

# **Impact of Foreign Direct Investment on Economic Growth in Afghanistan**

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## **Abstract**

This paper studies the relationship between foreign direct investment and economic growth in Afghanistan using time series data for the period 2008-2019. The causality tests have been applied to the data and the results confirm there is no causality between the variables due to political uncertainty, unstable and volatile economic conditions of the country, security conditions, continued war, and withdrawal of foreign troops.

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## 1. Introduction:

Afghanistan, a landlocked country located in the central Asia with a strategic geographical position connects important trade routes of southern and eastern Asia to Europe and the Middle East.

Since 2001, Afghanistan has witnessed remarkable economic growth with creating new opportunities for business and employment in the country. After several years of high economic growth, growth declined to average 2 percent per year from 2013 onwards, largely due to the withdrawal of foreign troops and decrease in international assistance. The growth in Afghanistan has been volatile as it is more reliant on agriculture (around 25% of GDP) which is affected by the weather condition in the country. Gross Domestic Product (GDP) surged from USD 2.2 billion in 2002 to around USD 21 billion with services sector accounting for half and agriculture and industry for the second half being three major sectors of the economy. Since 2001, the government has built basic infrastructure including roads, trade ports, electricity, and railways to support the economy.

Though, Afghanistan ranks among the lowest exporting economies, its exports have grown strongly from a very low base in 2001. Afghanistan has signed several free trade agreements within the region and also become the member of WTO gaining access to a number of large markets in the developed world including United States of America and the Europe. The government has also adapted the strategy to support infant industries such as flexible tax and duty regime, provision of cheap land for a specific period of time, and tariff protections. Afghanistan's minerals and other extractive resources worth more than USD 3 trillion are yet to be explored and extracted.

Since 2001, foreign assistance has become most important source of capital which has contributed to the economic growth of Afghanistan. Yet, above 50 percent of the Afghan population live in poverty. To lift more than half of the country's population out of poverty, the country has to maintain a steady growth rate; therefore, it is important to focus more on investment and growth enhancing sectors which include investment in agriculture, mining, energy, infrastructure, industry, telecommunication, and service sector.

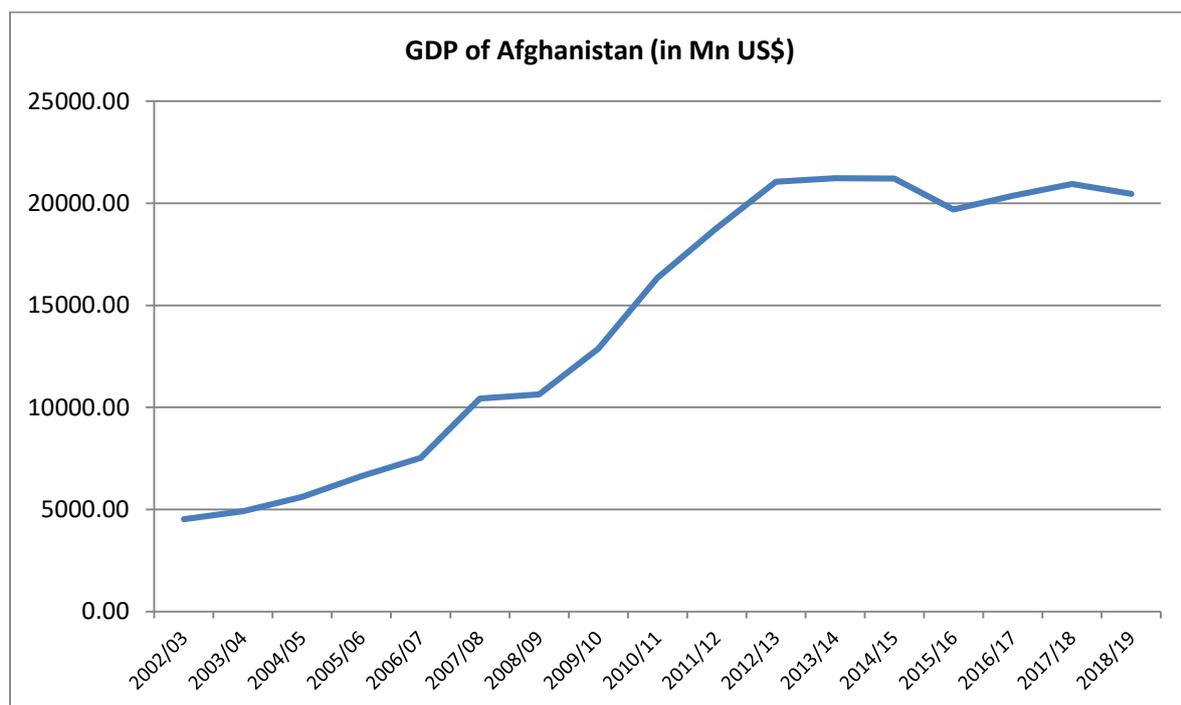
In order to achieve economic growth targets, the government of Afghanistan is trying to create a favorable investment environment through introducing new economic policies, incentives for investors, adoption of pro-private sector stance, liberal trade regime and etc. as it plays an important role in the development process of the country.

There has been a large body of literature on the impact of FDI on economic growth and it has been identified that it plays an important role in the development of developing countries.

This paper investigates the role of foreign direct investment in the economic growth and points out financial constraints in Afghanistan.

