

## *Original Paper*

# The Effect of Real Exchange Rate on Current Account

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### **Abstract**

*This research studies the impact of real Gross Domestic Production (GDP) and real exchange rate on the Current Account position in Jordan, during the quarterly periods from 2008 to 2022. The study reviews the literature on the theoretical framework around the impact of real GDP and fluctuations of the real exchange rate on the current account status. This study describes the performance of the current account during the study period and applies the appropriate econometric tests to an economic model. The main results show a significant, positive effect of real GDP growth in improving the status and sustainability of the current account; output growth indicates an increase in production leading to higher levels of exports and lower levels of imports. The results did not show a significant effect of the real exchange rate on the current account position, which is largely attributed to the stabilization policy of exchange rate pursued by the Central Bank of Jordan since October 1995.*

### **Keywords**

*real exchange rate, current account, Real GDP, trade deficit*

**JEL:** C32, E52, E58, E60

### **1. Introduction**

Current account balances are important measures for the state of the economy. Fiscal and monetary policymakers, investors, and international financial institutions observe closely the development of a country's current balances. Current accounts are first-rate indicators of a country's economic performance. Current account balances express the strength and the weakness of the external transaction position of the country. Large and persistent current account deficits represent an economic problem suffered by many countries. Solving this problem requires an appropriate response and reaction from the economic policymakers.

Current account balances often suffer from temporary imbalances. These temporary and short-term

imbalances usually happen because of the inflow and outflow of factors of production, especially capital. Generally, factors of production tend to have different return rates in different countries. Even if we assume factors such as the degree of risk and the degree of liquidity are constant, the temporary imbalances in the current account could be attributed to laws that provide tax benefits or to new opportunities in natural resources that attract investment. Imbalances may also arise due to a sharp decline in export prices as a result of a collapse in the demand for the local product designated for export. In cases where a particular product has the largest proportion of total exports, the country relies completely on this product to achieve balance in the current account. The large export value of that product is expected to cover the various imports of the country from abroad.

The tendency of the current account to continue in a permanent deficit will lead major economic problems in the future. This deficit may force the policymakers to adopt strict economic policies that may not be compatible with the nature of the economy or the nature of the society. A large and permanent deficit may lead to a decline in the value of the local currency and a rise in inflation rates. This may cause an increase in the volume of imports as a result of price differences between local and foreign products, which means increases in the trade balance deficit and the current account deficit. So, the problem gets bigger and bigger, and it becomes increasingly difficult to solve. To solve the problem, the monetary authorities may be forced to raise interest rates to protect the local currency. This measure may lead to a reduction in the ability of individuals and companies to borrow to meet their consumption and investment purposes.

This paper will study the impact of real GDP and the real exchange rate on the current account position in Jordan during the quarterly period extending from 2008 to 2022. Accordingly, the rest of this paper proceeds in the following order. Section 2 presents the literature review. Section 3 briefly explains the development of the current account in Jordan. Section 4 presents the methodology and the empirical results. Finally, section 5 gives the conclusion of the study.

## **2. Literature Review**

The following section presents a brief discussion of the literature that is related to the determinants of current account balances, especially exchange rate. Almohaisen (2015) examined the impact of the volatility of the real exchange rate on trade balance in Jordan for the quarterly period (1997 - 2013). Almohaisen's methodology uses the Autoregressive Conditional Heteroscedasticity (ARCH) model and the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model. The results show a negative effect of real exchange rate volatility on imports and exports, while the effect was positive on real GDP.

Ibrahim (2022) studies a number of determinants and the sustainability of the current account in Egypt during the period from 1974 to 2019. Ibrahim includes economic growth rate, budget deficit to output, trade to output, and real exchange rate variables. The study applies cointegration tests, after examining the stationarity of the variables. The null hypothesis that there is no cointegration relationship between

the study variables is rejected. The results of the Error Correction Model (ECM) also indicate that there is a long-term relationship between the variables.

Morsy (2009) examines the main determinants of the current account for a huge sample of oil-exporting countries, using panel data method of estimation. The results show that fiscal position and oil revenues are the main determinants of equilibrium in the current account.

Ozata (2020) examines the effect of exchange rate on economic growth in Turkey for the quarterly period 1998 – 2019, using the Autoregressive Distributed Lag (ARDL) Model. The findings of the applied model show that the volatility of the exchange rate is statistically significantly negatively affecting economic growth in Turkey. Ozata concludes that reducing the volatility of the exchange rate becomes a necessity to ensure higher levels of growth.

