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The effect of foreign direct investment on economic growth in Afghanistan: an empirical insight

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Abstract

Purpose – This paper examines the impact of foreign direct investment (FDI) on the economic growth of Afghanistan over the period 1990 to 2019.

Design/methodology/approach – This study uses an autoregressive distributed lag (ARDL) to measure FDI's impact on economic growth and determine the short- vs long-run relationship.

Findings – The results show that the F-bound cointegration test confirms the long-run relationship among the variables. The long-run and short-run results reveal that foreign direct investment has a significant negative impact on economic growth in the long run. However, domestic investment and labour force have a significant and positive impact on economic growth in the long run. Moreover, the impact of trade openness on economic growth is insignificant in the long run, while it has a significant negative impact in the short run.

Originality/value – In this study, we contribute to this research area by analysing the function of FDI in economic growth from Afghanistan's experience and perspectives. This is the first study empirically examining this relationship in Afghanistan while considering other selected macroeconomic indicators. This paper could greatly benefit policymakers in Afghanistan by guiding the formulation of FDI policies that would spur its economic growth and development.

Keywords Foreign direct investment, Economic growth, Trade openness, Afghanistan, ARDL

Paper type Research paper

1. Introduction

Generally, economic growth is determined by a country's (GDP) average growth rate. GDP means the total sum of all the finished goods and services produced over a period of time within a country. Besides, it is also considered an aggregate measure of a country's economic activities. Many nations conduct aggressive movements to ensure such GDP growth is continuously upward. Strong economic growth has a positive effect, such as higher living standards for a country's residents. Furthermore, a country's growth level determines whether that country is classified as a low, medium or high-income country. Economic growth is affected by internal and external macro variables (Aghion and Howitt, 2010), making it hard to decide what determines economic growth. Several factors, such as geographical, geological, technological, political and institutional structures across countries, play a significant role in the formation of capital as well as economic growth.

Apparently, FDI is considered an essential part of and contributor to economic growth in developing and developed countries (Blomstrom *et al.*, 1998). Javorcik (2004) highlighted that FDI would bring benefits in terms of physical foreign capital, job opportunity, productivity,

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new technology, managerial and marketing skills and knowledge spillover linkage with local firms. According to Sethi *et al.* (2019a), these positive spillovers will magnify the growth of the economies of the nations. Moreover, Nordin (2015) indicated that most countries have tried pulling foreign investment as an alternative and complementing their domestic capital sources. Indeed, to attract foreign investment, policymakers, especially in developing and developed countries, have reduced different entrance barriers, opened new industries to foreign investment and provided various investment incentives, such as exemptions from import duties and tax holidays. These kinds of incentives will attract more FDI to flow to host countries to complement the capital deficit in particular nations (Bahri *et al.*, 2019).

Historically, FDI has accounted for a significant proportion of international capital flows (Woraewaa, 2017). According to the UNCTAD report for 2021, foreign direct investment (FDI) had a 76% increase in 2020, totalling $1.66 tri. Meanwhile, FDI to emerging countries climbed from around 5% in 2000 to nearly 19% in 2020 (Xie and Sun, 2020). For the developed countries, its FDI reached an estimated $424 bn between January and June 2021. In terms of country basis, FDI inflow has reached up to 90% in 2021 due to a rise in cross-border mergers and acquisitions. In 2021, several prominent European economies obtained a large inflow of FDI, followed by East and Southeast Asia and Central and South America with 25%.

Conventional wisdom tells us that by promoting and encouraging FDI in the country, its economic growth is directly affected and subsequently brings prosperity to the nation. Theoretically, according to the neoclassical growth model, FDI stimulates economic growth by increasing the amount and efficiency of investment. Following the endogenous growth model, FDI contributes to the advancement of economic development by facilitating the spread of technology from developed nations to the recipient country (Borensztein *et al.*, 1998).

In addition, Balasubramanyam *et al.* (1996) as well as De Mello (1996) highlighted the concept that foreign direct investment (FDI) represents a multifaceted package comprising capital stock, expertise and technology. This combination has the potential to augment the current pool of knowledge within the receiving economy through workforce training, skill development, dissemination and the implementation of different methods of management and organisational structure.

On the one hand, although FDI growth increased significantly and provided various benefits, the former has produced a controversial debate about its potential roles. FDI may lead to negative externalities like worsening the host country's balance of payment due to repatriation of profit, the crowding-out effect on domestic investment, weakening domestic firms' productivity, threatening domestic sovereignty and the potential for multinational corporations (MNCs) to dominate the local markets, thus affecting the market structure (Moosa, 2002). Furthermore, Konings (2001) observed a negative spillover and detrimental competitive impact by multinational companies, which outweighed the significant technical effects on local companies, resulting in a net decrease in domestic output. This research also verified Hanson's (2001) and Moosa's (2002s) claim that FDI might be detrimental to the host economy. This debate demonstrates that the relationship between FDI and economic growth is not definitive. There is no mutual consensus about the FDI debate, which leaves it open, despite numerous theoretical and empirical attempts.

