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| RESEARCH ARTICLE

Study of the Impact of Government Expenditures on the Trade Balance of Afghanistan from 2005 to 2020

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| ABSTRACT
The effects of government expenditures, which are the results of the implementation of government financial policies, on the current account balance, especially on the trade balance of Afghanistan, during the period from 2005 to 2020 have been investigated. The purpose of this research is to study and investigate the effects of government spending on Afghanistan's trade balance during specific periods of time. The information used in this research is from the official reports of the Ministry of Finance, Ministry of Economy, Ministry of Trade and Industry, National Administration of Statistics and Information, World Bank, magazines and books. The method used in this study is a simple regression model, which is taken to estimate the parameters of the model, the Autoregressive Distributed Lag. Also, for the use of information, the generalized Dickey-Fuller method of validity and invalidity of information was obtained, and invalid information was removed by differentiating their unit root and used later in the table. The results of this research show that there is no significant relationship between government expenditure and Afghanistan's trade balance. The lack of correlation between the variables of government expenditure and trade balance may be due to the higher volume of imports and lower volume of exports, the weak economic structure and the limited amount of Afghanistan's budget during the considered years.

| KEYWORDS
government expenditure, government budget deficit, trade balance, current account and Afghanistan.

| ARTICLE INFORMATION

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1. Introduction

In today's world, the impact of fiscal policies, including government expenditures, has gained the attention of economists. Analyzing and evaluating the effects of fiscal policies (government expenditure) on variables like the trade balance, particularly the trade deficit, is of great importance. Research using various models has examined the relationship between budget deficits (increased government expenditure) and trade deficits (an increase in the value of imports relative to exports), focusing primarily on the direct effects of government expenditure, private investment, and private consumption. Regarding the reduction of government expenditures that could improve the trade balance, research has not reached a clear conclusion. On the other hand, concerning the increase in government expenditures that leads to a worsening trade balance, some have emphasized the evidence supporting this, while others have provided contrary results.

Empirical research conducted in recent decades in England during the 18th and 19th centuries, and studies by Ahmed (1987) and by Basir, Fratzcher, and Miller (2005) in the United States, have shown a negative relationship between government expenditure and the trade balance. Additionally, Yi (1993) found that government expenditures worsened the trade balance in the United States. Some other researchers have concluded that there is no positive relationship between government expenditure and the trade balance (Delavari & Karimi Kia, 2008).

Furthermore, the balance of payments of a country with the world is considered one of the important economic variables, indicating the balance of trade (the equilibrium of imports and exports), price stability, inflation control, interest rates, and the return on investment in the country (Bakhshi, 2012, p. 59). Additionally, a significant portion of government expenditure is

provided through direct payments (or tax exemptions and subsidized loans) under the name of export subsidies to potential and actual exporters or providing low-interest loans to foreign buyers to encourage exports (Salvatore, 2013, p. 366).

Fiscal and monetary policies are tools that the government can use to directly and indirectly influence macroeconomic variables such as investment, production, employment, private sector consumption, exports, imports, and the general price level, ultimately affecting economic growth (Arab Mazar & Chalak, 2010, p. 219).

Today, given the economic conditions of developing countries and the increasing globalization of trade, the impact of changes in exchange rates or the value of national currency on trade volume holds great significance. It is increasingly difficult to find a country in the world that is economically self-sufficient. Limiting consumption strictly to domestic products, due to the narrowing range of product choices, declining quality of goods, and rising prices, leads to a decrease in the standard of living for a country's citizens. These developments align with the principle of "limited resources - unlimited needs," compelling manufacturing firms to utilize cheaper resources in the production of goods and services and to access global markets with a focus on mass production of products. This situation creates the necessary conditions for trade among countries. On the other hand, trade among products and goods in the global arena must be based on values acceptable and validated by all nations. This value is none other than the national currency of the exporting country (as well as the national currency of the trading partner, commonly referred to as "foreign currency"). In fact, goods and services in international trade are valued and transacted based on the value of foreign currency (Rouhani, Hashemi, & Rezaei, 2020).

Moreover, today the global market in the realm of trade and exchanges between countries has transformed into a vast field of opportunities and threats. In global market exchanges, not only does this lead to increased sales of products, growth in income, and accumulation of wealth, but also intense competition within global markets presents risks of failure across various economic sectors for countries. Therefore, examining foreign trade and the factors influencing the performance of national economies is considered significant (Bahraad Amin, Zamaniyan, & Esfandiari, 2017).

Since the 1980s, the successes of many developed countries based on price control have resulted in less serious discussion about the role of external shocks. However, in recent decades, the economic threats arising from shocks to global trade have regained importance, and warnings have been issued regarding them. The World Economic Forum (WEF) in 2005 published a report analyzing the most significant global threats in the fields of economics, geopolitical issues, environmental concerns, social matters, and technology based on the likelihood and "intensity of impact." Additionally, the degree of inflation vulnerability is influenced by the monetary, fiscal, trade, exchange rate, labor market, and industrial structure characteristics within the economy (Haj Amini, 2018).

