GSJ: Volume 8, Issue 4, April 2020, Online: ISSN 2320-9186
www.globalscientificjournal.com

ISTANBUL COMMERCE UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCE

EXAMINE THE EFFECTS OF INFLATION

AND BANKING SECTOR INDICATORS

PERFORMANCE ON GDP GROWTH OF

TURKISH'S ECONOMY: A CASE STUDY OF TURKEY.

COLLINS ADU TAKYI
TUTOR: GHANA EDUCATION SERVICE
EMAIL:aducollins97@yahoo.com

TEL: 233(0)248220994.

M SC. ECONOMICS ISTANBUL COMMERCE UNIVERSITY

(2019)

ABSTRACT

The GDP growth in Turkey 2018 decline abnormally as a result of the Turkish Lira (TL) depreciation against United State dollar($) quarterly 2018. In view of that, the researcher investigated into the effects of inflation and banking sector indicators performance on the GDP growth on Turkish's economy. The study used quarterly data from secondary data source between 2009q1 to 2018q4 and investigated the data with Johansson Approach to Cointegration. Data for the study were analyzed with Augmented Dicky Fuller (ADF) test and the findings revealed that the variables of interest was stationary at their first difference level. Also, the study

further used Johansson Cointegration approach to determine if there is Cointegration among the variables and surprisingly the result showed that there is long run relationship among the GDP growth and the explanatory variables. The study found that there is long run and positive relationship existence between the interest rate, cash reserve required, bonds, treasury bill and GDP growth of Turkish'seconomy. While the variables such as consumer price index (CPI), producer price index (PPI), deposits and real exchange rate showed statistically insignificant on GDP growth of Tukey.Meaning that these variables have negative impact on the Turkish's GDP growth. Again the findings concluded that inflation has negative impact on GDP growth of Turkey likewise the banking sectors indicators such as interestrate, cash reserve required,bonds,treasury bill have positive impact on the economic growth of Turkey.Finally, the findings proofed that every 1% increase in the Turkey banking sector indicators in this study induce rapid growth on the economy whereas every 1% increase in inflation indicators like consumer price index(CPI),producer price index (PPI) drastically decline the GDP growth in a rapid level in Turkey.

Keywords: Gdp Growth, Inflation, Banking Sector Indicators, Cointegration, Economic growth.

1. INTRODUCTION

1.1 Background to the study

According to Andrew (2005) in economics, inflation is anincrease in the overall level of prices of goods and services in an economy over a period of time. In every economy when goods and service increase at a period of time the adverse effect on the general economic is that,the consumer purchasing power decline drastically, that is the cash in people hands purchase less goods and service. When this situation happen on an economy it negatively affect the economy by promoting slow economic growth as well as affecting all the sectors of the economy. Moreover, money is considered as a legal tender accepted by every country to

undertake all transactions as a whole, therefore the high inflation leads to low consumer purchasing power and this situation cause a country currency hurt of losing it real value in the domestic way of interchange goods and service which negatively impact the economy. For an economy to determine the rate at which the price of goods and service in an economy increases, it is derived by calculating the inflation rate of the country, that is calculate the annual percentage change in anoverall period and this percentage change result is known as consumer price index (CPI).The policy makers also attack an economy with some economic policies which impact inflation on an economy. Firstly, contractionary monetary policy is a macroeconomic tools use to induce effect on the GDP growth. This monetary policy is used to combat inflation that is the policy makers reduce money supply with intention to increase cost of borrowing and at the long run which brings slow GDP growth. If cost of borrowing is high, it discourages people from borrowing to increase investment this economic crisis happen on an economy because few people can get asses to financial loans to do investment which lead to increase in inflation which affect economic growth. Alsoexpansionary monetary policy is when a country central bank uses it instrument to stabilize the economy. Under this monetary policy system, the central bank of a country raise the money supply, decrease interest rate as well as increase total demand which positively increase GDP growth of an economy. Therefore, this monetary policy encourages domestic borrowing by the people as the financial credit of a country increase this raise the investment level of the

country which bring positive economic growth. When the investment level raise in a country it introduces less pressure on the market which reduce the inflation. If the country inflation is low, this increases the consuming purchasing power as the purchasing power increase it induce rapid economic growth. The increase in money supply in a country economy caused what is known as hyperinflation. A reduction in an inflation on an economy occur due to decrease in demand of goods and service as well as an increase in money supply and increase in supply of resources. Again banking sector development on the economic growth is the hallmark of every country. The financial sectors are seen as vital sector for policy makers, customers, investors, creditors and shareholders to ensure economic growth on an economy. The central bank is seen as high institution in financial system that supervises and monitors the commercial banks and also offer them loans to render to their clients. In other words banks grant advances and loan to individuals, government and business organization Cheboi, (2012).Commercial banks are the greatestsignificant savings, institute and financial supplydistributions institutions. Their core mandate ensure economic growth and progress on the economy. Turkey's finance minister has blamed "opportunism and stockpiling" for a soaring rate of inflation that reached almost 25% in September2018 in the rouse of a currency catastrophe that fired a price boom. The massiveincrease in an inflation on prices of goods and services as well ascurrency disaster that occurred in August 2018after a noise with Donald Trump worsenedprimary fears about the Turkish economy's health. Although the

currency has seenreinforced from record lows. It has lost 37% of its value against the dollar since the start of the year, pushing up the cost of fuel and other imports. (https://www.ft.com/content/22c4f276-c6db-11e8-ba8f_ee390057b8c9) accessed November, 2018.Chand, (2008).said most of the theories propounded in inflation is derived from monetary policy impact on the economic growth. Some banking sectors performance on the economic growth is achievable as a result of vital role the commercial banks exhibit in the economy. Therefore, for high volume of financial credit release to customers, investors in an economy can be possible unless commercial banks work effectively.