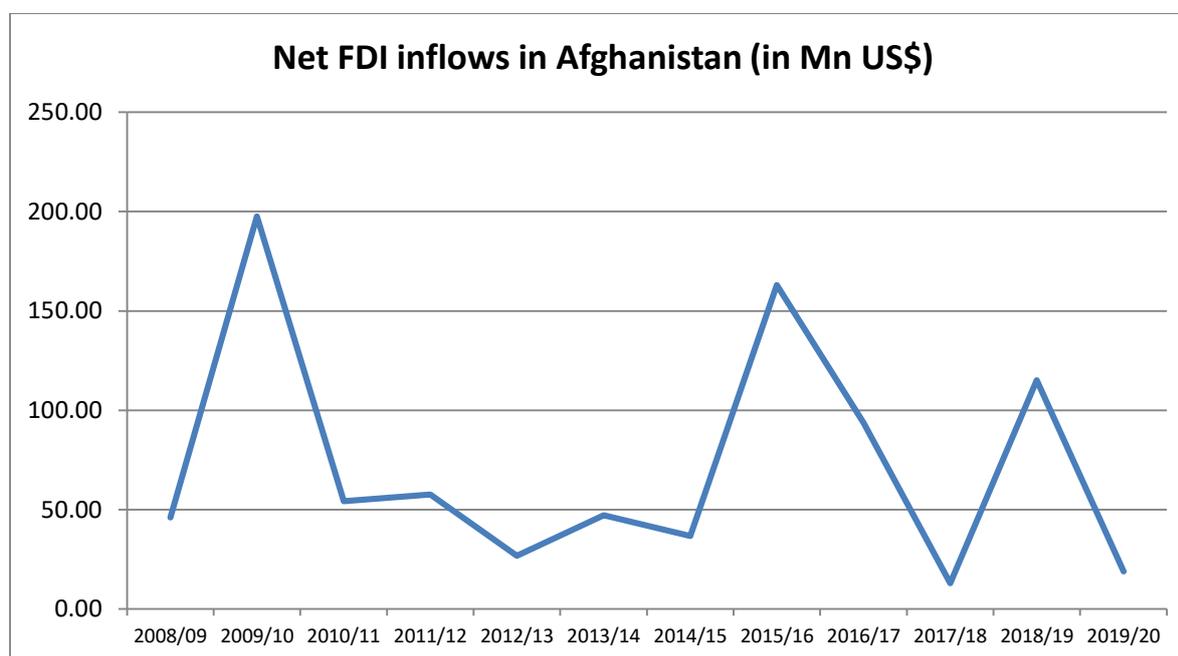
It is important to discuss the trend of FDI and GDP in Afghanistan. Since 2001, Afghanistan's gross domestic product saw an unprecedented growth. The economy of Afghanistan has had significant improvement due to the infusion of billions of dollars. The Gross Domestic Product in Afghanistan skyrocketed from around 1 billion USD before 2001 to 20 billion USD in 2019. Furthermore, the average annual growth rate of Afghanistan is about 3 percent.

Figure 1.1.



Source: NSIA Afghanistan

Figure 1.2.



Source: BoP, DAB

After reaching its lowest level in 2017 (USD 12.9 million), FDI inflows have been increasing gradually. The figures after 2017 are still low compared to the inflow levels the country received before 2009 (with a high of USD 197.5 million in 2009) as a significant share of FDI was linked to the intervention of NATO armed forces and associated development projects.

The rest of the paper is organized as follows: section two discusses the literature review, section three theoretical framework of FDI, section four discusses the empirical part, including the data, model specification, and methodology; section five reports and discusses the empirical results; finally, conclusions and recommendations.

## 2. Literature Review

Foreign Direct Investment means a direct investor (nonresident) gets an interest of at least ten percent in an enterprise located in home country (resident). Since Foreign Direct Investment is a form of investment, it impacts the current account balance, gross capital formation, employment in the home country, productivity, and economic growth in the country. With respect to the mentioned importance, Foreign Direct Investment gets a great

deal of attention in empirical literature. However, in this study we will focus only on the impact of FDI on growth in Afghanistan.

Existing empirical literature on FDI-growth nexus is somewhat enormous. This study makes an attempt to review a few of such empirical studies.

Balasubramanyam et al (1996) by using cross-section data from developing countries and applying OLS regressions found that FDI has a positive effect on economic growth of the countries. Similarly, Bengoa and Sanchez-Robes (2003) find that FDI has a significant positive impact on economic growth of developing countries but the magnitude of the impact depends on the conditions of the host country. In a study conducted by Hussain and Haque (2016) it has been revealed that there is a relationship between FDI, trade, and growth rate of per capita GDP of Bangladesh. Furthermore, trade and foreign investment variables have a significant impact on the growth rate of GDP per capita.

Supporting the previous results, Younus et al. (2014) have conducted a study on impact of foreign direct investment on economic growth in Pakistan for the period 2000-2010 by using two-stage least squares method of simultaneous equations estimation. The results show a positive relationship between economic growth and FDI in Pakistan.

Fadhil and Almsafir (2015) in a study of the role of FDI inflows in Malaysia economic growth have identified that FDI inflows together with the human capital development contribute strongly to the Malaysian economic growth. The study by Nistor (2014) found a correlation between FDI and economic growth. Moreover, FDI inflows had a positive impact on GDP of host economies, manifesting differently depending on the area and the region of the foreign investment; its impact depends largely on the quality and quantity of the inflow.

As like, FDI is an important vehicle for the transfer of technology, contributing relatively more to growth than domestic investment; however, the higher productivity of FDI holds only when the host country has a minimum threshold stock of human capital (Borensztein, De Gregorio, & Lee, 1998).

Osabuohien, Soogun, and Urhie (2017) have found that both domestic investment and foreign direct investment had significant effect on Nigeria's economic performance; however, the influence of the former was observed to be far greater than the latter with marked difference both in terms of the level of significance and size.