Over the past 30 years, the world has experienced considerable changes in economic activity based on the nature of the global economy. Nations have come closer to each other through trade and international finance. The international monetary system has also changed; the largest creditor country, the United States, has now emerged as the largest debtor nation in the world, and many developing countries are facing persistent problems in development due to heavy reliance on foreign debts. In response to the changing nature of global economic problems, there is evidence of an increased use of bilateral trade arrangements between major trading partners and a growing movement towards regional trade arrangements (Dennis & Fild, 2003).

Developing countries allocate a portion of their revenues to support payments for exported goods, which diminishes real competition among export goods and renders relative prices unrealistic. However, in the process of globalization, support for exports is no longer viable. Consequently, goods with a comparative advantage remain in the flow of exports. The reduction of import tariff restrictions is a key principle of the World Trade Organization in the process of globalization; thus, globalization has led to a decrease in import tariffs, resulting in an increase in imports. Therefore, in the process of globalization, the competition field expands from the regional level to the global level, and in this process, countries that have higher competitive power in international trade (exports and imports) are more successful. Moreover, a country's success is also related to its economic structure, laws, and regulations (Kalbasi & Jalai, 1381).

Considering the integration of international markets and the expansion of globalization, trade relations between countries have also developed significantly. Consequently, in recent years, the examination of the effects of globalization on economic variables within countries has attracted the attention of many economists, researchers, and scholars (Fathi Zadeh, Pirayi, & Asadi, 1398).

The exchange rate translates consumption between domestic and foreign prices or vice versa in global markets, reflecting an increase or decrease in the value of the national currency. When the national currency depreciates due to exchanges with foreign

currencies, it lowers the prices of goods and services for foreign buyers, thus encouraging the country's exports (benefiting foreign buyers). For this reason, many countries resort to devaluating their national currency to reduce domestic prices and enhance their competitiveness in global trade. In other words, in today's global economy, the devaluation of the national currency is one of the most common currency policies used by developing countries to address their trade balance deficits (Farahbakhsh, 1392).

As a result of the development of global trade among countries, new economic theories have emerged, and considering this, countries have sought to design mechanisms to maximize the welfare and benefits of their nations within the global trade system. In the 19th century, the theories of Adam Smith and Ricardo based on the absolute and comparative advantages of countries' production resources were proposed, which over time, led to the definition and regulation of international trade relations (Salvatore, 2003).

Economic statistics and information show that since the 1980s, the volume of global trade has been rapidly expanding, and the global economy is increasingly integrating. At the same time, most developing countries have realized the inefficiency of strategies aimed at avoiding international trade. Several developing countries concluded that by implementing outward-oriented policies and integrating into global markets, participating more in international trade, and attracting more foreign investment, they could improve resource allocation and shape their production processes based on comparative advantage. They also recognized that improving the efficiency of their companies could be achieved by increasing competition with foreign firms, thereby encouraging learning and technology transfer, ultimately providing a foundation for greater economic growth in their countries (World Bank, 1996).

It should be noted that a fundamental question has always confronted developing countries: Has the process of trade liberalization been able to leave a positive impact on the global economy? To what extent has government expenditure in these countries influenced foreign trade? Has the budget deficit caused a trade balance deficit in Afghanistan? A review of the literature on trade openness and liberalization emphasizes an important point: Despite the extensive literature on this subject, is there still not a clear and definitive answer regarding this issue?

The main objective of this research is to investigate and analyze the effect of government expenditure on the trade balance (net exports) of Afghanistan. To this end, after the introduction in the second section, the theoretical foundations of government expenditure and the trade balance are examined and presented. In the third section, the research background is reviewed; in the fourth section, the research identification method is discussed; in the fifth section, the model specification is analyzed; and finally, in the sixth section, data analysis is conducted, while the seventh section is dedicated to presenting results and recommendations.

2. Theoretical Foundations

It should be noted that discussions around the Mundell-Fleming model significantly expanded in the 1960s. This model, while having a Keynesian nature, also resembles Keynesian methods in its analysis. It maintains its position as the most important model regarding the effects of monetary and fiscal policies, the role of international capital mobility, and the trade of goods and services in both theoretical and empirical contexts of international economics and macroeconomics. In general, this model suggests that capital mobility determines equilibrium in the foreign exchange market, and consequently, changes in the exchange rate will in turn determine the balance of the current account (Shaghafi Shahr, www.SID.ir). Furthermore, according to the Mundell-Fleming model, an increase in the budget deficit indirectly affects domestic savings, investment, and the current account; because the increase in the budget deficit raises real interest rates, which leads to an influx of capital into the country, ultimately increasing the value of the domestic currency. The rise in interest rates and the increase in the value of the domestic currency cause an increase in the current account deficit. Additionally, the Keynesian absorption theory states that an increase in the budget deficit leads to an increase in domestic absorption and subsequently causes an expansion of imports, which itself results in a current account deficit (Mohammadi & Tohidi, 2013).