1.2 .Problem statement

Inflation can have positive and negative effects on an economy. Negative effects of inflation include loss in stability in the real value of money and other monetary items over time; uncertainty about future inflation may discourage investment and saving. The high inflation may lead to shortages of goods if consumers begin hoarding out of concern that prices will increase in the future. Positive effects include a mitigation of economic recessions, and debt relief by reducing the real level of debt. The effect of inflation on the Turkey economy has been experienced by various sectors in the economy including the banking sector. Huybens and Smith (1999) argue that an increase in the rate of inflation could have a negative consequences on financial sector performance through credit market frictions before affecting economic growth.

Turkish annual core inflation rate, which excludes energy, food, non-alcoholic beverages, alcoholic beverages, tobacco and gold, rose to an all-time high of (24 to 34 %)October 2018 from 24.05% in the previous month. Core Inflation Rate in Turkey averaged 7.81 % from 2004 until 2018, reaching an all-time high of 24.34% in October of 2018 and a record low of 2.50 percent in October of 2010. It was shown in the literature that both food and housing prices increased faster while transport prices continued to rise amid a falling lira. Inflation Rate in Turkey averaged 35.06% from 1965 until 2018, reaching an all-time high of 138.71% in May of 1980 and a record low of -4.01% in June of 1968.

In the last two decades' central banks in advanced economies has fought against inflation to keep it controlled. Today there is a high risk of deflation because it is below the current target of 2% enacted by most central banks Economist, (2014). On this background that the researcher decided to examine effects of inflation and banking sector indicators performance on GDP growth on Turkish economy.

1.3 Objectives of the study

Based on the problem identify above by the researcher, the study intended to investigate the effects of inflation and banking sector indicators performance on GDP growth on Turkish economy. The researcher decided to find answersto these questions: examine the effects of inflation on economic growth of Turkey, assess the impact of banking sector indicators on GDP

growth and examine if there is correlation existence between inflation, banking sector indicators and GDP growth of Turkish economy.

1.4 Research Questions

The researcher outline thesequestions and investigate into;

- What are the effects of inflation on GDP growth?

* Whatextent do inflation, banking sector correlate with GDP growth?

* Does the Turkish banking sector indicators impact GDP growth?

1.5 Research Hypothesis.

H_0: Inflation has effect on GDP growth on Turkish economy.

H_a: Inflation has no effects on GDP growth on Turkish economy.

H_0: Turkey banking sector indicators has impact on economic growth.

H_a: Banking sector has no impact on the economic growth of Turkish economy.

H_0: There is correlation between inflation, banking sectors indicators and GDP growth of Turkey.

H_a: There is no correlation between inflation, banking sectors indicators and GDP growth of Turkey

1.6 Significance of the Study

The study investigated the effects of inflation and banking sector indicators performance on GDP growth on Turkish economy. Also the outcome from this investigation will address the challenges in some economic sectors especially banking sector ofTurkey. Research findings will assist researchers to acquire knowledge on problems confronting economy development and give in-depth knowledgeto policy makers to provide good macroeconomics policies to solve economicchallenges of Turkish economy. It also provided bases for other researchers who want to carry out similar research topic. Again the research provided more knowledge on the current knowledge that exists in inflation and banking sector growth. Moreover, the paper obtained measures to curb the challenges acquire from the research questions. This study has contributed to the development and revenue collection for theTurkish government.

2.0LITRERATURE REVIEW

2.1. Some Proofs By Scholars to Back Inflation Impact on Economic Growth

An investigation conducted by Burcu, A., & Deniz. I., (2010). Used quarterly data from the period of 2002 to 2008 to examine the imprint that monetary and fiscal policies leave on credit development. Their findings revealed that due to problems the banking sector encounter during liquidity supplying to customers drastically reduced lending rate in a time contractionary monetary policies is adopted to manage the financial sector which adversely lead to increase in

inflation to slow GDP growth annually. The outcome from this studies supported the argument that monetary policies Turkey government employ to control banking sector discouraged high lending which have negative statistical significant on GDP growth on the Turkey's economy.

Suna, K., (2008).also analyzed effects of bank liquidity and their performance on inflation and growth. He tried to find answers to this debatable topic by using some selected countries in European vicinity. The annual data starting from 2006 to 2012 were extracted for his studies. Panel model was to carry out the analysis for his studies and empirically it was revealed from his findings that, banking sector provide loan for the local people in the selected countries has no impact on inflation but rather it has strong impact on growth. Suna, K. (2008).studied has statistically show clearly that credit from bank sector of Turkey do not have correlation with inflation but adversely it has statistical relationship with economic growth of Turkey

Again Mohammad, A.A., (2012).used case study from Iran to examine the consequences of inflation on financial sector development and the effect it exerts on their economic growth. His survey was conducted to assess the inflation impact on the banking sector within the period of 1973 up to 2007.The paper adopted the ADRL method to undertake the survey findings and it was proofed that there was negative impact from inflation onto the financial sectors in Iran. This proof from his studies supported the hypothesis that inflation has negative effect on the banking sector which led to slow economic growth.Boyd *et al*. (2001) found a non-linear, significant

negative relationship between inflation and banking sector. They verified the presence of the rapid falling drift on banking borrowing activities as inflation rises slightly that leads to a discrete drop in the financial sector performance. Their paper further clarified that the actions of bank loaning quickly decreases as inflation upsurges due to its threshold level.

According to empirical study conducted Erman, E., and Aydin.,H. O., (2008).they used bond test propounded by Pesaran et al. (2001) to investigate if there is correlation exist between the inflation and the GDP growth of Turkey. These scholars got their data from 1987:1 and 2006: era. After their careful investigation with this test they found that there is long run relationship exist between the inflation and economic growth of Turkey notwithstanding that alone the findings further revealed that there is Cointegration among the variables. Erman, E., and Aydin.H. O., (2008).in the same investigation tested the hypothesis with ARDL models, these models also tested and proofed that there is negative and nostatistically significant relationship between inflation and economic growth on Turkish economy.Toda Yamamoto (1995). Use the same model to test if there is causality among the variables and his findings revealed that there is causality relationship exist between economic growth to inflation, vice versa and causality relationship is between inflation and economic growth of Turkey.