Consequently, the relationship between FDI and economic growth has been discussed by many researchers (Osei and Kim, 2020; Bhujabal and Sethi, 2020; Sahoo and Sethi, 2020; Arvin *et al.*, 2021) earlier. While the positive link between FDI and economic growth is well-founded, existing empirical evidence is far from being uniform. The debate regarding FDI and its impact on economic growth remains an open question in the literature. Such studies as (Mustafa, 2023; Siddikee and Rahman, 2021; Yimer, 2023) have provided mixed findings. There is no mutual consensus about the FDI debate, which leaves it open, despite numerous theoretical and empirical attempts. For instance, some empirical studies have shown that the total FDI in the host country has a significantly positive relationship with economic growth,

but on the condition that the host economy can absorb and incorporate advanced MNCS technology. Likewise, the impact of FDI on economic growth was investigated by Bouchoucha and Ali (2019), Makki and Somwaru (2004) and Kunle *et al.* (2014). They discovered a significant and positive impact of FDI on the economic growth of the host nation. These findings are on the debate's positive side and support Blomstrom *et al.'s* (1998) conclusions.

However, some other empirical studies indicate that the effects of FDI on host countries' economic growth are adverse and support Moosa's (2002), Russell and Kouraklis's (2017) and Kakar and Wani's argument that FDI may be harmful to the host economy. The divergent outcomes of these studies have consistently sparked heated discussions and created avenues for subsequent investigations. Indeed, gaining a comprehensive understanding of the connection between foreign direct investment (FDI) and economic growth holds the utmost significance in evaluating a nation's overall growth trajectory.

However, to formulate accurate and impactful policy recommendations to mitigate potential crises in foreign direct investment (FDI) and economic growth, it is imperative to conduct an analysis that considers various underlying macroeconomic factors. These factors include domestic investment, the composition of the labour force and the degree of trade openness. By recognising these factors, it would help to strategise appropriate modelling strategies. Specifically, while the hypothesis of development driven by FDI suggests that the inflow of FDI can stimulate economic growth in developing countries by augmenting capital reserves and facilitating the transfer of knowledge, some researchers question the actual effectiveness of FDI in enhancing economic growth within host nations (Rjoub *et al.*, 2017). Adding to this, we may also note the role of domestic investment, labour force and trade openness in influencing economic growth alongside FDI. These interactions are explored to determine whether the impact of FDI on growth is direct or mediated through the interaction terms.

Despite the acknowledged benefits, the contribution of FDI to economic growth engenders debate, particularly concerning its potential adverse effects, such as the repatriation of profits and the undermining of domestic industries. This ambiguity in FDI's role reflects a complex interplay of factors influencing economic growth, necessitating a nuanced analysis beyond conventional wisdom. In this paper, we take part in this stream of research by examining the role of FDI in impacting economic growth from Afghanistan's experience and perspectives. Turning to Afghanistan, its government encouraged FDI to build infrastructure, seek involvement in bilateral and multilateral trade agreements and trade-related reforms in manufacturing, telecommunications, transportation and logistics. The percentage of FDI attracted by major sectors in Afghanistan includes the service, manufacturing and agricultural sectors (Kakar and Wani, 2018). In order to attract FDI, Afghanistan's government in 2002 began to permit 100% foreign ownership of Afghan companies to encourage foreign investment with considerable tax benefits and unrestricted transfer of assets. Moreover, in 2003, the Afghan Investment Support Agency was also set up to handle foreign investment activities (Federal Research Division, 2008).

However, alongside these benefits to the economy and its incentives, the three decades of war and devastation have damaged Afghanistan's infrastructure and created many economic, social and political problems. Although the country has abundant natural resources, its economic and political activities are still dependent on foreign assistance and investment (Tahiri, 2017). According to a World Bank report in 2018, Afghanistan's economic growth over the last decade has been slow, with an average of 2.3% from 2014 until 2018. It happened due to insecurity issues, presidential elections, political instability, import growth issues and unemployment issues. In order to regain its better economic condition, Afghanistan's government focuses on improving economic performance. Today, Afghanistan's economy relies heavily on foreign aid, and even without foreign aid, its economic growth will be hampered and continue to face economic crisis.

Afghanistan's economy is gradually moving forward with implementing policies aimed at enhancing liberalisation and easing the entry of foreign direct investment (FDI), while also regulating FDI operations. Over decades, a multitude of reforms have been undertaken to enhance economic growth, including initiatives such as economic partnership agreements, structural adjustments and economic recovery programmes. Apparently, in light of recent developments, proper assessment of the impact of FDI on economic growth and the present analysis are urgently needed.

For Afghanistan, the impact of FDI on economic growth has not been fully addressed and conducted; hence, the absence of a study demands that an empirical study be carried out. This progress has inspired us to undertake this empirical study. Notably, the specific impact of FDI on Afghanistan's economic growth remains underexplored. Given Afghanistan's unique challenges and opportunities, including its reliance on foreign aid and efforts to attract FDI amidst political and economic instability, this study aims to fill a critical gap in the literature.

