

## Modelling the determinants and Sustainability of Current Account of Pakistan

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**Abstract:** *The study investigated the determinants of the current account deficit from 1976 to 2020 for the economy of Pakistan, and its sustainability. The persistent deficit is necessary to be sustainable if it will be paid off shortly otherwise it will pile up external debt. The conventional methodology concluded that current account deficit (CAD) of Pakistan is unsustainable, albeit one measure suggests sustainability. There is cointegration among variables and domestic saving, external debt, fiscal deficit and trade deficit has positive whereas exchange rate and worker's remittances have a negative relation with the current account, all the results are significant. The negative sign of the error correction term confirms restoration of equilibrium and it is also significant. Bidirectional causality is reported between the worker's remittances, exchange rate and external debt with CAD. Unidirectional causality is seen from CAD to trade deficit and fiscal deficit. The diagnostic tests of the model confirm robustness. The government should favour an investment-friendly environment to increase economic activity in the country besides improving domestic savings and reducing the external deficit.*

**Keywords:** Current Account; Fiscal Deficit; Sustainability; Time-Series; Pakistan

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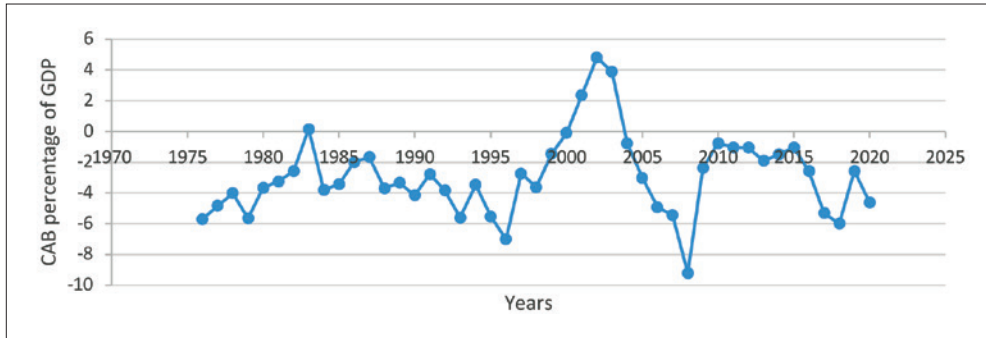
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## Introduction

Growing current account deficit (CAD) is considered precarious for an economy, especially when its persistent deficit situation calls for its sustainability, for this reason, the current account can be a major hurdle for the economic development of a country (Jawaid & Raza, 2013). In an open economy, which mostly relies on foreign funds, in this instance, such a dramatic change in foreign investors' response to investment in the local economy can create many challenges (Javid et al., 2010). Due to this scenario, it is of utmost importance to identify those factors which can explain this complex behaviour of the CAD. Generally, many theoretical models explain this phenomenon and empirical studies have also underlined several factors being responsible. The national accounting identity is considered the primary source of understanding the current account as it shows the difference between savings and investment. This research study aims to construct such a model which can explain and predict the factors responsible for changes in the CAD for the economy of Pakistan. The government has changed policies from time to time depending on the sector-specific preference of the political party in power, some favoured agricultural led growth while others prioritize the industrial policies, even the economy experienced martial law for a substantial time. In most of the times under consideration, Pakistan experienced many policy shifts that badly affected not only domestic indicators but also international trade as well. The continuous growth of CAD gave rise to measuring its external sustainability.

In addition, the study also discusses various measures to address the issue of current account sustainability, for this some measures have been adopted to access sustainability. The current account is the main economic indicator and has been in deficit due to excessive imports, many factors are responsible for the persistent deficit, the trade balance being its component also remain in deficit. The heavy reliance on imports and slow growth in exports is the cause of the trade deficit. A large amount of foreign exchange is spent on the oil import alone which is indispensable for the industrial and production needs. Exports were low in quality and mainly composed of primary or low valued goods so they could not compete with imports. Pakistan's exports are concentrated on a few item groups and the direction of trade is also limited to a few countries. Historically, the current account balance as a percentage of GDP showed a positive balance in 1983 at 0.15 and the second time it stood at an average of 3.69, from 2001 to 2003; and remained in deficit for the remaining period. This trend shows that the current account has remained in deficit almost the entire period under study, this is depicted in Figure 1.