There are long-run relationships among all the variables under consideration in the econometric model. The estimated long-run equation also indicates a positive association between the explanatory variables and real gross domestic product. In particular, net foreign direct capital was found to have a stronger influence on economic growth compared to openness and real foreign exchange rate. Correspondingly, a unidirectional relationship running from real exchange rate to net foreign direct investments was found. In addition, amongst the three explanatory variables used in the model, openness and net foreign direct investment contributed more towards innovations in economic growth during the forecast horizon compared to real exchange rate variable (Ogbokor, 2016).

The paper by Khaliq and Noy (2007) investigates the impact of foreign direct investment (FDI) on economic growth using detailed sectoral data for FDI inflows to Indonesia over the period 1997-2006. In the aggregate level, FDI is observed to have a positive effect on economic growth. However, when accounting for the different average growth performance across sectors, the beneficial impact of FDI is no longer apparent. When examining different impacts across sectors, estimation results show that the composition of FDI matters for its effect on economic growth with very few sectors showing positive impact of FDI and one sector even showing a robust negative impact of FDI inflows

Many authors have investigated the impact of FDI on economic growth in both developed and developing countries and it can be concluded that it has both positive and negative impact on different countries. The negative impact of FDI on economic growth of a number of countries mostly depends on their weak economic, political and security conditions including weak human resources or unavailability of skilled labor, weak institutions or tax policy regulations, less developed technology or old machinery and etc. while on other hand the positive impact of FDI is due to strong economic structure of the country for example, sufficient infrastructure, skilled labor force, new technology and so on. These impacts are not only limited to economic growth of the country but also other macroeconomic variables. However, in this paper we limit ourselves with the impact of FDI on economic growth in Afghanistan.

### **3. Theoretical Framework:**

To begin with, it is important to define Economic Growth, Investment and distinguish between their types.

Economic growth is the overall increase in the production of the country and it is measured by the increase in total output or real GDP of the country. Economic growth is an important indicator of a country's health condition, as higher growth indicates higher income, higher level of employment, higher tax income for the government, and higher standard of living.

Investment: utilization of tangible and intangible capital in the form of cash, credit, material goods, services or other types (i.e. patent, intellectual property, trademark and copyright) in an enterprise approved by the High Commission on Investment.<sup>1</sup>

“Foreign Direct Investment” refers to direct investment equity flows in an economy. It is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy (IMF, BoP).<sup>2</sup>

Foreign direct investment in Afghanistan and other countries reflects the foreign ownership of production facilities. To be classified as foreign direct investment, the share of the foreign ownership has to be equal to at least 10 percent of the value of the company. The investment could be in manufacturing, services, agriculture, or other sectors. It could have originated as green field investment (building something new), as acquisition (buying an existing company) or joint venture (partnership).

Economists generally agree that economic growth is influenced by natural resources, technological improvement, human capital and physical capital. These factors affect the rate of economic growth and the excess amount of these factors will boost the country's economy by increasing its production capacity. Meanwhile, physical capital in terms of whether domestic investment or foreign investment has attracted the attention of many countries in order to achieve the target level of economic growth for their countries. There are many theories on economic growth and capital investment and different economists have described the relation between them differently. For example, Harrod (1939) - Domar (1946) described that investment and savings are the key determinants of growth. Since raising savings are difficult in developing countries, it is advised to borrow savings via loans, foreign direct investment, and portfolio investment to achieve desired growth rates

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<sup>1</sup> Law on Domestic and Foreign Private Investment in Afghanistan

<sup>2</sup> International Monetary Fund, Balance of Payments database, supplemented by data from the United Nations Conference on Trade and Development and official national sources.

for different countries. Many developing countries have adopted FDI attracting policies and tax incentives in order to reach to targeted levels of growth.

By introducing neoclassical model of growth (Solow), a new rationale for the flow of funds from rich to developing countries was found, as diminishing returns on capital is assumed, the return on investment in developing countries should be higher than developed countries resulting in attracting funds from rich countries. Solow (1956) explained that sustained rise in capital investment increases the growth rate only temporarily; because, the marginal product of capital declines over time. He suggested that the capital, labor and output have to grow at same rate in order to reach the steady-state growth path.

The endogenous growth theory by Romer (1990) states, that an increase in people working in the knowledge sector will increase the domestic productivity and economic growth.

#### **4. Data and Methodology:**

The research reviews both theoretical and empirical literature discussing the role of foreign direct investment and economic growth. Theoretical literature provides a clearer detail of the analysis and the empirical to provide better understanding of relationship of foreign direct investment and economic growth in Afghanistan.

In this study we have used secondary data to assess the impact of FDI on economic growth in Afghanistan. There are some limitations that prevent us to include certain variables of interest in the study especially time period of the data and dis-contiguosness or the lack of uniformity of the observations, small number of observations so, we were not able to apply some of the time series analysis techniques to the data. Time period of the data for GDP in Afghanistan ranges from 2002 to 2019, Net FDI (2008 – 2019), CPI (2005 – 2019), and Net Exports (2008 – 2019) obtained from Da Afghanistan Bank (DAB) and National Statistics and Information Authority (NSIA). Therefore, we have estimated correlation among the variables under consideration.

#### **Model Specification**

In order to know how FDI impacts economic growth in Afghanistan we estimated correlation between the variables and ran causality test.

## 5. Data Analysis and Interpretation

The descriptive methods are used to provide better understanding of relationship of foreign direct investments and economic growth in Afghanistan. For the purpose above the statistical software EViews is used for analysis of the data and extraction of the results. This analysis clarifies the relationship between foreign direct investment and its impact on Afghan economy.

