Muhammad Shahid Akram[2]

Affiliations
1. National University of Modern Languages, Islamabad, Pakistan
waheedsana4@gmail.com

2. Preston University, Islamabad, Pakistan

Timeline

Received: Apr 14, 2023
Revised: May 30, 2023
Accepted: Jun 01, 2023
Published: Jun 10, 2023

DOI
https://doi.org/10.55603/jes.v2i1.a6

Abstract
The economy of Pakistan is facing the problem of the persistent current account and the budget deficit in the past many years. This study addresses the important question of whether the budget deficit affects the current account components of the balance of payments, creating imbalances therein as well. The main objective of this research is to investigate the association between the budget and the current account deficit in Pakistan. The study has taken data from the period 1980-2021. Johansen's cointegration approach has been applied to find the long-run association and the results imply a positive and considerable long-run association between budget deficit and current account deficit. The Vector Error Correction Model (VECM) specifies the convergence or deviation of the market in the short run to the long run. The finding shows that there is a long-run connection between the budget and the current account deficit. The study suggests that government should focus on a sound budgeting policy and focus to make exports more competitive in the foreign market.

Keywords: Current Account Deficit, Budget Deficit, Ricardian Equivalence, Keynesian Hypothesis

JEL Classification: F32, H61, O23, E62

1. Introduction
The problem of the deficit of the Current Account (CA) and Budget Deficit (BD) has been the most critical issues for the economy of Pakistan. An increasing BD worsens the deficit in trade, referred to as a twin deficit. A BD reflects that government spending is more than its revenues. The twin deficit negatively affects the economy as inflation, growth of public debt and external debt, low living standards, and deterioration of purchasing power. A higher BD could lead to a reduction in investment and national savings (Ebrahim Abbassi, 2015). Towards financing a BD, the government may borrow money by issuing bonds or other forms of debt. This borrowing adds to the national debt, which is the total amount of money owed by the government to its creditors.

A Budget Deficit can have both positive and negative effects on the economy. In the short term, it can stimulate economic growth by increasing government spending, creating jobs, and increasing the demand for goods & services. The risk of inflation, higher interest rates, and a subsequent slowdown in economic development exist if the deficit persists and grows too large. The government may choose to balance the budget by reducing expenditures, raising taxes, or doing both at once. This may be accomplished by taking steps like scaling back on government programs that are not necessary, decreasing wasteful expenditure, enacting tax changes, and raising taxes. It is crucial to remember that cutting the BD could necessitate making challenging decisions and balancing conflicting goals.

When there is a trade or CA imbalance, imports outpace exports. BDs, in contrast to CA deficits, may also trigger debt crises, currency crises, and reversals in the balance of payments. Over the past few decades, Pakistan has consistently had trade and budget imbalances highlighting the existence of the 'twin deficits' hypothesis. The rising CA deficit forces the government to increase spending, which increases the BD. Trade and BDs over the long run hurt how a nation views its long-term development. In other words, it denotes a

situation in which a nation spends more on imports of goods and services than it does on exports and investments.

Numerous variables, such as a lack of export competitiveness, elevated levels of domestic consumption, and significant foreign investment, can contribute to a deficit in the CA. In the short term, a deficit in the CA can be financed through foreign borrowing or selling off assets, but in the long term, it can indicate a downgrading of the nation's currency, higher inflation, and a decrease in economic growth. To address a CA deficit, a country may need to take steps to improve its competitiveness through measures such as investing in education and infrastructure, increasing productivity, and implementing structural reforms to make it easier to do business. The country may also need to reduce its domestic consumption and increase its savings rate to reduce its reliance on foreign borrowing. The twin deficit may negatively impact economic activity and growth (Vamvoukakis, 1997).

It's critical to understand the connection between the two deficits to achieve stable economic growth. Policymakers must understand how the budget and CA deficits are related since persistently high deficits result in excessive debt problems both internally and internationally and burden future generations (Gebremariam, 2018). Due to the trade imbalance caused by low export raw commodity prices compared to import pricing and comparatively small national savings when compared to national investments, there is a funding gap that must be filled by foreign capital inflows. Exchange rate volatility, a global trend of weak development, and an elevated level of foreign debt incurred to reduce BDs are other factors contributing to the CA deficit. A deficit is not always bad as it confers both positives and negatives for a country. It depends on the circumstances a country is involved, in and the duration and size of the deficit. A persistent deficit is not a good indicator for the developing economy and brings a negative effect on the economy.