Guru, *et al* (2002) reported that inflation as a macroeconomic variable has a positive relationship with bank productivity and performance whereas a negative relationship exist between interest

rate and bank profitability. Tan & Floros (2012) also examine the effect of inflation on bank profitability, the result exhibits that “there is a positive relationship between bank profitability, cost efficiency, banking sector development, stock market development and inflation in China”.

2.2 Some Empirical Evidence of Banking Sector Measures Performance on Economic Growth

Özcan, K., and Metehan, Y., (2011).traced that if there is relationship exist between the banking sector and GDP growth of Turkey. The scholars tried to find answers to this investigation in view of that he employed VAR model method to assess the relationship between inflation and economic growth. They also extracted annual data for the analysis of their investigation which started from 1980 up to 2010.It was proofed empirically that there is strong bidirectional relationship between banking sector and annual GDP growth on Turkish economy. Their findings supported the assumption that for an economy to see growth then the country needs to ensure effectiveness on their banking sectors to induce appropriate economic growth.

According to study conducted by Gizay, D., and Guray, K., (2016).their research examined the fault and strengthen of the financial sector of Turkeycontribution on economic growth. They used DuPont analysis, CAMELS rating and Data Envelopment Analysis to perform their analysis with the use of quarterly data range from 2001 up to 2015. It was established from their research findings that policy makers in Turkey introduced financial recovery policy in their banking

sectordue to the financial challenges the country went through and established recovery policy after the crisis in 2001.Infact the introduction of financial recovery to curb the economic crisis brought positive impact on banking sector which producedevelopments and rise in their economic growth. Their outcome affirms the assumption that when a country maintained stronger and better policies in the financial sector in terms of their assets and credit to induce economic growth. They further revealed that reforms made in the banking sectors in Turkey positively increase the State owned deposit banks on Turkish financialsector than their foreign competitors.

Huseyin, C., (2016). Also his study investigated whether if there is short and long run correlation between the banking sectors indicators and economic growth on Turkish economy. He took the research data from secondary data source from Global Financial Development database. The investigation was based on annual data from 1999 to 2011 period. His first findings was based on the period of 1970 to 2011, it was proofed by his test result that Turkey banking sector domestic deposits has statistical significant which promote positive effects on the economic growth on Turkish economy whereas all domestic liquidity giving to the private sectors also induce negative effect on the GDP growth. He further made analysis beginning from 1999 to 2011, which showed that there is negative correlation between stock price and economic growth in Turkey while stock market capitalization exhibit positive correlation on economic growth on their economy. He found that there is positive statically significant existence between Bank

return Assets and economic growth of Turkish economy. Finally his findings supported the hypothesis that there is impact from banking sector developments on economic growth of Turkey.

2.3 measurement of inflation

Inflation is regularlyassessed by computing the inflation rate of a price index, frequently the Consumer Price Index. The Consumer Price Index measures prices of a selection of goods and services purchased by a "typical consumer". The inflation rate is the percentage rate of change of a price index over time. For instance, in January 2007, the U.S. Consumer Price Index was 202.416, and in January 2008 it was 211.080. The resulting inflation rate for the CPI in this one year period is 4.28%, meaning the general level of prices for typical consumers rose by approximately four percent in 2007. Other widely used price indices for calculating price inflation include the following: Producer price indices (PPIs) which measures average changes in prices received by domestic producers for their output. This differs from the CPI in that price subsidization, profits, and taxes may cause the amount received by the producer to differ from what the consumer paid. There is also typically a delay between an increase in the PPI and any eventual increase in the CPI. Producer price index measures the pressure being put on producers by the costs of their raw materials. This could be "passed on" to consumers, or it could be absorbed by profits, or offset by increasing productivity Collins, (1995).Inflation is usually

estimated by calculating the inflation rate of a price index, usually the Consumer Price Index. The Consumer Price Index measures prices of a selection of goods and services purchased by a "typical consumer". The inflation rate is the percentage rate of change of a price index over time. For instance, in January 2007, the U.S. Consumer Price Index was 202.416, and in January 2008 it was 211.080. The resulting inflation rate for the CPI in this one year period is 4.28%, meaning the general level of prices for typical consumers rose by approximately four percent in 2007. Other widely used price indices for calculating price inflation include the following: Producer price indices (PPIs) which measures average changes in prices received by domestic producers for their output. This differs from the CPI in that price subsidization, profits, and taxes may cause the amount received by the producer to differ from what the consumer paid. There is also typically a delay between an increase in the PPI and any eventual increase in the CPI. Producer price index measures the pressure being put on producers by the costs of their raw materials. This could be "passed on" to consumers, or it could be absorbed by profits, or offset by increasing productivity Collins, (1995).

3.0. METHODOLOGY AND DATA

3.1. DATA SOURCE

The researcher collected data for the research anlaysis.The data employed for the research was extracted from the secondary data source. It was a time series data starting from 2009q1 to

2018q4.The variables which include GDP growth, interest rate, consumer price index, real exchange rate, domestic producer price index, cash reserve required, deposits, bonds and treasurybill for the study of 2009q1 to 2018q4 were taken from Turkey statistical institute and OECD((https://stats.oecd.org/index.aspx?queryid=350#0),).This source were used to gather data for the analysis because of the availability of data for the research analysis. Also due to the hypothesis test set for studies secondary data source is consulted for the data to provide enough data information to test the target hypothesis set. Also that source make data available and easily accessible to gather data and use (Ghauri, et al., 2002).