In this regard, the present research contributes a fresh perspective to the existing body of knowledge by investigating the connection between FDI, domestic investment, labour force, trade openness and economic growth jointly in the context of Afghanistan from 1990 to 2019. To the best of our knowledge, this is the first study examining these relationships in Afghanistan recently.

This paper seeks to address the following inquiries: Is there a substantial long-term relationship between FDI and economic growth in Afghanistan? What is the nature and direction of the relationship, both in the short and long run, between FDI and economic growth from 1990 to 2019? This paper analyses the hypotheses within the autoregressive distributed lag (ADRL) model framework. The remainder of the article is organised into four sections. The second section offers an overview of the current literature on the subject matter. The third section outlines the data and econometric approach used in this study. In the fourth section, the obtained results are analysed and discussed. Lastly, the fifth section presents the conclusions drawn and the policy implications that emerge from this research.

2. Review of literature

In many countries, FDI represents the primary source of external funding for capital-intensive projects in a recipient country (Agarwal, 2015). Low-income countries such as Afghanistan started to embark on a significant approach to providing conducive environments for attracting FDI. Its importance is where FDI will channel the necessary funds to the economy's capital shortage sectors, stimulating economic growth by increasing the marginal productivity of the capital the investing firms employ. FDI increases a host nation's capital accumulation by bringing new inputs and technology (Sultanuzzaman *et al.*, 2018). According to Ofosu-Mensah Ababio *et al.* (2022), since most developing countries lack the funds to fund investment projects for economic growth and development, FDI helps close the gap in available resources (capital).

Neoclassical economic growth theories have described the relationship between FDI and economic growth in a recipient country. They contend that economic growth occurs through the efficient market promotion of free trade, the government's removal of regulations to free trade and foreign investment restrictions (Abdu, 2013). Based on traditional economic theory, it was perceived that increases in capital and labour stocks were major contributors to economic growth (Murshed *et al.*, 2022). However, the impact of foreign direct investment (FDI) on the economic growth of a recipient nation becomes a topic of debate. While the FDI-led growth hypothesis, which posits that foreign direct investment (FDI) inflows lead to economic growth in developing nations by bolstering capital reserves and facilitating technology transfer, has gained significant recognition, some researchers are questioning the capacity of FDI to foster economic growth within host countries effectively (Rjoub *et al.*, 2017).

On the other hand, dependency theory indicates a negative contribution of FDI to economic growth due to dependence on the host country's foreign investment, negatively affecting their economic growth and income distribution (Adhikary, 2011). Dependency scholars argue that, due to the repatriation of benefits, declining reinvestment and income inequality, developing countries experience adverse effects through FDI. FDI inflows directed towards the "periphery" can potentially divert the focus of local firms, impede technological innovation and lead to the displacement of domestic enterprises. Furthermore, although FDI might have an initial positive influence on growth, there is an argument that, in the long term, overreliance on foreign investment can detrimentally affect growth (Dixon and Boswell, 1996).

Based on these mixed theoretical views, the researchers conducted empirical studies to examine this relationship. Apparently, the relationship between FDI and economic growth continues to be a subject of controversy. Previous empirical studies have identified three types of relations between FDI and economic growth. Among them are (1) FDI positively impacts economic growth, (2) FDI has a negative relationship with economic growth and (3) the effect of FDI depends on the host country's absorptive capacity.

For instance, numerous researchers highlight the positive contribution of foreign direct investment (FDI) to economic growth, attributing it to heightened capital formation, the stimulation of domestic investment, improved productivity within the manufacturing industry and the transfer of technological knowledge. Bouchoucha and Ali (2019) investigated the effect of FDI on Tunisia's economic growth from 1980 to 2015 by using the autoregressive lag distribution (ARDL) approach. The result showed that FDI has a statistically significant and positive impact on economic growth in the long and short term. Moreover, the study reveals that domestic investment and enrolment positively contribute to economic growth, while trade openness has a negative long-run relationship with economic growth. Meanwhile, Makki and Somwaru (2004) analysed the role of FDI in 66 developing countries. The outcome indicated that FDI has been associated positively with economic growth and suggests that FDI is exporting advanced technology to developing countries and encouraging domestic investment. Similarly, Kunle *et al.* (2014) used time-series data from 1999 to 2013 to find the effect of FDI on the Nigerian economy. The study results indicated that FDI positively affects economic growth and suggest that FDI is an economic growth engine. On the other hand, Reza *et al.* (2018) used time-series data from 1990 to 2015 to analyse FDI's effect on Bangladesh's economic growth. They found a causal link between FDI and growth (GDP). They identified FDI as a vital factor in the growth of Bangladesh's GDP due to technological advancement, the acceleration of investment and knowledge improvement. Natasha *et al.* (2020) collected data from 1970 to 2019 to investigate the effects of FDI on Indian economic growth. Their results also revealed that FDI positively impacts economic growth and is consistent with Sethi *et al.* (2019a, b, c). Additionally, Ciobanu (2020) investigated the impact of FDI on economic growth in Romania from 1991 to 2018 and found that FDI and trade openness positively impact economic growth, while the labour force has a negative long-run relationship with economic growth in Romania.