Accordingly, a BD can lead to a deficit in trade because the country is borrowing to finance its spending, including spending on imports. A country may have an imbalance if its imports exceed its exports, creating a negative CA balance. A nation with a budget surplus, on the other hand, can utilize the extra money to invest in its export-oriented businesses or cut back on imports, which would help close the CA deficit or even create a trade surplus. The relationship between budget and trade deficits is complicated, and other elements like exchange rates, productivity, and competitiveness can also influence a nation's trade balance. For Pakistani policymakers, the widening deficits in the CA, as well as deficits in the budget, have been of major concern proving the twin deficit phenomena true. Understanding the link between budget as well as trade imbalances throughout the economy is necessary given the current circumstances.

Therefore, the goal of this study is to determine whether there is any correlation between Pakistan's deficit in the CA and the BD. The major goals of this study are to analyze the short-term link as well as the long-term association between the BD as well as the deficit in the CA. identify variables influencing the relationship between the BD and the CA, and investigate the twin deficit hypothesis.

2. Review of Literature

The “twin deficits” hypothesis suggests that the fiscal deficit of a government leads to a current account deficit due to this the US economy requires to take such measures that will reduce the large deficits for the economy. For this purpose, Vector Autoregressive (VAR) model is used to investigate the impact of external policy shocks such as terms of trade on the magnitude of the twin deficit in the case of Australia, the UK, Canada, and the US. There is significant literature available on the twin deficits of Pakistan, jointly and separately (Andlib, et al., 2012, Padda, 2014, Safdar & Padda, 2017). The findings show that in less open economies the impact of external shocks is very restrictive. It is suggested that a reduction in the cost of spending may reduce the impact of the current account deficit on the economy (Kim & Roubini, 2008).

In the instance of Lebanon, Marashdeh & Saleh (2006) reexamined the association between the deficit in the budget and the deficit in trade. It is established that the trade deficit has a long-term effect on the BD in Lebanon. The Bounds test demonstrates that the effect of the civil war is the main factor contributing to the considerable and positive connection between trade and BD. The post-war period also witnesses the twin deficit

problem. The government expenditure and increase in imports had been financed through domestic and external debt. It is recommended that policies should be strengthened on the demand and supply side of services from the exportable service sector. Mukhtar et al. (2007), investigate the reason for the persistently extreme deficit in the CA and BD in Pakistan. Although the findings of this study are similar to the previous ones, this study lacks the validation of a single equation approach to examine the twin deficit hypothesis. Moreover, this study aims to find empirically the conventional effect of trade deficit through a BD in Pakistan.

Sunday (2013), analyzed the association between deficit financing and trade balances in the case of Nigeria. Using Vector Autoregressive (VAR) and Granger causality tests it is analyzed that in the short-run deficit financing and trade balances (surplus) possess positive relations while in the long run, the former diminishes the latter. It is suggested that deficit financing is a useful instrument for the government both in the short run as well as a long run and if there are effective policies regarding the proper management of deficit financing it can reduce the trade deficit in Nigeria in the long run.

Forte & Magazzino (2013), examined the association between the BD and deficit in trade in the case of European Countries. The evidence which supports the hypothesis regarding the persistent BD generating a trade deficit has been found and this proves the scheme that public liability creates a burden. The empirical results from the past and current values show the influence of the government budget on trade weight in the first sub-period.

Tufail et al. (2014), observed the relationship between the trade deficit and BD and found the long-run association between them. They estimated that a BD had a definite effect on the trade deficit by using the Johansen Co-Integration method. Trade openness, Real GDP, Exchange Rate, and Financial Development are the variables used in this study, and time series data from the period 1972-2011 is used. This study established that the BD, real GDP had a positive effect on the trade deficit. Contrary to this, exchange rates and financial development hurt the trade deficit. This study also recommended that financial development could play a part in reducing the trade deficit of the economy.

Ehlendawy (2014), stated that the noticeable BD of the Egyptian economy has affected the CA by creating imbalances. The researcher's findings show the presence of a long and short-run association linking the BD to the balance of payment component. The Granger causality test is used to find a significant counter-effect between the two types of deficits. The test also reveals the confirmation of the reverse hypothesis.