Figure 1: Current account Balance of Pakistan



Note: CAB refers to the current account balance

Source: Author's construction

On the fiscal side, the progress has not been satisfactory the government expenditures exceed revenue most of the time, so the country suffers from a budget deficit also, both these deficits raised the phenomena of twin deficit. Pakistan relied on aid and borrowing from internal or external sources to cover its fiscal deficit. Depreciation of currency increase imports and decrease exports, despite continuously depreciating exchange rate the country could not get higher exports because of low-income elastic goods in nature. The Pakistani emigrants working abroad send remittances and the country received a substantial amount from this source. The sluggish position of remittances is due to slow business activities in the host countries. Recently State Bank of Pakistan has taken vital measures to ease the process of sending money from abroad to home destinations through Pakistan Remittance Initiatives (PRI). Pakistan has gained a substantial amount of remittances from Gulf countries and the United Kingdom.

Section 2 of the paper presents theoretical as well as empirical studies on the current account. Section 3 addresses the issue of its sustainability, the modelling framework has been presented in section 4. Section 5 comprises empirical findings of the proposed model and finally, section 6 concludes with policy recommendations.

## Literature Review

The current account is described by the inter-temporal approach for the open economy (Sachs, 1983) and (Obstfeld & Rogoff, 1995). It is also explained by the Ricardian equivalence proposition (Barro, 1989) and subsequently by the Mundell Fleming model (Mundell, 1963). The Mundell-Fleming model says that fiscal deficit induces current account imbalances (Bahmani-Oskooee, 1992). Whereas the proponents of

the Ricardian equivalence stress that the changes in (lump-sum) tax collections are the ultimate cause of fiscal deficit which in turn raise the CAD. (Kim, 1995).

According to the Mundell-Fleming model deficit in the fiscal side is transmitted to the current account through appreciation of exchange rate and rising interest rate. In the same manner, Keynesian absorption theory suggests internal absorption is the cause of such external account imbalances (Baharumshah & Lau, 2007). The saving-investment approach advocates the equivalence between national investment and savings level, the savings gap will compel the economy to import more (Faruqee & DeBelle, 1996). Excessive imports deteriorate the trade balance and, in turn, converts the current account into a deficit, the depreciation of the exchange rate can help the current account into a favourable position (Ang & Sek, 2011).

(Rajakaruna & Suardi, 2021), analysed twin deficits for the South Asian economies for 50 years' data by using panel vector autoregressive model. They concluded that mutual causations were found in contrast to previous studies which reported unidirectional causality from fiscal deficit to current account deficit. External imbalance deteriorated the internal balance, fiscal deficit also deteriorates economic growth in regional economies. Hence, fiscal policy is not the sole reason to correct such imbalances, economic managers should find another policy mix as the remedial measures. (Mukhtar et al., 2021), analysed the twin deficits for Pakistan, although it has been under literary debate for a long time. However, they have re-examined this phenomenon with the nonlinear autoregressive distributed lag model from 1980 to 2018 and conclude that budget balance has an asymmetric impact on the current account balance. This result is true for short and long run, the study suggested that improvement in one balance will be reflected in other and this is evident by prudent fiscal policy management.

The debate about current account imbalances has got importance over time, it is regarded as an important indicator of economic performance from the external side. (Jawaid & Raza, 2013), tried to find out the determinants of the current account from 1976-2010 of Pakistan economy. there has been a long time in which it has been in deficit due to low exports along with the low price in the international market and at the same time, high import bill reflects the economy is consumption-oriented. Their findings suggest that savings should increase however, the government had better take cautious steps while financing its fiscal deficit.

