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The Impact of Foreign Direct Investment on Turkish Economy

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1. Introduction, Objectives

1.1 Introduction

Foreign Direct Investment has become a key factor for the operation of the present global economy with globalization processes and the focus of an extensive investigation by academics and multinational businesses. Foreign Direct Investment is one of emerging economies' major engines, bringing cash, technology, new management, etc., to recipient nations. Past empirical researches have shown that, based on the scale of the hosted national market, the tier of human resources, facilities, and host nation future prosperity, FDI could lead to desirable economic expansion, joblessness decrease, the favorable impact of these on the trading balance, advancement in human resources and entities. Therefore, theoretically, FDI is considered as a significant component which boosts economic growth (Ramsey, 1928), (Solow, 1956), (Romer, 1986, 1990) (Lucas, 1998), decreases unemployment rate (Keynes, 1936), (Dunning, 1985), (Baldwin, 1995), (Moosa, 2002) and positively affects trade (Dunning, 1974, 1977, 1985, 1988), (Ethier, 1986; Ethier & Markusen, 1996; Grossman & Helpman, 2002; Helpman, 1984, 1985; Horstmann & Markusen, 1992; Markusen, 1984, 1997, 2002; Markusen & Venables, 1998a, 2000), (Moosa, 2002), (Solomon & Ingham, 1977), (Panic & Joyce, 1980), in host countries.

Turkey had many advantages that were considered factors that might easily convince investors to put capital into the Turkish economy as a host country. First, it would be great to mention about convenient geolocation of Turkey. Turkey is located in the hub of Asia and Europe, playing the role of the bridge between two continents. The benefits of Turkey from this location are widespread and cheap transportation which is one of the crucial factors that foreign investors considering before investing in the host countries. Second, a cheap labor force is another vital factor that foreign investors consider before investing. If we compare the average wage of Turkey (285 Euro[1]) with western and eastern Europe, we can observe that the average wage in Turkey is much less than in European countries, which makes Turkey more attractive to foreign investors. Third, labor productivity is considered a crucial factor in the attraction of FDI. Based on the database of WorldBank,[2] the labor participation rate in Turkey is 66.5 % (2019) of the total population (ages 15-64), which is relatively high statistics in that field. However, having these advantages is not that countries will be prosperous in attracting FDI into

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[1] Türkiye İstatistik Kurumu
https://www.tuik.gov.tr/
[2] The World Bank
https://data.worldbank.org/indicator/SL.TLF.ACTI.ZS

their economies. Therefore, the economic and political stability of host countries is considered another crucial factor in attracting FDI.

Now, let us take a glance at the efforts of the Turkish state in attracting FDI into the economy of Turkey. They made crucial steps to attract the attention of foreign investors to its economy. One of the essential attempts was to practice the most liberal Foreign Capital Law of the period with Law No. 6224 in 1954, introduced in 1980th. (*Doğrudan yabancı sermaye yatırımları özel ihtisas komisyonu raporu.*, 2000).

The first Five-Year Development Plan of Turkey (1963-1967) was put into reality by creating the State Planning Organization (SPO) in 1960. While import substitution policy was favored throughout the mentioned time, under the heading "Incentive Measures," the question of attracting foreign capital to the private industry to achieve the specified objectives was addressed in the plan (Durgan et al., 2016).

In the context of "Economic Stability Measures of 24 January 1980," rules on international capitals have been likewise drawn up. On 25 January 1980, the Foreign Capital Framework Decree no. 8/168 came into action and was created with the State Planning Organization by the Foreign Investment Office linked to the Prime Minister (*Doğrudan yabancı sermaye yatırımları özel ihtisas komisyonu raporu.*, 2000). The General Directorate of Foreign Affairs was integrated into the undersecretaries of the Treasury and Foreign Trade under the Decree of 17.7.1991 and numbered 436. With the creation of the Under-Secretariat of Treasury and Foreign Trades by Law no. 4059 of 9 December 1999, the General Directorate of Foreign Capital maintains its functions under the undersecretaries of Treasury (*Doğrudan yabancı sermaye yatırımları özel ihtisas komisyonu raporu.*, 2000). The Framework Decisions were modified twice since 1980, in 1986 and 1992. In the subsequent time, the liberalization procedure was maintained, and with the Foreign Capital, Framework Decision numbered 95/6990 the latest legislation that led to significant amendments was implemented on 7 June 1995 (*Doğrudan yabancı sermaye yatırımları özel ihtisas komisyonu raporu.*, 2000).

The consequences of these economic liberalizations and structural changes led to the increase of foreign investment inflows into the economy of Turkey. With the establishment of political and economic stability, Turkey started to follow an open economy policy, and with these implementations, the incentives have been given to foreign investors. The significant achievements with the attraction of foreign direct investment inflows have been registered after accepting Turkish candidacy for the European Union in 1999 at the Helsinki summit of the European Council.

1.2 Objectives

This study assumes that through FDI inflows Turkish state was able to solve the problems with economic growth, unemployment rate, and trade balance. Thus, it should be assumed that there is a positive impact of FDI on the economy of Turkey. This research aims to analyze and find out the impact of FDI on the economy of Turkey. For that purpose, in other sections of this thesis, it is planned to make a theoretical and empirical literature review and afterward run statistical tests to find out the relationship between FDI and macroeconomic variables such as GDP, Unemployment rate, and Trade (Export and Import). The objectives of the dissertation are drawn up as follows:

- To establish the effect of FDI inflows on the GDP of Turkey
- To establish the effect of FDI inflows on the unemployment rate of Turkey
- To establish the effect of FDI inflows on the trade of Turkey

2. Methodology

Research methods

- Augmented Dickey-Fuller Unit Root Test,
- Phillips–Perron Unit Root Test,
- Zivot Andrews Unit Root Test,
- ARDL bounds testing approach,
- Granger Causality Test.

Research questions and hypothesizes

The first model

RQ1: Is FDI a significant contributor to economic growth?

H1: Foreign Direct Investment has a positive impact on Gross Domestic Product

The second model

RQ2: Does the inflow of foreign direct investments reduces the unemployment rate?

H2: Foreign Direct Investment negatively correlated with the unemployment rate

The third model (first part)

RQ3: Do FDI inflows positively affect the trade of Turkey?

H3: Fostering Foreign Direct Investments positively affects Trade (Export and Import)

The third model (second part)

RQ3: Do FDI inflows positively affect the trade of Turkey?

H3: Fostering Foreign Direct Investments positively affects Trade (Export and Import)

3. Results
3.1 The impact of FDI on GDP (economic growth)

The objective of research 1: To establish the effect of FDI inflows on the GDP of Turkey

RQ1: Is FDI a significant contributor to economic growth?

H1: Foreign Direct Investment has a positive impact on Gross Domestic Product

Research methods: Augmented Dickey-Fuller Unit Root Test, Phillips–Perron Unit Root Test, Zivot Andrews Unit Root Test, ARDL bounds testing approach (long-run), Error Correction Model (short-run), Granger Causality Test

Data description

This study focuses on the quarterly time-series data acquired from the Federal Reserve Bank of f St. Louis (FRED) and Central Bank of Turkey (CBT) for the period span from 2006 Q2 to 2019 Q4. Before converting to percentage change, all series have been adjusted to the USD in constant 2015 (CPI 2015). The Eviews-11 statistical software was employed for the empirical phase of the study. The below mentioned four series were applied in the model:

Dependent variable:

GDP- Gross Domestic Product by Expenditure in Constant Prices: Total Gross Domestic Product for Turkey (Percentage change, seasonally adjusted) (FRED)

Independent variable:

FDI- Foreign Direct Investment inflow (Percentage change, seasonally adjusted via E-views 11 software) (CBT)

Explanatory variables:

EXP – Export of goods and services (Percentage change, seasonally adjusted) (FRED)

GFCF - Gross Fixed Capital Formation in Turkey (Percentage change, seasonally adjusted) (FRED)

Model specification

Explanatory variables have been chosen as determinants of Economic Growth (to make the model better). Based on those series below mentioned model has been built:

$GDP_t = f(FDI_t, EXP_t, GFCF_t)$

Results of the First model

The statistical findings are presented and discussed in this section. The descriptive statistics and correlation values of the utilized series has been described in the Table 1. The correlation matrix findings indicates a strong and positive relationship between FDI, EXP, GFCF and GDP. The preliminary information about the relationships between series which have been gained through the descriptive statistics and correlation matrix is not enough to determine the relationship between analysed variables. In order to get more reliable outcomes about the relationship among analysed series the statistical methods will be utilized in the dissertation.