Most governments are concerned about the negative effects of a current account imbalance on the economic situation. It is believed that a growing imbalance in the financial and current accounts leads to macroeconomic instability, and their presence hinders the long-term economic progress of a country. In this section, some researchers have examined the relationship between the budget deficit and the current account deficit, which is referred to as twin deficits (Mohammadi & Tohidi, 2013).

Various theories can be discussed regarding government expenditure. Government expenditure has existed since ancient times, and over time, its importance and position have increased, making the analysis of the impacts of government expenditure on economic activities a significant subject today.

Mercantilists considered government expenditure to be an important factor in economic productivity, advocating for strong and comprehensive government intervention in economic matters. In contrast, classical economists such as Ricardo held a pessimistic view regarding the effects of government expenditure and believed it to be unproductive and consumptive, considering it a significant factor in reducing societal welfare. Lawrence Von Stein and Schiff supported the productivity of government

expenditure, and this view continued until the 1920s. Keynes, in the 1930s during an economic crisis, developed the theory of the general impact of government economic measures, discussing the effects of government expenditure on employment levels. New growth theories, the impact of revenues, the capacity effects of government investments, and the significance of government expenditure rapidly gained prominence (Aref, 2012, p. 232). Additionally, based on various theories presented regarding trade, it can be stated that several variables influence trade, and countries use these variables as tools to increase or decrease their trade (Rouhani, Hashemi, & Rezaei, 2020).

In the mid-1970s, the financial method for analyzing the balance of payments was introduced by a group of policy-makers from Cambridge Economics. Empirical studies in this area have been conducted by scholars such as Khan (1990), Khan and Knight (1990), Bartoli (1986), Kim and Rubini (2004), and Mazhar and Rahimian (2005). Based on the studies conducted on the factors influencing the trade balance or current account, as well as the balance of payments, it becomes evident that most of them utilized Keynesian theory (the conventional principle of Keynes). According to this Keynesian approach, budget deficits can affect private investment and savings and influence consumption, aggregate demand, and money demand. Based on this hypothesis, a positive relationship exists between the budget deficit and the current account deficit, whereas according to Ricardo's equivalence proposition, there is no relationship between these two deficits (the increase in the government budget deficit is offset by an increase in private sector savings, replacing the reduction in public sector savings).

In research conducted by Baxter (1995), the theory of convergence of deficits (budget deficit and trade balance or current account deficit) was presented. The results indicate that, in the medium term, a country's income has a positive impact, while government expenditure has a negative impact on the current account balance (Dalavari & Karimi Kiya, 2008).

From a theoretical perspective regarding the government budget deficit and the foreign trade deficit, it can be argued that an increase in the government budget deficit affects the trade balance through variables such as interest rates and exchange rates. The degree of influence of the government budget deficit on the trade balance deficit depends on the type of financing for the budget deficit. When financing the budget deficit through financial markets, pressure is exerted on interest rates, causing them to rise. Assuming full capital mobility and floating exchange rates, this leads to an influx of foreign investment and an increase in the domestic currency's value against foreign currency, ultimately resulting in an increase in imports and a trade balance deficit (Zavarei Kachoumisqali, 2012).

A decrease in the value of the domestic currency results in a reduction in imports and an increase in exports; however, it is essential to note that these changes occur only in the quantity of imports and exports. What is significant in this analysis is the value of exported and imported currency. The improvement in the balance of payments will depend on the net change in the amounts of foreign receipts and payments of the country. According to the Marshall-Lerner condition, a decrease in the value of the domestic currency will improve the balance of payments (trade balance) of the country only when the sum of the absolute values of the export and import price elasticity coefficients is greater than one (Mehrara & Abdi, 2017).

3. Literature Review

Persistent budget deficits are one of the major problems faced by developing countries. Budget deficits affect the current account through changes in aggregate demand. Additionally, various studies have been conducted over the past decade on the impact of factors influencing the trade balance and balance of payments in Iran, yielding different results.

Zavarei Kachoumisqali (2012). conducted a study titled "Examining the Relationship Between Government Budget Deficit and Current Account in the Iranian Economy from 1963 to 2006," using a vector autoregressive model to investigate the relationship between the budget deficit and the current account deficit. The Granger causality relationship in both the short and long terms was analyzed using a vector error correction model. The results indicate that in the long term, there is a cointegrating relationship between the budget deficit and the current account deficit. Additionally, a bidirectional causality relationship between the budget deficit and the current account deficit was confirmed in the long term, whereas in the short term, causality was only confirmed from the budget deficit to the current account deficit.

Zamani Rad and Mani (1998). conducted research titled "Estimation of the Long-Run Equilibrium Relationship Between the Budget Deficit and Trade Balance in Iran." This study, employing the Johansen cointegration technique, analyzed the period from 1961 to 1995. The results indicate that an increase in government expenditure on the aggregate supply side does not significantly impact due to the economic structure and low elasticity of total supply (resulting in inflationary pressure). Increased government expenditure leads to an increase in aggregate demand, ultimately resulting in heightened import demand and a worsening trade balance.

