ISTANBUL BILGI UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT OF FINANCIAL ECONOMICS

IMPACT OF MACRO-ECONOMIC FACTORS ON VALUATIONS OF PUBLICLY TRADED COMPANIES

CEYLAN HAYRIYE CELIK
113620016

SUPERVISOR
YRD. DOC. DR. EBRU REIS

ISTANBUL
2017

IMPACT OF MACRO-ECONOMIC FACTORS ON VALUATIONS OF PUBLICLY TRADED COMPANIES

MACROEKONOMİK DEĞİŞKENLERİN HALKA AÇIK ŞİRKETLER ÜZERİNDE Kİ ETKİLERİ

CEYLAN HAYRİYE ÇELİK

113620016

Tez Danışmanı:	Yrd. Doc. Dr. Ebru Reis	....
Jüri Üyesi:	Doc. Dr. Cenktan Özyıldırım	....
Jüri Üyesi:	Yrd. Doc. Dr. Ali Atilla Perek	....

Tezin Onaylandığı Tarih : 15.06.2017

Toplam Sayfa Sayısı: 69

Anahtar Kelimeler (Türkçe)	Anahtar Kelimeler (İngilizce)
1)Hata Payı	1) Forecast Error,
2)Makroekonomik Değişkenler	2) Macro-Economic Variables,
3)Şirket Değerlemesi	3) Firm Values
4) Hisse Senedi	4)Stock Price
5)Analist Tahminleri	5)Analyst estimates

ACKNOWLEDGEMENT

Firstly, I would like to thank my supervisor Dr. Ebru Reis for her guidance and advices. Besides my supervisor, I would also like to thank Dr. Serda Selin Öztürk for their guidance about the statistical analysis.

I am deeply grateful to my parents and my mother Emine and my aunt Ayşe for their all supports and love.

Last but not the least; I am also grateful to my friends Büşra Şişeci and Sevda Okudan for their valuable comments and supports.

ABSTRACT

Developing economy and growing capital markets, have increased the importance of the competitiveness of the markets. Because of increased competition, the valuation of public companies has become an important issue in financial markets.

My research aims to analyze the differences between the analysts' firm valuation estimations and the actual firm valuation with macro economic variables in a sample covering the period of 2005 to 2015.

In this research, I examine macro-economic variables, the impact of on forecast error company analysts. I use ordinary least square, unit root stability tests, Augmented Dickey-Fuller test and Phillip-Peron test, Co-integration; Engle-Granger Causality test and correlation analysis as my methodology. I use the following macro-economic variables in my thesis; Exchange rate - USD/TRL, Inflation Rate, Interest Rate, Stock Exchange (ISE-100), Unemployment Rate, Employment Rate and Gold Price Rate. In the literature the variables that affect company value and forecast error have been widely investigated. My result from this research supports the findings in the literature. Primarily, I find that exchange rate increases analysts' forecast error and inflation rate decreases forecast error.

Keyword: Forecast Error, Macro-Economic Variables, Firm Values, Stock Price, Analyst Estimates.

ÖZET

Gelişen ekonomi ve büyüyen sermaye piyasaları doğrultusunda piyasalarda rekabetçiliğin gittikçe önem kazandığını görmekteyiz. Rekabetin arttığı varsayımı üzerinde durularak/(durulursa) şirketlerin bu rekabetçi piyasada gerçek değerlerini bilmeleri ve korumaları gerekmektedir. Şirketlerin sahip oldukları varlıklar ve kuruluş sürecinden itibaren oluşturdukları değerler gelişen ve büyüyen ekonomide piyasayı oldukça etkiler.