Table 1: Descriptive statistics and correlation of the variables

	GDP	FDI	EXP	GCF
Mean	0.872256	2.415403	1.620071	0.903004
Median	2.373952	2.585822	1.775871	2.062274
Maximum	13.10307	41.58270	18.14356	15.67890
Minimum	-22.24286	-23.88768	-19.51142	-24.08571
Std. Dev.	6.535354	12.67748	6.046521	8.359276
Skewness	-1.254966	0.544393	-0.153574	-1.200002
Kurtosis	5.231847	3.797520	5.491040	4.825781
Jarque-Bera	25.85205	4.174258	14.43663	20.83925
Correlation				
GDP	1.000000			
FDI	0.514992	1.000000		
EXP	0.550121	0.055158	1.000000	
GFCF	0.896192	0.398363	0.428384	1.000000

Source: Author`s own calculations

The ADF and PP Unit Root Test

The specified time series might be stationary either at level or at the first difference, which is known as an advantage of the ARDL bounds testing approach. As a result, each series has been subjected to the Augmented Dickey – Fuller and Phillips–Perron unit root tests. Based on the ADF and PP test results, the null hypothesis assuming that variables have a unit root at

levels must be rejected since t-statistics are greater than critical values at a five percent significance level, and series` p-values are lesser than 0.05. The null hypothesis that the series has a unit root at level must be discarded referring to the statistics. As a consequence of the ADF and PP tests findings, the investigated variables were integrated of order zero (I (0)) which means all the series are stationary at level (See Table 2).

Table 2: The outcomes of the ADF and PP test

Variables	ADF (Intercept and trend)		PP (Intercept and trend)	
	Level	Decision	Level	Decision
GDP	[-5.061275]** (0.0007)	I(0)	[-5.897364]** (0.0000)	I(0)
FDI	[-7.175774]** (0.0000)	I(0)	[-7.175774]** (0.0000)	I(0)
EXP	[-6.350738]** (0.0000)	I(0)	[-6.283596]** (0.0000)	I(0)
GFCF	[-6.096379]** (0.0000)	I(0)	[-6.110011]** (0.0000)	I(0)

Note: In the ADF and PP unit root tests, the parentheses indicate p-values, brackets indicate t-statistics, and asterisk (**) denotes statistical significance at a 5% level.

Source: Author`s own calculations

The Zivot-Andrews unit root test (structural break)

The Zivot-Andrews unit root test was employed in order to check stationarity of the series considering one structural break. The ZA unit root test has examined the structural breaks in the analyzed series via thrree different models (A - intercept, B - trend, C - intercept and trend). The null hypothesis (H_0) of this test states that, the series has a unit root and the series are non-stationary. The alternative hypothesis (H_1) of this analysis states that the series does not have unit root and the series are stationary.

Table 3: The outcomes of the Zivot-Andrews test

Variables	ZA unit root test					
	Model A (Intercept)		Model B (Trend)		Model C (Intercept and trend)	
	t-statistic	Break year	t-statistic	Break year	t-statistic	Break year
GDP	-5.174486**	2010 q2	-6.089854***	2009 q1	-6.003069***	2009 q3
FDI	-7.295840***	2010 q4	-5.099453**	2015 q2	-8.385223***	2009 q2
EXPR	-5.693655***	2008 q4	-6.578393***	2009 q1	-5.693655***	2008 q4
GCF	-5.619979***	2010 q3	-4.590047*	2011 q3	-6.645603***	2010 q2

Note: The critical values for Model A and B at 1%, 5%, and 10% significance level are -5.34, -4.93, and -4.58 respectively. The critical values for Model C at 1%, 5%, and 10% significance level are -

5.57, -5.08, and -4.82 respectively. The asterisks (***, **, *) denote statistical significance at a 1%, 5%, and 10% level respectively.

The results of the ZA unit root test shows that the t-statistics of the model is more than critical values of 1%, 5%, and 10% significance level which means that the null hypothesis that the series has a unit root and the series are non-stationary should be rejected and the alternative hypothesis that the series does not have unit root and the series are stationary should be accepted. Thus, according to the findings of the ZA test the series are stationary with a one structural break (See Table 3).

ARDL bounds testing approach

In comparison with other cointegration analyses, the advantage of the ARDL approach is that the series might be integrated of order zero I(0) or one I(1). In our case, all the series are integrated of order zero I(0). Thus, the next step would be to run the ARDL model. The ARDL bounds test output shows that the F value is not below the lower bounds and above the upper bounds at 1% significance level. The null hypothesis that there is no cointegration between the analyzed series should be rejected and the alternative hypothesis that there is cointegration between the analyzed series must be accepted. Thus, based on the results of the ARDL bounds test there is a presence of cointegration between FDI, EXP, GFCF, and GDP in Turkey from 2006 to 2019. Therefore, R-squared is 0.92 which means the dependent variable is explained by 92 percent. Moreover, the probability of (F-statistic) is 0.00000, which means F-statistic is significant. Additionally, the Durbin-Watson statistic is 1.946103 (close to two is desirable). Based on the information mentioned above, it can be stated that the data fitted the model well (See Table 4).

Table 4: The results of the ARDL cointegration test

Estimated equation			GDPt= f(FDIt, EXPt, GFCFt)	
Autoselected lag structure			(2,2,2)	
Cointegration	F value	Significance	Critical values	
			lower bounds I(0)	upper bounds I(1)
Yes	5.888004	10%	2.37	3.2
		5%	2.79	3.67
		1%	3.65	4.66
R-squared			0.929446	
Adjusted R-squared			0.910517	
F-statistic			49.10136	
Prob(F-statistic)			0.00000	
Durbin-Watson stat			1.946103	

The Granger Causality test

As earlier stated, the Granger Causality analysis will also investigate the relation between GDP and FDI. The test's null hypothesis is stated below:

H_0: FDI does not Granger Cause GDP, and

H_0: GDP does not Granger Cause FDI

When the probability value is lesser than 0.05 percent, the null hypothesis is discarded.

Table 5: Granger Causality test for GDP and FDI

Pairwise Granger causality test, Lags 3, Sample 2006 Q2 - 2019 Q4, Observations 53		
Null Hypothesis	**F-statistic**	**Prob.**
FDI does not Granger Cause GDP	6.42973	0.0010
GDP does not Granger Cause FDI	3.91179	0.0145

Source: Author`s own calculations

Based on the Granger causality analysis findings, the null hypothesis of no causality running from FDI to GDP must be declined predicated on a P-value=0.001 (less than 0.05%). As a result, the second null hypothesis of no causality running from GDP to FDI must be discarded predicated on a P-value = 0.01 (less than 0.05 %). Hence, the Granger causality test findings revealed a bidirectional causality between FDI and GDP. (See Table 5).

Overall, the findings match the literature and the premises of the study (See Table 6).