Arab Mazari and Chalaki (2010). carried out a study titled "Dynamic Analysis of the Effect of Government expenditure on Economic Growth in Iran." This research examined the effect of government expenditure on economic growth and compared the impact of government consumption and capital expenditures. It further investigated how an increased government budget deficit, financed

through borrowing from the central bank, affects economic growth. The findings reveal that, on average, government capital and consumption expenditures promote economic growth, with a more significant effect observed for capital expenditures.

Dalavari and Karimi Kiya (2008). conducted a study titled "Examining the Impact of Fiscal Policy on Iran's Trade Balance with Emphasis on Government Expenditures." The objective of this research was to analyze the empirical relationships between fiscal policy (government expenditure) and the trade balance in Iran during the period from 1938 to 2006. To this end, an econometric model was employed, utilizing methods such as Engle and Granger (1987), Johansen (1988), ARDL by Pesaran and Shin (1998), and Phillips-Hansen (1990). The impact of variables such as government expenditure, private investment, private consumption, and other variables considered in the model on the trade balance was studied using an import function. The results show that increasing government expenditure, private consumption, and investment leads to a deterioration in the trade balance, and it is also confirmed that there is a long-term relationship among the variables forming the import function in the expanded specification.

Mohammadi and Tohidi (2013). conducted a study titled "An Empirical Examination of the Relationship Between the Current Account Deficit and Government Budget Deficit in Iran and a Selection of Developing Countries." The primary objective of this research is to empirically investigate the relationship between the budget deficit and the current account deficit. In this paper, data from a panel of 50 developing countries during the period from 1990 to 2012 were analyzed using three econometric methods: two-stage least squares, generalized method of moments, and the second-generation Granger causality test proposed by Dumitrescu and Hurlin. The findings indicate that the twin deficit hypothesis is valid for developing countries, meaning that adverse effects exist between the budget deficit and the current account deficit.

Rounaghi et al. (2019). addressed the impacts of economic variables on the exports of traditional goods from Iran during the years 1986 to 2014 in their article. In their research, they utilized a vector autoregressive model and Johansen cointegration. Their research results show a positive and significant relationship between macroeconomic variables and exports of agricultural and traditional products in Iran.

Arman et al (2008). conducted a study titled "The Triangle of Financial Development, Economic Growth, and Foreign Trade in Iran from 1961 to 2006." In their research, they used a distributed lag autoregression model. To examine the long-term relationship between variables, they employed Granger causality methods. Additionally, the Toda and Yamamoto causality test was used to determine the direction of causality. The results of the causality models support the demand-following hypothesis in the short term and the export-led growth hypothesis. Furthermore, a one-way causality from financial development to imports was confirmed in the long term.

Shahinpour and Khusravtar (2019). studied the impact of the exports and imports of capital and intermediate goods on value-added in Iranian industries during the period from 2001 to 2014. For this purpose, they used a Cobb-Douglas functional form in which production is a function of labor variables, capital stock, exports, and imports of capital and intermediate goods. The aforementioned model was estimated using panel data econometric methods for 139 industrial groups. The findings indicated that the total number of employees, capital stock, exports, and imports of capital and intermediate goods had positive and significant effects on the value-added in Iranian industries.

Shaghaghi Shahri conducted a study titled "Examining the Macroeconomic Variables Affecting Iran's Current Account Deficit" (Economic Papers 3, www.SID.ir). The objective of this research is to describe both long-term and short-term relationships between the foreign trade account deficit, government budget deficit, and real exchange rate by utilizing a structural vector error correction model during the years 1959 to 2001. Long-term results indicate that the policy of devaluing the domestic currency during this period was not effective for the current account deficit. On the other hand, the budget deficit during this period had a close relationship with the current account deficit, and an increase in the government budget deficit significantly raised the foreign trade account deficit. Additionally, short-term results from the current account deficit equation show that a dummy variable for a sudden increase in imports raised the current account deficit, while the unification of the official exchange rate in 1993 led to a reduction in the current account deficit.

Mehrara and Abdi (2007). conducted a study on the determining factors of the trade balance in Iran's economy utilizing methods such as Johansen (1988), Engle and Granger (1987), Phillips-Hansen (1995), and ARDL frameworks during the period from 1959 to 2004. In this study, they compared the ability of two relative prices, which define the effective official exchange rate and the parallel market exchange rate, in explaining the fluctuations of the trade balance. The results indicate that the effective official exchange rate is unable to satisfactorily explain the behavior of the trade balance based on cointegration tests, the size and statistical significance of the coefficients, diagnostic statistics, and parameter stability. What influences trade decisions and flows is the real exchange rate hypothesis based on its value in the parallel market. Among other influencing factors, the income of Iran's trade partners had the least impact, while domestic income had the most significant effect on the trade balance.