3.2 ESTIMATION PROCEDURE.

The computer software (STATA 13) was usedto examine the effects of inflation and banking sector indicators on GDP growth on Turkish's economy. Thevariables determinant of GDP growth was based on the theoretical and empirical review, in view of that quarterly data started from the period2009q1 to 2018q4 were adopted to undertake the investigation. Before testing for the long run and the short-run growth models, the time series models of the variables of interest were checked to show whether the variables are constantly trending upward or downward to include constant or trend to undertake the analysis. These were checked to avoid the spurious

regression of the parameters estimate.The researcher started the investigation into the data by first tested whether the series has unit root/non stationary and check if the data has no unit root orstationary. This test was performed to check if there can be long run trend existence among the variables. After the stationary testJohansenCointegration estimation test was adopted to examine the explanatory variables impact on GDP growth of Turkey. The dependent variable is GDP growth while explanatory variables are interest rate, consumer price index, real exchange rate, domestic producer price index, cash reserve required, deposits, bonds and treasury bills.

3.3. MODE OF SPECIFICATION

For the researcher to assess the inflation and banking sector indicators effects on GDP growth ofTurkey. The researcher used some specific variable to test the hypothesis set the study. Also the paper find response to the GDP growth with these specified explanatory variables like interest rate, consumer price index, real exchange rate, domestic producer price index, cash reserve required, deposits, bonds and treasurybill. The model specification approach in the research was adopted from Lucas (1988)studies. The scholar draw the model mathematically as follows:

*GDPGWTH = f (INTR, CPI, REXGR, DPPI, CRR, DPTS, BNDS, TRYBL).Therefore to determine the impact of GDP growth function it was expressed as;

*LNGDPGWTH = INTRβ t1 + CPIβ t2 + β3REXGRt + β4DPPIt + β5CRRt +β6DPTSt + β7BNDS + β8TRYBL +ET .That is;

LNGDPGWTH meaning log of Gross Domestic Product (GDP) measured at a time

$INTR_t$ =Interest rate CRR_t=Cash reserve required

CPI_t=Consumer price index $DPTS_t$= Deposits

$REXGR_t$ =Real exchange rate $BNDS_t$ = Bonds

$DPPI_t$ =Domestic producer price index $TRYBL_t$ = TRESURY BILL

NB// All the variables specified above were at a time. But the variables (INTR, CPI, REXGR, DPPI) were measured in percentage whiles the (CRR, DPTS.BNDS, TRYBL) were also measure in the currency form that is Turkish lira (TL).

*T = Time

*ET= Error correction term assumed to be normally and independently distributed with zero mean and constant variance, which captures all other explanatory variables which impact the GDP growth.

*β1 , β2 , β3 , β4 , β5 , β6,β7,β8 are the restricted elasticity of GDP growth with respect to , INTR, CPI, REXGR, DPPI, CRR, DPTS, BNDS, TRYBL respectively.

The error correction term lagged one period, equation is specified below meaning to check shortrun changes on long-run growth function is shown below through error correction model (ECM):

$$\Delta\mathbf{LNGDPGWTH}_t=\mathbf{a}_{1+}\sum_{\boldsymbol{i=1}}^{\boldsymbol{k-1}}\boldsymbol{b2i}\text{LNGDPGWTH}_{t-1}+\sum_{\mathbf{i=0}}^{\mathbf{k-1}}\mathbf{C3i}\Delta\ \text{INTR}_{t-1}+\sum_{\boldsymbol{i=1}}^{\mathbf{k-1}}\mathbf{d4i}\,\Delta\text{CPI}_{t-1}+\sum_{\boldsymbol{i=0}}^{\mathbf{k-1}}\mathbf{e5i}\Delta\text{REXGR}_{t-1}+\sum_{\mathbf{i=0}}^{\mathbf{k-1}}\mathbf{f6i}\,\Delta\text{DPPI}_{t-1}+\sum_{\mathbf{i=0}}^{\mathbf{k-1}}\mathbf{g7i}\ \Delta\text{CRR}_{t-1}+\sum_{\mathbf{i=0}}^{\mathbf{k-1}}\mathbf{h8i}\,\Delta\text{DPTS}_{t-1}+\sum_{\mathbf{i-0}}^{\mathbf{k-1}}\mathbf{i9i}\,\Delta\text{BNDS}_{t-1}+\sum_{\mathbf{i=0}}^{\mathbf{k-1}}\mathbf{j10i}\,\Delta\text{TRYBL}_{t-1}+\boldsymbol{\lambda_9}\mathbf{ECM}_{t-1}+\boldsymbol{\varepsilon}_{2t}$$

From the Cointegration equation above; $\mathbf{ECM}_{t-1}$is the error correction model. It was used to determine long run relationship in the model. Also it response and adjustment effect indicated how much disequilibrium is been corrected. According to studies by (Bannerjee, et al., 1998)revealed that there is stability in the long run relationship when there is statistically significant. This Δ also means the first difference in the equation above. Then (a1, b2i, c3i, d4i, e5i, f6i, g7i, h8i, i9i and j10i) are the coefficient of the independent variables. They were used to determine the rate of its impact on the dependent variable. This sign λ signifies the speed of the adjustment parameter. The value of λ must be found between the ranges-$1 \leq \lambda \leq 0$ and must be statistically significant. The lag selection is 4 by Akaike information criterion and this was

created automatically by the STATA 13 software which was used to undertake the research findings. The researcher determine the good fitness of the model set above with diagnostic test to determine that autocorrelation, normality and stability were checked