Table 6: Summary of the empirical literature review (FDI and GDP relationship)

Author	Research period	Research methods	Results
Nistor.P(2014)	1990-2012	Regression analysis (time series data)	Positive relationship
Chakraborty, C., & Nunnenkamp, P. (2008)	1987-2000	The Unit Root, Panel co-integration, and Granger causality (panel data)	Positive relationship
Karimov & Belkania, 2018)	1980-2017	ADF unit root test, Johansen co-integration test, and Granger causality tests (time series data)	Positive relationship
Dar, A. A., Bhatti, H. M. A., & Muhammad, T. (2016)	1997-2001 2002-2013	Vector Error Correction Model (VECM), panel co-integration test and Principle Component Analysis (PCA)	Positive relationship
Kisswani, K. M., Kein, A., & Shetty, S. T. (2015)	1994:Q1 to 2013:Q2	The ADF unit root test, Johansen co-integration test, Granger causality tests, and VECM	Positive relationship

Source: Author`s own invention

The overview is described in-depth as obeys:

RQ1: Is FDI a significant contributor to economic growth?

H1: Foreign Direct Investment has a positive impact on Gross Domestic Product

In response to the first question of the study, the H1 was investigated via different empirical tests. Gross Domestic Product (GDP) as a dependent variable was explained with Foreign Direct Investment (FDI), Export of goods and services (EXP), and Gross Fixed Capital Formation (GFCF).

In the first part of the empirical analysis, all variables were tested against stationarity and order of integration. In the second part, variables were tested through the ARDL bounds testing approach to see if there was any co-integration between the examined series or not. In the third part of the empirical analysis long-run and short-run analysis was performed to see if there was a long-run or short-run co-integration between examined series. In the fourth part of empirical analysis, Gross Domestic Product (GDP) and Foreign Direct Investment (FDI) were tested through the Granger causality test to see the causal relationship between the analyzed series.

According to empirical findings, it was supported that there was a co-integration between the analyzed variables, the long-run and short-run analysis shows a significant and positive relationship between independent and dependent variables in long-term and short-term, and finally Granger causality test indicates bidirectional causality among analyzed variables. Overall, considering all obtained empirical findings, it was supported that FDI is a significant contributor to economic growth in Turkey.

3.2 The impact of FDI on Unemployment rate

The objective of research 2: To establish the effect of FDI inflows on the unemployment rate of Turkey

RQ2: Does the inflow of foreign direct investments reduces the unemployment rate?

H2: Foreign Direct Investment negatively correlated with the unemployment rate

Research methods: Augmented Dickey-Fuller Unit Root Test, Phillips–Perron Unit Root Test, Zivot Andrews Unit Root Test, ARDL bounds testing approach (long-run), Error Correction Model (short-run), Granger Causality Test

Data description

This study focuses on the quarterly time-series data acquired from the Federal Reserve Bank of f St. Louis (FRED) and Central Bank of Turkey (CBT) for the period span from 2006 Q2 to 2019 Q4. Before converting to percentage change, all series have been adjusted to the USD in constant 2015 (CPI 2015). The Eviews-11 was employed for the statistical part of the study. The below mentioned four series were applied in the model:

Dependent variable:

UEMP- Unemployment Rate: Aged 15-64: All Persons for Turkey (Percentage, seasonally adjusted) (FRED)

Independent variable

FDI- Foreign Direct Investment inflow (Percentage change, seasonally adjusted via E-views 11 software) (CBT)

Explanatory variable

CPI - Consumer Price Index: All Items for Turkey (Percentage change, have been seasonally adjusted via Eviews 11 software) (FRED)

Model specification

Explanatory variables have been chosen as a determinant of Unemployment. Based on those series below mentioned model has been built:

$UEMPt= f (FDI_t, CPI_t)$

Results of the second model

The second phase of the statistical findings is presented and discussed in this section. The descriptive statistics and correlation values of the utilized series have been described in Table 7. The correlation matrix findings indicate a not so strong but positive relationship between FDI, CPI and UEMP. The preliminary information about the relationships between series which have been gained through the descriptive statistics and correlation matrix is not enough to determine the relationship between analyzed variables. In order to get more reliable outcomes about the relationship among analyzed series, the statistical methods will be utilized in the dissertation.

Table 7: Descriptive statistics and correlation of the variables

	UEMP	FDI	CPI
Mean	2.331378	2.415403	9.577273

Median	2.337991	2.585822	9.070000
Maximum	2.673286	41.58270	22.70000
Minimum	2.091009	-23.88768	4.270000
Std. Dev.	0.153703	12.67748	3.512023
Skewness	0.470300	0.544393	1.897695
Kurtosis	2.318687	3.797520	7.070619
Jarque-Bera	3.091266	4.174258	9.577273
Correlation			
UEMP	1		
FDI	0.117473	1	
CPI	0.145505	-0.257516	1

Source: Author`s own calculations

The ADF and PP Unit Root Test

The specified time series might be stationary either at level or at the first difference, and might be the mix, which is known as an advantage of the ARDL bounds testing approach. As a result, each series has been subjected to the Augmented Dickey-Fuller and Phillips-Perron unit root tests.

Based on the ADF and PP test results, the null hypothesis assuming that UEMP has a unit root at levels must be supported since T-statistics are minor than critical values at a one percent significance level, and UEMP`s p-values are greater than 0.05. After taking the 1st difference, the sequences remained stationary based on the following results: T-statistics greater than critical values at the five percent significance level and p-values lesser than 0.05. The null hypothesis that the UEMP has a unit root at 1st difference must be discarded referring to the statistics. As a consequence of the Augmented dickey – fuller and PP unit root test findings, the UEMP was integrated into order one (I (1)), which means the investigated variable is stationary at first difference.

Based on the ADF and PP test results, the null hypothesis assuming that FDI and CPI has a unit root at levels must be rejected since t-statistics are greater than critical values at a one percent significance level, and series` p-values are lesser than 0.05. The null hypothesis that the series have a unit root at level must be accepted referring to the statistics. As a consequence of the ADF and PP tests findings, the FDI and CPI were integrated of order zero (I (0)) which means FDI and CPI is stationary at level. (See Table 8).

Table 8: The outcomes of the ADF and PP test

ADF (Intercept and trend)			
Variables	Level	1st difference	Decision
UEMP	[-2.719485] (0.2333)	[-3.994241]** (0.0148)	I(1)

FDI	[-7.175774]*** (0.0000)		I(0)
CPI	[-5.135005]*** (0.0006)		I(0)
PP (Intercept and trend)			
Variables	Level	1st difference	Decision
UEMP	[-1.877836] (0.6522)	[-4.099097]** (0.0112)	I(1)
FDI	[-7.175774]*** (0.0000)		I(0)
CPI	[-7.448318]*** (0.0000)		I(0)

Note: In the ADF and PP unit root tests, the parentheses indicate p-values, brackets indicate t-statistics, and asterisks (***, **) denotes statistical significance at a 1%, and 5% level respectively. The critical values for this test at 1%, and 5% significance level are -4.14, and -3.49 respectively.

Source: Author`s own calculations

The Zivot-Andrews unit root test (structural break)

The Zivot-Andrews unit root test was employed in order to check stationarity of the series considering one structural break. The ZA unit root test has examined the structural breaks in the analyzed series via thrree different models (A - intercept, B - trend, C - intercept and trend). The null hypothesis (H_0) of this test states that, the series has a unit root and the series are non-stationary. The alternative hypothesis (H_1) of this analysis states that the series does not have unit root and the series are stationary.

Table 9: The outcomes of the Zivot-Andrews test

Variables	ZA unit root test					
	Model A (Intercept)		Model B (Trend)		Model C (Intercept and trend)	
	t-statistic	Break year	t-statistic	Break year	t-statistic	Break year
UEMP	-4.678673*	2011Q3	-4.599983*	2014Q1	-5.335280**	2014Q2
FDI	-7.295840***	2010 Q4	-5.099453**	2015 Q2	-8.385223***	2009 Q2
CPI	-6.156256***	2010Q2	-6.612687***	2010Q4	-6.987592***	2011Q3

Note: The critical values for Model A and B at 1%, 5%, and 10% significance level are -5.34, -4.93, and -4.58 respectively. The critical values for Model C at 1%, 5%, and 10% significance level are -5.57, -5.08, and -4.82 respectively. The asterisks (***, **, *) denote statistical significance at a 1%, 5%, and 10% level respectively.