Saadi and colleagues (2019). conducted a study titled "Investigating the Relationship Between Government expenditure and Economic Growth Within the Framework of the Barro Growth Model." The aim of this article is to examine the relationship between government expenditure and economic growth and, through that, determine the optimal size of government in the Iranian economy within the framework of the Barro growth model. The results of this research indicate that the effect of the government investment spending-to-GDP ratio on the economic growth rate is positive up to a certain point and becomes negative at larger values.

4. Research Methodology

This research is applied in nature and was conducted using a descriptive approach through a survey method to provide answers to the research question. In terms of nature, the research is both qualitative and quantitative, while the data type is library-based and relies on secondary information. In terms of research design, it is causal and correlational.

4.1. Data Collection Method

The qualitative information for this research was gathered from books, articles, journals, websites, and legislative documents. The quantitative data pertain to the period from 2005 to 2020, representing a 16-year period of analysis. Time series data were primarily analyzed using the Eviews program, which provides more accurate analysis and better results. Additionally, Eviews has the capability to adjust time series data quarterly and seasonally; thus, the annual data were first converted to quarterly data using this program, resulting in 32 quarters, and then were analyzed. The data or information used in this research were collected from the World Bank, the Ministry of Finance, the Ministry of Economy, the National Statistics Office, and the Ministry of Commerce and Industries.

4.2. Research Tools

For analyzing and testing the research hypotheses, Eviews 10 software was used, while Microsoft Word was employed for text writing and Microsoft Excel for graph plotting.

4.3. Conceptual Model of the Research

In this research, we have a regression model for the variables (government expenditure and trade balance). In this model, we aim to study and analyze the effects of government expenditure on the trade balance within the framework of an economic model. This study utilizes a simple time series model derived through the ARDL method, which is expressed as follows:

$Y = A + BX + \varepsilon$

Y = represents the trade balance

B = represents the coefficient of the independent variable

A = represents the constant term

X = represents government expenditure

ε = represents statistical errors

4.4. Data Analysis Method

Considering that the goal of this research is to examine the relationship between government expenditure and the trade balance, initially, in order to investigate this important issue, after selecting an appropriate empirical model and using Eviews 10 software, the desired model will be estimated, and the hypotheses will be tested and analyzed. In this context, after collecting data and examining the variables for significance using the unit root test and the generalized Dickey-Fuller test, the Autoregressive Distributed Lagmethod (ARDL) will be used to estimate the regression model.

4.5. Scope of the Research

A. Subject Scope: This research is focused on the topic of macroeconomics (government expenditure and trade balance).

B. Temporal Scope: The time frame of this research covers the period from 2005 to 2020.

C. Spatial Scope: The spatial scope of this research is Afghanistan

5. Construction of Variables

The variables used in this research include government expenditure and net exports (trade balance) in Afghanistan, both of which have been taken in their natural form. The explanation of the variables used in the research is as follows:

5.1. Government expenditure

Government expenditure is essentially considered as the payments made by the government (Mousizadeh, 2011, p. 110); in fact, the expenditures or spending of governments are seen as having significant impacts on factors such as employment levels, income redistribution, economic stability, and social security. An increase in government expenditure can positively affect areas such as support for low-income groups, the establishment and development of economic infrastructure in the country, prevention of recession and unemployment, support for emerging industries, and others. Therefore, a reduction in government expenditures leads to a decrease in governmental activities (Mostafa, 2012, p. 127); moreover, governments perform their assigned duties most effectively when they take on expenditures, which are allocated towards ensuring internal security and defense of the country's borders, providing economic infrastructure such as building roads and highways, creating conditions for establishing industrial parks, and providing educational and health facilities (referred to as government purchases), monetary transfers, and interest payments on governmental loans. Overall, government expenditure includes government purchases and monetary transfers (Noorabadi, 2016, p. 61); it can now be categorized into three groups: current expenditures (consumptive), investment, and transfers (grants). Current expenditures and investment spending reflect government purchases in the economy and indirectly influence overall demand in income distribution. For instance, investment in human capital leads to skill acquisition and improvement of technical capacities (education and training), which in turn enhances their income capacity in subsequent periods, thus playing a significant role in reducing income inequality among individuals in society (Aref, 2012, p. 237).