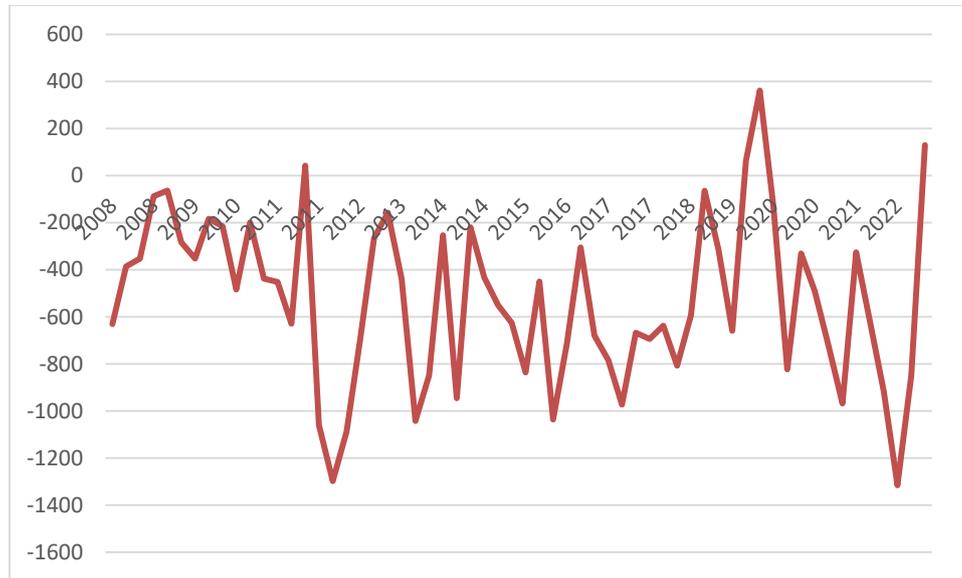
Saqib (2013) analyzes the relationship between exchange rate and trade surplus in Saudi Arabia for the time period from 1980 to 2008. Saqib uses the Engel Granger cointegration test. The results show a significant long run relationship between the two variables but no significant relationship in the short-run.

Sweidan (2013) examines the effect of exchange rate on trade balance in Jordan for the period 1976 – 2009. Using the bounds testing approach and the error correction model, the results show that the effect of exchange rate on exports and imports is significant in the short-run but not in the long-run.

### **3. Development of the Current Account in Jordan**

The current account balance is a compilation of the balances of the following sub-accounts: goods balance, services balance, income account, capital account, and financial account. The most important sub-account is the goods balance that includes import and export transactions. The services balance primarily includes the following accounts: transport, travel, insurance and pension services, financial services, telecommunications, computer and information services. The income account includes the two main components of employees' compensation and workers' remittances. The capital and financial accounts incorporate transactions such as: the direct investment, portfolio investment, financial derivatives, and loans.

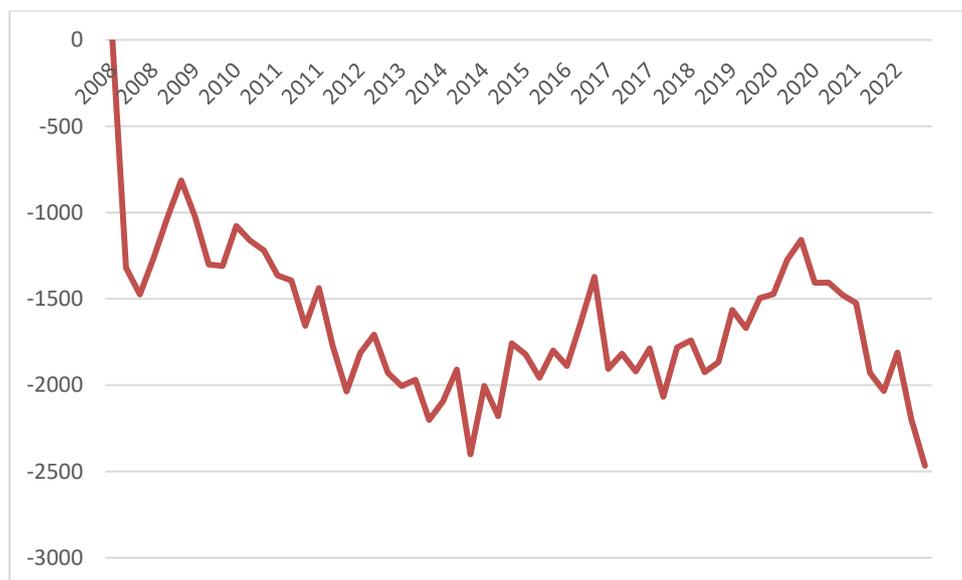
When we analyze the development of the current account for the quarterly period from 2008 to 2022 (Figure 1), we find that the current account held deficits in about 93% of the quarters during that period. Only 4 quarters out of the 60 recorded surpluses. The biggest deficit occurred in the second quarter of 2022, with a deficit value of 1316 Jordanian Dinar (JD). On the other end of the spectrum, the highest surplus occurred in the fourth quarter of 2019, with a value of 362 JD.



**Figure 1. Current Account for the Period 2008-2022 (million JD)**

Sources: Central Bank of Jordan monthly bulletin.

The main reason for the lasting and large deficits in the current account may largely be attributed to the persistent deficit in the trade balance, which shows large deficits during all of the study period. The data in Figure 2 show that the largest deficit in the trade balance, 2467.4 JD, occurred at the same as the highest deficit in the current account.