Bu çalışmada 2015-2015 döneminin verileri kullanılarak, hisse senedi kapanış fiyatları ile hisse senedi fiyat tahmini arasındaki hata paylarını etkilediği düşünülen makro ekonomik değişkenlerin ilişkilerini incelemektir. En küçük kareler yöntemi kullanılarak, birim kök durağanlık testleri Augmented Dickey-Fuller testi ve Phillip-Perron testi, granger nedensellik testi ve korelasyon analizi yardımıyla; ilişki, ilişki yönü ve şiddeti şeklinde incelemeler yapılarak, hata paylarının nelerden etkilendiğini ortaya koymak hedeflenmiştir. Kullanılan makro ekonomik değişkenler; Döviz Değişim Oranı (USD/TL), Altın Fiyatları, Hisse Senedi Fiyatı (BIST-100), Faiz Oranı, Enflasyon, İşsizlik ve İstihdam Oranı'dır. Çalışma kapsamında öncelikle şirket değerlemesi ile ilgili akademik literatür taraması yapılmış olup, firma değerini etkileyen değişkenler üzerinde durulmuştur. Finansal analistler tarafından yapılan şirket değerlemelerinin tahminleri ve gerçekleşen değerler karşılaştırmalı olarak incelenmiştir.

Elde edilen bulgular kriz dönemi gibi etkenler saf dışı bırakıldığında, birçok değişkenin bir aradayken hata payı üzerinde açıklayıcılığı savunan argümanını destekler niteliktedir. Öncelikli olarak döviz değişim oranının (USD/TL) analistlerin tahminlerinde ki hatayı artıracağı ve enflasyon oranının analistlerin tahminlerinde ki hatayı düşüreceği bulguları ile literatürü destekleyici şekilde sonuçlara ulaşılmıştır.

Anahtar Kelimeler: Tahmin Hata Payı, Makro Ekonomik Değişkenler, Şirket Değerlemesi, Hisse Senedi Fiyatı, Analist Tahminleri.

TABLE OF CONTENTS

ACKNOWLEDGEMENT ii

ABTRACT iii

ÖZET iv

TABLE OF CONTENTS x

LIST OF TABLES xi

LIST OF FIGURES xii

INTRODUCTION 1

LITERATURE REVİEW 3

METHODOLOGY AND DATA 8

2.1 Methodology 8

2.1.1 Regression Analysis 8

2.1.2 Forecast Error and Formula 9

2.1.3 Unit Root's 10

2.1.3.1 Augmented Dickey-Fuller 10

2.1.3.2 Phillips-Perron 11

2.1.4 Co-Integration 11

2.1.4.1 Granger Causality Test 11

2.1.5 Correlation 11

2.2 Sample 12

2.2.1 Description of Sample 12

2.2.1.1 Price, Value and Valuation Concepts and Company Valuation 13

2.2.2 Macro Economic Variables 15

2.2.2.1 Exchange Rate USD/TRL 15

2.2.2.1.1 Traditional Approach and Portfolio Approach 17

2.2.2.2 Interest Rate 17

2.2.2.3 Inflation Rate, Consumer Price Index Rate and Producer Price Index Rate . 18

2.2.2.4 Unemployment Rate 21

2.2.2.5 Employment Rate 22

2.2.2.6 Gold Rate 23

2.2.2.7 Index Rate ISE100 23

2.2.3 Dummy Variables 24

2.2.4 Sample Statistic 25

EMPRICAL FINDINGS 34

3.1 Multivariate Analysis of Macro Variables on Analyst Forecast Error 34

3.2 Multivariate Analysis of Macro Variables on Analyst Forecast Error Using Dummy Variables 36

3.3 Analysis of Used Test's 46

3.3.1 Unit Root's 46

3.3.1.1 Augmented Dickey-Fuller and Phillips-Perron 46

3.3.2. Co-Integration 47

3.3.2.1 Granger Causality Test 47

3.3.3 Correlation 47

CONCLUSION 48

REFERENCES 50

TABLES 51

APPANDIX 62

LIST OF TABLES

Table 1: Companies Table....54

Table 2: Sample Descriptive Table....55

Table 3: Multivariate Analysis of Macro Variables on Analyst Forecast Error....56

Table 4: Multivariate Analysis of Macro Variables on Analyst Forecast Error Using Dummy Variables....57