(Ang & Sek, 2012) analysed current account with the help of absorption approach, for the four Asian economies. Their focus was the deficit that occurred during the 1997-98 pre and post-financial crisis. Mainly they targeted those countries that adopted the floating exchange rate regime and inflation addressed policies. The result of GMM from 1973 to 2010 for the quarterly data of Thailand, the Philippines, Korea, and Indonesia showed differential impact due to frequent changes in policies. (Sek & Chuah, 2011), analysed current account concerning changes in exchange rate regimes from 1980Q1 to 2010Q4 for Thailand, Malaysia, Singapore, Korea, and the

Philippines. They reveal that the current account is not affected due to changes in the exchange rate regime in the post-crisis. The exchange rate fluctuations have affected so they have changed their policies to reduce the impact on their current accounts.

(Sohrabji, 2010) analysed the sustainability of the current account from 1980 to 2006. In attaining sustainability, it is proposed that exports and imports should be related in the long run, whereas he has satisfied this condition for the case of the Indian economy. This analysis focused on post 1991 financial crisis, and inflows and outflows of current accounts have proved to be sustainable. (Javid et al., 2010) analysed current account concerning changes in the fiscal policy, the study is carried out from 1960 to 2009. They used Vector autoregression (VAR) and concluded that expansionary fiscal measures improve current accounts and the exchange rate depreciates. Their findings are in contradiction with the theoretical base like fiscal deficit and current account both are negatively related and this depreciates exchange rate.

(Ouml et al., 2011) analysed the sustainability of the Turkish economy's current account from January 2000 to June 2010. They used the autoregressive distributed lag model and concluded that it is not sustainable due to the imbalance between exports and imports of the country, the economy has adopted the intertemporal budget constraint for such an analysis. In addition, (Tiwari, 2013) found out sustainability of trade balances of Thailand, Myanmar, Indonesia, the Philippines and Malaysia. The findings of this study also endorse the long run relation between imports and exports for the said countries.

The current account is analysed for the economy of Pakistan but with old data set like set and the analysis was limited to merely finding the determinants like studies include (Javid et al., 2010) and (Jawaid & Raza, 2013). However, they have ignored the issue of sustainability. This study fills this gap with an expanded and updated data set.

## Sustainability of Current Account

The growing CAD is the point of major concern; it is less worrisome when it is used to finance the investment gap. In that sense, this deficit can be allowed to persist until the growth rate of the economy is rising at the same pace in the long run. If the main reason for the CAD is to finance consumption rather than investment, it will end up with rising accumulated external debt. A CAD in the present time is considered favourable if it will pay off its deficit from rising income. The persistent CAD raises the question of its sustainability in the long run which is the centre point among academia and policymakers. Conventional knowledge suggests that the rising CAD could be the cause of currency or macroeconomic crisis, however, it needs to be assessed. There are some criteria for checking its sustainability.

**The Current Account Deficit to GDP:** There is a simple way to find sustainability of the current account with the help of taking its ratio to GDP and this ratio

depicts the expenditure in the production both domestically and internationally to GDP. (Mann, 1999) sets a benchmark of sustainability that this ratio should not cross 4.2 per cent otherwise, CAD is unsustainable. In the case of Pakistan, the current account as a percentage of GDP has crossed the benchmark of 4.2 per cent many times, recently in 2007, 2017 and 2018 stood at 5.45, 5.31 and 6 per cent respectively. Hence Pakistan's current account is unsustainable, it will pile up the external debt if it will not be addressed correctly. (Kenen, 1995) suggest that if the CAD as a percentage of GDP crosses the 5 per cent benchmark then it calls for the issue of its sustainability.

The sustainability of the CAD can be analysed with three approaches, accounting approach, structural assessment of indicators and lastly Inter-temporal. First is the accounting approach which postulates a debt to GDP ratio, and when this ratio maintains a constant percentage of exports to GDP only then it is concluded that the CAD is sustainable (Hudson & Stennett, 2003). It is suggested that according to this approach the growth of the deficit should be lower than the growth in GDP or exports. The accounting approach, focus on sustainability from the debt accumulation perspective.