Source: Author`s own calculations

The results of the ZA unit root test shows that the t-statistics of the model is more than critical values of 1%, 5%, and 10% significance level which means that the null hypothesis that the series has a unit root and the series are non-stationary should be rejected and the alternative hypothesis that the series does not have unit root and the series are stationary should be

accepted. Thus, according to the findings of the ZA test the series are stationary with a one structural break (See Table 9).

ARDL bounds testing approach

In comparison with other cointegration analyses, the advantage of the ARDL approach is that the series might be integrated of order zero I(0), one I(1) or might be mixed. In our case, the series is mixed, integrated of order zero I(0) and one I(1). Thus, the next step would be to run the ARDL model. The ARDL bounds test output shows that the F value is not below the lower bounds and above the upper bounds at 1% significance level. The null hypothesis that there is no cointegration between the analyzed series should be rejected and the alternative hypothesis that there is cointegration between the analyzed series must be accepted. Thus, based on the results of the ARDL bounds test there is a presence of cointegration between FDI, CPI, and UEMP in Turkey from 2006 to 2019. Therefore, R-squared is 0.98 which means the dependent variable is explained by 98 percent. Moreover, the probability of (F-statistic) is 0.00000, which means F-statistic is significant. Additionally, the Durbin-Watson statistic is 2.209649 (close to two and slightly more is desirable). Based on the information mentioned above, it can be stated that the data fitted the model well (See Table 10).

Table 10: The results of the ARDL cointegration test

Estimated equation			$UEMP_t = f(FDI_t, CPI_t)$	
Autoselected lag structure			(9,6,10)	
Cointegration	F value	Significance	Critical values	
			lower bounds I(0)	upper bounds I(1)
Yes	5.612699	10%	2.63	3.35
		5%	3.1	3.87
		1%	4.13	5
R-squared			0.985366	
Adjusted R-squared			0.962124	
F-statistic			42.39597	
Prob(F-statistic)			0.00000	
Durbin-Watson stat			2.209649	

Source: Author`s own calculations

Granger Causality test

As earlier stated, the Granger Causality analysis will also investigate the relation between UEMP and FDI. The test's null hypothesis is stated below:

H_0: FDI does not Granger Cause UEMP, and

H_0: UEMP does not Granger Cause FDI

When the probability value is lesser than 0.05 percent, the null hypothesis is discarded.

Table 11: Granger Causality test for FDI and UEMP

Pairwise Granger causality test, Lags 1, Sample 2006 Q2-2019 Q4, Observations 54		
Null Hypothesis	**F-statistic**	**Prob.**
FDI does not Granger Cause UEMP	5.45718	0.0235
UEMP does not Granger Cause FDI	1.07210	0.3054

Source: Author`s own calculations

Based on the Granger causality analysis findings, the null hypothesis of no causality from FDI to UEMP must be declined predicated on a P-value=0.02 (less than 0.05). As a result, the second null hypothesis of no causal relationship from UEMP to FDI must be confirmed predicated on a P-value = 0.30 (more than 0.05). Hence, the Granger causality test findings revealed a unidirectional causality running from FDI to UEMP. (See Table 11).

Overall, the findings mostly match the literature and the premises of the study (Table 12).

Table 12: Summary of the empirical literature review (FDI and Unemployment rate relationship)

Author	Research area and period	Research methods	Results
Karimov, M., Paradi-Dolgos, A., & Koroseczne Pavlin, R. (2020)	Turkey (1980-2017)	The Unit Root test, Johansen cointegration test, and the Granger causality	Positive relationship
Brincikova, Z., & Darmo, L. (2014)	V4 countries (1993-2012)	The panel regression approach	Positive relationship
Zdravković, A., \DJukić, M., & Bradić-Martinović, A. (2017)	17 transitioning nations (2000-2014)	The panel co-integration method	Negative relationship
Johnny, N., Timipere, E. T., Krokeme, O., & Markjackson, D. (2018)	Nigeria (1980-2015)	The cointegration, unit root, and standard most minor square tests	Negative relationship
Irpan, H. M., Saad, R. M., Nor, A. H. S. M., & Ibrahim, N. (2016)	Malaysia (1980-2012)	autoregressive distributed lag (ARDL) approach	Positive relationship

Source: Author`s own invention

The overview is described in-depth as obeys:

RQ2: Does the inflow of foreign direct investments reduces the unemployment rate?

H2: Foreign Direct Investment negatively correlated with the unemployment rate

In response to the second question of the study, the H2 was investigated via different empirical tests. The unemployment rate (UEMP) as a dependent variable was explained with Foreign Direct Investment (FDI), and Consumer Price Index (CPI).

In the first part of the empirical analysis, again, all variables were tested against stationarity and order of integration. In the second part, variables were tested through the ARDL bounds testing approach to see if there was any co-integration between the examined series or not. In the third part of the empirical analysis long-run and short-run analysis was performed to see if there was a long-run or short-run co-integration between examined series. In the fourth part of empirical analysis, unemployment rate (UEMP) and Foreign Direct Investment (FDI) were tested through the Granger causality test to see the causal relationship between the analyzed series.

According to empirical findings, it was supported that there was a co-integration between the analyzed variables, the long-run analysis indicates a significant and negative cointegration between the FDI and UEMP, and a significant and positive cointegration between the CPI and UEMP, the short-run analysis shows a significant and negative cointegration between the FDI and UEMP, and a significant and negative cointegration between the CPI and UEMP, and finally, the Granger causality test indicates bidirectional causality among analyzed variables. According to the obtained findings, it was supported that FDI inflows negatively correlated with the unemployment rate in Turkey.

3.3 The impact of FDI on Trade (Export)

The objective of research 3: To establish the effect of FDI inflows on the Trade Balance of Turkey

RQ3: Do FDI inflows positively affect the trade of Turkey?

H3: Fostering Foreign Direct Investment positively affects Trade (Export and Import)

Research methods: Augmented Dickey-Fuller unit root test, Phillips–Perron unit root test, Zivot Andrews Unit Root Test, ARDL bounds testing approach (long-run), Error Correction Model (short-run), Granger Causality test

Data description

This study focuses on the quarterly time-series data acquired from the Federal Reserve Bank of f St. Louis (FRED) and Central Bank of Turkey (CBT) for the period span from 2006

Q2 to 2019 Q4. Before converting to percentage change, all series have been adjusted to the USD in constant 2015 (CPI 2015). The Eviews-11 was employed for the statistical part of the study. The below mentioned four series were applied in the model:

Dependent variable

EXP – Export of goods and services (Percentage change, seasonally adjusted) (FRED)

Independent variable

FDI- Foreign Direct Investment inflow (Percentage change, seasonally adjusted via Eviews 11 software) (CBT)

Explanatory variables

EXCR- National Currency to US Dollar Exchange Rate: Average of Daily Rates for Turkey (Percentage change, seasonally adjusted via Eviews 11 software) (FRED)

FCR – Foreign Currency Reserves (Percentage change, seasonally adjusted) (CBT)

Model specification

Explanatory variables have been chosen as determinants of Trade. Based on those series below mentioned model has been built:

$EXP_t = f(FDI_t, EXCR_t, FCR_t)$

Results of the third model

The third phase of the statistical findings is presented and discussed in this section. The descriptive statistics and correlation values of the utilized series have been described in Table 13. The correlation matrix findings indicate a not so strong but positive relationship between FDI and EXP, and a strong and positive relationship between GDP and EXP. The preliminary information about the relationships between series which have been gained through the descriptive statistics and correlation matrix is not enough to determine the relationship between analyzed variables. In order to get more reliable outcomes about the relationship among analyzed series, the statistical methods will be utilized in the dissertation.

