 

**AZERBAIJAN STATE UNIVERSITY OF ECONOMICS - UNEC**

**SABAH CENTER**

**The impact of Foreign Direct Investment on non-oil economic growth in Azerbaijan**

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**Abstract**

The purpose of the research is two directions. Firstly, to analyze the connection between the foreign direct investments and economic growth. Secondly, to estimate the impact of Foreign Direct Investment on non-oil economic growth in Azerbaijan over the period of 2001–2017. The empirical analysis uncovers that there is a positive and statistically significant effect links between FDI and economic growth. The review of the literature and findings of the research show that the supply of foreign direct investment is a critical factor that decidedly influences economic growth in Azerbaijan.

**Keywords:** *Foreign direct investment, Economic growth, Literature Review, Descriptive analyses, Empirical methodology.*

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**INTRODUCTION**

It is of specific significance for Azerbaijan, trying to lessen dependence on oil and gas incomes by expanding its economy and fares, to draw in foreign direct investment (FDI) to non-oil segments, especially to the preparing business. In this manner it is by and large suitable that the principal significant marker out of the four laid out in the administration's arrangement titled the Strategic Roadmap of the National Economy Prospects is to achieve a 4 percent offer of non-oil outside direct interest in GDP until 2025 (contrasted with 2.6 percent in 2015).

Azerbaijan's oil and gas rich in hydrocarbons parts have dependably been appealing for remote venture: $ 77.8 billion outside of FDI to the nation's economy from 2001 to 2017, more than 85 percent, or $ 66.8 billion, went to the oil and gas fields. In addition, outside speculators had inadequate enthusiasm for the nation's non-oil/gas part, particularly the preparing business amid that period. Outside financial specialists' little enthusiasm for Azerbaijan's non-extractive ventures is surely intriguing, as they had put intensely in the oil and gas segments. So as to accomplish an expansion in FDI streams to these areas, steps ought to be taken to distinguish and take out the components that oblige remote speculators. The viability and competency of the Government's choices on advancing speculation action is likewise among the issues, which ought to be reconsidered.

The challenge to draw in FDI among nations has been intense, particularly in late decades. Subsequently, the issue of deciding the variables that guarantee the engaging quality of an economy and government strategies for FDI is one of the key subjects that is in the spotlight of absolutely logical research, just as viable investigations of universal associations and national governments.

In order to attract investment in the country's economy, the government is implemented an "open door" policy. At present, the Government of Azerbaijan is taking measures to continue economic reforms in the country, further improve the business environment, and develop non-oil sector.

In this area, the leading trend in FDI policy - raw material and material resources - is to be developed on the basis of the most up-to-date techniques and technology and to increase the export potential in the form of ready-made products that are of the highest quality, competitive in the world market.

The role of the state in investment policy in the area of ​​attracting foreign capital in the national economy should be based on the following main principles and trends:

- the use of more efficient forms of attracting foreign investments for a specific project;

- insurance and protection of foreign investment in the country;

- arrangement of collateral transactions on foreign investments;

- Delivery of inquiries about the conditions of investment to foreign investors, formation of the data bank on existing investment projects;

- Creation of international consortiums, voucher funds and leasing companies to attract foreign investments;

- development of investment cooperation with international financial institutions and organizations;

- Creating favorable conditions that ensure safe and unmanned return of capital from the country;

- Development of the state program on creation of free economic zones in the country in order to increase export;

- liberalization of norms and rules of foreign investors' foreign exchange operations in the future;

- Development of regional investment programs, investment projects to strengthen the inflow of foreign investments to the regions;

- expanding cooperation with foreign banks, conveying information about the banking system, investment projects to the international banking community, and trying to open credit lines.

**CHAPTER 1**

**Background**

It very well may be said that the historical backdrop of FDI streams to autonomous economy of Azerbaijan goes to 1995. A conclusion to the political precariousness, which had been reigning over Azerbaijan since it recuperated its freedom in 1991, the truce came to in the Nagorno-Karabakh war1 and, specifically, the consenting to of the arrangement on joint improvement and creation sharing for the Azeri Chirag fields and the Deep Water Portion of the Guneshli Field (ACG) in the Caspian Sea Azerbaijan Sector’s of the made ready for remote speculation streams to Azerbaijan.

Azerbaijan had FDI streams of $125.5 billion somewhere in the range of 1995 and 2017, including $120.6 billion (96.1%) from 2001 to 2017, as per the State Statistical Committee (SSC). $29.2 billion (24.2 %) of the every remote venture somewhere in the range of 2001 and 2017 were advances Azerbaijan’s government and state-run and private firms had gotten from an assortment of universal fund and credit organizations. $77.8 billion (64.5 %) were immediate speculations, $217.7 million (0.2 %) were extra installments under oil understandings, and the remaining $13.4 billion (11.1 %) were different ventures (essentially portfolio investments).

Out of the all-out FDI of $77.8 billion into economy of Azerbaijan somewhere in the range of 2001 and 2017, $66.8 billion, or 85.9 percent, went to the oil part, while $19.9 billion (14.1 percent) went to the non-oil area.

FDI stock of the oil sector has dependably been more noteworthy than in the non-oil sector (Figure 1).



Source: State Statistical Commitee (SSC)

Non-oil FDI was $500 million in 2008, and came to $1 billion of every 2012. From 2003 to 2014, there was a continuous increment in non-oil FDI. Be that as it may, the most recent three years (2015-2017) saw a sharp unpredictability in non-oil FDI. It fell by 34.7 % in 2015, yet there was an extensive development of 98.3% ($1.7 billion) in 2016 and afterward in 2017 it fell by 52.4 % (Figure 2) once more.



Source: Prepared on the basis of data from the State Statistical Commitee (SSC)

The proportion of Azerbaijan's oil FDI to yearly oil GDP had been in excess of 20 % until 2007 (it even surpassed 150 % in 2004), yet it shifted somewhere in the range of 10 and 20 % from 2008 until 2013 and surpassed 30 % in 2015.

Conversely, in many years the proportion of non-oil FDI to non-oil GDP has been underneath 3 % (just somewhat surpassing 3 % amid certain years) and rose to 7.6 % in 2016. The sharp change amid that year was for the most part because of the abrupt decrease in non-oil GDP: non-oil GDP remained at about $22.5 billion in 2016, falling 46.8 % from $42.3 billion out of 2014. It was a 32.4 % decay from the 2015 dimension, when the non-oil GDP was $33.3 billion. The proportion of non-oil FDI to non-oil GDP dropped to 3.5 % in 2017 because of a decrease in FDI streams. (It ought to be noticed that the administration's objective "to increase non-oil FDI to the dimension of 4 % of GDP by 2025" as sketched out in the Strategic Roadmap of the National Economy Prospects would demonstrate lacking in this respects, as it doesn't mull over the way that national cash rate can significantly affect this proportion.)

FDI to the non-oil division came to $10.9 billion somewhere in the range of 2001 and 2017, representing 3.3 percent of the all-out non-oil GDP in a similar period. As indicated by the State Statistical Committee, out of the all-out non-oil FDI stock fares to the nation amid this time (2001-2017), $2.5882 billion (23.7 %) were ventures from Turkey, $1.6494 billion (15.1 % ) from the UK, $1.1251 billion (10.3%) from the Netherlands, $911.7 million (8.3 %) from the United States, $757.9 million (6.9 % ) from the Russian Federation, $717.6 million (6.6 percent ) from United Arab Emirates (UAE), $615.5 million (6.6%) from Germany, $143.8 million (1.3 %) from Italy, $138.3 million (1.3 %) from France, 97.2 million (0.9 %) from China and $91.1 million (0.8 %) from Iran (Figure 3).



Source: State Statistical Commitee (SSC)

Speculators of Turkish, except for certain years, have constantly kept up a main job in non-oil segment of Azerbaijan. Moreover, there were speculations from the German, French, US, UK, UAE and Russian organizations also. Be that as it may, the nation has seen a sharp development in speculations from Russian, Turkish and Swiss organizations in the previous 2-3 years after the drop in non-oil FDI internal stocks in 2015: out of $1.7 billion FDI stock, $1.04 billion, or 61 %, tumbled to the offer of the three nations (Figure 4).