Conversely, FDI is also negatively affecting the economy due to repatriation of profit, low-level human capital, low financial development, increasing imports, occurring trade deficits, crowding out of domestic investment and suppression of developing countries by developed countries. For example, the study by Brecher and Diaz Alejandro (1977) found that FDI negatively affects the host country's economic growth if foreign investors transfer excessive profits to the home country. This scenario is referred to as "profit repatriation," which has an adverse impact on the host country's balance of payments. Borensztein *et al.* (1998) investigated the influence of FDI on economic growth across 69 developing nations, employing data from 1970 to 1989. Their findings indicated that FDI inflows had an adverse effect on economic growth in countries characterised by low levels of human capital.

Furthermore, Eller *et al.* (2005) explored the impact of FDI on economic growth within seven central and eastern European countries. Analysing data spanning from 1996 to 2003, they identified that FDI had the effect of displacing domestic capital. Similarly, Falki (2009) investigated the effect of the labour force, FDI and domestic investment on Pakistan's GDP for the period 1980 to 2006 and found a negative and significant impact of FDI, while labour force and domestic investment positively impacted Pakistan's GDP. These findings are also consistent with Saqib *et al.* (2013), who identified that FDI, debt, inflation and trade had a negative impact on Pakistan's GDP for the period of 1981–2010.

A third perspective emerges from empirical studies, suggesting that the impact of foreign direct investment (FDI) on economic growth hinges on the host country's ability to absorb and effectively utilise the incoming investment. Borensztein *et al.* (1998) studied the effects of FDI by using panel data in 69 countries and found that FDI's benefits relied heavily on the host country's skilled personnel, efficient technology, developed infrastructure, open trade policy, organisational and political reforms and friendly FDI policies. This is consistent with the views of Buckley *et al.* (2002), who suggested that FDI's positive effects on the economy may require the host country to have a good political, fiscal, social and geographical position. Indeed, Forte and Moura (2013) also supported the idea that FDI's impact on economic development relies on the host country's domestic conditions (e.g. economic and technological conditions, human capital and degree of openness of the economy). In 2015, Hodrab *et al.*, also examined the effects of FDI on economic growth from 1995 to 2011 in Palestine. This study found that there was a negative impact of FDI during those periods. It suggested that absorption capacity has not reached the threshold for efficient use of transferred technology, accumulation of knowledge and the acquisition of skills.

The prevailing empirical evidence affirms that the impact of foreign direct investment (FDI) on economic growth is contingent on the unique circumstances of each country, owing to variations in socioeconomic conditions across nations. It would differ from one country to another, from one region to another and from one time period to another. While numerous empirical studies have delved into the discourse surrounding this relationship, the majority of these investigations have primarily concentrated on other developing nations. However, research concerning the influence of foreign direct investment (FDI) on Afghanistan's economic growth remains scanty or nonexistent in terms of coverage. Hence, the present research endeavours to bridge this gap in the existing body of knowledge by investigating the correlation between FDI and economic growth in Afghanistan from 1990 to 2019. This investigation includes the incorporation of intermediate variables such as domestic investment, labour force and trade openness due to their significance in the FDI-economic growth framework. Indeed, no study in Afghanistan has jointly incorporated these variables while analysing this relationship. Accordingly, guided by neoclassical economic growth theories, this study puts forth the following hypotheses:

H1. There is a long-run relationship between FDI and economic growth in Afghanistan.

H2. In the long run, FDI causes economic growth in Afghanistan.

H3. In the short run, FDI causes economic growth in Afghanistan.

3. Data and methodology

The model is based on reviewing several theories and existing studies in which economic growth is determined by FDI, domestic investment, labour force and trade openness. The present study employed Afghanistan's time series data (yearly data) to analyse the relationship between FDI and other intermediate variables on economic growth in Afghanistan from 1990 to 2019. These periods are selected due to several occurrences of

political and economic transitions, economic reforms and FDI policies, and security, reconstruction and development phases. All data are transformed into natural logarithms (see Table 1). Since the time series data are heteroskedastic and likely to be a stationary or integrated model, thus its transformation into a natural logarithm would fix the former issues.