The twin deficit theory under Keynesian economy is stated as a fiscal deficit that will give rise to domestic absorption, and expansion of exports and hence increases trade deficit. On the contrary, the Ricardian hypothesis suggests that a rise in BD will urge people to save more due to anticipation of an increase in the tax rate in the future, and the shift in people's choice to consume less will have no impact on the real interest rate and trade deficit.

To empirically check the existence of the twin deficit hypothesis in the case of India monthly and quarterly data for the period 1998-2009 is taken, for this purpose applying bound testing and error correction model is used. The results show that the twin deficits hypothesis holds in the short run only supporting the Keynesian channel in the case of India (Ratha, 2012). In the case of Pakistan, to empirically investigate the validation of the twin deficit hypothesis annual time series data from the period 1972 to 2008 is used. The results of the cointegration test show the long-run relationship of BD and CAD and Granger causality results indicate uni-directional causality running from current account to fiscal deficit. Hence the twin deficit phenomenon also holds in the case of Pakistan (Saeed & Khan, 2012).

Ahmed et al. (2023) examined that governments fiscal interventions play a role in adaptations toward climate change and if urbanization is not supported by the government then it can reduce the adaptive capacity of the people. Iftikhar et al. suggested that the digital divide can reduce human capital and resultantly the decline in GDP. Reed et al. (2019) highlighted that CAs and BDs have an important impact on the reliability of any

country in paying off debts. The study determined a dynamic relationship between CA deficits, BDs, and the debt crisis of the Iranian economy. By using the Vector Autoregressive model (VAR) long-term relationship is analyzed between the BD and CA deficit in increasing the debt crisis. The major reason for the dependence of two variables is the underlying dependence of Iran on oil revenues. The study recommended that to reduce both types of deficit and to sustain its debt credibility authorities need to reduce its dependence on the current government and state budget on oil revenues. South Africa faces the issue of a persistent budget deficit which reduces the economic growth of the economy as well as an imbalance of the trade account. To examine the relation between two deficit time series data is used from 1994 to 2016. The autoregressive distributive lag method is used to test the cointegration and relationships between variables. The results confirm the existence of a positive and significant relationship between the two deficits in the short run. It is recommended that the policymaker should focus on reducing the two deficits taking into account the problem of rising inflation and increasing investment to achieve stable economic growth (Ncanywa & Letsoalo, 2019).

From the literature, many studies are conducted to investigate the relationship between the two deficits both empirically and theoretically. However, the findings of each study vary holding to examine the twin deficit hypothesis in the case of both developing and developed economies. In this context, the present study focuses on finding the relation between budget deficit and trade deficit and the existence of the twin deficit hypothesis in the case of Pakistan. In the literature, the studies conducted in the case of Pakistan (see for example, Tufail et al. (2014), Saeed & Khan (2011)) has used the past two decades of data to empirically evaluate the relationship between two deficit but the current study uses time series data for the past three decades from 1980 to 2021 to empirically investigate the association between two deficits and pointing out important macroeconomic variables that hampers this relationship in case of Pakistan.

3. Theoretical Framework

Ricardian equivalence with the Keynesian thesis is two significant methods for demonstrating the theoretical link between the deficit in the CA (trade deficit) and the deficit of budget. The CA position does not alter the BD, and taxes have a different but similar impact on saving, according to the Ricardian equivalence theory. Rational people would raise their savings in anticipation of an increase in taxes, which the government uses to cover the BD. They will boost their savings by an amount equal to the anticipated tax rate from their disposable income. Therefore, savings of an equal amount are used to balance increases in BDs. The deficit in the CA is unaffected by the BD (Marinheiro, 2008).

The Keynesian hypothesis anticipates a causal link between the deficit in trade as well as the BD. Rendering to the Keynesian hypothesis, a BD will boost domestic absorption. Imports will rise to close the production gap caused by increased aggregate demand since it is believed that domestic output will remain steady. The CA situation will deteriorate, and the trade imbalance will rise as a result of rising imports and falling exports. According to this claim, the deficit in the CA, as well as the BD, are directly related (Bagheri et al. 2012).

Mundell-Fleming framework (1996) extended the Keynesian proposition, that an increase in the BD will push the local rate of interest upward this in turn will cause capital inflows as imports seem to be cheaper which results in exchange rate appreciation, which would lead to an upsurge in deficit in the CA (Ogbonna, 2013).