Source: State Statistical Commitee (SSC)

The biggest internal FDI internal stock into non-oil division of Azerbaijan was from Switzerland in 2016, adding up to $370.5, and representing 60.2 % of absolute internal non-oil FDI streams to Azerbaijan from Switzerland from 2001 to 2017. The secondly biggest financial specialist of internal FDI interests in Azerbaijan in 2016 was Russia, with internal streams adding up to $363.2 million. It ought to be noticed that 71.6 % ($542.2 million) of complete internal FDI streams to Azerbaijan's non-oil division starting from Russia had been recorded in the previous two years (2016 and 2017).

In the meantime, SSC uncovered the measure of internal FDI streams to Azerbaijan's non-oil division by nation, however subtleties of zones affected by FDIs are inaccessible. The parity of installments by the Central Bank of the Republic of Azerbaijan just introduces the measure of FDIs to the non-oil segment; be that as it may, tasks and territories affected by FDIs are unavailable4. Therefore, it is hard to clarify the sharp increment in FDI stocks starting from Russia and Switzerland even in 2016. The expansion could be because of Gazprombank's advance to back the SOCAR Polymer venture, an occupant of the Sumgait Chemical Industry Park (SCIP): 60 % ($450 million) of the $750.1 million project originated from the Gazprombank's loan.

During FDI flows to the non-oil segment, it is additionally critical to follow the remote interest in fixed capital by sectoral divisions and organizations tasks of joint endeavors and outside put undertakings in the nation. As indicated by Shahin Mustafayev who is Azerbaijan's Minister of Economic Development, more than 9,000 remote organizations occupied with various fields of the economy had so far been enlisted in Azerbaijan. Additionally, the State Statistical Committee (SSC) reports that as much as 1,425 joint endeavors and outside put ventures keep running in Azerbaijan in 2017 (contrasted with 551 out of 2000, 1,091 of every 2010, and 1,235 out of 2015). 528 (37 percent) of the joint endeavors and remote put undertakings in 2017 were occupied with exchange and upkeep, 271 (19 percent) industry (counting oil and gas), 151 (10.5 percent) expert, science and specialized action, 138 (9.7 percent) development, 74 (5.2 percent) transportation and capacity, 41 (2.9 percent) data and correspondence, 41 (2.9 percent) settlement and sustenance administration exercises, and 30 (2.1 percent) cultivating and fishing. There are no information on the nation of starting point of joint endeavors and outside put ventures in Azerbaijan.

In 2017, out of the all-out fixed capital arrangement of AZN 8.7 billion (counting FDI) in Azerbaijan's economy, AZN 6.3 billion (72.6 percent) were shaped in the extraction business (oil and gas yield specifically) and AZN 2.41 billion in other monetary circles, as indicated by the State Statistical Committee (SSC). Out of the all-out non-oil/non-gas outside interests in fixed capital, 1.07 billion AZN (around 45 %) tumbled to the offer of development, 548.1 million AZN (22.8 %) to transportation and capacity, 469.1 million AZN (19.5 %) to water supply, and 200 million AZN (8.3 %) to power, gas, steam and cooling supply.

The sectoral structure of outside interests in fixed capital in 2017 has remained practically unaltered over the most recent three years (2015-2017). Our figurings dependent on SSC information demonstrate that extractive industry (chiefly oil and gas industry) got 75 percent of remote speculations' offer (18.6 billion AZN out of 24.8 billion AZN) coordinated to the primary capital from all sources amid the most recent three years. The rest, which is 6.2 billion AZN, of remote venture was coordinated to development (51.3% or 3.2 billion AZN); stockpiling business (21.3 % or 1.3 billion AZN); water supply (18.2 percent or 1.14 billion AZN) and power supply (4.6 % or 288.5 million AZN). Interestingly, amid the most recent three years cultivating, ranger service and fishery got 76.9 million AZN (1.2 %), preparing industry got 48.2 million AZN (0.8 %), data and correspondence 22.1 million AZN (0.3 %) outside ventures to the fixed capital.

It ought to be noticed, that the greater part of remote interests in water and power supply are involved credits given by worldwide money related organizations.

In this way, development and capacity as non-exchange parts appear to be progressively alluring for outside financial specialists as far as internal FDI streams to the non-oil segment. Assembling territories, for example, preparing and cultivating specifically, have neglected to draw in huge FDI streams. In any case, the Strategic Roadmap of the National Economy Prospects marked by President Ilham Aliyev in late 2016 characterizes cultivating, data, and correspondence, little and medium-sized undertakings that produce devouring items, notwithstanding transportation and the travel industry as needs.

**CHAPTER 2**

**Literature Review**

Sjoerd Beugelsdijk et.al (2008) utilizing another database and conventional all out FDI figures as a benchmark, they assessed the development impacts of vertical and level US MNE action into 44 have nations over the period 1983– 2003. They found that even and vertical FDI have positive and huge development impacts in created nations, yet they found no noteworthy impacts of flat or vertical FDI in creating nations.

Siong Hook Law et al. (2010) utilized a limit relapse model. They found new proof that the positive effect of FDI on development "kicks in" simply after monetary market advancement surpasses an edge level. Up to that point, the advantage of FDI was non-existent.

Panagiotis Pegkas et al. (2015) utilized board information estimations to test the connection between the factors. There was twofold the motivation behind the investigation. Right off the bat, to examine the connection between the outside direct ventures and monetary development and furthermore, to appraise the impact of remote direct speculations on financial development in the Eurozone nations over the time of 2002– 2012. The outcomes additionally shown that the load of remote direct speculation is a huge factor that emphatically influences financial development in the Eurozone nations.

Sebnem Kalemli-Ozcan et al. (2003) inspected the different connections among remote direct speculation (FDI), money related markets, and monetary development. They investigated whether nations with better money related frameworks can abuse FDI all the more proficiently, utilizing crosscountry information somewhere in the range of 1975 and 1995. The outcomes were hearty to various proportions of budgetary market advancement, the incorporation of different determinants of monetary development, and onsideration of endogeneity, additionally demonstrated that FDI alone assumes an uncertain job in adding to financial development.

Usha Nair‐Reichert et al. (2001) utilized a blended fixed and arbitrary (MFR) board information estimation technique to take into consideration crosscountry heterogeneity in the causal connection among FDI and development and balance our discoveries with those from customary methodologies. Their outcomes recommend there is some proof that the adequacy of FDI in raising future development rates, albeit heterogeneous crosswise over nations, is higher in progressively open economies.

Henrik Hansen and John Rand (2006) examined the Granger causal connections between outside direct speculation (FDI) and GDP in an example of 31 creating nations covering 31 years, and utilizing estimators for heterogeneous board information they discovered bi‐directional causality between the FDI‐to‐GDP proportion and the dimension of GDP. They deciphered as proof for the speculations that FDI affects GDP by means of learning exchanges and appropriation of new innovation.

Zeshan Atique et al. (2005) examined the exchange arrangement routine pursued by Pakistan that has impacted altogether both the measure of internal FDI got and monetary development. Their discoveries keep up that the Bhagwati Hypothesis Emphasis on both fare advancement strategy and internal FDI with respect to the legislature can get the ideal aftereffect of financial development.

Mounir Belloumi et al. (2013) broke down the connection between remote direct venture (FDI), exchange transparency and monetary development have nations. They inspected this issue for Tunisia by applying the limits testing (ARDL) way to deal with cointegration for the period from 1970 to 2008. The outcomes found for Tunisia can be summed up and contrasted with other creating nations which share a typical involvement in drawing in FDI and exchange advancement.

Robert Lensink and Oliver Morrissey (2006) added to the writing on FDI and financial growth.They assessed the standard model utilizing cross-area, board information, and instrumental variable systems. While all outcomes are not so much hearty, there is a reliable finding that unpredictability of FDI negatively affects development. The proof for a constructive outcome of FDI levels on development isn't vigorous, nor is that for any impact of human capital.

Samuel Adams (2009) broke down the effect of remote direct venture (FDI) and local speculation (DI) on monetary development in Sub-Saharan Africa for the period 1990– 2003. The outcomes demonstrate that DI is sure and essentially related with financial development in both the OLS and fixed impacts estimation, yet FDI is sure and critical just in the OLS estimation. The examination likewise discovered that FDI has an underlying negative impact on DI and resulting beneficial outcome in later periods for the board of nations considered.