**Net International Debt to GDP:** There is an alternative way to assess the sustainability of the CAD, that is of accumulation of the CAD over time. When an economy experience deficit in its current account, it will pile up a huge amount of international obligations in the kind of debt and this rising debt losses foreign investors' confidence to undertake future contracts. This can be accompanied by rising interest rates or depreciation of the currency to finance its international debt. (Holman, 2001) suggests an unsustainable position of the external sector (current account) when any country attains net international debt to GDP at 12 per cent.

Pakistan's experience of the external debt as a percentage of GDP shows that the cut-off point of the previous study of 12 per cent of GDP has been violated because it has already got more amount than paid. Hence, according to these criteria, Pakistan's CAD is unsustainable. The country needs a lot of resources for development and growth due to the heavy cost of importing capital goods, machinery, medicine, fertilizers and oil group, the country's trade has remained in deficit except for 1972-3. The persistent deficit in the current account and budget deficit is the major cause of ever-increasing external debt.

Since 1980, the inter-temporal approach or the present value approach has been most cited in the sustainability literature. However, over time this theory has generated many versions. This theory asserts that the CAD is sustainable when it will satisfy long run inter-temporal constraints despite not disturbing any policy shifts (Josifidis et al., 2021). This approach stresses the expected values of savings and investment. It considers trade and financial perspectives in explaining the behaviour of expected relative prices and their impact on savings and investment for the rest of the economy (Obstfeld & Rogoff, 1995). It is divided into two subcomponents viz. Inter-temporal solvency and inter-temporal sustainability approach. The advocates of this approach

assert that present deficits will be covered by future surpluses in this sense current consumption will be sacrificed to enjoy future consumption.

According to (Liargovas & Dapontas, 2008), it is impossible to assess the sustainability of the CAD with the help of such ratios, the results could be misleading in the long run. In this context, he showed reluctance to apply such ratio analysis. We have applied an inter-temporal optimizing approach in the current study that is also proposed by (Kónya, 2009) and (Trehan & Walsh, 1991). This approach postulates that if exports and imports are cointegrated of the order one, which is necessary and sufficient condition to conclude that the current account is sustainable in the long run. The Stationarity condition of both the variables allows us to assess the long-run cointegration among variables, the stationarity results of exports and import is given in table 2. The Johansen cointegration technique is applied for such a purpose, the results indicate that there is one cointegrating vector, which is reported in table 1. It confirms the long-run cointegration relationship between exports and imports. The results confirm that the CAD is sustainable in the case of Pakistan.

Table 1: Cointegration Test of Export and Import

| Null hypothesis | Trace Stat. | 5 % C.V. | Max. Eigen stat. | 5 % C.V. |
|-----------------|-------------|----------|------------------|----------|
| None*           | 18.766      | 15.494   | 18.684           | 14.264   |
| At most 1       | 0.082       | 3.841    | 0.082            | 3.841    |

Source: Author's estimation

## Modelling Framework

The determinants of the current account are important in explaining its behaviour and they will guide policymakers. The literature review has highlighted the following variables, which are tested for the case of Pakistan. The data is taken from Economic Survey and the data set starts from 1976 to 2020 on an annual basis all the data is in US \$ Million. The model is specified as:

$$CAD = \beta_0 + \sum_{i=1}^n \beta_1 DS + \sum_{i=1}^n \beta_2 ED + \sum_{i=1}^n \beta_3 ER + \sum_{i=1}^n \beta_4 FD + \sum_{i=1}^n \beta_5 TD + \sum_{i=1}^n \beta_6 WR + \varepsilon_i$$

Whereas CAD refers to current account deficit, DS is domestic Savings, ED is the External Debt, FD is the Fiscal deficit is also known as a budget deficit, TD is a trade deficit and WR is the worker remittances. The domestic savings, external debt, fiscal and trade deficits are positively related to the CAD whereas exchange rate and worker remittances are negatively related to the CAD. The Unit root of the data has been checked with Augmented Dickey-Fuller and Philip-Perron tests. The

Johansen cointegration is used for the long-run and the short-run dynamics are analysed through the error correction model. Finally, the Granger causality test is also used to find out the causality among the variables.