To manage stationarity, the non-stationary data has been transformed to stationary after taking first difference of the data. The observation period is, due to data availability, from 2008 until 2019. (See Appendix)

### Descriptive Statistics

Table 1 indicates the descriptive statistics of studies variables throughout 2008-2018. The minimum value of GDP is USD 10641.3 million in 2008 while the maximum value of GDP is calculated as USD 21217.9 million in 2013. Moreover, the mean of GDP and standard deviation are USD 18506.8 million and USD 3661.8 million, respectively. On the other hand, the mean of Net FDI is 77.3 million, the standard deviation is USD 58.9 million, the minimum value is USD 12.9 million and the maximum value is USD 197.5 million.

Table 5.1.

Variable	Mean	Std. Dev.	Min	Max
GDP	18506.8	3661.8	10641.3	21217.9
Net FDI	77.3	58.9	12.9	197.5
CPI	135.5	30.2	105.7	183.4
Net Exports	-5911.8	1888.6	-9000	-2475.3

The two control variables are inflation rate and net exports with the mean values which are 135.5 and -5911.8, respectively.

### Correlation Matrix

The analysis of the study is carried out from the correlation test to describe the statistical relationship between GDP, FDI, CPI, and Net Exports. Correlation is the association of the variables under consideration. It illustrates the strength of association between the variables under consideration. From the correlation results it can be figured out that one variable might move in one direction and the other variable in opposite direction or both the

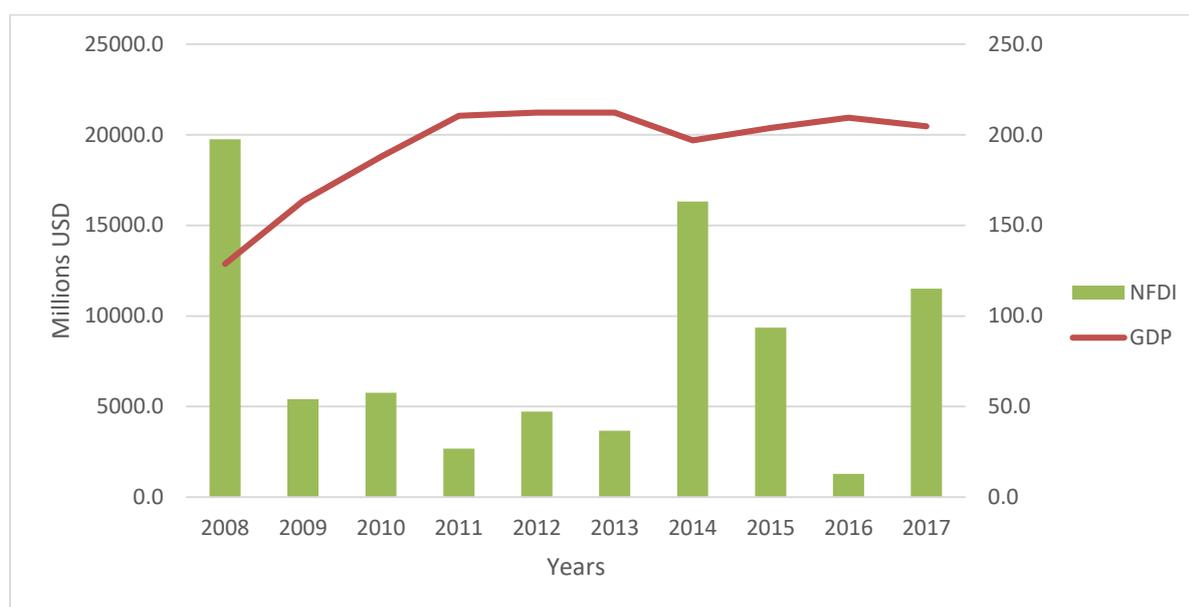
variables might have the same direction. Correlation results are within the range of -1 and +1. -1 indicates a perfect negative correlation while +1 indicates perfect positive correlation.

Table 5.2.

Variable	GDP	Net FDI	CPI	Net Exports
GDP	1.0000			
Net FDI	-0.3052	1.0000		
CPI	-0.7870	0.0888	1.0000	
Net Exports	-0.9178	0.2536	0.6923	1.0000

The correlation matrix above shows that Net FDI is negatively related to GDP the reason behind that is the data for the period under consideration is unreliable and limited observations.

Figure 5.1.