Table 5: Augmented Dickey-Fuller Test for Variables....58

Table 6: Phillips-Perron Test for Variables....59

Table 7: Granger Causality Test....60

Table 8: Correlation....61

LIST OF FIGURES

2.1.5 Correlation 11

Figure 1: Rule of thumb: Correlation Coefficient Interpretation Guideline. 11

2.2 Sample 12

Figure 2 Selected macro economics variables 12

2.2.4 Sample Statistic 12

Figure 3: The movement of Exchange Rate between 2005-2015 26

Figure 4: The movement of Interest Rate between 2005-2015 27

Figure 5: The movement of Inflation between 2005-2015 28

Figure 6: The movement of Producer Price Index between 2005-2015 29

Figure 7: The movement of Customer Price Index between 2005-2015 29

Figure 8: The movement of Unemployment between 2005-2015 30

Figure 9: The movement of Employment Rate between 2005-2015 31

Figure 10: The movement of Gold Rate between 2005-2015 32

Figure 11: The movement of Index Rate between 2005-2015 32

INTRODUCTION

Financial markets became significant with Liberalization and globalization of financial markets. The increase of financial markets' significance affected the importance of macroeconomic variables that affect financial decisions and progress. Especially the relationship between stock markets and macroeconomic variables is examined.

The main target of financial markets is generally to minimize the uncertainty in the market. The macroeconomic variables are used to measure the uncertainty in the economy. The variables such as inflation rate, interest rate, exchange rate, unemployment rate, CPI, PPI are also used in this study.

Under the recent financial conditions, firm value even moved ahead of profit maximization. The increase of firm value's importance induced many research in the literature. There are several searches in the literature that evaluate the effects of the macroeconomic variables on stock prices.

This study aims to analyze the differences between the analysts' firm valuation estimation and the actual firm valuation, with macroeconomic variables. Then compare the findings with similar studies in the literature. The estimations of analysts are generally not coinciding with the actual stock prices. The study aims to analyze the macroeconomic variables impacts on the forecast error that arisen from the analyst's estimation and actual values of stock prices. The mostly used macroeconomic variables that expected to affect the forecast error are used in my analyses.

Previous research "The Financial Theory", the prices of capital market instruments are composed of expected cash flows and expected discount rates. Macroeconomic variables are determined to affect stock's returns through expected cash flows and discount rates. Macroeconomic fluctuations affect all the companies' profits, as well as stock returns."(Chen, Roll, et. al., 1986; Geske and Roll, 1993; Fama, 1981transfers from Sayılgan and Süslü, 2011).

In the first section of the study, the terms of value, valuation and forecast error are mentioned. The close stock prices are used as actual stock price and the average of best target prices[1] that are taken from Bloomberg database are used as the firm value estimations. In the analyses, monthly data's of the variables are used between January 2005 and December 2015. In the second section, multivariate analyses are presented.

[1] According to Bloomberg websites; Best target price, this field is dependent upon the Data Source entered by the user in Best Data Source Override (BE998). A value of 'BST' will provide the 12-month target price consensus, which excludes price older than three months when it is calculated.

CHAPTER 1
LITERATURE REVIEW

There are many types of research and studies in the literature that examine the relationship between the stock market index and macroeconomic variables. Macroeconomic variables such as exchange rate, interest rate, inflation rate, Consumer Price Index, Producer Price Index, unemployment rate, employment rate, Index Rate-ISE100 and gold ratio are used in the thesis. The macroeconomic factors have an influence on the stock market also indirectly affects the forecast values, and they constitute a place in the error shares. From this point of view, the topics and results of some studies in the literature on the examination of the macroeconomic factors affecting stock prices are summarized as follows.

Ince and Can (2011) use multiple linear regression and causality tests to examine the relation between the stock prices traded at the Istanbul Stock Exchange (ISE), the Euro-Dollar Parity and the real effective exchange rate index as well as all directions of the relationship. As a result of their study, real effective exchange rate and index had a positive effect on ISE 100 Index by 77.5%.