Kevin Honglin Zhang (2001) broke down the connection between remote direct venture (FDI) and monetary development in creating nations, gave an exact appraisal of the issue by utilizing information for 11 economies in East Asia and Latin America. Particularly,FDI will in general be bound to advance financial development when have nations receive changed exchange routine, improve instruction and accordingly human capital conditions, energize export‐oriented FDI, and keep up macroeconomic dependability.

Joysri Acharyya et al. (2009) inspected two most significant advantages and expenses of remote direct interest in the Indian setting - GDP development and the earth debasement. They found a factually huge long run positive, however minimal, effect of FDI inflow on GDP development in India amid 1980-2003.

Jozef Konings et al. (2003) utilized firm‐level board information to research exactly the impacts of outside direct venture on the efficiency execution of household firms in three rising economies of Central and Eastern Europe: Bulgaria, Romania and Poland. They found that just in Poland, show improvement over firms without outside support. In addition, for each of the three nations examined here, they found no proof of positive overflows to household firms, overall. Conversely, by and large, there are negative overflows to residential firms in Bulgaria and Romania, while there are no overflows to household firms in Poland. This recommends a negative challenge impact that commands a positive innovation impact.

E. Borensztein et al. (1997) investigated the impact of outside direct venture (FDI) on financial development in a crosscountry relapse system, using information on FDI streams from modern nations to 69 creating nations in the course of the most recent two decades. Their outcomes propose that FDI is a significant vehicle for the exchange of innovation, contributing moderately more to development than household venture. In this manner, FDI adds to financial development just when an adequate absorptive capacity of the trend setting innovations is accessible in the host economy.

Xiaming Liu (2005) researched whether remote direct speculation (FDI) influences financial development dependent on a board of information for 84 nations over the period 1970– 1999. The cooperation of FDI with human capital applies a solid constructive outcome on monetary development in creating nations, while that of FDI with the innovation hole has a huge negative effect.

Marios B. Obwona (2002) utilized time arrangement information to explore the FDI‐growth linkage. The experimental outcomes show that FDI positively affects GDP development in Uganda. The Ugandan experience demonstrates that to pull in FDI, macroeconomic and political steadiness and approach consistency are significantly more significant than such impetus plans, talked about foundation and institutional bottlenecks that go about as obstructions to FDI.

Dierk Herzer et al. (2008) tested the across the board conviction that FDI by and large positively affects monetary development in creating nations and rethinks the FDI-drove development theory for 28 creating nations utilizing cointegration strategies on a nation by-nation premise. Their outcomes demonstrated that there is no unmistakable relationship between the development effect of FDI and the dimension of per capita salary, the dimension of instruction, the level of receptiveness and the dimension of budgetary market improvement in creating nations.

Ari Kokko et al. (1995) analyzed intra‐industry overflows from FDI in Uruguayan assembling plants in 1988, to decide if contrasts in the innovation hole between locally‐owned plants and remote members have any effect on the connection between nearby profitability and outside nearness. They found a positive and measurably critical overflow impact just in a sub‐sample of locally‐owned plants with moderate innovation holes vis‐à‐vis remote firms.

Shujie Yao et al. (2006) displayed and tried two recommendations on the job of FDI in financial development from a recently industrializing economy's point of view. They found that because of its double job as a mover of generation proficiency and a shifter of creation outskirts, FDI is an incredible driver of monetary development for a recently industrializing economy to get up to speed with the world's most exceptional nations.

P.P.A Wasantha Athukorala et al. (2003) concentrated on the FDI-drove development speculation on account of Sri Lanka. The investigation depends on time arrangement information from 1959 to 2002 and the reaction of common society and remote firms. They found that the relapse investigation don't give much help to the perspective on a hearty connection among FDI and development in Sri Lanka.

Abdur Chowdhury and George Mavrotas (2006) analyzed the causal connection among FDI and monetary development by utilizing a creative econometric philosophy to think about the heading of causality between the two factors. They dependent on the Toda‐Yamamoto test for causality, to time‐series information covering the period 1969– 2000 for three creating nations, in particular Chile, Malaysia and Thailand, every one of them significant beneficiaries of FDI with an alternate history of macroeconomic scenes, arrangement routines and development designs.

Nicole Madariaga and Sandra Poncet (2007) reconsiderd the topic of effect of FDI on development execution. They depend on a dataset of Chinese urban communities somewhere in the range of 1990 and 2002 to explore the impacts of FDI in the conventional development relapse system utilizing the GMM estimator for dynamic boards. Their outcomes uncover that Chinese urban areas exploit of FDI streams got locally as well as of FDI streams gotten by their neighbors.

Eldin Mehic et al. (2014) explored the effect of remote direct speculation (FDI) on monetary development in the change nations of southeast Europe. The experimental examination grasps seven southeast European nations in the period 1998-2007, and they utilized Prais-Winsten relapse with board redressed standard blunders for the favored estimation model. They found that the principle inquire about outcome is the positive and factually critical impact of FDI on monetary development.

Yen Li Chee et al. (2010) examined the connection between FDI, budgetary segment improvement and monetary development on an example of 44 Asia and Oceania nations for the period 1996-2005, they utilized board information strategies. The exact examination demonstrated that budgetary area advancement improves the commitment of FDI on monetary development in the locale. It additionally demonstrated that the corresponding job of FDI and monetary division improvement on financial development is most significant for least created economies in the locale.

Marta Bengoa and Blanca Sanchez-Robles (2003) investigated the transaction between financial opportunity, outside direct speculation (FDI) and monetary development utilizing board information examination for an example of 18 Latin American nations for 1970– 1999. They found that financial opportunity in the host nation is a positive determinant of FDI inflows. Their outcomes additionally recommend that outside direct venture is emphatically associated with monetary development in the host nations.

James B. Ang et al. (2008) analyzed the determinants of FDI for Malaysia to advise scientific and approach discusses, utilizing yearly time arrangement information for the period 1960– 2005. They found that steady with the forecast of the market estimate theory, genuine GDP is found to have a noteworthy positive effect on FDI inflows. There is proof that development rate of GDP applies a little positive effect on internal FDI.

## Niels Hermes and Robert Lensink (2010) observationally examined the job the advancement of the budgetary framework plays in improving the positive connection among FDI and financial development. Of the 67 nations in informational collection, 37 have an adequately created money related framework so as to let FDI contribute decidedly to monetary development. A large portion of these nations are in Latin America and Asia.

## Kevin Honglin Zhang et al. (2001) researched the issue utilizing board information at the common dimension in the time of 1986– 1997. Their discoveries bolster the broadly held conviction that expanded dimensions of FDI decidedly influence commonplace assembling trade execution.

## Paula Neto et al. (2008) explored whether total remote direct speculation (FDI), cross outskirt mergers and acquisitions (M&A) and greenfield ventures influences financial development dependent on a board information of 53 nations over the period 1996-2006. The proof proposes that there is bidirectional causality between FDI, M&A and development. M&A negatively affects the monetary development of creating nations, however inconsequential on created nations.

## Elizabeth Asiedu (2006) utilized board information for 22 nations over the period 1984– 2000 to inspect the effect of regular assets, showcase measure, government approaches, political shakiness and the nature of the host nation's foundations on FDI. Their outcomes propose that nations that are little or need normal assets can pull in FDI by improving their establishments and approach condition.

## Aviral Kumar Tiwari et al. (2011) analyzed the effect of outside direct speculation on financial development in Asian nations. They did our examination in the board system for the period 1986 to 2008. They additionally inspected the nonlinearities related with remote direct venture and fares in the financial development procedure of Asian nations under thought. They found that both remote direct venture and fares upgrade the development procedure. What's more, work and capital additionally assume a significant job in the development of Asian nations.

## Stevan Globerman and Daniel M. Shapiro (1999) utilized the structure of a factual model, the degree to which arrangement changes in Canada explicitly coordinated toward internal outside direct speculation (FDI) have impacted both capital outpourings to Canada and capital surges from Canada. They inspected explicitly the impacts of significant strategy changes toward FDI executed by the Canadian government over the period 1950-1995. They found that unhindered commerce understandings (FTA and NAFTA) seem to have essentially expanded dimensions of internal and outward remote direct interest for Canada's situation.