3.4. Unit Root Test

The researcher tested the explanatory and outcome variable with Augmented Dicky Fuller (ADF).ADF test was used to check if the series are non-stationary at level and also find weather the series are stationary at first difference. This hypothesis set to test are; null hypothesis said the series are non-stationary or has a unit root while alternative hypothesis postulate the series are stationary or has no unit root. The purpose of conducting that test was to take out the spurious regression from the model because they are likely to occur in the model set.Also, the estimation of that test was conducted based on this equation set below;

$$\Delta y_t = \beta_0 + \beta_1 y_{t-1} + \beta_2 t + \sum_{i=1}^{p} A1 \Delta yt - 1 + Zt;$$

$$H_0: \beta_1 = 0 \quad H_1: \beta_1 > 0$$

3.5. THE JOHASSEN COINTEGRATION TEST

The researcher outcome from the unit root test conducted with Augmented Dicky Fuller(ADF) test revealed that the variables of interest are stationary at first difference as they were integrated

in order(1).The intention of conducting this test is to determine whether the variables exhibit Cointegration or do not show any Cointegration. The paper adopted this method as it was developed by Johansen Cointegration Maximum Likelihood Method of Cointegration developed by Johansen (1988) and applied by Johansen and Jealous (1990) to define the number of Cointegrating amongvariables. The set hypothesis stated to measure them are, null hypothesis stated the there is no Cointegration among the variables while the alternative hypothesis also of the view that there is Cointegration among the variables. In view of that the paper used the trace statistics test and max-eigenvalue test to test this hypothesis set. Under these tests the assumption is that if the trace statistics value is greater than the 5% critical value then we can reject the null hypothesis and rather accept the alternative that there is Cointegration among the variables of interest vice versa.However, the researchers need to do the same interpretation to results based on maximum eigenvalue test, to bring down number of Cointegrating vectors (Enders, 2004).When the outcome variables are integrated in order I (0) irrespective of the order of integration of the other variables, you cannot conduct the Cointegration analysis, meaning that there is no longrun relationship existence among the variables. In this case, the research can run OLS after differencing the I (1) variables. But, if the researcher found that the variables are integrated in order I (1) after identify the series at first difference are stationary, then is necessary to conduct the Cointegration test to show if there exist long run relationship among the variables.

When the variables are identified to be cointegrated, the researcher can estimate the vector error

Correction model using standard methods and diagnostic tests.

4. EMPIRICAL RESULTS AND DISCUSSIONS.

LEVELS			**FIRST DIFFERENCE**			
VARIABLES	**ADF TEST**	**CRITICAL VALUE 5%**	**ADF-TEST**	**CRITICAL VALUE 5%**	**ORDERS OF INTEGRATION**	**CONCLUSION**
LNGDPGWTH	-2.010	-2.961	-4.251	-2.961	1	I (1)
INTR	0.476	-2.961	-3.409	-2.961	1	I (1)
CPI	2.959	-2.961	-4.331	-2.961	1	I (1)
REXGR	-0.757	-2.961	-5.965	-2.961	1	I (1)
DPPI	3.675	-2.961	-2.949	-2.961	1	I (1)
CRR	-1.961	-2.961	-4.629	-2.961	1	I (1)
DPTS	0.346	-2.961	-6.547	-2.961	1	I (1)
BNDS	1.171	-2.961	-4.635	-2.961	1	I (1)
TRYBL	-2.364	-2.961	-7.667	-2.961	1	I (1)

4.1 Unit Root Test Results/ TABLE 1: AUGMENTED DICKY FULLER TEST (Constant and Trend Included)

NULL H_0: The series are non-stationary / has unit root.**ALT H_a:** The series are stationary/has no unit root.

he table 1 above showed the outcome of Augmented Dicky-Fuller test.The test revealed that, variables like Treasury bill, Deposits, Real exchange rate, Consumer price index (CPI),interest rate, bonds, cash reserve required are all non-stationary or has unit root at their level. That is the test statistics values are less than the 5% critical value which fail to reject the null hypothesis that series are non-stationary at level. Except the domestic producer price index which did not show non-stationary at level which has test statistics value greater than the 5% critical value. Therefore series at level are integrated in order (1). Also the test find that, the test statistics for variables like treasury bill, Deposits, Real exchange rate, Consumer price index (CPI), interest rate, bonds, cash reserve required, domestic producer price index and GDP growth are greater than the 5% critical value which are stationary at their first difference. In view of that, the researcher rejected the null

Hypothesis that the series are non-stationary and rather accepted the alternative hypothesis that the series are stationary or has no unit root at their first difference. All the series at their first difference were stationary and are integrated order I (1).The test included constant and trend to

test the hypothesis below. Variables were stationary at their first difference. Therefore the ADF test revealed that the series are stationary at their first difference and are integrated in order (1)

4.2. OPTIMAL LAG SELECTION

Also, the researcher adopted Vector Autoregressive (VAR), to check the optimal lag length for the Johansson Cointegration test which is based on the AIC as shown in Table 2 below. The test result showed that optimal lags length for Johansson Cointegration test is based on AIC and picked optimal lag 4.

TABLE 2: OPTIMAL LAG LENGTH

Lag	LL	LR	DF	p	FPE	AIC	HQIC	SBIC
0	242.61				1.9e-17	-12.9784	-12.8402	-12.5825
	1572.79	660.36	81	0.000	2.1e-23	-26.8217	-25.44	-22.8629
2	684.339	223.1	81	0.000	9.7e-24	-28.5188	-25.8936	-20.9971
3	1581.3	1793.9	81	0.000	7.6e-42*	-73.8499	-69.9811	-62.7653
4	9041.49	14920*	81	0.000		-484.305*	-479.331*	-470.053*

Endogenous: lngdpgwthG,lnintr,lncpi,lnrexgr,lndppi,lncrr,lndpts,lnbnds,lntrybl,

* indicates lag order selected by the criterion -AIC: Akaike information criterion

-LR: sequential modified LR test statistic (each test at 5%level)-SC: Schwarz information criterion-FPE: Final prediction error -HQ: Hannan-Quinn information criterion

4.3. Results of Johansen Maximum Likelihood Cointegration Test

After series were found to be stationary at first difference and also integrated at order I (1).The researcher used Johansson Cointegration test to check if there is Cointegration among the variables. From table 2 below, thetest resultrevealed by trace statistics showed that there isCointegration among the variables with trace statistics value greater than 0.05% critical value. Therefore null hypothesis was rejected and accepted the alternative hypothesis that there is Cointegration among variables which rank from hypothesis number (1, 2, 3, 4, 5, and 6).Hypothesis number 7 and 8 failed to reject the null hypothesis that there is no Cointegration because their trace statistics value was less than 0.05% critical value. Also result from max-eigenvalue test to test Cointegration among the variables also the findings showed that there is 2 Cointegration among the variables because the hypothesis number 0 and 1, max-eigenvalue statistics value is greater than the 5% critical value which rejected the null hypothesis accepted the alternative hypothesis that there is 2Cointegration. The hypothesis number (3, 4, 5, 6,7and 8) accepted the null hypothesis that there is no Cointegration among these rank.