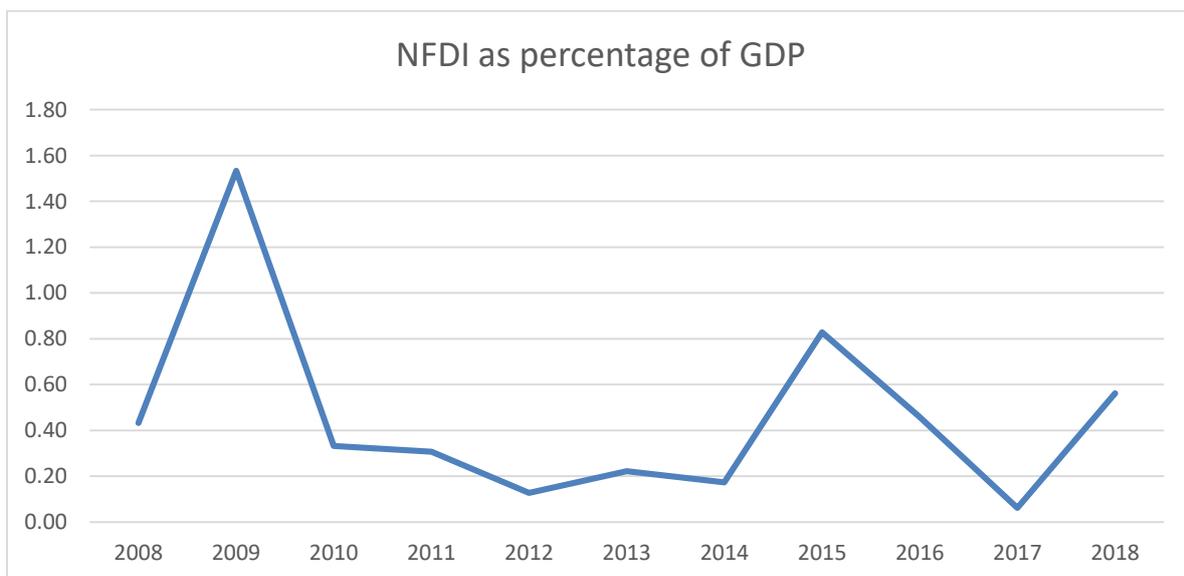


The figure above depicts the graphical representation of the relationship of GDP and Net FDI from 2008 to 2017. From the figure above we can conclude that Net Foreign Direct Investment has not contributed to the Gross Domestic Product of Afghanistan from the years 2008 to 2017. The reason behind no contribution of foreign direct investment to the gross domestic product is that Afghanistan has a very volatile economy and there exists many other dominant factors affecting the GDP of the country including political

uncertainty, volatile economy, worse security situation, withdrawal of foreign troops, continued war and violence and etc.

Since 2001, Afghanistan has witnessed a huge increase in the inflow of foreign direct investment in the country, however, security conditions and political instability deterred the effective use of FDI in the country and these two factors remained major challenges throughout the period.

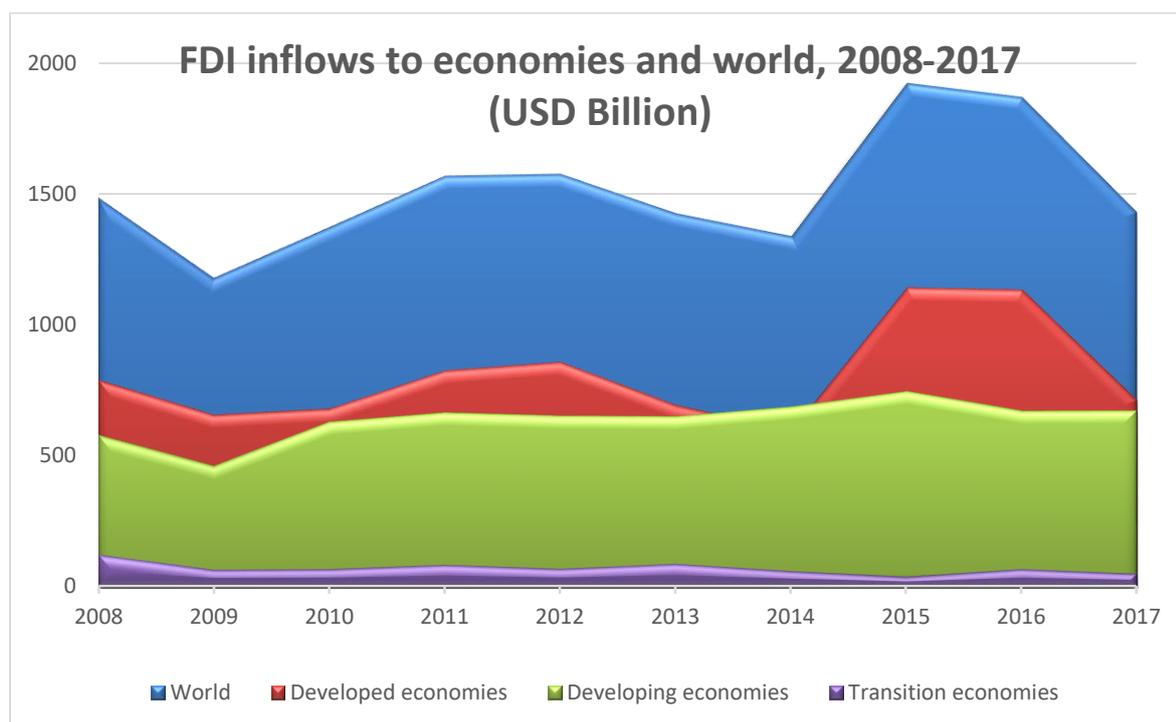
Figure 5.2.



Foreign investments are not a huge part of Afghanistan's gross domestic product and it has a negligible impact on the state of the country's economy. The figure above shows the trend of FDI as percentage of GDP between 2008 and 2018. Net FDI as percentage of GDP has witnessed a sharp decline from 2008 onwards due to a large number of withdrawal of foreign troops and worsening security conditions in the country.

Since 2001, Afghanistan has received political and economic support of international community in terms of dispatching military forces and infusion of billions of dollars' aid which paved the way for the inflow of foreign direct investment in the country reaching its highest in 2008/09 to 197.5 million USD and its minimum in 2017 to 12.9 million USD. The figure above depicts that FDI flows have witnessed great volatility in the period under consideration specially, in 2017 due to insecurity and political instability in the country. The withdrawal of foreign troops from 2010 onwards also greatly affected the inflow of FDI which resulted in huge decline over the years.

Figure 5.3.