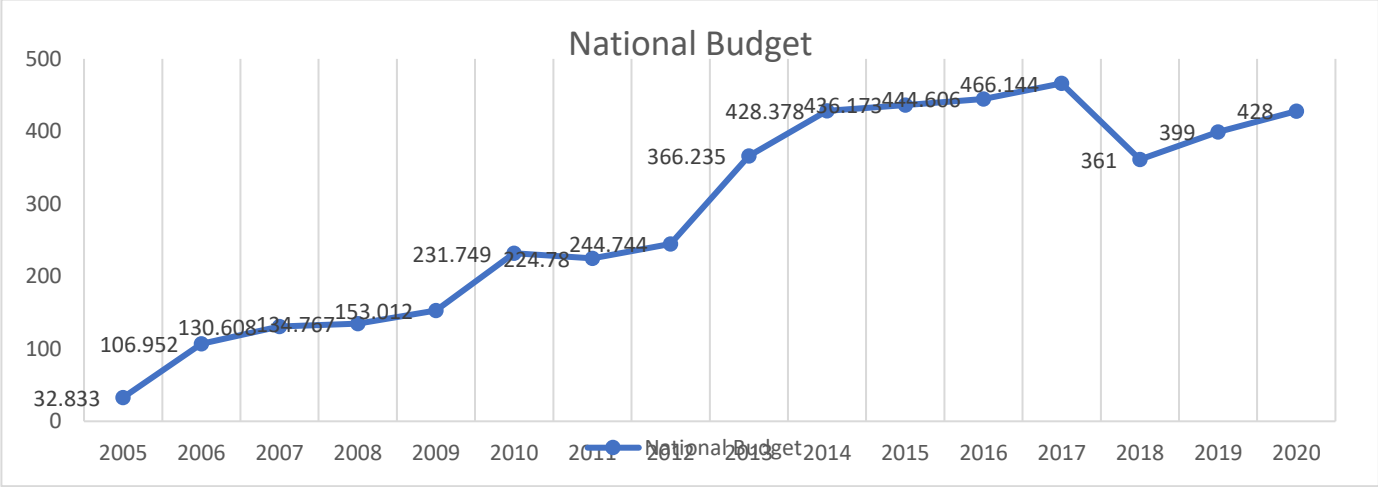
The government expenditure of Afghanistan is reflected in Table 1 based on billions of Afghanis in the national budget of the country over the years.

Table 1: *Government expenditure in Afghanistan from 2005 to 2020.*

Years	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
National Budget	32.833	106.925	130.608	134.767	153.012	231.749	224.780	244.744	366.235	428.378	436.173	444.606	466.144	361	399	428

Source: *Draft National Budget from 2005 to 2020.*

The information from the above table is illustrated in Graph 1 below.



Graph 1: *National Budget from 2005 to 2020*

The above table and graph show that the national budget of Afghanistan experienced an increasing trend from 2005 to 2017, decreased in 2018, and has continued to rise in the subsequent years.

5.2. Trade Balance (Net Exports)

The difference between a country's imports and exports over a specific period, usually one year, is referred to as the trade balance. In other words, the financial value between imports and exports is called the trade balance. If the value of exports exceeds the value of imports, the trade balance of the country is positive, and if the value of imports is greater than the value of exports, the trade balance is negative.

Balance = Exports – Imports

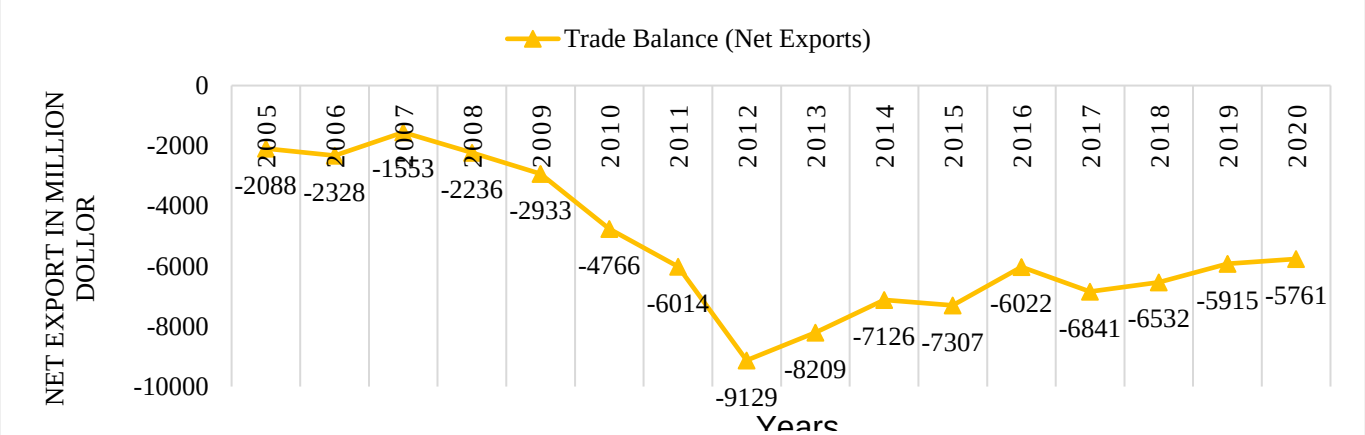
An increase in a country's exports is directly related to the increased demand for the currency of the exporting country. This is because the importing country must purchase the currency of the exporting country to pay for the goods. Consequently, as the exports of a country increase, the value of the currency of the exporting country also rises. Additionally, the value of the currency of the exporting country stabilizes. A positive trade balance is considered an advantage for the exporting country, while a negative trade balance is viewed as a weakness for the importing country (Ali Wala Trading Company, 2018).