NULL H_0: There is no co-integration among the variables.

ALT H_a: There is co-integration among the variables.

TRACE TEST				**MAX-EIGENVALUE TEST**	
HYPOTHESIZED	**EIGEN**	**TRACE**	**5%**	**MAX-EIGEN**	**5%**
VARIABLES	**COEFFICIENT**	**STAND ERROR**	**P-VALUE (P>0.05)**		
D	**VALUE**	**STATS**	**CRITICA**	**VALUESTAT**	**CRITICAL**
NO OF CEs.			**VALUE**	**S**	**VALUE**
0	.	298.8624*	192.89	85.5779*	57.12
1	0.89482	213.2846*	156.00	67.9504*	51.42
2	0.83273	145.3341*	124.24	38.8407	45.28
3	0.64017	106.4934*	94.15	33.7698	39.37
4	0.58880	72.7236*	68.52	24.7748	33.46
5	0.47898	47.9488*	47.21	23.0123	27.07
6	0.45425	24.9365*	29.68	13.3002	20.97
7	0.29532	11.6363	15.41	11.5388	14.07
8	0.26188	0.0975	3.76	0.0975	3.76

TABLE 3: JOHANSEN COINTEGRATION TESTS

LNINTR	.9723215	.1648678	0.000
LNCPI	7.974976	7.065349	0.259
LNREXGR	-.7314754	.5677558	0.198
LNDPPI	-7.298649	1.988847	0.000
LNCRR	1.158064	.1956049	0.000
LNDPTS	-5.383	1.760474	0.002
LNBNDS	7.265808	1.728509	0.000
LNTRYBL	.0882406	.042238	0.037

*Trace test indicates 6 co-integrating equations * Max-eigenvalue test indicates 2 co-integrating equation* denotes rejection of the hypothesis at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level**MacKinnon-Haug-Michelis (1999) p-values**MacKinnon-Haug-Michelis (1999) p-values

4.4.THE CO-INTEGRATION REGRESSION OF GDP GROWTH ON TURKISH'S ECONOMY.

TABLE 4

RESULTS ON TABLE 4 INTERPRETATION

The analysis of the table 4 showed that, the coefficient of the interest rate is positive. That is the interest rate is statistically significant with (p-value = 0.000).It means that every 1% percent increase in interest rate lead to GDP growth by .9723215%, ceteris peribus. The result inference is that interest rate has positive effect on the GDP growth of Turkish's economy. Similarly the assumption here is that interest rate has long run correlation on the economic growth in turkey.Therefore this result backed findings from these scholars Danquah (2006), Aryeetey & Fosu(2005), that there is positive correlation exist between the interest rate and economic growth. Moreover, the investigation further revealed that there is negative correlation between the consumer price index and GDP growth of Turkish's economy with statistically insignificant at 10 percent level. This means that an increase in the consumer price index will adversely cause the economic growth to decline by 7.97% automatically ceteris peribus. In general, the consumer price index has negative impact on economic growth of Turkey. It statistically support the assumption that the long run rise in the consumer price index on an economy cause fall in the rate of the economic growth.

The real exchange rate has statistically insignificant effect on GDP growth at significant level of 10% while the domestic producer price index has positive impact on the GDP growth at 1% significant level effect on average ceteris peribus. The inferences from these results arethat when you increase the real exchange rate by 1% will cause the GDP growth of Turkish's economy to decrease at -.73 percent likewise the 1 percent increase in domestic producer price index can lead

to economic growth to drastically decline by -7.3%.Therefore the findings revealed that the real exchange rate and domestic producer price have negative impact on the GDP growth on Turkish's economy. The findings supported the argument that there is negative correlation existence between the inflation and GDP growth of Turkey.

Furthermore, cash reserve required has positive impact on GDP growth of Turkey on average ceteris peribus at the significant level of 1% while there is negative effect of deposits on economic growth at significant level of 1% on average ceteris peribus. This means that, if the cash reserve required of Turkish's economy rise by 1% there will be statistically significant GDP growth increase at 1.16 percent. Meaning that the increase in the Turkey cash reserve required induce positive economic growth on their economy to cause development. Also the 1% increase in deposits by the domestic cause the GDP growth to decrease by -5.38 percent which bring negative growth rate on the Turkish economy. These findings revealed here supported the hypothesis that the banking sector indicators in Turkey impact the GDP growth of their economy.

Again, the result on the table 4 proofed that, bonds has positive impact on GDP growth rate at 1% significant level while the treasury bill also has positive impact on the economic growth at 5% significant level. The result further backed their findings that, when the bonds issue increase by 1% adversely it positively increase the GDP growth rate at 7.23% likewise the 5% increase in

the treasury bill automatically increase the economic growth at .08%.It was shown that there is positive correlation existence between the bonds, treasury bill and GDP growth of Turkish's economy. The researcher findings here also supported the problem statement that the banking sector indicators have effect on the GDP growth on Turkish's economy. Finally, the results revealed that there is long run relationship existence between the interest rate, cash reserve required, bonds, treasury bills and GDP growth of Turkey.