3.1 Methodology

The theoretical link between the deficit in the CA as well as the BD is represented by national income accounts:

$$GDP= C+S+T= C+I+G+X-M$$

The condition for twin deficits to be identical can easily be found from the above identity:

$$S+T+M= I+G+X$$

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

Whereas X-M is the deficit in the Trade TD, (T-G) represents BD, and (S-I) represents Saving Deficit SD occurs when private investments exceed private savings in the private sector. From the above equation, the deficit in the CA can be described as the sum of the BD and the saving deficit.

3.2 Model Specification

The model used in this study followed the specific theoretical framework. From the empirical literature on the Ricardian equivalence hypothesis and Keynesian proposition, important variables are pointed out that affect the CA deficit (Onafowora & Owoye, 2006). Ricardian equivalence is an economic theory that suggests that the timing and composition of government spending do not affect aggregate demand and economic activity in the long run. The theory is named after David Ricardo, an economist who developed the theory of comparative advantage.

People choose to save and spend money based on their lifetime income rather than their current income, according to the Ricardian equivalence theory. To counterbalance the anticipated rise in future taxes needed to pay off the government debt, people will save more if the government increases expenditure and finances, by borrowing. As a result, there will be no impact on overall demand or economic activity from the rise in government expenditure. According to Ricardian equivalence, fiscal policy, including taxes and government expenditure, is unsuccessful at promoting economic development over the long run. The argument contends that monetary policy, which includes changing the money supply and interest rates, is a better instrument for regulating the economy. Ricardian equivalency opponents contend that people might not completely foresee their future tax obligations and might not change their saving and spending habits correspondingly. Furthermore, the theory makes the unfounded assumption that government expenditure has no significant impact on the economy, which is not always true, especially in the short run.

$$CAD_t = \alpha_1 + \alpha_2 BD_t + \alpha_3 WIR_t + \alpha_4 MON_t + \alpha_5 REER_t + \alpha_6 TO_t + e_{1t}$$

WIR is the weighted interest rate on deposits and is taken as a proxy of real interest rate, MON is broad money supply, REER is the real effective exchange rate and TO is trade openness.

3.3 Data Description

This is time-based research and the data used in the study is gathered from secondary sources i.e., the Economic Survey of Pakistan, the World Bank, and the State Bank of Pakistan for the period 1980-2021. Data on variable Current Account Deficit (CAD) is sourced from the World Development Indicator and expressed as a percentage of GDP. The budget balances of the country show its financial health. The data on BD is also taken as a percentage of GDP from the Economic Survey of Pakistan for 42 years.

The weighted interest rate on deposits is taken as a proxy for the real interest rate. The data for WIR is in percentage and taken from the State Bank of Pakistan annual report. Broad money (MON) is another variable that is taken as a measure of the supply of money that signifies the number of liquid assets in the economy. The Real Effective Exchange Rate (REER) determines the estimate of a currency versus a weighted average of other foreign currencies. An increase in REER implies that imports are cheaper and exports become expensive. The trade openness (TR) index is the trade share calculated as the ratio of exports and imports to GDP. The data for Broad money (MON), REER, and TR are taken from World Development Indicator (WDI).

4. Results and Discussions

This section will discuss empirical results and findings by applying econometric techniques.

4.1 Unit Root Test

To test the stationarity of the given data unit root assessment is used. Based on the integrated level of variables, an appropriate technique is decided. Table 1 shows the stationarity of variables at first difference. The CA deficit (CAD) is stationary at first difference with an ADF value of -5.990514 which is less than the critical value of -2.934247. The BD is also stationary at first difference with ADF statistics -7.528501 being less than

the critical value at a 5% level of significance i.e., -2.943427. Similarly, the weighted interest rate is stationary at first difference with ADF statistics value at -5.322470 less than critical value -3.621023.

Table 1: Results of the Unit Root test

Variables	ADF statistics	Critical values	Probability	Stationarity
WIR	-5.322470	-2.610263	0.0001	I (1)
CAD	-5.990514	-2.934247	0.0000	I (1)
BD	-7.528501	-2.943427	0.0000	I (1)
MON	-5.330327	-3.621023	0.0001	I (1)
REER	-7.199567	-3.536601	0.0000	I (1)
TO	-7.596498	-3.200320	0.0000	I (1)

Source: Authors' calculations

4.2 VAR lag order selection criteria

Table 2: VAR results

Order of lag	AIC	SC
0	31.82405	32.09068
1	26.27474	28.14115*
2	26.73778	30.20398
3	26.65815	31.72414
4	24.84447*	31.51024

Source: Authors' calculations

Other variables real effective exchange rate, Money supply, and Trade openness are also stationary at first difference with ADF statistics value -5.330327, -7.199567, and -7.596498 less than critical value i.e., -3.621023, -3.536601 and -3.200320 (table 2). The lag length selection for the cointegration test is based on the minimum value of AIC (Akaike information criteria). Here, the minimum AIC is at lag 4 and therefore selected for the cointegration analysis to determine the presence of the long-run association between variables.