## Empirical Findings

Based on the above-stated test the stationarity of the variables is checked and the results are reported in table 2.

Table 2: Unit Root Estimation

| Variable | ADF Test |       |                  |       | PP Test |       |                  |       |
|----------|----------|-------|------------------|-------|---------|-------|------------------|-------|
|          | Level    |       | First Difference |       | Level   |       | First Difference |       |
|          | C        | C&T   | C                | C&T   | C       | C&T   | C                | C&T   |
| CAD      | 2.399    | 2.485 | 4.936            | 4.849 | 2.555   | 2.662 | 5.316            | 5.150 |
| DS       | 1.606    | 1.672 | 4.902            | 4.830 | 1.723   | 1.860 | 4.902            | 4.830 |
| ED       | 0.756    | 1.976 | 3.608            | 3.423 | 0.582   | 2.111 | 3.609            | 3.411 |
| ER       | 1.335    | 3.129 | 5.315            | 5.784 | 1.433   | 1.537 | 5.316            | 5.782 |
| FD       | 2.461    | 0.938 | 5.149            | 6.204 | 3.692   | 1.453 | 4.486            | 5.260 |
| TD       | 0.197    | 0.972 | 5.159            | 5.576 | 0.073   | 0.986 | 5.178            | 5.624 |
| WR       | 4.310    | 1.846 | 2.718            | 3.981 | 4.310   | 2.955 | 2.685            | 3.869 |
| EXP*     | 1.3331   | 1.527 | 3.876            | 4.354 | 0.399   | 2.540 | 6.508            | 6.553 |
| IMP*     | 1.8025   | 0.986 | 4.346            | 4.991 | 0.887   | 3.029 | 6.490            | 6.398 |

\*EXP refers to Exports and IMP refers to Imports

Source: Author's estimation

The estimation of OLS shows that exchange rate and worker remittances have a negative relation with the CAD, and it confirms the theoretical perspective. Whereas the domestic savings, external debt, previous year's fiscal deficit and trade deficit show a positive relationship with the CAD. (Gulzar et al., 2007) also find the positive relationship of domestic savings with the current account and this is also in conformity with the theoretical foundations. The trade balance has been negative due to excessive imports over exports. Pakistan used import substitution policy under the Structural Adjustment Program (SAP) to reduce the reliance on imports, but it could not produce the stated objects. Pakistan's negative trade balance is the primary cause of the CAD. In comparison to that Pakistan's export revenue is generated either from value-added products or raw materials which are not so much costly in the world markets.

The exchange rate shows a positive and significant relationship with the CAD as found by (Baharumshah & Lau, 2007). The depreciation of the currency positively affects its exports and negatively affect its imports, as Pakistan's exports consist of primary products, so the exchange rate doesn't affect much of the CAD. When the government experience deficit in its fiscal side, then its expenditures are greater than



its revenues, in such a situation government impose more taxes and get foreign loans simultaneously to cover its fiscal deficit. This imposition of excessive taxes will lead to decreased domestic savings and it is the ultimate cause of the investment gap in the economy. Investors will borrow in the international market to fill this gap.

Resultantly the country has to pay a huge amount of interest for the borrowed money this will create upward pressure and is the cause of the CAD. The goodness of fit of the model is very good at 97 per cent, however, the model does not suffer from autocorrelation and the results are reported in table 3. The Stationarity of the model's residuals has also been checked results are reported in Table No. 4. The results of (Johansen & Juselius, 1990) multivariate cointegration test shows that there are four cointegrating equations and it confirms the long-run relations among variables and the result is presented in Table No. 5.