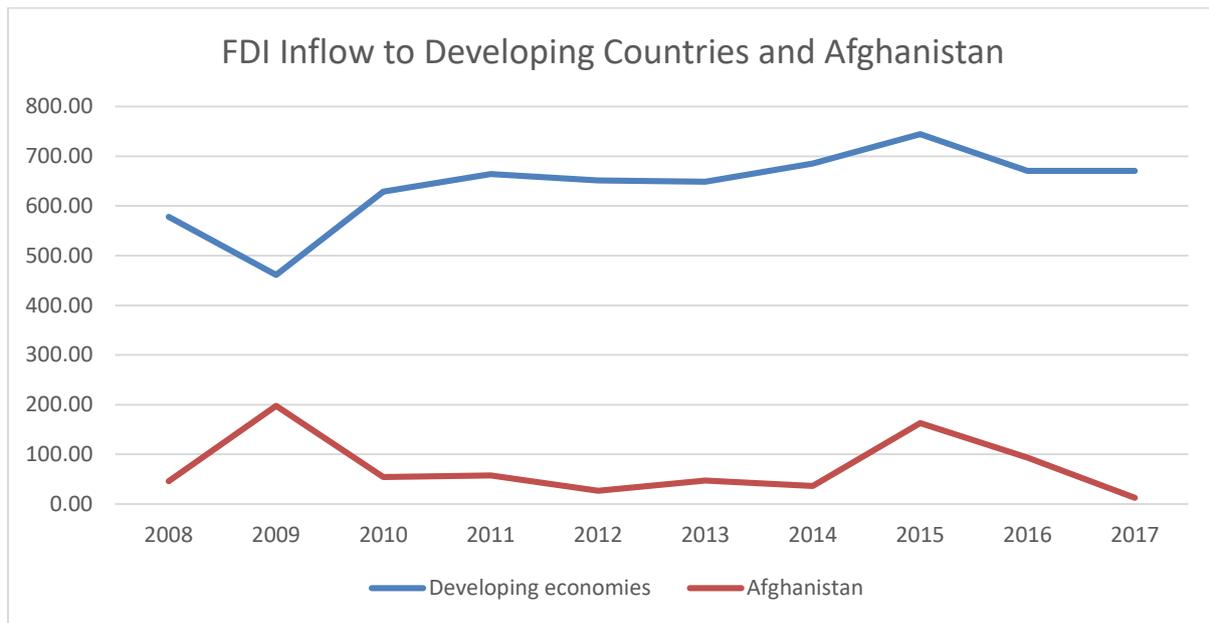


Source: UNCTAD, FDI/MNE database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics)).

Foreign direct investment (FDI) flows to the world on average remained around \$1,500 billion from the year 2008 to 2015. It increased to almost \$2,000 billion in 2015 with gradual decline over the next couple of years. This is due to weaker macroeconomic performance and policy uncertainty for investors, including trade tensions.

With the increase in global FDI in 2015, FDI flows to the developed economies also increased to over \$1,000 billion. However, it declined significantly in 2017 reaching to around \$700 billion. Flows to the developing economies remained almost unchanged at an estimated \$650 billion and flows to transition economies experienced a stable state of an average of \$60 billion over the period 2008-2017. These trends are reflected in figure 5.3. (above), indicating that during the years 2008-2017, 53.3% of FDI went to developed countries, while 46.7% of FDI went to developing and transition economies.

Figure 5.4.



Afghanistan is still not able to bounce back in terms of foreign direct investment inflows compared to other developing countries as seen in the graph above. Lack of infrastructure, worse security condition, political instability, bureaucracy and corruption at all levels in the government are the biggest obstacles for the attraction of FDI to the country. Some of the major obstacles that Afghanistan must deal with are as follows:

### **Factors affecting Foreign Direct Investment:**

There are different factors to be considered before investing in countries, which are going to be important for determining whether investing in these countries is beneficial or not.

These factors include wage rates, labor skills, tax rates, infrastructure and transport, growth potential of the economy or the current economic condition of the country, political stability, exchange rate, openness of the country, and etc.

Factors affecting foreign direct investment flows are many and vary from country to country because it depends on social-economic and political dynamics of the countries. Afghanistan a country affected by decades of war has adopted market economic system after the end of the Taliban era. Post-Taliban era has been the period of reconstruction of the country and development, yet, the country has not reaped the benefits from the huge inflows of aid for reconstruction and development. Security and political instability have remained the major challenges over the years hindering the reconstruction phase which in result decreased the inflow of FDI to the country. Since 2001, Afghanistan has witnessed a volatile FDI trend which is evident from the FDI trend line in the figure 1.2.

Afghanistan has worked on many investment support strategies in order to attract more FDI to the country including low tax on FDI, land ownership for longer period of time, easy licensing, providing electricity at lower costs and etc. but despite the availability of potentials for the investment, the amount of foreign direct investment to the country is not promising.

Afghanistan has joined certain world organizations including World Trade Organization (WTO) and has signed multiple trade and investment agreements with the US, Europe, and Asia, which could bring a number of opportunities for investment in the country. If the country supports Foreign investments inflow or work for the improvement of investment support strategies, this will result in increase in employment in the country as international firms investing in Afghanistan will induce the local firms to increase their production and become suppliers to the international firms. With the increase in the production the local firms hire more people and results in higher employment in the country. By encouraging investment opportunities in the country the international firms need to buy land or other assets and for that they need national currency and they exchange foreign currencies to local currency which will result in increase in foreign exchange reserves. FDI is also the source of transfer of new technology and better managerial skills to the home country as international firms use new technology and train local personnel. Sometimes, the employees trained in international firms start their own businesses or try to join local firms and in that way the knowledge and skills are transferred from international to local firms. Foreign Direct Investment also paves the path to international markets as the international firms already have exports to foreign countries so the host country will also benefit from the establishment of new markets.

Afghanistan ranks among the most corrupt countries in the world and corruption includes bribery which takes place for different reasons and mostly it happens in order to get better services or faster services and influence actions such as police and judicial activities, misuse of power, nepotism, and use of position for dishonest gain. Afghans consider corruption as a major challenge that the country is currently facing and ranks it ahead of the poverty. Corruption also has a very severe effect on many other factors including the current level of investment, future investment opportunities, the quality of infrastructure, education and healthcare system of the country. The final results of the projects implemented by foreign investors or the products produced by foreign firms are likely to be limited or can be of low quality if due to corruption not most qualified firms are awarded contracts to invest in the country. Similarly, corruption in education system, health care system or in any other government sector will ultimately effect the investors' decision making whether to invest in

the country or not. Bureaucracy even without corruption also effects the decision of the would-be investor as the excessive amount of time taken in order to get the work done or issue the permit license or any other documentation process can result in not investing in that particular sector of the country.