**Figure 2. Trade Balance for the period 2008-2022 (million JD)**

Sources: Central Bank of Jordan monthly bulletin.

#### 4. Methodology and Empirical Results

This study uses quarterly data, for the period of 2008 to 2022, to analyze the effect of the real exchange rate on the current account balance in Jordan. A number of independent variables are included in the model to control for the total effect on the current account balance. The variables are: real GDP, trade balance, investment, and real exchange rate. Data on these variables are collected from the official website of the Central Bank of Jordan ([www.cbj.gov.jo](http://www.cbj.gov.jo)). The general form of the model is shown in Equation (1).

$$CA = f(RGDPG, RERV, TD) \quad (1)$$

CA is the current account as a percentage of Gross Domestic Production (GDP), TD is the deficit of the trade balance as a percentage of GDP, RGDPG is the growth rate of real GDP, and RERV is the volatility in the real exchange rate measured as the percentage change in the variable itself.

The empirical model is estimated using equation 2 that includes the lag of the dependent variable (*CA*lag).

$$CA_t = a_0 + a_1 CA_{lag_t} + a_2 RERV_t + a_3 RGDPG_t + a_4 TD_t + e_t \quad (2)$$

The next step is implemented to determine if the variables are nonstationary on their levels. Specifically, we are interested in knowing if the variables are cointegrated and if a long-term relationship exists among them. If the variables are found to be stationary at their levels, then there is no need to apply the cointegration test, and the Ordinary Least Square (OLS) method is applicable (Seddighi, Lawler, & Katos, 2000).

To test for stationarity of the data, the Augmented Dickey Fuller (ADF) test is used (Dickey & Fuller, 1979). If the variables are stationary at the level, then the OLS method will be sufficient for estimation. However, if the variables are not stationary at the first difference, then the cointegration test would be considered.

**Table 1. Unit Root Test Results**

Variables	Augmented Dickey Fuller (ADF) Test (at level)			
	t-statistic	Critical value (5%)	Critical value (10%)	Stationary (Yes/No)
<i>Current Account Balance (CA)</i>	-5.1086	-3.4878	-3.1723	Yes
<i>Real Exchange Rate Volatility (RERV)</i>	-7.0724	-3.4907	-3.1739	Yes
<i>Growth Rate of Real GCP (RGDPG)</i>	-3.3674	-3.4937	-3.1757	Yes
<i>Trade Balance Deficit (TB)</i>	-3.664	-3.4878	-3.1723	Yes

The results of the unit root test (Table 1) show that all variables of interest are stationary at the level. Accordingly, it is acceptable to apply the OLS method on the empirical model. Table 2 shows the results of the empirical model from equation 2.

**Table 2. The Results of the Empirical Model**

Variables	Coefficient	t-Statistic
Constant	0.4331*	1.8986
<i>Current Account Balance lag (CA<sub>lag</sub>)</i>	0.2694*	1.8712
<i>Real Exchange Rate Volatility (RERV)</i>	-0.0072	-1.0674
<i>Growth Rate of Real GCP (RGDPG)</i>	0.0002	0.2158
<i>Trade Balance Deficit (TB)</i>	-0.0666**	-2.1281

\*\*\*, \*\*, \* mean significant at 1%, 5%, 10%, respectively.

The coefficient of the real exchange rate has an unexpected sign. However, the p-value of that estimate is statistically insignificant. The statistical insignificance is inconsistent with the findings of Almohaisen (2015), who found that depreciation in the real exchange rate will improve the performance of the economy. However, this result is consistent with the findings of Sweidan (2013). Sweidan found no effect of the real exchange rate on the economy, specifically on exports and imports, in the long run for the Jordanian economy.

The effect of the real GDP on the economy shows a positive sign, as expected. We anticipate that a stronger level of the economy will enhance the position of the current account, and the balance of payments, generally. The strong economy means higher levels of production. Higher production leads to more exports and fewer imports, and that trade surplus puts the current account in a better position.

The main component of the current account, trade balance, shows that an increase in the trade deficit will worsen the position of the current account. On the other hand, a decrease in the trade balance will improve the current account situation. This result is logical, and it is significant at 5% level.

## 5. Conclusion

This research paper studies the effect of the real exchange rate, and other exogenous variables, on the current account in Jordan for the quarterly period from 2008 to 2022. The methodology tests for the unit root. The unit root test verified that the OLS technique is an appropriate method of estimation. The unexpected result of the paper shows that real exchange rate is not a main factor in determining the position of the current account, which is consistent with Sweidan (2013). We mainly attribute this result to the constant nominal exchange rate. This variable is the main component of the real exchange rate equation. The nominal exchange rate is fixed the whole period of the study by a policy of the Central Bank of Jordan. This policy made the real exchange rate series very stable with little variability, causing its effect on the current account balance to be minor compared to the impact of the other variables.

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