Table 3: Determinants of Current Account Deficit

| Variable                                   | Coefficient | Standard Error | t-statistics   | Probability |
|--|-------------|----------------|----------------|-------------|
| Constant                                   | -5.921      | 228.051        | -0.025         | 0.979       |
| DS   | 5.840       | 1.800          | 3.236          | 0.004       |
| ED   | 0.241       | 0.054          | 4.462          | 0.000       |
| ER   | -12.933     | 3.577          | -3.611         | 0.000       |
| FD (-1)                                    | 0.012       | 0.005          | 2.149          | 0.041       |
| TD   | 1.557       | 0.144          | 10.812         | 0.000       |
| WR   | -1.645      | 0.160          | -10.281        | 0.000       |
| CAD (-1)                                   | 0.029       | 0.014          | 2.071          | 0.042       |
| Adjusted R <sup>2</sup>                    | 0.975       |                | F-statistic    | 0.000       |
| Breusch-Godfery Serial Correlation LM Test | 0.568       |                | Prob. F-stats. | 0.000       |

Source: Author's estimation

Table 4: Unit Root Test for Residuals

| Statistic | Intercept | Trend & Intercept |
|-----------|-----------|-------------------|
| ADF       | -5.170    | 5.083             |
| PP        | 8.234     | 8.809             |
| 1% C.V.   | -3.616    | -4.219            |
| 5% C.V.   | -2.941    | -3.533            |
| 10% C.V.  | -2.609    | -3.198            |

Source: Author's estimation

Table 5: Johansen Juselius Cointegration

| Null hypothesis | Trace Statistic | 5% C.V. | Max. Eigen Statistic | 5% C.V. |
|-----------------|-----------------|---------|----------------------|---------|
| None*           | 280.018         | 125.615 | 107.172              | 46.231  |
| At most 1       | 172.846         | 95.7537 | 61.480               | 40.077  |
| At most 2       | 111.365         | 69.819  | 51.774               | 33.877  |
| At most 3       | 59.591          | 47.856  | 33.316               | 27.584  |

Source: Author's estimation

### Short Run Dynamics

To analyse the short-run behaviour an Error Correction Model has been applied which is specified as below:

$$\Delta CAD_t = \delta_0 + \sum_{i=1}^p \delta_1 \Delta DS_{t-i} + \sum_{j=1}^q \delta_2 \Delta ED_{t-j} + \sum_{k=1}^r \delta_3 \Delta ER_{t-r} + \sum_{l=1}^s \delta_4 \Delta FD_{t-s} \\ + \sum_{m=1}^u \delta_5 \Delta TD_{t-u} + \sum_{n=1}^v \delta_6 \Delta WR_{t-v} + \delta_7 \Delta CAD_{t-1} + \partial ecm_{t-1} + l_t$$

Where  $\delta_0, \delta_1, \delta_2, \delta_3, \delta_4, \delta_5, \delta_6, \delta_7$  refers to short-run (SR) dynamics of CAD. The model reports movement from SR to LR equilibrium, however,  $\partial$  refers to the speed of adjustment and  $\Delta$  shows 1<sup>st</sup> difference operator, finally,  $ecm$  is lagged value of the residual for one period. The exchange rate and workers' remittances are negatively related to the CAD. Whereas the domestic savings, external debt, lagged value of fiscal deficit and trade deficit are positively related to the CAD. The negative sign of  $ecm$  refers to the robustness of results in SR, the results are presented in Table 6.

Table 6: Error Correction Model

| Variable           | Coefficient | Standard Error | t-Statistic     | Probability |
|--------------------|-------------|----------------|-----------------|-------------|
| Constant           | 9.991       | 141.237        | 0.0704          | 0.944       |
| D (DS)             | 0.0045      | 0.0013         | 3.452           | 0.002       |
| D (ED)             | 0.203       | 0.077          | 2.613           | 0.015       |
| D (ER)             | -15.323     | 3.395          | -4.512          | 0.000       |
| D (FD(-1))         | 0.002       | 0.00065        | 3.069           | 0.005       |
| D (TD)             | 1.553       | 0.071          | 21.840          | 0.000       |
| D (WR)             | -1.656      | 0.148          | -11.193         | 0.000       |
| D (CAD(-1))        | 0.054       | 0.040          | 1.339           | 1.339       |
| $ecm_{t-1}$        | -0.792      | 0.221          | -3.582          | 0.001       |
| Adj R <sup>2</sup> | 0.965       |                |                 |             |
| D.W. stats         | 1.819       |                | F-stats (Prob.) | 0.000       |