For the reasons above reducing corruption and less bureaucracy plays pivotal role in attracting foreign investment and the government had to take initiatives for increasing the inflow of foreign investment in order to promote growth and development in the country.

**Table.5.3: Foreign Direct Investment (inward) from 2008 to 2019 (By Sector) In Million USD**

<b>Year</b>	<b>Construction</b>	<b>Services</b>	<b>Industry</b>	<b>Agriculture</b>	<b>Mining</b>
<b>2008</b>	23.12	13.39	9.39	0.13	-
<b>2009</b>	157.73	31.53	7.26	0.99	-
<b>2010</b>	25.57	19.87	7.32	1.44	-
<b>2011</b>	20.87	23.27	13.48	-	-
<b>2012</b>	22.78	14.36	3.72	-	-
<b>2013</b>	22.38	15.88	9.50	0.05	0.50
<b>2014</b>	9.59	19.78	13.60	-	-
<b>2015</b>	8.22	147.85	9.05	4.03	-
<b>2016</b>	8.12	67.18	8.49	-	9.80
<b>2017</b>	9.69	41.37	2.11	0.12	0.10
<b>2018</b>	21.97	94.97	0.25	0.02	0.66
<b>2019</b>	3.90	37.91	0.25	0.01	0.07
<b>Total</b>	333.95	527.36	84.42	6.79	11.13

Source: BOP, DAB

According to Balance of Payment, Monetary Policy Department data from 2008 to 2019, the total FDI inflows are distributed among services sector (54.73%), construction (34.65%), industry (8.76%), mining (1.15%), and agriculture (0.70%). The services sector in Afghanistan received the highest share in FDI's amounting to over 527 million USD from 2008 to 2019. This sector included banking, telecommunication, and aviation. The construction sector came second amounting to almost 334 million USD from 2008 to 2019. It must be acknowledged that these figures do not reflect the exact trends of FDI inflows to Afghanistan as significant portion of FDI has been channeled through contractors and other firms owned by foreigners.

## Causality results

The results depict that there is no causality among the variables of interest. The unavailability of causality is due to that Afghanistan has a very volatile economy and there exists many other dominant factors affecting the GDP of the country including political uncertainty, volatile economy, worse security situation, withdrawal of foreign troops, continued war and violence and etc. It is worth mentioning that Foreign Direct Investment plays a pivotal role in the growth of the country but as Afghanistan has faced significant challenges including security transition, economic, and political concerns post 2014; the country has not reaped the benefits of FDI inflows completely. The government of Afghanistan encourages FDI in various sectors but from 2005-2013 FDI decreased due to lack of rule of law and difficulty in government procedure for investing in the country.

Table 5.3.

Pairwise Granger Causality Tests			
Sample: 2008 2018			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
DCPI does not Granger Cause DGDP1	7	0.32169	0.7566
DGDP1 does not Granger Cause DCPI		2.45367	0.2895
DNX does not Granger Cause DGDP1	7	0.63698	0.6109
DGDP1 does not Granger Cause DNX		0.53357	0.6521
DNFDI does not Granger Cause DGDP1	7	2.30754	0.3023
DGDP1 does not Granger Cause DNFDI		0.70233	0.5874
GDP1 does not Granger Cause DGDP1	7	NA	NA
DGDP1 does not Granger Cause GDP1		NA	NA
DNX does not Granger Cause DCPI	8	0.74313	0.5468
DCPI does not Granger Cause DNX		3.85184	0.1484
DNFDI does not Granger Cause DCPI	8	2.39066	0.2394
DCPI does not Granger Cause DNFDI		0.02276	0.9777
GDP1 does not Granger Cause DCPI	8	1.70144	0.3207
DCPI does not Granger Cause GDP1		0.72307	0.5543
DNFDI does not Granger Cause DNX	8	0.63860	0.5874
DNX does not Granger Cause DNFDI		0.38900	0.7076
GDP1 does not Granger Cause DNX	8	2.09941	0.2690
DNX does not Granger Cause GDP1		0.67611	0.5723
GDP1 does not Granger Cause DNFDI	8	0.64637	0.5842
DNFDI does not Granger Cause GDP1		2.33614	0.2445

## 6. Conclusion and Policy Recommendations

This paper intends to study the relationship between foreign direct investment (FDI) and economic growth in Afghanistan for the period 2008 to 2019. Having applied the stationarity, it has been concluded that all the variables are non-stationary hence first difference is taken to make the data stationary. The causality tests result show that there is no causality among the variables. No causality among the variables could be the result of unstable and volatile economic conditions of the country. Afghanistan's economy is dependent on agriculture which contributes around 30 percent to the GDP of the country and the sector is not largely affected by the FDI.

From the results of causality tests and the rest of the analysis, we come to the conclusion that it is needed for Afghanistan to attract the foreign direct investment to further economic growth in the country. Afghanistan has experienced a very bad economic situation with the lowest GDP of 1 billion USD before 2002 but has been increased with the establishment of new government and the infusion of billions of USD aid and foreign direct investment which supported the economy of the country. The amount of foreign direct investment has been increased since then and reached its maximum in 2009/2010 to 197.5 million USD but with it decreased with the gradual withdrawal of foreign troops and worsening economic and security condition of the country.