Table 13: Descriptive statistics and correlation of the variables

	EXP	FDI	GDP
Mean	1.620071	2.415403	0.872256
Median	1.775871	2.585822	2.373952
Maximum	18.14356	41.58270	13.10307
Minimum	-19.51142	-23.88768	-22.24286

Std. Dev.	6.046521	12.67748	6.535354
Skewness	-0.153574	0.544393	-1.254966
Kurtosis	5.491040	3.797520	5.231847
Jarque-Bera	14.43663	4.174258	25.85205
Correlation			
EXP	1		
FDI	0.055158	1	
GDP	0.550121	0.514992	1

Source: Author`s own calculations

The ADF and PP Unit Root Test

The specified time series might be stationary either at level or at the first difference, which is known as an advantage of the ARDL bounds testing approach. As a result, each series has been subjected to the Augmented Dickey – Fuller and Phillips–Perron unit root tests. Based on the ADF and PP test results, the null hypothesis assuming that variables have a unit root at levels must be rejected since t-statistics are greater than critical values at a five percent significance level, and series` p-values are lesser than 0.05. The null hypothesis that the series has a unit root at level must be discarded referring to the statistics. As a consequence of the ADF and PP tests findings, the investigated variables were integrated of order zero (I (0)) which means all the series are stationary at level. (See Table 14).

Table 14: The outcomes of the ADF and PP test

Variables	ADF (Intercept and trend)		PP (Intercept and trend)	
	Level	Decision	Level	Decision
EXP	-[6.350738]*** (0.0000)	I(0)	-[6.283596]*** (0.0000)	I(0)
FDI	[-7.175774]*** (0.0000)	I(0)	[-7.175774]*** (0.0000)	I(0)
GDP	[-5.061275]*** (0.0007)	I(0)	[-5.897364]*** (0.0000)	I(0)

Note: In the ADF and PP unit root tests, the parentheses indicate p-values, brackets indicate t-statistics, and asterisks (***, **) denotes statistical significance at a 1%, and 5% level respectively. The critical values for this test at 1%, and 5% significance level are -4.14, and -3.49 respectively.

Source: Author`s own calculations

The Zivot-Andrews unit root test (structural break)

The Zivot-Andrews unit root test was employed in order to check stationarity of the series considering one structural break. The ZA unit root test has examined the structural breaks in the analyzed series via thrree different models (A - intercept, B - trend, C - intercept and trend). The null hypothesis (H_0) of this test states that, the series has a unit root and the series are non-stationary. The alternative hypothesis (H_1) of this analysis states that the series does not have unit root and the series are stationary.

Table 15: The outcomes of the Zivot-Andrews test

Variables	ZA unit root test					
	Model A (Intercept)		Model B (Trend)		Model C (Intercept and trend)	
	t-statistic	Break year	t-statistic	Break year	t-statistic	Break year
EXP	-5.693655***	2008 q4	-6.578393***	2009 q1	-5.693655***	2008 q4
FDI	-7.295840***	2010 Q4	-5.099453**	2015 Q2	-8.385223***	2009 Q2
GDP	-5.174486**	2010 q2	-6.089854***	2009 q1	-6.003069***	2009 q3

Note: The critical values for Model A and B at 1%, 5%, and 10% significance level are -5.34, -4.93, and -4.58 respectively. The critical values for Model C at 1%, 5%, and 10% significance level are -5.57, -5.08, and -4.82 respectively. The asterisks (***, **, *) denote statistical significance at a 1%, 5%, and 10% level respectively.

Source: Author`s own calculations

The results of the ZA unit root test shows that the t-statistics of the model is more than critical values of 1%, 5%, and 10% significance level which means that the null hypothesis that the series has a unit root and the series are non-stationary should be rejected and the alternative hypothesis that the series does not have unit root and the series are stationary should be accepted. Thus, according to the findings of the ZA test the series are stationary with a one structural break (See Table 15).

ARDL bounds testing approach

In comparison with other cointegration analyses, the advantage of the ARDL approach is that the series might be integrated of order zero I(0) or one I(1). In our case, all the series are integrated of order zero I(0). Thus, the next step would be to run the ARDL model. The ARDL bounds test output shows that the F value is not below the lower bounds and above the upper bounds at 5% significance level. The null hypothesis that there is no cointegration between the analyzed series should be rejected and the alternative hypothesis that there is cointegration between the analyzed series must be accepted. Thus, based on the results of the ARDL bounds test there is a presence of cointegration between FDI, GDP, and EXP in Turkey from 2006 to 2019. Therefore, R-squared is 0.93 which means the dependent variable is explained by 93 percent. Moreover, the probability of (F-statistic) is 0.000000, which means F-statistic is significant. Additionally, the Durbin-Watson statistic is 1.898327 (close to two or slightly more is desirable). Based on the information mentioned above, it can be stated that the data fitted the model well (See Table 16).

Table 16: The results of the ARDL cointegration test

Estimated equation			$EXPR_t = f(FDI_t, GDP_t)$	
Autoselected lag structure			(1,2,2)	
Cointegration	F value	Significance	Critical values	
			lower bounds I(0)	upper bounds I(1)
Yes	4.130823	10%	2.63	3.35
		5%	3.1	3.87
		1%	4.13	5
R-squared			0.931597	
Adjusted R-squared			0.920957	
F-statistic			87.55240	
Prob(F-statistic)			0.000000	
Durbin-Watson stat			1.898327	

Source: Author`s own calculations

Granger Causality test

As earlier stated, the Granger Causality analysis will also investigate the relation between EXP and FDI. The test's null hypothesis is stated below:

H_0: FDI does not Granger Cause EXP, and

H_0: EXP does not Granger Cause FDI

When the probability value is lesser than 0.05 percent, the null hypothesis is discarded.

Table 17: Granger Causality test for FDI and EXP

Pairwise Granger causality test, Lags 2, Sample 2006 Q3-2019 Q4, Observations 52		
Null Hypothesis	**F-statistic**	**Prob.**
FDI does not Granger Cause EXP	6.36278	0.0036
EXP does not Granger Cause FDI	1.63266	0.2063

Source: Author`s own calculations

Based on the Granger causality analysis findings, the null hypothesis of no causality between FDI and EXP must be declined predicated on a P-value=0.003 (less than 0.05). As a result, the second null hypothesis of no causal relationship from EXP to FDI must be confirmed predicated on a P-value = 0.20 (more than 0.05). Hence, the Granger causality test findings revealed a unidirectional causality running from FDI to EXP. (See Table 17).

Overall, the findings match the literature and the premises of the study (See Table 18).

Table 18: Summary of the empirical literature review (FDI and Trade (Export and Import) relationship)

Author	Research area and period	Research methods	Results
Karimov, M (2019)	Turkey (1974-2017)	The Unit Root test, Johansen cointegration test, and the Granger causality	Positive relationship
Simionescu, M. (2014)	G7 countries (2002-2013)	The Granger causality test for panel data	Positive relationship

Bhasin, N., & Kapoor, K. (2020)	BRICS (1993–2015)	The panel unit root tests, panel cointegration, VECM and causality tests	Positive relationship
Savićević, M., & Kostić, M. (2020)	Western Balkan countries Central and Eastern European countries (2010- 2016)	The Panel regression analysis	Positive relationship
Mukhtarov, S., Alalawneh, M. M., Ibadov, E., & Huseynli, A. (2019)	Jordan (1980-2018)	Autoregressive Distributed Lag Bounds Testing (ARDL BT) cointegration approach	Positive relationship

<div align="center">Source: Author`s own invention</div>

The overview is described in-depth as obeys:

RQ3: Do FDI inflows positively affect the trade of Turkey?

H3: Fostering Foreign Direct Investment positively affects Trade (Export and Import)

In response to the second question of the study, the H3 was investigated via different empirical tests. The Export of goods and services (EXP) as a dependent variable was explained with Foreign Direct Investment (FDI), and Gross Domestic Product (GDP).