4.3 Johansen Cointegration Test:

To test the long-run association between variables Johansen Cointegration technique is used. It follows the Max eigenvalue test and the Trace test. These two tests are used to find out whether that long-run relationship exists or not.

Table 3: Trace test results

No. of CEs	Eigenvalue	Trace statistics	Critical value	Probability
None*	0.747831	121.4007	95.75366	0.0003
At most 1*	0.665536	74.56046	69.81889	0.0199
At most 2	0.412074	37.32281	47.85613	0.3325
At most 3	0.262971	19.26358	29.79707	0.4741
At most 4	0.188219	8.889283	15.49471	0.3757
At most 5	0.051549	1.799459	3.841466	0.1798

Source: Authors' calculations

Table 3 demonstrates the result of the trace test which shows the rejection of the null hypothesis (existence of no long-run relationship) at a 5% level of significance. The trace statistics value i.e., 121.4007 is greater than the critical value 95.75366 with a probability value of 0.0003 which indicates the rejection of the none* hypothesis. Second trace statistics i.e., 74.56046 is also greater than the critical value i.e., 69.81889 with a probability value of 0.0199 which indicates the rejection of at most 1* hypothesis. The results of the trace test indicate the presence of 2 cointegration equations.

Table 4 shows the results of the Max-Eigen value test which also indicates the existence of two cointegration equations. On the other hand, the Max-Eigen value test indicates rejection of the null hypothesis at a 5 % level of significance which means that there exists a long-run association between variables.

Table 4: Rank test (Maximum Eigenvalue)

No. of CEs	Eigenvalue	Max-Eigen Statistics	Critical value	Probability
None*	0.747831	46.84024	40.07757	0.0075
At most 1*	0.665536	37.23765	33.87687	0.0191
At most 2	0.412074	18.05923	27.58434	0.4902
At most 3	0.26297	10.37429	21.13162	0.7089
At most 4	0.188219	7.089824	14.2646	0.4786
At most 5	0.051549	1.799459	3.841466	0.1798

Source: Authors' calculations

Table 5 shows the long-term significance of each independent variable's effect on the dependent variable. According to the positive sign of the BD coefficient, a 1% rise in the BD will, ceteris paribus, result in an average long-term increase in the CA deficit of 0.22716%. According to the coefficient of weighted interest rate, a 1% increase in interest rates would, ceteris paribus, cause an average long-term increase in the CA deficit of 1.160233%.

Table 5: Coefficient of the cointegration equation

Variables	Coefficients	Standard Errors	t-values
BD	0.13459	0.06934	3.3890
WIR	1.23950	0.14316	8.10451
MON	-0.17428	-0.02647	-6.05519
REER	0.0125	0.00321	3.88845
TO	0.598961	0.07181	5.97348

Source: Authors' calculations

In Table 5, the value of the coefficients of the cointegration equation is given. The wide money coefficient was negative, indicating that a 1% increase in the money supply would, result in a long-term reduction in the CA deficit of 0.17483% on average, ceteris paribus. The coefficient of trade openness has a positive sign, meaning that over the long term, a 1% increase in trade openness would, result in an average rise in the CA deficit of 0.598961%, ceteris paribus.

4.4 Vector Error Correction Model (VECM):

This test is conducted to establish a short-run link among variables and to test whether the diversion from the mean in the short run diverges toward the mean in the long run. The cointegration equation depicted the value of a coefficient less than 0. This suggests that any deviation in long-run equilibrium will be corrected.

Table 6: Vector Error Correction results

Variables	Coefficients	Standard Errors	t-value
CAD	0.359234	0.17699	1.6578
BD	-0.45678	0.29196	-2.46571
WIR	-0.67890	0.21302	-2.75476
MON	-0.32567	0.1362	-2.35980
REER	0.307705	0.15833	1.94344
TO	0.472776	0.17064	1.77065
EC	-0.62567	0.20987	3.5032

Source: Authors' calculations

The adjustment coefficient of EC means other things held constant in the previous period deviancy from long-run balance is corrected in the present period at an adjustment speed of 62.5% (table 6).