Yılmaz (2006) examine whether there is a relation between independent variables determined by ISE indexes and dependent variables such as consumer price index, money supply, interest rate, exchange rate, foreign trade balance and industrial production index in their studies. As a result of their study, exchange rate, consumer price index and money supply have positively influenced the ISE index, interest rate, and foreign trade balance negatively affected, and industrial production index does not affect the ISE index.

Dizdarlar and Derindere (2008) try to determine macroeconomic indicators which have impacts on ISE 100 index by observing fourteen main factors, the current account, foreign trade balance, domestic direct investments, portfolio investments, volume of emissions, money supply, industrial production index, external debt, consumer price index, gold prices, weighted average interest on open market operations, open market, repo reverse repo transactions, between

2002 and 2007 years have tried to determine the macroeconomic indicators affecting the ISE 100 Index by using 14 counterparts consisting of interbank money markets. As a result of the study, the exchange rate was the most important factor had an impact on the ISE100 index.

Horasan (2009) determined that there is a positive correlation between inflation and stock market based on his examination impacts of inflation on stock returns in the period of 1990 and 2007.

Zügül and Şahin (2009) states that there is negative correlation between money supply, exchange rate, interest rate and the ISE 100 index; whereas there is a positive correlation between inflation rate and the ISE 100 index as a result of their research. They utilized monthly data in between 2004 and 2008 in their research.

Sayılgan and Süslü (2011) examine the impact of macroeconomic factors in developing countries on stock returns during 1996-2006. Within the scope of the study, the share of stocks in developing countries had been influenced by exchange rate, inflation and S&P1 500 indexes.

Kaya (2013) prove that there is a positive correlation between stock return and money supply; whereas there is a negative correlation between stock return and exchange rate. These correlations are obtained by application of multiple regression models of least square on the ten years period of 2002-2012 and examination of the relationship between interest rate, money supply, industrial production index and exchange rate and ISE 100 index.

Durukan;1999-23-29 indicate that the analysis of the effect of the macro variations of interest rates, inflation, exchange rates and money supply on stock prices in the period 1986-1998 with the regression analysis, percent change, and logarithm models presents that exchange rate and inflation has no impacts on stocks; however, money supply and interest rate has influence on stocks.

Duman and Karamustafa (2004) had observed the ISE index end consumer price index (CPI) by using time series. As a conclusion, they indicate that there is a negative correlation between CPI and stocks.

Gençtürk (2009) studies on impacts of exchange rate and inflation on stocks by multiple linear regression models in the 2001-2008 period of Turkey. As a result, there is a negative effect of inflation and exchange rates on stocks have been observed.

Koutsoyiannis (1983) uses many variables such as US dollar, interest rate, inflation expectation, silver price, oil price, financial assets to explain the gold prices in his research by using daily data from 29 December 1979 to 31 March 1981. The results show that gold prices are positively correlated with inflation rate, oil prices, silver prices, US dollar, interest rate, and has a negative correlation with Dow Jones index. Koutsoyiannis (1983) also added the political tension index, which he created by emphasizing the political crises that he had undergone in his study, and that political stability also influenced the gold prices.

Dooley vd. (1992) investigate both short term and long term relations between gold prices and exchange rates by using co-integration tests. The result of the research indicates that there is a strong negative correlation between gold prices and exchange rates through elaboration of January 1976 and December 1990 period's data.

Together with McDonald and Solnik (1977), Jastram (1977) have researches on the relation between gold prices and inflation rates in the period of 1970-1976 years. Both researches emphasize that there is a positive correlation between gold prices and inflation rates.

Jaffe (1989), who has a research in the period of 1971-1987, notes that gold prices are not as strongly related to inflation as they have the same direction between gold prices and inflation (Ratner, 1992).

Ghazali vd (2008) use the monthly data for the period 1986-2007, their study is based on investigating whether the producer price index (PPI) and CPI indices in Malaysia. They have determined that the level values of both series are stationary after receiving the first cyclical differentials. The Granger causality test based on the first difference is the result of the one-way causality from the PPI to the CPI.