## Luiz R. de Mello Jr (1997) studied the most recent improvements in the writing on the effect of internal outside direct speculation (FDI) on development in creating nations. They found that a definitive effect of FDI on yield development in the beneficiary economy relies upon the extension for proficiency overflows to residential firms, by which FDI prompts expanding returns in household creation, and increments in the value‐added substance of FDI‐related generation.

## James B. Ang (2010) analyzed the FDI-development nexus in the little open economy of Malaysia by controlling for the dimension of budgetary improvement. Utilizing time-arrangement information from 1965 to 2004, the outcomes demonstrate that FDI and monetary improvement are decidedly identified with yield over the long haul. The effect of FDI on yield is upgraded through money related advancement. The outcomes demonstrate that monetary development causes FDI development over the long haul, however no input relationship is watched.

## Anis Omri et al. (2014) researched the causality interfaces between CO2 discharges, outside direct speculation, and financial development utilizing dynamic synchronous condition board information models for a worldwide board of 54 nations over the period 1990– 2011. Their outcomes give proof of bidirectional causality between FDI inflows and monetary development for every one of the boards and among FDI and CO2 for every one of the boards, with the exception of Europe and North Asia. They additionally showed the presence of unidirectional causality running from CO2 outflows to monetary development, except for the Middle East, North Africa, and sub-Sahara board, for which bidirectional causality between these factors can't be rejected.

## Najia Saqib et al. (2013) utilized the information for this examination has crossed over the time of 1981 till 2010. Other than FDI, four different factors including Debt, Trade, Inflation and Domestic Investment have been incorporated into the examination, to endless supply of this nation. The philosophy to test the effect of these factors on Pakistan's economy has been restricted to the least squares strategy. Their discoveries showed that Pakistan's monetary execution is adversely influenced by outside speculation while its household venture has profited its economy. Besides, the country's obligation, exchange and expansion have found to have negative effect on its GDP.

## Manh Vu Le et al. (2006) contemplated the concurrent effect of open uses and outside direct speculation (FDI) on monetary development, utilizing an example of 105 creating and created nations for the period 1970– 2001. They found that considers the cooperation among FDI and open uses in deciding the financial development rate. Their principle discoveries are FDI, open capital, and private venture assume significant jobs in advancing monetary development, open non-capital use negatively affects financial development, and over the top spending in open capital consumption can obstruct the valuable impacts of FDI.

## John Whalley et al. (2010) introduced and evaluated of the commitment of internal FDI to China's ongoing fast financial development utilizing a two phase development bookkeeping approach. Their outcomes showed that China's FIEs may have contributed over 40% of China's financial development in 2003 and 2004, and without this internal FDI, China's general GDP development rate could have been around 3.4 rate focuses lower. They proposed that the manageability of both China' fare and generally financial development might be flawed if internal FDI levels later on.

## Markus Eller et al. (2006) analyzed the effect of money related division FDI on monetary development by means of the effectiveness channel, utilizing a board information model for 11 Central and Eastern European nations in a crosscountry development bookkeeping structure more than 1996 to 2003. They found that a protuberance formed effect of FDI on financial development. They joined the FDI-development and the money development writing and infer that the dimension and nature of outside speculation impacts the monetary parts' commitment to development in developing markets.

## Archanun Kohpaiboon (2003) analyzed the job of exchange strategy routines molding the effect of outside direct speculation (FDI) on development execution in venture accepting (have) nations through a contextual analysis of Thailand. The philosophy included evaluating a development condition, which accommodated catching the effect of FDI intuitively with financial transparency on monetary development, utilizing information for the period 1970– 99. The outcomes support the 'Bhagwati' theory that, different things being equivalent, the development effect of FDI will in general be more prominent under a fare advancement (EP) exchange routine contrasted with an import-substitution (IS) routine.

## M. Alguacil et al. (2010) added to the dialog on the pretended by the absorptive limits inside host economies in their capacity to develop and to abuse FDI productively. The results for an example of creating economies amid the period 1976– 2005 show contrasts related to both the technique for estimation (the framework GMM versus OLS strategy) just as the dimension of monetary improvement. They found that have nation governments ought to build up a lot of approaches that are centered around internal FDI advancement as well as on the improvement of their political and monetary system.

## Timothy C. Passage et al. (2007) investigated the connections between making another stock proportion of outside direct speculation (FDI) in view of work, they can catch these long‐term impacts. Their outcomes exhibit that FDI greaterly affects per capita yield development than local venture for US expresses that meet a base human capital edge. Incidentally, the most dynamic states in the enlistment of FDI will in general fall beneath this edge.

## Nauro F. Campos and Yuko Kinoshita (2002) tried for the impacts of FDI on development in a lot of nations in which FDI is unadulterated innovation exchanged: the 25 Central and Eastern European and previous Soviet Union change nations somewhere in the range of 1990 and 1998. Their principle finding is that, in this increasingly fitting setting, FDI has a positive and critical effect on monetary development as hypothesis predicts.

## Dongsheng Zhou et al. (2002) examinied the effect of FDI on local firms. It examines how FDI influences the efficiency of local firms in China. Their outcomes demonstrate that FDI may apply an alternate effect on firms at the provincial dimension than it does on firms at the modern dimension. Local firms in areas that draw in more FDI or have a more extended history of FDI will in general have higher profitability, while local firms in businesses that have more FDI or have a more extended history of FDI will in general have lower efficiency.

## Jordan Shan (2010) utilized a vector autoregression (VAR) approach, reconsidered a few speculations recommended by the financial writing on the financial aspects of FDI applying quarterly time arrangement information from China, a nation which has as of late turned into the second biggest host nation for FDI. The experimental research utilizing this strategy on account of China is constrained, the examination along these lines gives an intriguing development with regards to the writing on the financial matters of FDI in China.

## Nadia Doytch et al. (2011) inspected the impact of assembling and administration FDI (outside direct venture) all alone part development, the overflow to different segments and the general economy in host nations. They distinguished critical sectoral and between industry overflow impacts with different information orders and sorts of FDI streams. They found that development impact of assembling FDI works by invigorating movement in its own (fabricating) area and is common in Latin America-Caribbean, in Europe-Central Asia, center to low-pay nations and economies with extensive industry share.

## Chung Chen et al. (1995) broke down the advancement of China's approach toward remote direct venture (FDI) amid the post-1978 period is assessed and the volume, sources, geographic appropriation and structure of FDI. They found that FDI has been emphatically connected with financial development, and the expansion of complete fixed resource interest in China. Remote direct venture has additionally constrained an expanding number of local makers to contend comprehensively.

## Kevin Honglin Zhang et.al (2001) endeavored to break down the job of FDI in China's salary development and market‐oriented progress, utilizing a development model and cross‐section and board information for the period 1984‐1998. They initially recognize potential channels through which FDI may have positive or negative impacts on the Chinese economy. They gave an observational appraisal, which proposes that FDI appears to support China's progress and advance pay development, and that this positive development impact appears to ascend after some time and to be more grounded in the waterfront than the inland districts.

## Egwaikhide Christian Imoudu et.al (2012) researched the connection between outside direct speculation (FDI) and financial development in Nigeria between 1980-2009 through the use of Johansen Cointegration procedure and Vector Error Correction Methodology in which FDI is disaggregated into different parts. They inspected the determinants of FDI in Nigeria. The Johansen Cointegration result builds up that the effect of the disaggregated FDI on genuine development in Nigeria to be specific: agribusiness, mining, assembling and oil divisions is almost no except for the telecom area which has a decent and promising future, particularly over the long haul.

## Alan A. Bevan et al. (2000) utilized a board dataset containing data on FDI streams from market to change economies, they built up the determinants of FDI inflows to Central and Eastern Europe: nation chance, unit work costs, have showcase size and gravity factors. They observed that the nation hazard to be impacted by private segment advancement, modern improvement, the administration parity, stores and debasement. The fundamental elements of the procedure outline that increments in FDI improve nation FICO assessments with a slack, subsequently expanding future FDI receipts.

## Sher Verick et al. (2008) contended that a key channel is its consequences for household factor markets, particularly local speculation, and investigations the two‐way linkages among FDI and local interest in sub‐Saharan Africa. Their outcomes propose, first, that FDI packs in residential speculation and, also, that private venture is a driver of FDI, suggesting that African nations will increase much from improving the household atmosphere. Additionally, there are options in contrast to asset blessings as a methods for pulling in remote venture to non‐resource‐rich nations.