Based on the study, we can conclude that Afghanistan must focus on improvement of security situation in the country, rule of law, and human capacity building. As, these improvements will pave the path for the higher economic growth. The infrastructure of the country has been destroyed through years of war and unstable political situation which is very unsupportive in terms of attracting FDI to the country as this increases the cost of shipping and delays the transportation.

To attract the inflow of FDI to Afghanistan, new FDI law has to be drafted including industry-specific investment laws, policies, tax regimes and etc. which in result will greatly improve the investment climate in the country. Afghanistan in order to attract higher FDI must work for the improvement of security situation which will reduce instability for the investors, specifically international entrepreneurs. In Afghanistan, a very low percentage of the population have access to finance which is not a favorable ratio compared with other countries. The lack of access to finance for private businesses is one of the biggest challenges for the Afghan economy. Private sector often faces difficulties when trying to access finance. Only about 2 percent of all Afghan firms take loans to finance their investments. Consequently, they often remain below their potential as they cannot expand,

innovate or hire additional staff. This results in low revenue generation and many potential jobs being lost – major obstacles for the country’s economic development.

Finally, the existence of informal economy which comprises a large share in the country’s GDP creates market distortions in Afghanistan and undermines clean government.

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## 8. Appendix

Null Hypothesis: GDP has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, max lag=1)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.829783	0.0199
Test critical values: 1% level	-4.297073	
5% level	-3.212696	
10% level	-2.747676	

\*MacKinnon (1996) one-sided p-values.

Warning: Probabilities and critical values calculated for 20 observations

and may not be accurate for a sample size of 10

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(GDP)

Method: Least Squares

Date: 08/11/20 Time: 09:52

Sample (adjusted): 2009 2018

Included observations: 10 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.330028	0.086174	-3.829783	0.0050
C	7024.663	1608.322	4.367697	0.0024
R-squared	0.647068	Mean dependent var	981.1031	
Adjusted R-squared	0.602951	S.D. dependent var	1558.841	
S.E. of regression	982.2539	Akaike info criterion	16.79443	
Sum squared resid	7718582.	Schwarz criterion	16.85495	
Log likelihood	-81.97217	Hannan-Quinn criter.	16.72805	
F-statistic	14.66724	Durbin-Watson stat	1.570023	
Prob(F-statistic)	0.005019			

Null Hypothesis: CPI has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, max lag=1)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.756947	0.3773
Test critical values: 1% level	-4.297073	
5% level	-3.212696	
10% level	-2.747676	

\*MacKinnon (1996) one-sided p-values.

Warning: Probabilities and critical values calculated for 20 observations  
and may not be accurate for a sample size of 10

Augmented Dickey-Fuller Test Equation  
Dependent Variable: D(CPI)  
Method: Least Squares  
Date: 08/11/20 Time: 09:51  
Sample (adjusted): 2009 2018  
Included observations: 10 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI(-1)	-0.444135	0.252788	-1.756947	0.1170
C	54.42661	35.62265	1.527865	0.1651
R-squared	0.278425	Mean dependent var	-6.805000	
Adjusted R-squared	0.188228	S.D. dependent var	25.88016	
S.E. of regression	23.31760	Akaike info criterion	9.313151	
Sum squared resid	4349.684	Schwarz criterion	9.373668	
Log likelihood	-44.56575	Hannan-Quinn criter.	9.246764	
F-statistic	3.086863	Durbin-Watson stat	2.415621	
Prob(F-statistic)	0.116989			

Null Hypothesis: NFDI has a unit root  
Exogenous: Constant  
Lag Length: 0 (Automatic - based on SIC, max lag=1)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.568420	0.0294
Test critical values: 1% level	-4.297073	
5% level	-3.212696	
10% level	-2.747676	

\*MacKinnon (1996) one-sided p-values.  
Warning: Probabilities and critical values calculated for 20 observations  
and may not be accurate for a sample size of 10

Augmented Dickey-Fuller Test Equation  
Dependent Variable: D(NFDI)  
Method: Least Squares  
Date: 08/11/20 Time: 09:52  
Sample (adjusted): 2009 2018  
Included observations: 10 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
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NFDI(-1)	-1.235711	0.346291	-3.568420	0.0073
C	97.80208	32.33495	3.024655	0.0164
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R-squared	0.614153	Mean dependent var	6.908698	
Adjusted R-squared	0.565922	S.D. dependent var	95.60330	
S.E. of regression	62.98782	Akaike info criterion	11.30062	
Sum squared resid	31739.72	Schwarz criterion	11.36113	
Log likelihood	-54.50308	Hannan-Quinn criter.	11.23423	
F-statistic	12.73362	Durbin-Watson stat	1.477036	
Prob(F-statistic)	0.007310			

Null Hypothesis: NX has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, max lag=1)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.146097	0.2332
Test critical values: 1% level	-4.297073	
5% level	-3.212696	
10% level	-2.747676	

\*MacKinnon (1996) one-sided p-values.

Warning: Probabilities and critical values calculated for 20 observations

and may not be accurate for a sample size of 10

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(NX)

Method: Least Squares

Date: 08/11/20 Time: 09:53

Sample (adjusted): 2009 2018

Included observations: 10 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NX(-1)	-0.422056	0.196662	-2.146097	0.0642
C	-2874.556	1208.232	-2.379143	0.0446
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R-squared	0.365368	Mean dependent var	-405.6079	
Adjusted R-squared	0.286039	S.D. dependent var	1381.790	
S.E. of regression	1167.560	Akaike info criterion	17.14008	
Sum squared resid	10905570	Schwarz criterion	17.20059	
Log likelihood	-83.70038	Hannan-Quinn criter.	17.07369	
F-statistic	4.605731	Durbin-Watson stat	2.643866	
Prob(F-statistic)	0.064164			