Table 2: *Net Exports (Trade Balance) of Afghanistan from 2005 to 2020.*

Years	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Net Export	- 2088	- 2328	- 1553	- 2236	- 2933	- 4766	- 6014	- 9129	- 8209	- 7126	- 7307	- 6022	- 6841	- 6532	- 5915	- 5761

Source: *World Bank and Ministry of Commerce of Afghanistan from 2005 to 2020.*

Now, the information from the above table is illustrated in Graph 2 below.



Graph 2: *Trade Balance (Net Exports) of Afghanistan from 2005 to 2020.*

The above table and graph indicate that the trade balance of Afghanistan has been negative or in deficit in all years, showing that from 2005 to 2020, the annual value of exports was less than the annual value of imports. Afghanistan's net exports had the smallest deficit in 2007 and the largest deficit in 2012.

6. Data Analysis

The unit root test is conducted to examine the stationarity of the data based on econometric literature. For estimating the model, it is essential first to perform a stationarity test on the variables. If non-stationary variables are used in the model estimation, despite the absence of a relationship between the variables, the obtained coefficient of determination may be high, leading to potential misconceptions (facing spurious regressions). The augmented Dickey-Fuller (ADF) test is used for stationarity testing. For non-stationary variables, most of them can be made stationary through differencing.

The unit root test is conducted using Eviews10. There are several tests in econometrics for unit root testing, and we will use the augmented Dickey-Fuller (ADF) test here, which has two potential ways to understand the ADF test.

6.1. Analysis of Stationarity for government expenditure

For the analysis of the stationarity of government expenditure to test the unit root problem, we first organize our hypotheses and then apply the augmented Dickey-Fuller unit root tests using the Eviews program, and finally, we analyze the results and make decisions regarding the hypotheses. The hypotheses for the augmented Dickey-Fuller unit root test are as follows:

Null Hypothesis (H0): Government expenditure has a unit root (government expenditure is non-stationary).

Alternative Hypothesis (H1): Government expenditure does not have a unit root (government expenditure is stationary).

Table 3): Results of Stationarity Analysis (ADF Unit Root Test) for Government Expenditure

Unit Root Analysis for the Net Exports Variable		
Result of the Unit Root Test Level form		
P-Value	0.5774	
Government expenditure has a unit root (non-stationary)	Reject	***(H0)***
Government expenditure does not have a unit root (stationary)	Accept	***(H1)***
Result of the Unit Root Test after First Differencing		
P- Value	0.0022	
Government expenditure has a unit root (non-stationary)	Reject	***(H0)***
Government expenditure does not have a unit root (stationary)	Accept	***(H1)***

Source: Research findings of the author.

According to Table 3, the results of the Augmented Dickey-Fuller (ADF) test indicate that the government expenditure variable is non-stationary at the 95% confidence level, as the P-Value is greater than 0.05. Therefore, the null hypothesis is accepted, and the alternative hypothesis is rejected, meaning that government expenditure is non-stationary. Additionally, after the first difference, the results of the Augmented Dickey-Fuller (ADF) test show that the government expenditure variable remains non-stationary at the 95% confidence level, since the P-Value is still greater than 0.05. Thus, the null hypothesis is accepted again, indicating that government expenditure is non-stationary.

However, after the second difference, the results of the Augmented Dickey-Fuller (ADF) test indicate that the government expenditure variable becomes stationary at the 95% confidence level, because the P-Value is less than 0.05. Consequently, the null hypothesis is rejected, and the alternative hypothesis is accepted, which means that government expenditure is stationary.

6.2. Analysis of Stationarity for Net Exports (Trade Balance)

To test for unit root problems, we first organize our hypotheses and then apply the Augmented Dickey-Fuller tests using the EViews software. Finally, we analyze the results and make decisions regarding the hypotheses.

Null Hypothesis (H0): Net exports (trade balance) have a unit root (net exports are non-stationary).

Alternative Hypothesis (H1): Net exports (trade balance) do not have a unit root (net exports are stationary).

Table 4: Results of Stationarity Analysis (ADF Unit Root Test) for Net Exports (Trade Balance)		
Unit Root Analysis for the Net Exports Variable		
Result of the Unit Root Test Level form		
P-Value	0.4374	
Net exports (trade balance) have a unit root (non-stationary)	Reject	***(H0)***
Net exports (trade balance) do not have a unit root (stationary)	Accept	***(H1)***
Result of the Unit Root Test after First Differencing		
P- Value	0.00000	
Net exports (trade balance) have a unit root (non-stationary)	Reject	***(H0)***
Net exports (trade balance) do not have a unit root (stationary)	Accept	***(H1)***
Source: Researcher's findings		

The results of the Augmented Dickey-Fuller (ADF) test indicate that the net exports (trade balance) variable is non-stationary at the 95% confidence level, as the P-Value is greater than 0.05. Therefore, the null hypothesis is accepted, and the alternative hypothesis is rejected, meaning that net exports are non-stationary. After the first difference, the results of the Augmented Dickey-Fuller (ADF) test show that the net exports variable is stationary at the 95% confidence level, since the P-Value is less than 0.05. Thus, we reject the null hypothesis and accept the alternative hypothesis, which indicates that net exports are stationary.