The long-term and short-term relationships between the variables are analysed using the autoregressive distributed lag (ARDL) cointegration method. This cointegration approach has the benefit of avoiding spurious regression caused by any combination of stationary and non-stationary variables, which are common characteristics of economic data (Duasa *et al.*, 2018). Indeed, according to Kuppusamy and Shanmugam (2007), the ARDL technique is robust for small sample studies, which is also relevant to our study. As indicated by Payne (2003) and Kutan and Yigit (2009), within the framework of the ARDL approach, the concern of endogeneity becomes less problematic as long as the model remains devoid of residual correlation. Moreover, the ARDL approach to integration, as emphasised by Pesaran *et al.* (2001), entails the estimation of the conditional error correction (EC) version of the ARDL model for economic growth and its determining factors, outlined as follows:

$$\begin{aligned}\Delta Ln\_GDP_t = {} & \alpha_0 + \sum_{i=1}^{p} \beta_i \Delta Ln_{GDP\,t-i} + \sum_{i=1}^{p} \theta_i \Delta Ln_{FDI\,t-i} + \sum_{i=1}^{p} \pi_i Ln_{DI\,t-i} + \sum_{i=1}^{p} \gamma_i \Delta Ln_{LF_{t-i}} \\ & + \sum_{i=1}^{p} \partial_i \Delta Ln_{TO\,t-i} + \delta_1 GDP_{t-1} + \delta_2 Ln_{FDI\,t-1} + \delta_3 Ln_{DI\,t-1} + \delta_4 Ln_{LF\,t-1} \\ & + \delta_5 Ln_{TO\,t-1} + \mu_t \end{aligned} \tag{1}$$

where in equation (1) Δ represents the first difference, and the maximum order of lag is represented by (p). β, θ, π, γ, ∂ are parameters for the short-run dynamic, while all the δ's capture the long-term nexus among the variables.

Subsequently, if evidence of a long-run relationship or cointegration among the variables emerges, the subsequent long-run model is computed:

$$\begin{aligned} Ln\_GDP_t = {} & \alpha_0 + \sum_{i=1}^{p} \beta_i Ln_{GDP\,t-i} + \sum_{i=1}^{p} \theta_i\, Ln_{FDI\,t-i} + \sum_{i=1}^{p} \pi_i Ln_{DI\,t-i} + \sum_{i=1}^{p} \gamma_i Ln_{LF_{t-i}} \\ & + \sum_{i=1}^{p} \partial_i Ln_{TO\,t-i} + \mu_t \end{aligned} \tag{2}$$

Symbol	Variable	Measurement	Source of data
LN_GDP	Economic growth	USD	OIC Statistics Database (OICStat)
LN_FDI	Foreign direct investment – net inflow	(% of GDP)	World development indicator (WDI) and OIC Statistics Database (OICStat)
LN_DI	Domestic investment	USD	OIC Statistics Database (OICStat)
LN_LF	Labour force	% of total population ages 15–64	World development indicator (WDI)
LN_TO	Trade openness	Exports plus imports as percent of GDP	OIC Statistics Database (OICStat)

Source(s): Authors' compilation

Table 1. Data and variables

The next stage in the ARDL process involves uncovering short-term dynamics through the utilisation of the error correction (ECM) model introduced by Sargan (1974). The integration of the error correction term (ECT) captures the short-term dynamics generated by establishing the error correction model (ECM) within the framework of ARDL, as illustrated below:

$$\Delta Ln\_GDP_t = \alpha_0 + \sum_{i=1}^{o} \lambda_{1i} \Delta Ln\_GDP_{t-1} + \sum_{i=1}^{p} \lambda_{2i} \Delta Ln\_FDI_{t-1} + \sum_{i=1}^{q} \lambda_{3i} \Delta Ln\_DI_{t-1} + \sum_{i=1}^{r} \lambda_{4i} \Delta Ln\_LF_{t-1} + \sum_{i=1}^{s} \lambda_{5i} \Delta Ln\_TO_{t-1} + \eta_1 ECT_{t-1} + \vartheta_t \quad (3)$$

where ECT_{t-1} is the error correction term that is developed from the cointegration vector and the residual attained from the co-integrating equation, while η_1 is the coefficient for speed of adjustment. ϑt indicates an error term in the model, which is identically independent and normally distributed.

In addition, several diagnostic tests are carried out to ensure that the residual term of the chosen model meets the required conditions for regularity. The tests included for serial correlation the Breusch–Godfrey Lagrange Multiplier (Breusch–Godfrey LM) test, for heteroskedasticity Breusch–Pagan–Godfrey, for normality of data Jarque–Bera test, and model specification error Ramsey RESET test. Meanwhile, in 1975, Brown *et al.*, proposed the utilisation of cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) techniques. These methods were recommended for assessing both the stability of cointegration within a model and the model's goodness of fit. In order to confirm the stability of the coefficient of both the long run as well as short run, the CUSUM and CUSUMSQ lines should descend in the range of a 5% significance level in the critical bound.

4. Empirical results and discussions

Even though the ARDL model does not require pre-unit root testing, it is essential to confirm that none of the variables are 1 (2) or integrate more than one order. Narayan and Narayan (2004) suggested that the unit root test should be performed. It is to examine whether the order of integration between the variables used in the study is either level I (0) or I (1) to eradicate spurious regression. Hence, the research conducted a unit root analysis using the augmented Dickey–Fuller (ADF) and Philips–Peron (PP) tests. The results of both ADF as well as PP tests are illustrated in the following Table 2.