Ilhan Ozturk (2007) dissected the writing managing the impacts of FDI on Growth, various exact examinations have been led to research whether development is affected by FDI. In any case, facilitated commerce zones, exchange routine, the human capital base in the host nation, budgetary market guidelines, banking framework, foundation quality, charge motivating forces, advertise measure, territorial coordination courses of action and monetary and political steadiness are significant determinant for FDI that makes a positive effect on generally speaking financial development. In rundown, agreement has been come to among the scholarly world and specialists that FDI will in general have huge impact on financial development through different channels, for example, capital arrangement, innovation exchange and overflow, human capital (learning and ability) improvement, etc.

Dauda, R.O.S et al (2007) endeavored to give proof on the impact of exchange approach routine on Foreign Direct Investment (FDI) commitment to financial development execution in Nigeria, utilizing a yearly information for the period, 1970-2004. They found that an observational model as a development condition, which catches the effect of FDI intelligently with exchange transparency on monetary development. Their outcomes unequivocally underpins exchange advancement and speculation routines.

LR de Mello, Jr et al (1999) evaluated the effect of remote direct venture (FDI) on capital aggregation, and yield and complete factor efficiency (TFP) development in the beneficiary economy. Time arrangement and board information proof are accommodated an example of OECD and non-OECD nations in the period 1970-1990. They found that in spite of the fact that FDI is relied upon to help long-run development in the beneficiary economy through mechanical overhauling and information overflows, it is demonstrated that the degree to which FDI is development improving relies upon the level of complementarity and substitution among FDI and local venture.

M.M. Metwally et al. (2004) built up a synchronous conditions model to test the procedure of connection between outside direct speculation (FDI), sends out and financial development in three Middle Eastern nations: Egypt, Jordan and Oman, and tests for any conceivable criticism impacts. Their outcomes propose that higher rates of financial development result in a more prominent inflow of remote capital. Also, the concurrent conditions model outcomes propose that there is an input impact in the connection between financial development and capital inflow in all example nations.

Muhammad Arshad Khan (2007) analyzed the connection between FDI, household money related area, and financial development for Pakistan over the period 1972– 2005. Exact examination depends on the bound testing approach of cointegration progressed by Pesaran, et al. (2001). The outcomes recommend that FDI inflows applied positive effect on monetary development in the short-run and the long-run if the residential money related framework has accomplished a specific least dimension advancement.

Sumei Tang et al. (2008) researched the causal connection between remote direct speculation (FDI), household venture and financial development in China for the period 1988– 2003 utilizing a multivariate VAR framework with mistake amendment model (ECM) and the advancement bookkeeping (change decay and motivation reaction work examination) systems. They found that while there is a bi‐directional causality between residential venture and financial development, there is just a single‐directional causality from FDI to local speculation and to monetary development.

Leonard K.Cheng et al. (2000) evaluated the impacts of the determinants of remote direct speculation (FDI) in 29 Chinese locales from 1985 to 1995, they locate that substantial provincial market, great framework, and special arrangement had a beneficial outcome yet wage cost negatively affected FDI. The impact of training was sure yet not measurably noteworthy. What's more, there was additionally a solid self-strengthening impact of FDI on itself.

**CHAPTER 3**

**Data and Methodology**

**3.1. Variable measurement**

Brief depiction of the model variables are displayed underneath:

*Total budget expenditures (EXPEND)* uses gives an unequivocal examination of various types of utilization and wide clarifications behind the assortments in assessments. Enthusiasm for stipends of the Central government is furthermore a bit of the Total Budget Expenditure. Quarterly measurements is pronounced by the Central Bank of Azerbaijan (CBAR) and State Statistical Committee of Azerbaijan. We utilize the information from the measurable proclamations of CBAR which could be achieved online at

<http://www.cbar.az/pages/publicationsresearches/statistic-bulletin/>.

*Non-oil GDP (GDP)* is addition adjusted entire of the regard included, assessed in million manat which was conveyed in the economy without the oil region. Quarterly insights is pronounced by the Central Bank of Azerbaijan (CBAR) and State Statistical Committee of Azerbaijan. We utilize the information from the factual articulations of CBAR which could be achieved online at <http://www.cbar.az/pages/publicationsresearches/statistic-bulletin/>.

*Oil production (OPRN)* is the measurements of Azerbaijan's quarterly oil creation, thousands barrels for each day in normal. The information is acquired from Trading Economics database in month to month premise (retrieved from <http://www.tradingeconomics.com/azerbaijan/crude-oil-production>) and changed to quarterly information.

*Oil price (OPRC)*  is the quarterly world normal cost of one barrel oil taken from list mundi database. Initially, the information is month to month which was changed to quarterly recurrence by utilizing basic normal strategy. For swelling change, Consumer Price Index (CPI) strategy is utilized.

**3.2. Descriptive analyses**

Regression model demonstrates relationship between Foreign Direct Investment (FDI), Total Budget Expenditure (EXPEND), Gross Domestic Product (GDP), Oil Production (OPRN) and Oil Price (OPRC). Number of observations equals to 66. There is positive relationship between Foreign Direct Investment and Gross Domestic Product in Azerbaijan. Probability of FDI equal to 0.693.

*Table 1. Descriptive statistics of the variables*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **FDI** | **EXPEND** | **GDP** | **OPRN** | **OPRC** |
| **Mean** |  1171.773 |  2453.115 |  4342.555 |  714.0505 |  64.85879 |
| **Median** |  1111.500 |  2193.900 |  3788.050 |  840.0000 |  59.10000 |
| **Maximum** |  2231.000 |  7005.800 |  9984.400 |  1066.000 |  121.1000 |
| **Minimum** |  168.0000 |  143.4200 |  583.9000 |  290.0000 |  19.30000 |
| **Std. Dev.** |  494.9308 |  1959.976 |  3074.665 |  270.0762 |  29.79915 |
| **Skewness** | -0.001879 |  0.507942 |  0.384576 | -0.569258 |  0.234782 |
| **Kurtosis** |  2.484089 |  2.284882 |  1.702742 |  1.714665 |  1.758805 |
|  |  |  |  |  |  |
| **Jarque-Bera** |  0.731989 |  4.244383 |  6.254799 |  8.107843 |  4.842904 |
| **Probability** |  0.693507 |  0.119769 |  0.043832 |  0.017354 |  0.088793 |
|  |  |  |  |  |  |
| **Sum** |  77337.00 |  161905.6 |  286608.6 |  47127.33 |  4280.680 |
| **Sum Sq. Dev.** |  15922170 |  2.50E+08 |  6.14E+08 |  4741175. |  57719.31 |
|  |  |  |  |  |  |
| **Observations** |  66 |  66 |  66 |  66 |  66 |

Source: Author’s own completion
*Figure 5. Time profile of the logs of variable*



*Figure 6. Time profile of the logs of variable*



Source: Author’s own completion

*Figure 7. Time profile of the logs of variable*



Source: Author’s own completion

*Figure 8. Time profile of the logs of variable*



Source: Author’s own completion

*Figure 9. Time profile of the logs of variable*



Source: Author’s own completion

**3.3. Empirical methodology**

Here, Autoregressive Distributed Lag Bounds Testing (ARDLBT) Approach is locked in to cointegration method to figure long run relationship and short run elements between monetary strategy markers and non-oil GDP.

Prior to coordinating the methodology, the request of joining of every single included variable ought to be dictated by utilizing Augmented Dickey-Fuller (ADF from this point forward) unit root tests which tests non-stationarity in a given time arrangement (see Dickey et al. 1981). In this manner it is smarter to outline ADF unit root tests quickly before examining the act of ARDLBT way to deal with co-joining.

For a time series variables which is expressed as y, the regression below provides ADF statistics value as the $t$-ratio on $b\_{1}$.

$∆y\_{t}$= $b\_{0}$+ $ψtrend $+ $b\_{1}y\_{t-1}$+ $\sum\_{i=1}^{k}a\_{i}∆y\_{t-i}$+ $ε\_{t}$ (1)

Here, $b\_{0}$ is a constant term, and $∆$ is first difference operator. Number of lags is denoted by k, trend shows linear time trend while i is the lag order. As the last one, $ε\_{t}$ is white noise residuals.