4.5. RESULTS OF THE ESTIMATED SHORT-RUN DYNAMIC MODEL

This model is used to studywhether the impact of independent variables on outcome/dependent variables are permanent or temporary. Therefore, when a researcher identify the result of short run output is statistically significant, it means that the effect of change cause by the independent/explanatory variables are temporary. Also, if both short run and long ruin outcome are statistically significant meaning that effect of changes by any of the explanatory variables arepermanent. Moreover, the Dynamic Error Correction Model (DECM) is used to determine the speed of adjustment in response to a deviation from the long run equilibrium, which is important to assist the policy makers to do needful policy analysis. (Cholifihani, 2008).

The table 5 below estimated model, and identified that in the short run all the explanatory variables have statistically insignificant of the effects of inflation and banking sectors indicators performance on GDP growth of Turkey. This means that, the explanatory variables outlined in

the study to carry out the investigation exhibited no effect on the GDP growth in the short run but rater showed effects of independent variables on GDP growth in the long run. The estimated coefficient of the error term (-13.01914) found statistically insignificantwith the p-value (0.676)which is higher than 5% significantlevel. Though the error term showed negative sign as appropriate but still proof statistically insignificant in the short run. This suggests that the system did not corrects it previous period's disequilibrium by (-13) percent a year.

TABLE 5:ESTIMATED SHORT-RUN DYNAMIC MODEL

DEPENDENT VARIABLES:D(GDPGWTH)			
VARIABLES	**COEFFICIENT**	**STD. ERROR**	**P.VALUE**
CONSTANTS	.1489631	1.270905	0.907
DLNGDPGWTH(-1))	10.12286	25.10833	0.687
DLNGDPGWTH(-2))	7.776092	20.457	0.704
DLNGDPGWTH(-3))	3.707978	11.19553	0.740
DLNINTR(-1))	4.119663	17.36593	0.812
DLNINTR(-2))	-10.83696	29.12737	0.710
DLNINTR(-3))	-5.801612	22.5477	0.797
DLNCPI(-1))	26.93735	94.80155	0.776
DLNCPI(-2))	20.45951	90.93529	0.822
DLNCPI(-3))	-12.58141	17.6726	0.477

DLNREXGR(-1))	33.45399	70.45438	0.635
DLNREXGR(-2))	22.59379	47.75094	0.636
DLNREXGR(-3))	12.51993	21.55	0.561
DLNDPPI(-1))	-7.89798	59.01981	0.894
DLNDPPI(-1))	13.89069	37.5152	0.711
DLNDPPI(-1))	3.994478	20.01778	0.842
DLNCRR(-1))	16.44402	39.11111	0.674
DLNCRR(-2))	13.87443	36.34212	0.703
DLNCRR(-3))	6.53938	22.64738	0.773
DLNDPTS(-1))	-37.01336	124.123	0.766
DLNDPTS(-2))	.1909034	17.69411	0.991
DLNDPTS(-3))	7.385305	21.60534	0.732
DLNBNDS(-1))	84.17109	232.4688	0.717
DLNBNDS(-2))	45.51649	126.7087	0.719
DLNBNDS(-3))	2.08231	12.83724	0.871
DLNTRYBL(-1))	.7591325	2.033101	0.709
DLNTRYBL(-2))	-.2363558	.8628849	0.784
DLNTRYBL(-3))	-.1948671	.7157303	0.785
ECM(-1)	-13.01914	31.14453	0.676

5. CONCLUSION

The researcher identify some poor growth on Turkish's economy as problem which compared the scholar to examine the effect of inflation and banking sectors indicators performance on GDP growth on Turkish's economy.He intended to examine the ways and extent of inflation and banking indicators influence on economic growth and policies formulation. The purpose ofthe study examined the effects of inflation and banking sectors indicatorson GDP growth on Turkey between the periods of 2009 to 2018.In order to achieve the main stated objective, the following hypotheses were tested:H0: Inflation has effect on GDP growth on Turkish economy.

Ha: Inflation has no effects on GDP growth on Turkish economy.

H0: Turkey banking sector indicators has impact on economic growth.

Ha: Banking sector has no impact on the economic growth of Turkish economy.

H0: There is correlation between inflation, banking sectors indicators and GDP growth of Turkey.

Ha: There is no correlation between inflation, banking sectors indicators and GDP growth of Turkey.

However, the researcher started the overall estimation of the data with Augmented Dicky Fuller (ADF) test.Under this test, unit root test of the variables of interest were tested. This tests were carried out with the intention to find if the variables under study are integrated of the same order. But it was revealed from the findings fromADF test the variables at interest are integrated in order (1) at their first difference. This result showed from this test made the researcher to proceed and carried out Johansen approach to Cointegration test.The purposeof carrying out this

approach in the study was to identify whether if thereis existence oflong run relationship among the variables of interest.

5.1. SUMMARY OF RESEARCH FINDINGS.

The study investigated the effects of inflation and banking sector indicators performance on GDP growth of Turkish's economy. The research was conducted with formal research methods and instrument to conduct the investigation. After careful study and critical analysis made by researcher, below are the findings spelt out from the study;

*It was revealed that, interest rate has positive impact and long run relationship on GDP growth on Turkish's economy, that is 1% rise in interest rate lead to .09723215% growth increase.

*Also the consumer price index (CPI) and domestic producer priceindex (PPI) which are the inflation indicators showed that there is negative correlation between CPI, PPI and GDP growth. They exhibited negative impact on the economic growth of Turkey. Every 1% increase in CPI cause GDP growth to decline by 7.97% while the 1%.Therefore the findings proof that there is negative correlation between inflation and GDP growth of Turkish's economy.

*Real exchange rate has negative impact on Turkish's GDP growth that is 1% increase in exchange rate decrease growth by -.73%.

*The cash reserve required also showed positive impact and exhibit long run relationship between the cash reserve required and GDP growth. This proofed was backed by 1% increase in cash reserve required automatically increase growth by 1.16%.

*Bonds showed statistically significant on GDP growth on their economy. It showed positive and long run correlation on GDP growth on Turkish's economy. Meaning that, every 1% increase in bonds also increase the GDP growth by 7.23%.