From the results above, policymakers must strike a balance between short-term adjustments and long-term structural reforms to address twin deficits effectively. The specific policy mix will depend on Pakistan's unique circumstances and objectives, taking into account factors such as the level of debt, inflation, exchange rate regime, and external economic conditions. Overall, the twin deficit presents challenges that require careful policy management to achieve fiscal and external sustainability, promote economic growth, and maintain stability in the economy.

4. Conclusions and Policy Implications

The relationship between BD and CAD is complex and not always straightforward. A budget deficit can lead to a trade deficit if the government borrows to finance its spending, including imports of goods and services. Conversely, a budget surplus can lead to a trade surplus if the government uses the excess funds to invest in export industries or reduce its reliance on imports. In this regard, the main objective of the study is to examine the relationship between budget and trade deficit. For this purpose, time series data is used from 1980 to 2021 for Pakistan. Johansen's co-integration test is applied to investigate the long-run relationship between variables; the result of the cointegration test shows the existence of a long-run association between the two deficits. The results of the Vector Error correction model (VECM) represent the convergence of variables from the short run to the long run. Although the relation between variables is not significant in the short run, based on the empirical results of the study, the twin deficit hypothesis holds only in the long run in the case of Pakistan validating the Keynesian theory that fiscal deficit rises domestic absorption, increasing interest rate and foreign investment which will result in an expansion of trade deficit. Hence, the results also indicate the rejection of the Ricardian equivalence hypothesis in the case of Pakistan. It is therefore suggested that such policies should be designed to make our exports more attractive in the foreign market and necessary measures should be taken to reduce the dependence on imports. The government should focus more on revenue collection through direct taxation and reduce the irrelevant current cost of spending. However, to implement all these measures and policies effectively a stable political situation of the country is also required.

To address the fiscal deficit component of the twin deficit, policymakers may need to implement fiscal consolidation measures. These measures could include reducing government spending, increasing taxes, or a combination of both. The aim is to improve the government's fiscal position by reducing the deficit, which can help stabilize the economy and restore market confidence. Addressing a twin deficit often requires structural reforms to boost the competitiveness of the economy. This can involve measures to enhance productivity, promote investments, and improve the business environment. By increasing competitiveness, countries can boost exports and reduce the current account deficit. A twin deficit may put pressure on the country's currency. In some cases, policymakers may consider allowing the currency to depreciate to improve export competitiveness and reduce the current account deficit. However, this approach can have implications for inflation and borrowing costs, and it needs to be managed carefully. To reduce the current account deficit, policymakers may implement measures to promote exports. This can include providing incentives for export-oriented industries, improving trade infrastructure, negotiating trade agreements, and focusing on diversifying export markets. Encouraging export growth can help narrow the trade imbalance and improve the overall balance of payments. To reduce imports, policymakers may also consider promoting import substitution industries. This involves supporting the domestic production of goods that are currently being imported. By substituting imports with domestically produced goods, the country can reduce its dependence on foreign products and lower the current account deficit. Policies that attract foreign direct investment can help finance the current account deficit by bringing in capital inflows. Creating an attractive investment climate, offering incentives for foreign investors, and removing barriers to FDI can encourage capital inflows and help offset the current account deficit.

Acknowledgments
The authors acknowledge the useful comments from the Editor and anonymous reviewers. Certainly, all remaining errors are our own.

Data Availability Statement
The data that support the findings of this study are available from the corresponding author upon reasonable request.

Disclosure statement
No potential conflict of interest was reported by the author(s).

Funding if any
Nil

References

Abbassi, E., Baseri, B., & Alavi, S. S. (2015). The effect of budget deficit on current account deficit: Evidence from Iran. *Journal of Economics and Sustainable Development, ISSN*, 2222-1700, 6(14), 183-189.

Ahmed, N., Padda, I. U. H., Khan, A., Otil, M. D., Cismas, L. M., Miculescu, A., & Rehman, A. (2023). Climate change adaption strategies in urban communities: new evidence from Islamabad, Pakistan. *Environmental Science and Pollution Research*, 1-14.

Andlib, Z., Khan, A., & Padda, I. U. H. (2012). The coordination of fiscal and monetary policies in Pakistan: an empirical analysis 1980–2011. *The Pakistan Development Review*, 695-704.