Autoregressive Distributed Lag Bounds Testing (ARDLBT) Approach strategy is given in Pesaran et al. (2001) as an elective way to deal with the co-coordination. In correlation with options, ARDLBT strategy is favored because of certain points of interest, for example, appropriateness in little examples effectively by utilizing Ordinary Least Squares (OLS) with no endogeneity issue with both I(1) and I(0) arrangement or blend of them, and simultaneously assessing long-run and short-run coefficients (Pesaran et al. 2001, 2006, Sulaiman et al. 2010). On account of moderately modest number of perceptions, and when ADF unit test results are considered, this methodology is all the more neighborly to utilize for this exploration too. Ensuing stages comprise the utilization of ARDLBT approach (Pesaran et al. 2001)

Construction of an Unrestricted ECM.

 $∆y\_{t}$=$c\_{0}$+ $θ\_{y\_{t-1}}$+ $θ\_{yxx}x\_{t-1}$+ $\sum\_{i=1}^{n}ω\_{i}∆y\_{t-i}$+ $\sum\_{i=0}^{n}φ\_{i}∆x\_{t-1}$+ $u\_{t}$ (2)

Here, *y* is the dependent, and *x* is the independent variable while *u* represents white sound errors. $c\_{0}$ denotes the drift coefficient where $θ\_{i}$ represents long-run coefficients, and $ω\_{i}$ and $φ\_{i}$ are short-run coefficients.

*Testing existence of co-integrating relationship by using Wald-test (or the F-Test) on* $θ\_{i}$ *the coefficients.*

After constructing an Unrestricted ECM, we should test for the null hypothesis of “there is no integration” which is defined as $H\_{0}$: $θ\_{1}$= $θ\_{2}$=...= $θ\_{n}$=0 while the alternative hypothesis is the opposite expression.

Note that we can dismiss the invalid speculation if the estimation of processed F-measurement from the example is higher than the most abnormal amount of the basic incentive under a given noteworthiness level. On the off chance that the esteem is beneath than the most minimal dimension of the genuine dimension reliable to a dimension of significance, we can neglect to dismiss the invalid speculation. The test outcomes will be uncertain whenever figured F-measurement esteem from the example is among most minimal and-most noteworthy groups of the basic esteem.

In any case, F-insights in the ARDLBT co-combination test have non-standard circulation not at all like normal F-measurements. Subsequently, analysts should utilize the basic estimations of F-appropriation determined by Pesaran and Pesaran [see: Pesaran et al. 1997 or Pesaran et al., 2001], not the preservationist basic estimations of F-dispersion.

*In the event that there is co-coordinating relationship among the factors, we can gauge/ascertain the long-run coefficients.*

Note that these coefficients can be calculated from the equation (2) by implementing Bewley (1979) transformation which means manually setting $c\_{0}$+ $θ\_{y\_{t-1}}$+ $θ\_{yxx}x\_{t-1}$ to zero and finding *y* as

 $y$= $-\frac{c\_{0}}{θ}-\frac{θ\_{yxx}}{θ}x+u$ (3)

Current writing incorporates different perspectives identified with the legitimacy of basic estimations of F-circulation in the instances of little and vast size examples. Regardless of figuring of the upper and lower basic estimations of F-appropriation by Pesaran and Pesaran (1997) by utilizing test sizes of 500 and 1000 even 20 000 and 40 000 replications individually, these qualities are tested to be relevant for little example sizes in Narayan (2005). Narayan (2004, 2005) contends that basic qualities by Pesaran and Pesaran (1997) are not for little example sizes. So as to legitimize his contention, Narayan has looked at his very own basic qualities on 31 perceptions with the basic qualities in Pesaran et al. (2001), with four regressors and at the 5% dimension of centrality. The outcomes bolstered Narayan's contention. That is the reason basic qualities in Narayan (2005) will be likewise utilized in our ARDLBT co-mix test so as to dodge the issues because of moderately little example estimate.

**CHAPTER 4**

**Results and interpretations**

**4.1. Unit Root test results**

Existence of the unit root in series means that the corresponding variable is non-stationary. However, to be able to apply ARDLBT approach, the series should be found I(0) or I(1). Below, ADF unit root test results with intercept as well as with trend and intercept are reported.

*Table 2: ADF Unit Root test results*

|  |  |  |
| --- | --- | --- |
| Variables | *Intercept* | *Trend and intercept* |
| I(0) | I(1) | I(0) | I(1) |
| GDP | 0.054 | -4.313\*\* | -2.424 | -4.267\*\* |
| FDI | -2.098 | -12.613\*\* | -1.590 | -12.787\*\*\* |
| Expend | -0.848 | -12.73\*\*\* | -2.200 | -12.613\*\*\* |
| OPRC | -2.179 | -6.537\*\*\* | -2.025 | -6.677\*\*\* |
| OPRN | -1.521 | -6.622\*\*\* | -0.552 | -6.846\*\*\* |
| Note: Null hypotheses is “... is non-stationary or has a unit root”. \*\*\*, \*\*, and \* denote statistical significance at 1%, 5%, and 10% level of significance, respectively.  |

Source: Author’s own completion

According to ADF unit root test results, it becomes clear that the variables are all (2). More precisely, all variables are non-stationary at level but their first difference is stationary. Trend has no substantial impact over the results.

Therefore, the results show that ARDLBT approach to cointegration can be employed to estimate long run association among the variables.

**4.2. Estimating cointegration equation: ARDLBT results**

Below, the table represent ARDL equation estimation results. Based on the methodological procedure explained in corresponding section, E-views 10 automatically provide the best model specification.

*Table 3: ARDL equation estimation results*

|  |  |
| --- | --- |
| ARDL Long Run Form and Bounds Test |  |
| Dependent Variable: DLOG(GDP) |  |  |
| Selected Model: ARDL(4, 0, 0, 1, 2) |  |
| Case 2: Restricted Constant and No Trend |  |
| Date: 05/05/19 Time: 22:56 |  |  |
| Sample: 2001Q1 2017Q3 |  |  |
| Included observations: 62 |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Conditional Error Correction Regression |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| C | 0.466053 | 0.407300 | 1.144251 | 0.2581 |
| LOG(GDP(-1))\* | -0.273570 | 0.054458 | -5.023508 | 0.0000 |
| LOG(FDI)\*\* | 0.065010 | 0.040125 | 1.620218 | 0.1116 |
| LOG(EXPEND)\*\* | 0.142409 | 0.054525 | 2.611800 | 0.0119 |
| LOG(OPRC(-1)) | 0.014531 | 0.043556 | 0.333629 | 0.7401 |
| LOG(OPRN(-1)) | 0.049189 | 0.075280 | 0.653410 | 0.5165 |
| DLOG(GDP(-1)) | -0.447795 | 0.080818 | -5.540799 | 0.0000 |
| DLOG(GDP(-2)) | -0.407806 | 0.088157 | -4.625911 | 0.0000 |
| DLOG(GDP(-3)) | -0.236029 | 0.086892 | -2.716362 | 0.0091 |
| DLOG(OPRC) | -0.090413 | 0.069438 | -1.302065 | 0.1990 |
| DLOG(OPRN) | -0.238021 | 0.168444 | -1.413059 | 0.1640 |
| DLOG(OPRN(-1)) | -0.511344 | 0.187364 | -2.729148 | 0.0088 |
| @SEAS(1) | -0.196931 | 0.045010 | -4.375272 | 0.0001 |
|  |  |  |  |  |
|  |  |  |  |  |
|   \* p-value incompatible with t-Bounds distribution. |
| \*\* Variable interpreted as Z = Z(-1) + D(Z). |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Levels Equation |
| Case 2: Restricted Constant and No Trend |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| LOG(FDI) | 0.237637 | 0.133791 | 1.776185 | 0.0819 |
| LOG(EXPEND) | 0.520558 | 0.135547 | 3.840422 | 0.0004 |
| LOG(OPRC) | 0.053118 | 0.165377 | 0.321194 | 0.7494 |
| LOG(OPRN) | 0.179803 | 0.275830 | 0.651864 | 0.5175 |
| C | 1.703598 | 1.460881 | 1.166144 | 0.2492 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Source: Author’s own completion

However, before interpretation of regression results, one should test for reliability of the estimated model as well as existence of cointegration or long run association among the variables. Only after long-run equation can be interpreted.

Because non-existence of serial correlation in residuals is the most important issue, the following table tabulate Breusch-Godfrey Serial Correlation LM test results.