In the first part of the empirical analysis, again, all variables were tested against stationarity and order of integration. In the second part, variables were tested through the ARDL bounds testing approach to see if there was any co-integration between the examined series or not. In the third part of the empirical analysis long-run and short-run analysis was performed to see if there was a long-run or short-run co-integration between examined series. In the fourth part of empirical analysis, export of goods and services (EXP) and Foreign Direct Investment (FDI) were tested through the Granger causality test to see the causal relationship between the analyzed series.

According to empirical findings, it was supported that there was a co-integration between the analyzed variables, the long-run analysis indicates a significant and positive cointegration between the FDI, GDP and EXP, the short-run analysis shows a insignificant and negative cointegration between the FDI and EXP, and a significant and positive cointegration between the GDP and EXP, and finally, the Granger causality test indicates bidirectional causality among analyzed variables. According to the obtained findings, it was supported that FDI inflows positively affects the export in Turkey.

3.4 The impact of FDI on Trade (Import)

The objective of research 3: To establish the effect of FDI inflows on the trade of Turkey

RQ3: Do FDI inflows positively affect the Trade of Turkey?

H3: Fostering Foreign Direct Investment positively affects Trade (Export and Import)

Research methods: Augmented Dickey-Fuller unit root test, Phillips–Perron unit root test, Zivot Andrews Unit Root Test, ARDL bounds testing approach (long-run), Error Correction Model (short-run), Granger Causality test

Data description

This study focuses on the quarterly time-series data acquired from the Federal Reserve Bank of f St. Louis (FRED) and Central Bank of Turkey (CBT) for the period span from 2006 Q2 to 2019 Q4. Before converting to percentage change, all series have been adjusted to the USD in constant 2015 (CPI 2015). The Eviews-11 was employed for the statistical phase of the study. The below mentioned four series were applied in the model:

Dependent variable

IMP – Import of goods and services (Percentage change, seasonally adjusted) (FRED)

Independent variable

FDI - Foreign Direct Investment inflow (Percentage change, seasonally adjusted via Eviews 11 software) (CBT)

Explanatory variables

EXP – Export of goods and services (Percentage change, seasonally adjusted) (FRED)

Methodology

Model specification

Explanatory variables have been chosen as a determinant of Trade. Based on those series below mentioned model has been built:

$IMP_t = f(FDI_t, EXP_t)$

Results of the fourth model

The third phase (second part) of the statistical findings is presented and discussed in this section. The descriptive statistics and correlation values of the utilized series have been described in Table 19. The correlation matrix findings indicate a strong and positive relationship between FDI, EXP, and IMP. The preliminary information about the relationships between

series which have been gained through the descriptive statistics and correlation matrix is not enough to determine the relationship between analyzed variables. In order to get more reliable outcomes about the relationship among analyzed series, the statistical methods will be utilized in the dissertation.

Table 19: Descriptive statistics and correlation of the variables

	IMP	FDI	EXP
Mean	1.279461	2.415403	1.620071
Median	1.242840	2.585822	1.775871
Maximum	17.58139	41.58270	18.14356
Minimum	-31.01304	-23.88768	-19.51142
Std. Dev.	7.899029	12.67748	6.046521
Skewness	-1.312106	0.544393	-0.153574
Kurtosis	7.100668	3.797520	5.491040
Jarque-Bera	54.31702	4.174258	14.43663
Correlation			
IMP	1		
FDI	0.332918	1	
EXP	0.743101	0.055158	1

Source: Author`s own calculations

The ADF and PP Unit Root Test

The specified time series might be stationary either at level or at the first difference, which is known as an advantage of the ARDL bounds testing approach. As a result, each series has been subjected to the Augmented Dickey – Fuller and Phillips–Perron unit root tests. Based on the ADF and PP test results, the null hypothesis assuming that variables have a unit root at levels must be rejected since t-statistics are greater than critical values at a five percent significance level, and series` p-values are lesser than 0.05. The null hypothesis that the series has a unit root at level must be discarded referring to the statistics. As a consequence of the ADF and PP tests findings, the investigated variables were integrated of order zero (I (0)) which means all the series are stationary at level. (See Table 20).

Table 20: The outcomes of the ADF and PP test

	ADF (Intercept and trend)		PP (Intercept and trend)	
Variables	Level	Decision	Level	Decision
IMP	[-4.748627]*** (0.0018)	I(0)	-4.507555*** (0.0000)	I(0)
FDI	[-7.175774]*** (0.0000)	I(0)	-7.175774*** (0.0000)	I(0)
EXP	[-6.350738]*** (0.0000)	I(0)	-6.283596*** (0.0000)	I(0)

Source: Author`s own calculations

The Zivot-Andrews unit root test (structural break)

The Zivot-Andrews unit root test was employed in order to check stationarity of the series considering one structural break. The ZA unit root test has examined the structural breaks in the analyzed series via thrree different models (A - intercept, B - trend, C - intercept and trend). The null hypothesis (H_0) of this test states that, the series has a unit root and the series are non-stationary. The alternative hypothesis (H_1) of this analysis states that the series does not have unit root and the series are stationary.

Table 21: The outcomes of the Zivot-Andrews test

Variables	ZA unit root test					
	Model A (Intercept)		Model B (Trend)		Model C (Intercept and trend)	
	t-statistic	Break year	t-statistic	Break year	t-statistic	Break year
IMP	-5.192504**	2009 Q2	-4.929630*	2009 Q1	-5.863969***	2009Q2
FDI	-7.295840***	2010 Q4	-5.099453**	2015 Q2	-8.385223***	2009Q2
EXP	-5.693655***	2008 Q4	-6.578393***	2009 Q1	-5.693655***	2008Q4

Note: The critical values for Model A and B at 1%, 5%, and 10% significance level are -5.34, -4.93, and -4.58 respectively. The critical values for Model C at 1%, 5%, and 10% significance level are -5.57, -5.08, and -4.82 respectively. The asterisks (***, **, *) denote statistical significance at a 1%, 5%, and 10% level respectively.

Source: Author`s own calculations

The results of the ZA unit root test shows that the t-statistics of the model is more than critical values of 1%, 5%, and 10% significance level which means that the null hypothesis that the series has a unit root and the series are non-stationary should be rejected and the alternative hypothesis that the series does not have unit root and the series are stationary should be accepted. Thus, according to the findings of the ZA test the series are stationary with a one structural break (See Table 21).

ARDL bounds testing approach

In comparison with other cointegration analyses, the advantage of the ARDL approach is that the series might be integrated of order zero I(0) or one I(1). In our case, all the series are integrated of order zero I(0). Thus, the next step would be to run the ARDL model. The ARDL bounds test output shows that the F value is not below the lower bounds and above the upper bounds at 1% significance level. The null hypothesis that there is no cointegration between the analyzed series should be rejected and the alternative hypothesis that there is cointegration

between the analyzed series must be accepted. Thus, based on the results of the ARDL bounds test there is a presence of cointegration between FDI, EXP, and IMP in Turkey from 2006 to 2019. Therefore, R-squared is 0.72 which means the dependent variable is explained by 93 percent. Moreover, the probability of (F-statistic) is 0.000000, which means F-statistic is significant. Additionally, the Durbin-Watson statistic is 1.894519 (close to two or slightly more is desirable). Based on the information mentioned above, it can be stated that the data fitted the model well (See Table 22).