The findings of ADF and PP tests show that Ln_TO and Ln_LF are stationary at levels, while Ln_GDP, Ln_FDI and Ln_DI become stationary after taking the first difference. This

	Augmented Dickey–Fuller (ADF)		Phillips–Perron(pp)		
Variables	Level	1st difference	Level	1st difference	Order of integration
Ln_ GDP	−2.925960	−5.486467**	−2.993282	−5.571453**	I (1)
Ln_FDI	−1.970468	−5.746323**	−2.101230	−5.744493**	I (1)
Ln_DI	−2.359317	−5.014570**	−2.371228	−5.013186**	I (1)
Ln-TO	−2.440636	−7.064658**	−2.519071**	−7.459122**	I (0)
Ln_LF	−4.05857***	−4.905954**	−0.965794	−4.058945**	I (0)

Note(s): (**) and (***) represent the 1 and 5% significance levels, respectively
Source(s): Authors' compilation

Table 2.
Result of unit root analysis

result indicates that Ln_TO and Ln-LF are integrated at I (0), whereas Ln_GDP, Ln_FDI and Ln_DI are integrated at I (1). Based on this finding too, none of the study variables is integrated at I (2). Thus, applying the ARDL model for estimating the relationship between the selected variables becomes suitable.

Before applying the bound cointegration test, evaluating each variable's maximum lag is necessary. The Schwarz Criterion (SIC) is utilised to choose the number of optimal lags for the model of ARDL. According to the SIC criterion, the selected ARDL model among the top 20 models is (1,0,0,0,2). One lag is attributed to the dependent variable (LN_GDP), and two lags to the independent variable trade openness (LN_TO). In contrast, zero lags are attributed to foreign direct investment (LN_FDI), domestic investment (LN_DI) and labour force (LN_LF).

Table 3 shows the result of long-term cointegration for the selected variables. The default maximum lags of two (2) based on the Schwarz Information Criterion (SIC) are used to provide its explanatory power and superiority (Narayan and Narayan, 2004). The table shows that the calculated value of F-statistics is 12.29050, which is significant at one present level and greater compared to the critical value of the upper bound, which is 5.84. As a result, the null hypothesis indicating the absence of cointegration (no long-term relationship) is thereby rejected. This leads to the inference that a long-term relationship exists among the variables examined in the study.

Once the long-term relationship (cointegration) between the variables has been confirmed, as reported in Table 3, it is essential to analyse the long-term relationship between economic growth (GDP), FDI, domestic investment, labour force and trade openness, which is indicated in Table 4.

Calculated *F*- statistics	Critical values (restricted constant and no trend)		
Fc(LN_GDPt, LN_FDIt, LN_DIt, LN_LFt, LN_TOt)	LCB	UCB	Sig
12.29050	4.28	5.84	1%
	3.058	4.223	5%
	2.525	3.56	10%

Note(s): The presented table displays the outcomes of the bound testing process used to identify a long-run relationship. The estimation period used is from 1990 to 2019. The maximum lag are based on SBC
Source(s): Authors' compilation

Table 3.
Bound test for long-run relationship

Dependent Variable	Independent variables			
LN_GDP	LN_FDI	LN_DI	LN_LF	LN_TO
	−0.092939**	1.102947***	12.04915***	0.102444
	(−3.694374)	(13.58656)	(6.288462)	(1.303734)

Note(s): ** and *** denote rejection of the particular null hypothesis. Various diagnostic examinations were conducted by employing several tests, including Ramsey's RESET test, tests for serial correlation, heteroscedasticity and normality. A serial correlation test was applied to the residuals using the Busch–Godfrey Serial Correlation LM test to validate the estimates of the error correction term. Since the *p*-value of the F-statistics (0.0568) was greater at the 5% level of significance, the alternate hypothesis of no serial correlation failed to reject, and as such, no heteroscedasticity (F-statistic = 0.1606) was found. The Ramsey RESET test (F-statistic = 0.7380) confirmed that the model is correctly specified, and Jarque-Bera (JB) (0.6550) results of normality implied that the error term was normally distributed
Source(s): Authors' compilation

Table 4.
Panel A: long-run analysis

The result of long-run empirical analysis describes that foreign direct investment, labour force and domestic investment have a significant impact in the long term on economic growth. In contrast, trade openness has an insignificant effect, but its sign is consistent with the theory. The FDI coefficient exhibits a significant negative sign, implying a notable inverse association with economic growth. It means that the increase in FDI negatively affects economic growth, which is consistent with dependency theory. This may be because most foreign investment gains are diluted by the repatriation of profits back to the investor country, and FDI is not concentrated in productive investment. The majority of FDI inflows in Afghanistan were in the service sector instead of the industrial and large-scale manufacturing sectors. Hence, the role of FDI was not significant and valuable for boosting exports. This result is consistent with the studies by Nabila *et al.* (2017), Russell and Kouraklis (2017), Kakar and Wani (2018) and Falki (2009). These studies highlighted that FDI has a negative effect on the economy due to benefit repatriation, low human capital, low financial growth, increasing imports, occurring trade deficits, crowding out of domestic investment and suppression of developing countries by developed countries.