7. Analysis of ARDL Model Results

Following the Augmented Dickey-Fuller (ADF) unit root tests, we concluded that the initial observations and first differences of the indicators are non-stationary at the 95% confidence level and have a unit root problem. This unit root problem was resolved by taking the second difference of these variables. In this section, we will estimate the model and its parameters using Eviews and the Autoregressive Distributed Lag method. The hypotheses regarding the relationship between government expenditure and the trade balance are stated below.

Null Hypothesis (H0): There is no significant relationship between government expenditure and net exports (trade balance).

Alternative Hypothesis (H1): There is a significant relationship between government expenditure and net exports (trade balance).

Table 5: Results of the Regression Equation Estimation and Model Parameters				
Variables	**Model Coefficients**	**P-Value**	**Hypotheses**	**R-squared**
A (C)	-205.696	0.4445		0.422876
Government Expenditure	+5.145	0.5545	**Null Hypothesis:** Accept	
Econometric Model of the Research				

Trade Balance =- 205.696235276 + 5.14483841759 * Budget + ε Y=A+BX + ε
The estimated regression equation can be expressed as follows:
Y= Trade Balance *A*= Constant term *B*= Coefficient of the independent variable *X*= Government Expenditure ε = Error term
***Source**: Researcher's findings*

The constant term (A) is 205.696, and it shows the expected trade balance when government expenditure is zero.

The coefficient for government expenditure (B) is 5.145, indicating a positive relationship; however, with a P-value of 0.5545, we fail to reject the null hypothesis, suggesting that government expenditure does not have a statistically significant effect on the trade balance at the 95% confidence level.

The R-squared value of 0.422876 indicates that approximately 42.29% of the variability in the trade balance can be explained by the model.

Based on the results shown in Table (5), the P-Value for the government expenditure variable is greater than 0.05, which means that the null hypothesis (H0) is accepted and the alternative hypothesis (H1) is rejected. This indicates that there is no significant relationship between government expenditure and the trade balance (net trade) in the Afghan economy. Therefore, we conclude that the government expenditure variable has not impacted the trade balance in Afghanistan.

The R-squared value is (0.422876), indicating that 42.2876% of the changes in the trade balance (net exports) of Afghanistan, which is the dependent variable, are attributed to government expenditure (the independent variable), while 63.7122% of the changes in the trade balance are due to other factors. A represents the value of the dependent variable without the effects of the independent variable, and in the above model, (A = -205.696), indicating the trade balance (the value of the dependent variable) without the effects of government expenditure (the independent variable). This means that if we exclude the effects of government expenditure, the trade balance would be -205.696.

The model coefficients -205.696235276 + 5.14483841759*Budget + ε = Trade Balance indicate that with an improvement or decline of one unit in government expenditure, the trade balance will change by several units. For example, the above model shows that with an increase of one unit in government expenditure, the trade balance will increase by approximately 5.145 units, as their relationship is direct.

8. Discussion and Conclusion

In light of the increasing attention from countries to access global markets and enhance international trade relations, achieving global market access has become a significant focus. This shift necessitates moving beyond geographical boundaries towards an open global economy. Additionally, understanding the relationship between government expenditure and the trade balance is considered a key factor for successful trade policy-making. There is a general consensus that government expenditure is a fundamental element for reducing poverty and developing the economy. Given the importance of foreign trade and the role of government expenditure in accelerating the trade balance, I felt compelled to study the impact of government expenditure on the trade balance in Afghanistan.

An increase in government expenditure on the supply side has little impact due to the structural economic conditions and low elasticity of total supply. Furthermore, increased government expenditure leads to a rise in total demand, which ultimately results in increased import demand and a deterioration of the trade balance during the studied periods.

This research employs the Autoregressive Distributed Lag(OLS) method to estimate model parameters, using data from 2005 to 2020 that includes two economic variables: government expenditure and Afghanistan's trade balance. The stationarity of the data was tested using the Augmented Dickey-Fuller test, and non-stationary data were transformed into stationary data through

differencing. The results indicate that there is no significant relationship between government expenditure and the trade balance in Afghanistan during the specified years.

The findings of this research align with existing literature, showing that government expenditure has not impacted the trade balance in Afghanistan, as no significant relationship exists between the two. The heavy reliance on imports for 95% of essential goods, limited exports to agricultural products, transactions conducted in foreign currencies, and dependency on foreign aid for financing imports all contribute to the ineffectiveness of government expenditure on Afghanistan's trade balance. Additionally, the influence of political relations on foreign trade is more pronounced than that of economic variables. Therefore, it can be concluded that the absence of a significant relationship between government expenditure and the trade balance in Afghanistan is not an unexpected outcome.

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