Source: Author's estimation

### Diagnostic Tests

The residual diagnostic is an important tool to access the perfection of the proposed model. The Jarque-Bera test is conventionally used for the normal distribution of finite values of error terms. According to the result of JB statistics, the null hypothesis is accepted as a probability value of 34 per cent, which is greater than 10 per cent that confirms the normal distribution of error terms. Breusch-Godfrey LM test is used for autocorrelations, it suggests that if the probability value is more than 10 per cent allows us to accept null of no serial correlation in the residuals, hence it is concluded that the model does not suffer from autocorrelations. Most of the econometric models suffer from the problem of inconsistent or unstable variance of squared error terms, but Classical Linear Regression Model assumes the constant variance of the error terms that can be tested with the ARCH LM test, if the probability value is greater than 10 per cent, then it is concluded that errors of the model are homoscedastic. The severity of the Heteroscedasticity can be traced with White's Heteroscedasticity test. The explanatory power of independent variables depends on the independently & identically distribution of the error term. In the present context, White's Heteroscedasticity test is greater than a probability value of 10 per cent, which is sufficient to report homoscedastic residuals of the model. The results are presented in Table 7.

Table 7: Diagnostic Test Statistics

| Test                                       | Test Statistic        | Test Value | Probability |
|--|-----------------------|------------|-------------|
| Jarque-Bera statistic                      | $\chi^2$ - statistics | 2.139      | 0.343       |
| Breusch-Godfrey Serial Correlation LM Test | F-statistic           | 0.335      | 0.568       |
|  | $\chi^2$ - statistic  | 0.459      | 0.497       |
| ARCH LM Test                               | F-statistic           | 0.004      | 0.952       |
|  | $\chi^2$ - statistic  | 0.004      | 0.949       |
| White Heteroskedasticity                   | F-statistic           | 0.882      | 0.528       |
|  | $\chi^2$ - statistic  | 6.608      | 0.471       |

Source: Author's Estimation

### Causality Analysis

It is interesting to know the causality of CAD to the dependent variables with the methodology of (Granger, 1969) by applying one lag. The ad hoc selection is applied to the Granger causality test for the selection of lag structure (Jones, 1989). Bidirectional causality is observed between the worker's remittances, exchange rate and external debt with CAD. Unidirectional causality is seen from CAD to trade deficit to fiscal deficit. However, fiscal deficits did not show any causality with CAD at all. The result is presented in table 8.

Table 8: Results of Granger Causality

| Dependent variables | CAD      | ER       | ED       | FD       | TD       | DS       | WR       |
|---------------------|----------|----------|----------|----------|----------|----------|----------|
| CAD                 |          | 4.941    | 5.448    | 1.051    | 0.945    | 2.605    | 2.018    |
|                     |          | (-0.012) | (-0.004) | (-0.532) | (-0.786) | (-0.313) | (-0.014) |
| ER                  | 11.587   |          | 4.615    | 1.468    | 2.109    | 6.67     | 4.362    |
|                     | (-0.001) |          | (-0.122) | (-0.234) | -0.156   | -0.014   | -0.411   |
| ED                  | 7.168    | 3.316    |          | 4.491    | 3.633    | 10.394   | 8.001    |
|                     | (-0.005) | (-0.151) |          | (-0.081) | (-0.118) | (0.350)  | (0.236)  |
| FD                  | 1.286    | 32.413   | 80.835   |          | 2.005    | 1.211    | 10.098   |
|                     | (-0.016) | (0.000)  | (0.000)  |          | (-0.449) | (-0.489) | (0.410)  |
| TD                  | 7.874    | 8.882    | 8.541    | 11.503   |          | 5.074    | 3.893    |
|                     | (-0.015) | (-0.035) | (-0.034) | (-0.012) |          | (-0.021) | (0.333)  |
| DS                  | 3.773    | 2.935    | 8.415    | 6.891    | 5.927    |          | 7.908    |
|                     | (-0.415) | (-0.164) | (-0.028) | (-0.017) | (-0.027) |          | (0.225)  |
| WR                  | 3.271    | 6.231    | 9.364    | 3.469    | 5.619    | 7.336    |          |
|                     | (-0.021) | (0.420)  | (0.192)  | (0.192)  | (0.192)  | (0.192)  |          |