*Treasury bill has positive impact on GDP growth .It exhibited statically significant on economic growth that is 5% rise in treasury bill in Turkey lead to .08% growth on their economy.

*Deposits have negative impact on GDP growth of Turkey. At 1% increase in deposits lead GDP to decline by -5.38%.

*Also the short run dynamic model revealed that the variables of interest are statistically insignificant in the short run. The error correction term did not correct disequilibrium level by (-13%).

In conclusion the findings generally revealed that there is long run relationship between interest rate, cash reserve required, bonds, Treasury bill and GDP growth of Turkey. Also the findings revealed that the inflation has negative impact and statistically insignificant on GDP growth. Notwithstanding that, the findings exhibited that the banking sectors indicators have positive impactand statistically significant GDP growth of Turkish's economy.

5.3. RECOMMENDATIONSFOR REASEACHERS AND POLICY MAKERS

Due to the findings acquired from this study, the reasecher outline this recommendations below;

1. The 1% increase in interest rate has positive impact on GDP growth. In view of that, government and policy makers shouldregulate interest rate for the banking sector to boost growth of the Turkish's economy. It is recommended that the central bank of Turkey should reduce the interest rate to lenders for people to get access to more capital to create more investment to increase GDP growth at fastest rate.
2. Policy makers in collaboration with market analyst should control inflation of goods and service to accelerate GDP growth. The inflation indicators such as consumer price index (CPI) should be reduced to increase consumer purchasing power of goods and services to cause rapid growth on the economy. Therefore the producer selling price of domestic production of goods in Turkey should be reduced to increase domestic and foreign customer'spurchasing power to come and purchase domestic product to show positive impact on the GDP growth.

3. The central bank of Turkeyshould do policy review on banking sector toincrease the cash reserve required for commercial bank and private banks in Turkey. This will eliminate the non performing banks and strengthen the banks financial powers to give credit to investors to create more investment to induce positive impact on GDP growth.

4. Depositors should be give incentives to use their deposits fund to create investment to decrease the high rate of deposits from domestic in the banking sector to eliminate the negative impact of deposits on the GDP growth. The central bank also should reduce the interest put on deposits to encourage depositors to avoid rate of deposits but rather invest the deposited funds into the economy to increase GDP growth.

5. The banks and government should control the bonds effectively to casuse positive growth on the GDP of Turkey. Bonds should be sold to investors and local manufacturers to create enabling environment for investors and business to increase production and also increase government spending on developmental projects which adversely bring positive GDP growth on Turkish's economy.

6. The central bank of Turkey and policy makers should undertake massive policy reforms in the banking sector of Turkey to clear out non performing banks and also strengthen the banks that exhibit good performance on GDP growth.

7. Finally, the rate of banks treasury bill should be increased on the securities and investment made by the securities holders to increase the funds to be able to invest back their income on the market environment to induce GDP growth on Turkey

REFRENCES

Andrew, P. E. (2005). *Corporate Financial Management*. Kinshasa Zaire, African Bureau of Science and Education

Aryeetey, E., and Fosu, A.K. (2005), "*Economic Growth in Ghana*: 1960-2000," AERC Growth Project Workshop, Cambridge

Boyd et al. (2001). *The impact of inflation on financial sector development*. What have we learned in the last ten years, Federal Reserve Bank of Cleveland?

Burcu, A., & Deniz. I., (2010). Bank Lending in Turkey: Effects of Monetary and Fiscal Policies. *IMF Institute and Research Department*.

Cheboi, P. K. (2012). *Response Strategies to Change in the Economic Environment by Cooperative Bank of Kenya Limited*. University Of Nairobi.

Cholifihani, M. (2008), "A Cointegration Analysis of Public Debt Service and GDP in Indonesia," *Journal of Management and Social Sciences*, 4(2): 68-81.

Enders, W. (2004). "*Applied Econometric Time Series*". John Wiley and Sons, Inc., USA: 354.

Erman, E., and Aydin.H. O., (2008). Does Inflation Depress Economic Growth? Evidence

From Turkey. *International Research Journal of Finance and Economics* ISSN 1450-2887 Issue 17 (2008) © Euro Journals Publishing, Inc. 2008 .http://www.eurojournals.com/finance.ht

Gizay, D., and Guray, K., (2016). *Turkish Banking Sector PerformanceAnalyses*.Conference: 5th Global Business and Finance research Conference

Guru B., Staunton, J., & Balashanmugam, B. (2002), "*Determinants of Commercial Bank Profitability in Malaysia*," Paper presented at the 12thAnnual Australian Finance and Banking Conference, 16-17 December, Sydney, Australian. https://www.ft.com/content/22c4f276-c6db-11e8-ba8f-ee390057b8c9. Accessed November, 2018m.

Huseyin, C., (2016). The Relationship between Turkey's Financial Indicators and Economic Growth Rates. *Journal of Economics, Business and Management*, Vol. 4, No. 1, January 2016.

Johansen and Jealous (1990). "Maximum Likelihood estimation and Inference on Cointegration withApplications the Demand for Money". *Oxford Bulletin of Economics and Statistics*, 52(2): 169-210.

Johansen, S. (1988). "Statistical Analysis of Cointegration Vectors". *Journal of Economic Dynamicsand control*, 12: 231-254

Mohammad, A.A., (2012). The Effect of Inflation on Financial Development: *The Case of Iran J. Basic. Appl. Sci. Res*., 2(8)8394-8400, 2012© 2012, Text Road Publications' 2090-4304.

Özcan, K., and Metehan, Y., (2011). Financial Deepening and Economic Growth in Turkey. *JEL Classification*: E01, O11, O16.

Suna, K., (2008). Impact of Bank Credits on Economic Growth and Inflation. *Journal of Applied Finance & Banking*, vol. 5, no. 1, 2015, 57-69 ISSN: 1792-6580 (print version), 1792-6599 (online) Science press Ltd, 2015.