Okun Arthur M. (1962), studies on time series analysis in the period of 1947 – 1960 in the United States of America. This study, known as the Okun Law, has identified an asymmetric relationship between unemployment and growth. As a result of the study, the real growth rate raised to 22.5% over the years, with a 1% increase in real income over 2.25%, a 0.5% reduction in the unemployment rate.

Aghion and Howit (1992) analyzed 20 OECD countries in the period 1974-1989 with Cross Country-Cointegration Analysis. The researchers determined that there is an inverse U-shaped relationship between the average unemployment rate and the annual average growth rate. In other words, countries with low or high growth rates have low unemployment rates in this period and countries with medium growth have experienced high unemployment rates.

In the study conducted by Kargı (1998), an examination was made by using the ISE index, Cumhuriyet gold prices, US dollar, mark, money supply and interest rate variables in the period of 1986-1995. In accordance with the research's results, it is generally indicated that there was a weak reaction in the initial period, and then, in the later periods there was a significant and strong relationship.

According to Mumcu (2006), the most crucial factor in variable which has an impact on the index is the Treasury bill rate which has a negative correlation with ISE index that is concluded from the examination of how the degree of macroeconomic factors affecting stock prices. In the same period, there is a negative relationship between and industrial production index, stock prices and gold prices, which are other variables used in the research.

Cihangir and Kandemir (2010) aim to determine how the macroeconomic factors affect stocks' returns during 1998-2002 through arbitrage pricing model. Stocks listed in ISE-30 index were preferred between dates specified as independent variables. Consumer price index, export-import coverage ratio, capacity utilization rate, gold prices, exchange rate, treasury bond interest rates, short-term deposit interest rates, current account balance, money supply data are used as dependent variables. As a result of the study, it is found that the consumer price index as the only macroeconomic factor affecting stock returns in a statistically significant manner during 1998-2002 periods in Turkey covering the 2000-2001 financial crises.

Sharma and Mahendru (2010) examined the relationship between exchange rates, foreign exchange reserves, inflation rate and gold prices and stock prices in India between January 2008 and January 2009. The researchers found that the inflation rate and foreign exchange reserves did not affect stock prices, but there was a significant relationship between exchange rates and gold prices and stock prices.

CHAPTER 2
METHODOLOGY AND DATA

2.1 METHODOLOGY

In this thesis has been using twenty-three Companies are selected ISE 100. The financial and real estate and the firms that have not got enough information are excluded from the sample. The purpose, which macroeconomic impacts the forecast error in company valuations are affected or are not affected. The Companies were used to stock closing price.

Independent variables that are used as macro economic factors, it is purposed to explain the dependent variable with the forecast error.

2.1.1 Regression Analysis and Calculating

Our estimations in following tables are done using Ordinary Least Squares method and the econometric software used is EViews version 9.1. The empirical results of this paper are supported by the previous research findings whence literature that are especially independent variables used as macroeconomic effects. However, the result related with significance level conflicts with literature.

The regression model is as follows

Forecast Error = C(1)*Exchange Rate USD/TL + C(2)*Interest Rate + C(3)*Inflation Rate or Consumer Price Index + C(4)*Unemployment Rate + C(5)*Employment Rate + C(6)*Gold Ratio + C(7)*Index Rate-ISE100 + C(8)

The study examined the effects between 2005 and 2015. Therefore, it is in this period also the period of crisis 2008-2009. The year 2007 2008 2009-dependent (forecast error) and independent variables (inflation, exchange rate USD/TL, etc.) increases or decreases were observed above and below the quote. Independent variables that are affected by the crisis period dummy are also supported.

Least square test to be done which will be used for the time series data must be stationary. In the study, dependent variable and independent variables were tested with statistic of unit root test. These tests; Augmented Dickey-Fuller and Phillip-Perron Test Statistics.

Non-stationary series of the logarithm and/or first-cyclical stability is provided by taking the differences and the least square test was applied.