Source: Author's estimation

## Conclusion and Implications

This study is intended to find out the determinants of CAD and also assess its sustainability. This topic is popular in the macroeconomic debate because it is related to the foreign trade position of a country with the rest of the world. Normally, developing countries face a deficit in their current accounts due to heavy import of some costly items or absence of technology at home. The determinants that affect the CAD of Pakistan's economy are domestic savings, external debt, exchange rate, trade deficit, fiscal deficit, and workers' remittances. Results indicate that the domestic savings, external debt, previous year's fiscal deficit and trade deficit positively affect the CAD, while the exchange rate and workers' remittances negatively and significantly affect the CAD. Bidirectional causality is observed between the worker's remittances, exchange rate and external debt with CAD. Unidirectional causality is seen from CAD to trade deficit to fiscal deficit.

If the CAD is more than 5 per cent of GDP, then it is not sustainable in the long run (Mann, 2002). In connection to this approach of analysis, Pakistan is a developing country and its current account has been more than 5 per cent of GDP many times, it is evident that Pakistan's CAD is not sustainable and it will pile up external debt in the long run. In addition to this, if the net international debt to GDP rises above 12 per cent then it is also regarded unsustainable (Holman, 2001). Pakistan's indebted position does not allow it to be free even from this criterion of sustainability and the country has violated it many times. Finally, the condition of the intertemporal

optimising approach states that if exports and imports are cointegrated then CAD is sustainable in the LR (Trehan & Walsh, 1991). Pakistan has satisfied this final approach but still, it has to reduce this external deficit efficiently and adopt such policies that will help it in achieving success on the external front economically. The empirical model qualifies all the diagnostic tests applied and confirms the robustness of the results.

The current account is closely linked to the position of trade balance, which is in turn dependent on the export earnings rather than import speeding. Pakistan is a developing country; it should increase its domestic level of savings to finance the fiscal balance instead of reliance on foreign funds. The only component which is contributing positively is the worker's remittances from abroad however, they are only concentrated to the Gulf countries and Europe. It is necessary to diversify the worker's remittances base along with diversifying exports.

The government should favour an investment-friendly environment in the country so that more amount of foreign funds could be obtained to supplement the weak domestic production base. There is space available to search current account deficit from a different perspective and in addition to other macroeconomic indicators. In addition, the government should formulate effective policies to reduce both the deficits because they put unnecessary pressure on most other macroeconomic indicators.

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### *Conflicts of interest/Competing interests*

There is no conflict of interest/Competing interests.

### *Availability of data and material*

The data that support the findings of this study are openly available in the website of World Bank ([www.worldbank.org](http://www.worldbank.org)).

### *Code Availability*

The computer program results are shared through the tables in the manuscript.

### *Authors' Contributions*

#### CRedit Author Statement

**Rafiq Ahmed:** Conceptualization, Writing- Original draft preparation, **Syed Tehseen Jawaid:** Methodology, **Aftab Hussain Tabasam:** Writing- Reviewing and Editing, **Muhammad Shahid Iqbal:** Software, **Francis Komla Gamli-Dovene:** Visualization, **Muhammad Javed Iqbal:** Supervision, Validation.

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