The outcome also portrays that domestic investment and economic growth are positively and significantly correlated. The coefficient of domestic investment is 1.102947, which means if domestic investment increases by one percent, there will be an increase in GDP by 1.102947%. The neoclassical theory argues that the rise in investment (capital) as a production factor led to a corresponding increase in output. Therefore, a positive relationship between gross fixed capital formation and economic growth is expected to exist. This result aligns with the studies conducted by Ma'in and Mat Isa (2020) and Adhikary (2011). Investments will trigger economic activity by generating immediate impacts on aggregate demand and enhancing the efficiency of pre-existing private capital (Febrina, 2011; Pettinger, 2019).

Similarly, the coefficient of the labour force is significant and positively associated with economic growth in the long run. The result of this study is similar to Shahid (2014), Shimelis (2014) and Rahman (2018), who determined that the accumulation of exogenous production factors, like capital stocks and labour, stimulates economic growth. Indeed, the increase in the labour force can trigger a multiplier effect where, as more people are employed and earning income, their productivity and spending will rise and propel further economic growth.

Lastly, the study's findings reveal that the coefficient sign of trade openness is positive, consistent with the theory. However, its coefficient is not statistically significant, which indicates that increasing trade openness does not affect or influence economic growth in Afghanistan's case. This result is consistent with the findings by Kim (2011) and Huang and Chang (2014). According to their results, trade boosts economic growth only when the nation meets the threshold for stock market development, and trade has an insignificant impact on growth in countries with high inflation. On the other hand, Haussmann *et al.* (2007) mentioned that trade openness might not have any impact on the economic growth of countries which specialise in the production of low-quality products and are vulnerable to terms of trade shocks. This is ideally in line with the current conditions in Afghanistan with the lack of security, lack of an adequate legislative framework and organisational capacity, lack of professional and skilled labourers in the relevant field as well as corruption (Wilczewska, 2019).

The short-run analysis of the error correction model is reported in Table 5. The coefficients are statistically significant in the ECM model. The findings reveal that one period lagged in trade openness has a significant and adverse relationship with the dependent variable in the short-run period at a 1% level of significance. It also suggests that a deviation from the long-run equilibrium level of economic growth is corrected by 70.26% over the following year.

Next, this paper evaluates the stability of the long-run connection between economic growth and its influencing factors by employing CUSUM and CUSUM-squared tests as

outlined by Brown *et al.* (1975). This approach aims to scrutinise the consistency of long-run parameters. When the plot of CUSUM statistics remains within the 5% significance level, it indicates that the estimates are considered stable. This criterion also applies for CUSUM-squared statistics, representing squared recursive residuals. In both tests, the presence of the plot within the critical bounds (usually at the 5% significance level) suggests that the model's parameters are stable over the time frame analysed. The "blue trend line" staying between the "red boundaries" at the 5% significance level is indicative of a model that does not suffer from significant parameter shifts or structural changes over the period under consideration. This paper's findings, as shown in Figure 1, indicating that both the CUSUM and CUSUMSQ plots reside within the acceptable bounds, affirm the dynamic stability of the model. This implies that despite the economic and political fluctuations that Afghanistan has experienced from 1990 to 2019, the relationship between economic growth and its influencing factors, such as FDI, domestic investment, labour force and trade openness, has remained consistently stable in both the long and short run.

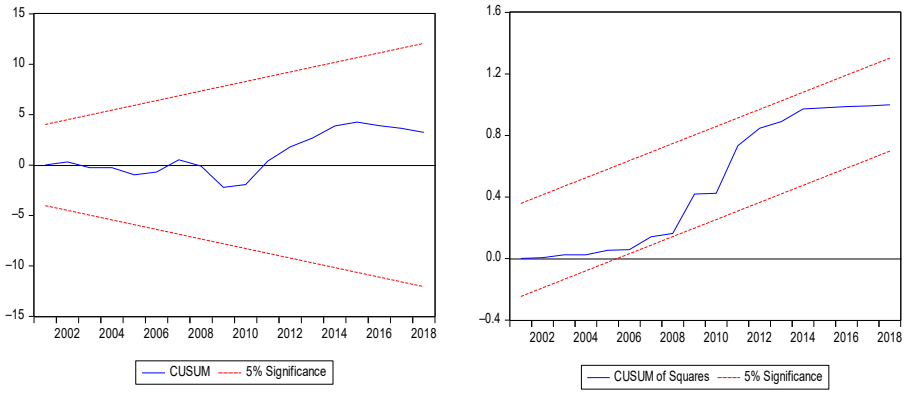
5. Conclusion and policy implications

This study investigates the impact of foreign direct investment on economic growth from 1990 to 2019 in Afghanistan. The stationarity test results showed that three variables, LN_GDP, LN_FDI and LN_DI, are 1 (1) out of the five variables and LN_LF and LN_TO are I (0). Due to the mixed result of stationary, the study applied the ARDL approach to cointegration along with ECM to examine the variables' short-run and long-run relationships. The F-bound test for cointegration confirms the long-run relationship among the variables. The long-run