*Table 4: Testing for existence of serial correlation problem*

|  |  |
| --- | --- |
| Breusch-Godfrey Serial Correlation LM Test: |  |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 1.949703 |     Prob. F(4,45) | 0.1186 |
| Obs\*R-squared | 9.157903 |     Prob. Chi-Square(4) | 0.0573 |
|  |  |  |  |  |
|  |  |  |  |  |
| Test Equation: |  |  |  |
| Dependent Variable: RESID |  |  |
| Method: ARDL |  |  |  |
| Date: 05/05/19 Time: 23:02 |  |  |
| Sample: 2002Q1 2017Q2 |  |  |
| Included observations: 62 |  |  |
| Presample missing value lagged residuals set to zero. |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| LOG(GDP(-1)) | -0.040619 | 0.114183 | -0.355737 | 0.7237 |
| LOG(GDP(-2)) | -0.053303 | 0.063919 | -0.833906 | 0.4087 |
| LOG(GDP(-3)) | -0.000749 | 0.061935 | -0.012094 | 0.9904 |
| LOG(GDP(-4)) | 0.097583 | 0.115690 | 0.843485 | 0.4034 |
| LOG(FDI) | -0.015100 | 0.039303 | -0.384206 | 0.7026 |
| LOG(EXPEND) | -0.001352 | 0.056777 | -0.023813 | 0.9811 |
| LOG(OPRC) | 0.003396 | 0.069361 | 0.048965 | 0.9612 |
| LOG(OPRC(-1)) | -0.004309 | 0.071633 | -0.060152 | 0.9523 |
| LOG(OPRN) | 0.073727 | 0.166007 | 0.444117 | 0.6591 |
| LOG(OPRN(-1)) | -0.078212 | 0.267901 | -0.291942 | 0.7717 |
| LOG(OPRN(-2)) | 0.010058 | 0.186203 | 0.054018 | 0.9572 |
| @SEAS(1) | 0.031498 | 0.055137 | 0.571268 | 0.5707 |
| C | 0.060688 | 0.411738 | 0.147396 | 0.8835 |
| RESID(-1) | -0.010309 | 0.188382 | -0.054724 | 0.9566 |
| RESID(-2) | 0.264836 | 0.157564 | 1.680816 | 0.0997 |
| RESID(-3) | 0.001882 | 0.169154 | 0.011129 | 0.9912 |
| RESID(-4) | -0.399280 | 0.162881 | -2.451367 | 0.0182 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.147708 |     Mean dependent var | -4.58E-16 |
| Adjusted R-squared | -0.155329 |     S.D. dependent var | 0.067311 |
| S.E. of regression | 0.072350 |     Akaike info criterion | -2.186689 |
| Sum squared resid | 0.235553 |     Schwarz criterion | -1.603442 |
| Log likelihood | 84.78735 |     Hannan-Quinn criter. | -1.957691 |
| F-statistic | 0.487426 |     Durbin-Watson stat | 2.099483 |
| Prob(F-statistic) | 0.940628 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Source: Author’s own completion

According to test result, it becomes clear that there is no serial correlation problem in the estimated model. Thus, p-value of F-statistic is higher than 5%. Therefore, we fail to reject the null hypothesis of “no serial correlation”.

The next problem should be tested is existence of heteroscedasticity. The following table represent Breusch-Pagan-Godfrey heteroscedasticity test results. Note that the null hypothesis here is “no heteroscedasticity”.

*Table 5: Testing for existence of heteroscedasticity problem*

|  |
| --- |
| Heteroskedasticity Test: Breusch-Pagan-Godfrey |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 1.153066 |     Prob. F(12,49) | 0.3422 |
| Obs\*R-squared | 13.65253 |     Prob. Chi-Square(12) | 0.3234 |
| Scaled explained SS | 7.571589 |     Prob. Chi-Square(12) | 0.8176 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Test Equation: |  |  |  |
| Dependent Variable: RESID^2 |  |  |
| Method: Least Squares |  |  |
| Date: 05/05/19 Time: 23:04 |  |  |
| Sample: 2002Q1 2017Q2 |  |  |
| Included observations: 62 |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| C | -0.014030 | 0.032001 | -0.438428 | 0.6630 |
| LOG(GDP(-1)) | 0.003570 | 0.006931 | 0.515003 | 0.6089 |
| LOG(GDP(-2)) | 0.006909 | 0.004784 | 1.444145 | 0.1551 |
| LOG(GDP(-3)) | -0.008483 | 0.004484 | -1.891885 | 0.0644 |
| LOG(GDP(-4)) | -0.002928 | 0.006827 | -0.428900 | 0.6699 |
| LOG(FDI) | 0.003315 | 0.003152 | 1.051449 | 0.2982 |
| LOG(EXPEND) | -0.001226 | 0.004284 | -0.286089 | 0.7760 |
| LOG(OPRC) | -0.006454 | 0.005456 | -1.183091 | 0.2425 |
| LOG(OPRC(-1)) | 0.006066 | 0.005780 | 1.049426 | 0.2991 |
| LOG(OPRN) | -0.003136 | 0.013234 | -0.236977 | 0.8137 |
| LOG(OPRN(-1)) | 0.038458 | 0.021153 | 1.818060 | 0.0752 |
| LOG(OPRN(-2)) | -0.033300 | 0.014721 | -2.262102 | 0.0282 |
| @SEAS(1) | -0.003663 | 0.003536 | -1.035697 | 0.3054 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.220202 |     Mean dependent var | 0.004458 |
| Adjusted R-squared | 0.029231 |     S.D. dependent var | 0.005989 |
| S.E. of regression | 0.005901 |     Akaike info criterion | -7.243488 |
| Sum squared resid | 0.001706 |     Schwarz criterion | -6.797476 |
| Log likelihood | 237.5481 |     Hannan-Quinn criter. | -7.068373 |
| F-statistic | 1.153066 |     Durbin-Watson stat | 1.691449 |
| Prob(F-statistic) | 0.342160 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Source: Author’s own completion

Here also, we fail to reject the null hypothesis due to the fact that probability of F-statistic is greater than 5%. Therefore, it is identified that there is no heteroscedasticity problem in the model.

The next issue is examining the distribution of residuals – whether normally distributed or not. The following figure represent Jarque-Bera test result for this purpose. According to the test result, the null hypothesis of “residuals are normally distributed” is not rejected, because p-value is greater than 5%. So, it is concluded that residuals are normally distributed.

*Figure 10: Normality test results*

 Source: Author’s own completion

Although residuals diagnostic test results are all positive and provide strong evidence about reliability of the model, one should also check existence of functional misspecification in the model. More precisely, whether any quadratic and interaction term or terms should be included or not. Below, Ramsey-Reset functional misspecification test result is tabulated and given.