Table 22: The results of the ARDL cointegration test

Estimated equation			$IMP_t = f(FDI_t, EXP_t)$	
Autoselected lag structure			(2,1,1)	
Cointegration	F value	Significance	Critical values	
			lower bounds I(0)	upper bounds I(1)
Yes	12.64489	10%	2.63	3.35
		5%	3.1	3.87
		1%	4.13	5
R-squared			0.724642	
Adjusted R-squared			0.688725	
F-statistic			20.17584	
Prob(F-statistic)			0.000000	
Durbin-Watson stat			1.894519	

Source: Author`s own calculations

Granger Causality test

As earlier stated, the Granger Causality analysis will also investigate the relation between IMP and FDI. The test's null hypothesis is stated below:

H_0: FDI does not Granger Cause IMP, and

H_0: IMP does not Granger Cause FDI

When the probability value is lesser than 0.05 percent, the null hypothesis is discarded.

Table 23: Granger Causality test for FDI and IMP

Pairwise Granger causality test, Lags 2, Sample 2006 Q2-2019 Q4, Observations 53		
Null Hypothesis	**F-statistic**	**Prob.**
FDI does not Granger Cause IMP	6.36278	0.0036
IMP does not Granger Cause FDI	1.63266	0.2063

Source: Author`s own calculations

Based on the Granger causality analysis findings, the null hypothesis of no causality running from FDI to IMP must be rejected predicated on a P-value = 0.0036 (less than 0.05). As a result, the second null hypothesis of no causal relationship between IMP and FDI must be accepted predicated on a P-value = 0.20 (more than 0.05). Hence, the Granger causality test findings revealed a unidirectional causality running from FDI to IMP (See Table 23).

Overall, the findings match the literature and the premises of the study. The overview is described in-depth as obeys:

RQ3: Do FDI inflows positively affect the Trade Balance of Turkey?

H3: Fostering Foreign Direct Investment positively affects Trade (Export and Import)

In response to the third question of the study, the H3 was investigated via different empirical tests. The import of goods and services (IMP) as a dependent variable was explained with Foreign Direct Investment (FDI), and export of goods and services (EXP).

In the first part of the empirical analysis, again, all variables were tested against stationarity and order of integration. In the second part, variables were tested through ARDL bounds test approach to see if there was any co-integration between the analyzed series or not. In the third part of the empirical analysis long-run and short-run analyses was run to see if there was a long-run or short-run causality between the analyzed series. In the fourth part of empirical analysis, import of goods and services (IMP) and Foreign Direct Investment (FDI) were tested through the Granger causality test to see the causal relationship between the analyzed series.

According to empirical findings, it was supported that there was a co-integration among the examined variables, long-run and short-run relationship between analysed series, and a unidirectional causal relationship from FDI to IMP. According to the obtained findings, it was supported that FDI inflows positively affects imports in Turkey.

Overall, the summary table of the status of the hypothesizes is mentioned below (See Table 24).

Table 24: The summary table of justified hypothesis

№	Hypothesis	Status
1	Foreign Direct Investment has a positive impact on Gross Domestic Product	Approved
2	Foreign Direct Investment negatively correlated with unemployment rate	Approved
3	Fostering Direct Investment has a positive effect on Trade (Export and Import)	Approved

Source: Author`s own invention

4. Conclusion and Policy Recommendations
4.1 Conclusion

With the growth in capital movements in the international market, foreign capital begins to produce in any country where investments will be more appropriate.

Countries consider FDI inflows as a means of financing for current account imbalances to support development and growth and thus prioritize measures to enhance FDI inflows. Foreign direct investment, which offers the buildup of the nation's wealth where it is directed, initiates competitiveness with technical progress and knowledge management, generates jobs, and improves export prospects. It also makes a substantial contribution to resolving nations' balance of payments imbalances, economic progress, and prosperity. Therefore, foreign direct investment is one essential factor that must be assessed, particularly for developing nations.

They also have specific detrimental ramifications on the economy of the hosting nation in contrast to their economic benefits. In general, major international firms make foreign direct investments, and the competitive dominance of big firms generates an economic monopoly, and it might be a challenge to transmit their earnings. Foreign direct investment may lead to concerns such as more significant foreign influence over the nation's economy and the failure of indigenous enterprises to cope with foreign corporations. Nevertheless, in its beneficial impact on the economy, it would be more logical for the priority industries to provide investment inputs instead of prohibiting foreign investment under some circumstances.

The intention of the investments of the holder of foreign direct investment is to advantage from various inducements such as connectivity to raw material in foreign nations, profit from inexpensive labor, seek for alternative marketplaces, use of low price variables, avoidance of tariff barriers and quotas, waivers of taxes, shipping expenses.

The country is regarded as a long-term foreign investment in other forms, such as the purchase of a firm, the provision of the initial stock of a recently created business, or the increase of the current stock of the corporation. Foreign investors are sensitive to the choice of the nation in which they will engage. It considers aspects like macroeconomic stability, capacity for labor, geographic placement, taxation, rewards, and degree of growth for the country to be engaged. The growth stages are essential. Since it is tough to engage in a country that has not finished its infrastructural operations, that is why the capital revenue proportion is large. Since the investment needed to be collected for a production item is expensive, nations that have not finished their infrastructural development are not favored. A growth phase spanning from cognitive processing to fissile substance and service industry investment has been carried out in international investment that commenced with natural and agricultural endowments. Tourism, data preparation, car industry, telecommunications, and nuclear materials have emerged industries that draw international investments, particularly after 1985. The services industry, particularly the trade and finance industries, has been the most considerable foreign direct investment activity in recent decades.

Since the 1950s, studies in Turkey have begun to produce progressive laws that modify the perspective of foreign resources and choose a means to profit from international investment for economic development. Particularly after the 2008 financial crisis, the trend of FDI inflow to developing economies has dramatically altered the worldwide FDI inflows ratio. When glancing at countries' rankings regarding FDI from 2005, Turkey's achievement in Eastern and Central Europe stands out, and Turkey was one of the top ten economies in those areas for attracting foreign direct investment[3]. These accomplishments were made possible by maximizing existing capability and emphasizing regulations that support FDI as a source of prudent finance for long-term development.

Investors consider various aspects, for instance, the quality of the countries' legislation in which they invest, the barriers to market access, the level of basic economic principles, the country's level of international competition, and the business climate when selecting a destination for the FDI. The comparatively superior standing of the nations in such fields means that they receive more significant FDI than other countries.

The main objective of this study was to examine the impact of FDI on economic growth, unemployment rate, and trade (import and export) in Turkey. The research consists of three parts. The first part is the effect of FDI on economic growth, and the second part is the effect of FDI on the unemployment rate, and the third part is the effect of FDI on Trade (Export and Import).

Considering the theoretical literature review about FDI and the economic growth relationship, we can confirm a positive impact on the economic growth of both investing and host countries. Contrary to theories, considering empirical literature review, we can see different results based on the picked period, region, and utilized empirical methods. The results of the analysis of the ARDL bounds test approach have indicated a co-integration among FDI and GDP. Additionally, the outputs of the long-term test have shown a long-run cointegration between FDI and GDP, the results of Error Correction Model have shown a short-run cointegration between analyzed series and the results of the last analysis, the Granger causality test has shown a bidirectional causality from FDI to GDP and vice versa. All together, we can interpret the empirical results as follows, with liberalization processes which have been started after 1980th to the present time and other factors, the Turkish state was able to attract FDI

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[3] Presidency of the Republic of Turkey, Investment office https://www.invest.gov.tr/en/pages/turkey-fdi-strategy.aspx

inflows and to boost economic growth with the help of FDI in the long term, and short term. Hence, we can conclude the theory that FDI inflows positively impact economic growth in Turkey.