Anoruo, E., & Ramchander, S. (1998). Current account and fiscal deficits: Evidence from five developing economies of Asia. *Journal of Asian Economics*, *9*(3), 487-501.

Aqeel, A., Nishat, M., & Qayyum, A. (2000). The twin deficits phenomenon: Evidence from Pakistan [with comments]. *The Pakistan Development Review*, 535-550.

Bagheri, F., & Keshtkaran, S. (2012). Testing for twin deficits and Ricardian equivalence hypotheses: Evidence from Iran. *Journal of Social and Development Sciences*, *3*(3), 77-84.

Banday, U. J., & Aneja, R. (2019). Twin deficit hypothesis and reverse causality: a case study of China. *Palgrave Communications*, *5*(1), 1-10.

Bernheim, B. D. (1987). Ricardian Equivalence: An evaluation of theory and evidence. *NBER Macroeconomics Annual*, *2*, 263-304. doi:https://doi.org/10.1086/ma.2.4623723

Ehlendawy, E. O. (2014, February 25). The relationship between budget deficit and current account deficit in Egypt. *Internal Journal of Economics and Finance, 6*(3). doi:10.5539/ijef.v6n3p169

Forte, F., & Magazzino, C. (2013, August). Twin deficit in European countries. *International Advances in Economics Research, 19*(3), 289-310.

Gebremariam, T. K. (2018). The effect of budget deficit on current account deficit in Ethiopia: investigating the twin deficits hypothesis. *International Journal of Economic and Management Science*, *7*(4), 1-6.

Iftikhar, A., Ahmed, N., & Shah, S. U. M. (2023). Analyzing digital divide among university students of Pakistan. *Turkish Online Journal of Distance Education*, *24*(2), 261-271.

Kim, S., & Roubini, N. (2008). Twin deficit or twin divergence? Fiscal policy, current account, and real exchange rate in the US. *Journal of International Economics*, *74*(2), 362-383.

Marashdeh, H., & Saleh, A. S. (2006, April). Revisiting budget and trade deficit in Lebanon: A critique. *Working Paper 06-07*.

Marinheiro, C. F. (2008). Ricardian equivalence, twin deficits, and the Feldstein–Horioka puzzle in Egypt. *Journal of Policy Modeling*, *30*(6), 1041-1056.

Mukhtar, T., Zakaria, M., & Ahmed, M. (2007). An empirical investigation for the twin deficits hypothesis in Pakistan. *Journal of Economic Cooperation*, *28*(4), 63-80.

Ncanywa, T., & Letsoalo, T. E. (2019). Which among the twin deficits hypothesis, twin divergence, and Ricardian's equivalence hold in a developing country? *Journal of Public Affairs*, *19*(2), e1904.

Ogbonna, B. C. (2013). Twin deficits or Ricardian equivalence hypothesis: Evidence from Nigeria. *Journal of Banking*, *7*(1), 1-48.

Onafowora, O. A., & Owoye, O. (2006). An empirical investigation of budget and trade deficits: The case of Nigeria. *The Journal of Developing Areas, 39*(2), 153-174. Retrieved from https://www.jstor.org/stable/4193009

Padda, I. U. H. (2014). On minimizing the welfare cost of fiscal policy: evidence from South Asia. *Quality & Quantity*, *48*(3), 1553-1572.

Ratha, A. (2012). Twin deficits or distant cousins? Evidence from India1. *South Asia Economic Journal*, *13*(1), 51-68.

Reed, M., Najarzadeh, R., & Sadati, S. Z. (2019). Analyzing the relationship between budget deficit, current account deficit, and government debt sustainability. *Journal of WEI Business and Economics*, *8*(1), 20-31.

Saeed, S., & Khan, M. A. (2012). Twin deficits hypothesis: The case of Pakistan 1972-2008. *Academic Research International*, *3*(2), 155.

Safdar, F., & Padda, I. U. H. (2017). Impact of institutions on budget deficit: the case of Pakistan. *NUML International Journal of Business & Management*, *12*(1), 77-88.

Sunday, O. A. (2013). Deficit financing and trade balance in Nigeria. *International journal of accounting research*, *42*(827), 1-6.

Tufail, M. K., Anwar, S., Raza, S. H., & Abbas, K. (2014). Effect of budget deficit on trade deficit in Pakistan (a time series analysis). *Journal of Finance and Economics*, *2*(5), 145-148.