Dependent variable: ΔLn_GDP$_t$	Coefficient	*t*-statistics
ΔLn_TO$_t$	−0.302887	−4.281624
Δln _TO$_{t-1}$	−0.304817	−4.253127
ECM$_{t-1}$	−0.702619	−9.707067
R^2 = 0.8323	*F*-stats = 166.35	DW-stats = 2.117
	Prob (*F*-stats = 0.000)	

Source(s): Authors' compilation

Table 5. Estimated short-run analysis and error correction model



Source(s): Authors' compilation

Figure 1. Plot of CUSUM and CUSUMSQ

and short-run results reveal that foreign direct investment has a significantly negative impact on economic growth in the long run. Thus, through the ARDL framework, FDI is consistent with dependency theory in the context of Afghanistan. Nonetheless, domestic investment and the labour force exhibit substantial and positive influences on long-run economic growth. Furthermore, trade openness demonstrates insignificance in its long-term effect on economic growth; however, it does bear a significant negative impact on economic growth in the short run. Diagnostic tests confirm the absence of serial correlation within this model. There is no evidence of heteroskedasticity, and it states that the terms of error are homoscedastic. Moreover, the residuals are normally distributed, and the model is specified correctly. The CUSUM and CUSUMSQ tests confirm the stability of the model both in the long run and short run.

This analysis investigated the long-run as well as the short-run relationship among GDP, FDI, labour force, trade openness and domestic investment. The results reveal that in the long term, FDI negatively affects economic growth and indicate that an increase in FDI will decline Afghanistan's economic growth. The research revealed that production in the industrial sector depends on foreign investments (FDI), which cause national resources not to be used properly. This means that the economy is mainly driven by international investors and that sustainable growth does not occur. Besides, relatively high reliance on foreign capital has a long-term adverse effect on growth; its influence is extreme over the first five years and over time decreases. Furthermore, the companies that finance FDI in host countries transfer excessive gains to their home countries; hence, FDI negatively affects economic growth. The study also shows that the country has a low level of human resources, with the increase in FDI inflows having a negative effect on economic development. Where the effect of domestic investment on economic growth is positive, this implies that a rise in domestic investment would improve Afghanistan's economic growth. It is because an increase in investment (capital) as an input in production leads to an expansion in output. Moreover, investment expands economic activities and generates new sources of products that accelerate economic growth. Similarly, the labour force's effect on economic growth is positive and shows that increased participation in the labour force is boosting economic growth in Afghanistan. The labour force is a factor of production that contributes directly to economic growth. Economic growth is produced by accumulating exogenous production factors, such as capital stocks and labour. The impact of trade openness is found to be positive but insignificant. In the short analysis, trade openness negatively impacts economic growth.

The empirical results of the study align with earlier research that identified a negative relationship between FDI and economic growth. Among the other factors, domestic investment and the labour force emerged as the principal catalysts and factors shaping Afghanistan's long-term economic growth. This result implies that Afghanistan's government should pay special attention to encouraging domestic investment and the labour force. Given that this study has revealed a negative relationship between FDI and economic growth, these outcomes could raise concerns for the government of Afghanistan. This is particularly significant as a country with limited capital resources like Afghanistan cannot overlook the significance of foreign investment in achieving sustainable growth. Afghanistan must investigate the factors that underlie this negative relationship and benefit from FDI by positively billeting these factors. The government must make a policy to attract FDI in such a way that it can increase growth rather than delay growth. More investment should be encouraged, along with investment in large-scale manufacturing that can raise Afghanistan's exports. It is also recommended that the government should build new education and training institutes that will produce more skilled labour, enhancing Afghanistan's economic growth. Finally, since healthy employees will strongly demonstrate their productivity, there is a need to ensure adequate health coverage for the

workforce. To make the FDI useful, the Afghan government needs to improve the country's absorption capacity via quality education, training and health, high infrastructure, investment-friendly policies, political stability and advanced technology.

6. Limitations of the study and future recommendation

The limitation of this study is the lack of availability of macroeconomic data in the case of Afghanistan. Therefore, data for some macroeconomic variables are not available for specific years, leading to difficulty in obtaining data. As a result, a small sample size that tends to be biased compared to a large sample size is the major limitation of this study. In addition, this study adopted only a few macroeconomic variables for analysis due to the data's unavailability. It is generally known that the larger the number of variables, notably explanatory variables, the better the outcome will be.

This study has few recommendations for future research, mainly for variables and methodology used in this analysis, which have been expressed. Firstly, future researchers could examine the impact of foreign direct investment on Afghanistan's economic growth by adding more variables to improve the results. Remarkably, human capital, government spending, inflation, exchange rate, foreign aid and external debts could be added to the model to see its robustness. As the second recommendation, the future researcher may employ different methodology approaches like Dynamic Ordinary Least Square (DOLS) to improve the study results. Lastly, future researchers could also extend their research in examining the effect of FDI on economic growth by increasing the sample size by using quarterly data or by increasing the number of years.

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