We can observe different scenarios considering theoretical and empirical literature review about FDI and the unemployment rate relationship. Analyzing the theory and practice, we can conclude that the effects of FDI on the unemployment rate depend on the forms of investments in host countries. The results of the analysis of the ARDL bounds test approach have indicated a cointegration between FDI and UEMP. Additionally, the outputs of the long-term test have shown a long-run cointegration between FDI and UEMP, the results of Error Correction Model have shown the absence of a short-run cointegration between analyzed series, and the results of the last analysis, the Granger causality test, has shown a unidirectional causality running from FDI to UEMP. Generally summarizing the study's empirical results, we can observe a positive influence of Foreign Direct Investment on the unemployment rate in Turkey. According to the Central Bank of the Republic of Turkey statistics, the number of firms with international capital increased from 5.600 in 2002 to 73.675 in 2020[4]. Matching the statistics mentioned above with gained empirical results, we can confirm that FDI has a beneficial influence on the unemployment rate in Turkey. Because in those circumstances, foreign investors will need to hire new workers for their new businesses, which will decrease the unemployment rate in the host country.

On the other hand, FDI positively affects the unemployment rate based on the sectors where investors are focused. Service and manufacturing (using labor-intensive technology) sectors are labor-intensive sectors which means that the role of human resources in those sectors is excellent. Based on statistics of the Central Bank of the Republic of Turkey, service and manufacturing sectors from 2005 to 2020 are the most foreign investment oriented sectors regarding Turkey[5].

Considering theories about FDI and Trade relationships, we can say that they are positively related. Additionally, most empirical literature as well showed a positive relationship between FDI and trade. In order to prove our assumptions, we needed further estimations via empirical calculations. Thus, now let us glance at the results of the third part of the statistical analysis of this study. The findings of the analysis of the ARDL bounds test approach have indicated a cointegration between FDI and Trade (EXP and IMP). Additionally, the outputs of

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[4] The Investment Office of the Presidency of the Republic of Turkey
https://www.invest.gov.tr/en/whyturkey/pages/fdi-in-turkey.aspx
[5] The Investment Office of the Presidency of the Republic of Turkey
https://www.invest.gov.tr/en/pages/turkey-fdi-strategy.aspx

the long-run analysis have shown a long-run relationship between FDI and Trade (EXP and IMP). The results of the Error Correction Model have shown a short-run relationship just between FDI and IMP. There was no short-run relationship between FDI and IMP. Furthermore, the results of the last analysis, the Granger causality test has shown a unidirectional causality running from FDI to EXP and a bidirectional causality running from FDI to IMP and vice versa. Due to the cheap skilled labor force, transportation costs, etc., the international parent company will produce its products in Turkey and then export them to the origin country. Hence, considering the information above, we can conclude that FDI inflows boost export in Turkey. Therefore, to manufacture products, foreign parent companies need to import raw materials or some unique parts to Turkey to accomplish the assembling. Thus, considering the information mentioned earlier, we can conclude that FDI inflows boost imports in Turkey. Overall, the FDI inflows into the Turkish economy have a positive impact on Trade (Export and Import).

4.2 Policy recommendations

Turkey has no negative foreign direct investment, excellent market prospects, skilled workers, and highly liberal legislation. Moreover, relative to the rival countries, they have no significant drawbacks. Nevertheless, in respect of inbound and outbound foreign direct investment and several developing economies, it is evident that it remains below developing economies. Particular goals must be maintained to increase Turkey's relative competitiveness and implement the essential laws and legislation. Countries' comparative advantage depends on modern techniques in emerging economies, shifting from labor-based production to technology-based production in the manufacturing sector. The danger of thieving or duplicating the advanced technologies to be given to the nation does impede the investment of other countries and decrease the country's worldwide appeal. One of the major problems that adversely affect Turkish foreign market competitiveness and exports emerges concerning ownership rights. Nevertheless, the difficulty here has mainly to do with execution and can lead to investing in low-tech and import-dependent industries.

Foreign direct investment is being invested in areas that create more extraordinary value addition and improve manufacturing capability by enhancing resource efficiency for local companies. The preservation of intellectual property rights must thus be accorded significant attention. Considering prosperous nation precedents and people who work in the labor market, it would be more exact to target foreign investment to high-value-added industries. Since these investments are mainly aimed at producer industries and the manufacturing sector's export

capability, investments are also extensive. Regarding human capital training and growth in the sphere of software and information services in Turkey, the industry is considered a field with growth prospects. However, as regards measures to encourage the growth of these industries, the desired outcome has not yet been reached. It is recommended that proper surroundings and climate be formed to allow the advancement of established frameworks in a manner that enhances one another in order to assign more assets to R&D investigations in the regions which generate high added value than industries, to strengthen the company's R&D and innovation capacity and to promote R&D incentives.

Foreign investment must thus choose initiatives in areas that would improve the country's competitiveness as a target market rather than how it is created. In order to develop long-term laws and policies that will not divert local entrepreneurs from the nation's investment, political and economic stability must also be guaranteed when recruiting similar investments. We need to overcome the judicial framework's shortcomings and remove the issues emerging from its execution.

5. The novelty of the research

Investigation of the relationship between the FDI and macroeconomic variables (GDP, Trade, and Unemployment rate) was a favorite topic for researchers for decades. However, considering the literature, there are still no responses to questions concerning some distinct countries for a specific period. On the contrary, with that past literature which has contained old methods, models, datasets, and respectively results which were actually for those periods, this research will be a good example that will fill those gaps with new unique methods, models, datasets, and correspondingly results which will give us a clear view about current circumstances. New scientific results of this study are the followings:

1. By utilizing the time series quarterly datasets and well-known statistical methods as ADF unit root test, PP unit root test, Zivot Andrews Unit Root Test, ARDL bounds testing approach (long-run), Error Correction Model (short-run) and Granger causality tests I have observed the positive effect of foreign direct investment on economic growth regarding Turkey.

2. Employing the time series quarterly datasets and popular statistical methods of current period as ADF unit root test, PP unit root test, Zivot Andrews Unit Root Test, ARDL bounds testing approach (long-run), Error Correction Model (short-run), and Granger causality tests I have observed the positive effect of foreign direct investment on unemployment rate regarding Turkey.

3. Applying the time series quarterly datasets and new notorious statistical methods as ADF unit root test, PP unit root test, Zivot Andrews Unit Root Test, ARDL bounds testing approach (long-run), Error Correction Model (short-run), and Granger causality tests I have demonstrated the positive effect of foreign direct investment on trade (import, export) regarding Turkey.

Thus, considering all the information mentioned above, this research will upgrade the currently limited literature with the most recent and well-known empirical analysis.

6. Limitations of the research

Considering the research limitations, it can be said that it was complicated to find out the needed macroeconomic variables due to the scarce datasets. By observing this limited data, it can be seen that this topic still needs additional literature. Therefore, not all variables were found to increase the number of variables in the built model and run additional statistical tests. Another aspect was to utilize the political variables into the built statistical model due to the tremendous impact of political issues in the economy of the host countries but it was not possible due to the shortage of the available data.

7. Article Publication
7.1 The published articles relating to the topic of the dissertation

1. Karimov, M., & Belkania, D. (2018). A Case Study of Foreign Direct Investment and Economic Growth Relationship in Turkey. *European Journal of Marketing and Economics*, *1*(3), 97-101.
2. Karimov, M. (2019). The Impact of Foreign Direct Investment on Trade (Export and Import) in Turkey. *European Journal of Interdisciplinary Studies*, *5*(1), 6-17.
3. Karimov, M., Paradi-Dolgos, A., & Pavlin, R. K. (2020). An Empirical Analysis of the Relationship between Foreign Direct Investment and Unemployment Rate: Evidence from Turkey. *European Research Studies*, *23*(1), 453-464.

7.2 The published articles not relating to the topic of the dissertation

1. Belkania, D., & Karimov, M. (2018). An Empirical Examination of the Export-Led Growth Theory Regarding Georgia. European Journal of Marketing and Economics, 1(3), 88-96.

2. Karimov, M. (2020). An Empirical Analysis of the Relationship among Foreign Direct Investment, Gross Domestic Product, CO2 Emissions, Renewable Energy Contribution in the context of the Environmental Kuznets Curve and Pollution Haven Hypothesis Regarding Turkey. European Journal of Engineering and Formal Sciences, 4(1), 110-123.