*Table 6: Testing for existence of functional misspecification problem*

|  |  |  |
| --- | --- | --- |
| Ramsey RESET Test |  |  |
| Equation: UNTITLED |  |  |
| Specification: LOG(GDP) LOG(GDP(-1)) LOG(GDP(-2)) LOG(GDP(-3)) |
|   LOG(GDP(-4)) LOG(FDI) LOG(EXPEND) LOG(OPRC) LOG(OPRC(-1)) |
|         LOG(OPRN) LOG(OPRN(-1)) LOG(OPRN(-2)) @SEAS(1) C  |
| Omitted Variables: Squares of fitted values |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  | Value | df | Probability |  |
| t-statistic |  0.385879 |  48 |  0.7013 |  |
| F-statistic |  0.148903 | (1, 48) |  0.7013 |  |
|  |  |  |  |  |
|  |  |  |  |  |
| F-test summary: |  |  |
|  | Sum of Sq. | df | Mean Squares |  |
| Test SSR |  0.000855 |  1 |  0.000855 |  |
| Restricted SSR |  0.276376 |  49 |  0.005640 |  |
| Unrestricted SSR |  0.275522 |  48 |  0.005740 |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Unrestricted Test Equation: |  |  |
| Dependent Variable: LOG(GDP) |  |  |
| Method: ARDL |  |  |  |
| Date: 05/05/19 Time: 23:07 |  |  |
| Sample: 2002Q1 2017Q2 |  |  |
| Included observations: 62 |  |  |
| Maximum dependent lags: 4 (Automatic selection) |
| Model selection method: Akaike info criterion (AIC) |
| Dynamic regressors (4 lags, automatic):  |  |
| Fixed regressors: C |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.\*   |
|  |  |  |  |  |
|  |  |  |  |  |
| LOG(GDP(-1)) | 0.216299 | 0.184434 | 1.172771 | 0.2467 |
| LOG(GDP(-2)) | 0.024697 | 0.073103 | 0.337836 | 0.7370 |
| LOG(GDP(-3)) | 0.136985 | 0.106978 | 1.280492 | 0.2065 |
| LOG(GDP(-4)) | 0.184919 | 0.158830 | 1.164255 | 0.2501 |
| LOG(FDI) | 0.055529 | 0.047352 | 1.172680 | 0.2467 |
| LOG(EXPEND) | 0.113709 | 0.092505 | 1.229215 | 0.2250 |
| LOG(OPRC) | -0.072172 | 0.084507 | -0.854039 | 0.3973 |
| LOG(OPRC(-1)) | 0.085597 | 0.089567 | 0.955672 | 0.3440 |
| LOG(OPRN) | -0.161361 | 0.261423 | -0.617241 | 0.5400 |
| LOG(OPRN(-1)) | -0.194882 | 0.281989 | -0.691100 | 0.4928 |
| LOG(OPRN(-2)) | 0.414556 | 0.314069 | 1.319950 | 0.1931 |
| @SEAS(1) | -0.154467 | 0.119044 | -1.297564 | 0.2006 |
| C | 1.120962 | 1.746214 | 0.641939 | 0.5240 |
| FITTED^2 | 0.013028 | 0.033762 | 0.385879 | 0.7013 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.993296 |     Mean dependent var | 8.142897 |
| Adjusted R-squared | 0.991480 |     S.D. dependent var | 0.820809 |
| S.E. of regression | 0.075763 |     Akaike info criterion | -2.126734 |
| Sum squared resid | 0.275522 |     Schwarz criterion | -1.646413 |
| Log likelihood | 79.92875 |     Hannan-Quinn criter. | -1.938148 |
| F-statistic | 547.0607 |     Durbin-Watson stat | 2.119598 |
| Prob(F-statistic) | 0.000000 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| \*Note: p-values and any subsequent tests do not account for model |
|         selection. |  |  |

Source: Author’s own completion

According to Ramsey-Reset test result, p-value is greater than 5% which means that there is no functional misspecification problem in the estimated model.

Therefore, we can proceed with testing existence of long-run association or cointegration relationship in the estimated model as the final step before interpretation of long-run equation parameters. Below, the table show F-bounds test result for this purpose.

*Table 7: Testing for existence of cointegration association in the estimated model*

|  |  |
| --- | --- |
| F-Bounds Test | Null Hypothesis: No levels relationship |
|  |  |  |  |  |
|  |  |  |  |  |
| Test Statistic | Value | Signif. | I(0) | I(1) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  | Asymptotic: n=1000 |  |
| F-statistic |  39.65142 | 10%   | 2.2 | 3.09 |
| k | 4 | 5%   | 2.56 | 3.49 |
|  |  | 2.5%   | 2.88 | 3.87 |
|  |  | 1%   | 3.29 | 4.37 |
|  |  |  |  |  |
| Actual Sample Size | 62 |  | Finite Sample: n=65 |  |
|  |  | 10%   | 2.335 | 3.252 |
|  |  | 5%   | 2.75 | 3.755 |
|  |  | 1%   | 3.725 | 4.94 |
|  |  |  |  |  |
|  |  |  | Finite Sample: n=60 |  |
|  |  | 10%   | 2.323 | 3.273 |
|  |  | 5%   | 2.743 | 3.792 |
|  |  | 1%   | 3.71 | 4.965 |
|  |  |  |  |  |
|  |  |  |  |  |

Source: Author’s own completion

The result present very strong evidence about existence of cointegration relationship among the variables. The null hypothesis of “no cointegration” is rejected at 1% level of significance. Calculated F-statistic value is greater than upper bound of critical value in both large sample (when n=1000) as well as small sample (when n=60). Therefore, it is concluded that there is significant long run association among the variables. So, long-run equation coefficients can be interpreted.

The table below provide the parameters of long-run equation where dependent variable is LOG(GDP). Note that LOG denote natural logarithm or LN.

*Table 8: Long-run equation*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.    |
|  |  |  |  |  |
|  |  |  |  |  |
| LOG(FDI) | 0.237637 | 0.133791 | 1.776185 | 0.0819 |
| LOG(EXPEND) | 0.520558 | 0.135547 | 3.840422 | 0.0004 |
| LOG(OPRC) | 0.053118 | 0.165377 | 0.321194 | 0.7494 |
| LOG(OPRN) | 0.179803 | 0.275830 | 0.651864 | 0.5175 |
| C | 1.703598 | 1.460881 | 1.166144 | 0.2492 |
|  |  |  |  |  |
|  |  |  |  |  |

Source: Author’s own completion

ARDL estimation results show no significant impact of oil price and oil production over Azerbaijan’s non-oil GDP. Thus, p-value for both variables is greater than 10% which means no significant long run impact. However, findings show that the impact of total budget expenditures over Azerbaijan’s non-oil output is statistically and economically significant. According to estimation results, while holding other factors fixed, in average, 1% increase in total amount of budget expenditures leads to increasing long-run non-oil economic growth in Azerbaijan by 0.52%.

Note that the main variable of interest in this thesis is FDI. More precisely, primary goal is determining long-run impact of FDI over non-oil economic growth in Azerbaijan. That is why coefficient of FDI variable and its statistical significance is more essential for research than others.

ARDL estimation results conclude that there is weak long-run causality from FDI to non-oil sector economic performance in Azerbaijan. Long-run coefficient of FDI is statistically insignificant at 5% significance level while it is significant at 10% level of significance. Estimation results reveal that 1% increase in amount of total FDIs increases non-oil sector economic performance by approximately 0.24%. This can be explained by the share of oil & gas sector in total amount of FDIs in Azerbaijan.

**CONCLUSION**

In the wake of applying the ARDL equation estimation results, in view of information from the Central Bank of Azerbaijan for the period 2001-2017, we reviewed whether the FDI inflows impacts for the GDP in the Azerbaijan economy. Given the substantial assortment of uncertain research on this inquiry, this strategy offers a conclusive new road to pick up clearness in a manner that includes earlier work and permits testing various guessed contentions impartially. From the computations made, it uncovered that there is a link between FDI and economic growth. Additionally, FDI inflows impacted GDP. We can certify that FDI inflows in Azerbaijan, affected the economic growth.

According to test result, it becomes clear that there is no serial correlation problem in the estimated model. Thus, p-value of F-statistic is higher than 5%. Therefore, we fail to reject the null hypothesis of “no serial correlation”. ARDL estimation results demonstrate no critical effect of oil price and oil production over Azerbaijan's non-oil GDP. In this way, p-value for the two factors is more noteworthy than 10% which implies no huge long run effect. Nonetheless, discoveries demonstrate that the effect of all budget expenditures over Azerbaijan's non-oil yield is measurably and economically critical.

Note that the fundamental variable of enthusiasm for this proposal is FDI. All the more accurately, essential objective is deciding long-run effect of FDI over non-oil economic growth in Azerbaijan. That is the reason coefficient of FDI variable and its factual criticalness is more basic for research than others.

As a result of the research, we bolster the way that FDI can be viewed as a functioning element in the advancement and adjustment to the market economy and intensity. Just in a couple of cases happened negative or null effects. One of the most important issues is to evaluate their macroeconomics in order to determine the efficient use of domestic and foreign direct investments directed to our economically developing and strengthening country.

The further enrichment of the necessary legal environment of foreign direct investment, its adaptation to the progressive world level can further enhance the ability of the country to invest in foreign direct investment and can contribute to our country's active involvement in globalization processes. In determining the effectiveness of investment in the economic aspect, it is attempted to take account of the major and associated production costs in more detail.

Azerbaijan was a top recipient of FDI, gave the sort of condition considered most great for FDI to positively affect non-oil economic growth. After gaining independence, one of the most important directions of economic reforms in our country is to increase the efficiency of foreign direct investment. One of the measures taken in this direction is liberalization of foreign economic relations. Naturally, liberalization covers both current transactions of the balance of payments and fixed capital accounts.

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