2.1.2 Forecast Error and Formula

In statistics, a forecast error is the difference between the actual or real and the predicted or forecast value of a time series or any other phenomenon of interest. The close stock prices are used as actual stock price and the average of best target prices* that are taken from Bloomberg database are used as the firm value estimations.

Primarily, the actual values of the company with analysts' estimates between the forecast errors have been calculated. Then by examining the relationship between the macro variable with the forecast error.

How often/ however errors in analysts' estimates are affected by macroeconomic factors or are affected? Targeted to find answers to these questions.

Forecast error calculating is like down;

Forecast $\text{Error}_t = (\text{Actual}_t\text{- Forecast}_{t-1}\ /\text{Actual})*100$

t = calculated time

Each company of the actual value of the closing price of the stock for the period 2005 and 2015. Analysts' estimates, data were obtained from the Bloomberg. Then, More than one analyst found different results, so; take in of average to estimates. The Companies used are listed in table 1.

In this way, the forecast error was calculated. Then, whether the forecast error is used as the dependent variable and macro economic factors consisted of independent variables. When selecting the macroeconomic variables, the effect of stocks has been recognized as a priority other reasons, the frequent use in the literature of selected macro variables.

2.1.3 Unit Root's Test

There are many unit roots of time series of macro- economic variables. In other mean, time series aren't stationary. R^2 can be high when the time series is not stationary. Thus, the regression may be miscalculated and the false regression may occur. Cannot make predictions with the resulting the false regression. If there is unit root our time series, we use to logarithm or differences of the series for can be stationary.

There are two know unit root tests;

2.1.3.1 Augmented Dickey-Fuller Test

Usually, macroeconomic variables are no stationary. So, series can be stationary when taking by first or second seasonal differencing or logarithm. Many tests are used to determine the stability. In this thesis, the stability of the data for the variables was tested using Dickey-Fuller. Dickey-Fuller develops a new test that inserts the delayed values of the dependent variable into an independent variable. The new test is the name of Augmented Dickey- Fuller. The Akaike and Schwarz criteria are used when determining the appropriate lag time of the delayed variable. Akaike and Schwarz criteria are automatically determined in EViews.

There are three types of models applied in the ADF test.

- Intercept and trend,
- Intercept and no trend
- No intercept and no trend.

2.1.3.2 Phillips- Perron Test

Phillips and Perron's test statistics can be viewed as Dickey–Fuller statistics that have been made robust to serial correlation by using the Newey–West (1987) heteroscedasticity and autocorrelation consistent covariance matrix estimator. Under the null hypothesis that $\rho = 0$, the PP Zt and $Z\pi$ statistics have the same asymptotic distributions as the ADF t-statistic and normalized bias statistics.[2]

2.1.4 Co-Integration Test

2.1.4.1 Granger Causality Test

Granger causality is a way to investigate causality between two variables in a time series. The method is a probabilistic account of causality; it uses empirical data sets to find patterns of correlation.[3]

2.1.5 Correlation

Correlation is a statistic that measures the relationship between variables. We use to correlation because some variables have high relation with each other. High relation have variables cannot be used. Correlation is computed into what is known as the correlation coefficient, which has value that must fall between -1 and 1. Correlation between showing the independent variables in the correlation tables.

Correlation formula;

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n(\sum x^2) - (\sum x)^2]\,[n(\sum y^2) - (\sum y)^2]}}$$

N = Number of pairs of scores

[2] http://staff.bath.ac.uk/hssjrh/Phillips%20Perron.pdf

[3] (http://www.statisticshowto.com/granger-causality/ *Granger Causality: Definition, Running the Test was last modified: April 10th, 2017 by Andale)*

$\sum xy$ = Sum of the products of paired scores

$\sum x$ = Sum of x scores

$\sum y$ = Sum of y scores

$\sum x^2$ = Sum of squared x scores

$\sum y^2$ = Sum of squared y scores

Figure 1: Rule of thumb: Correlation Coefficient Interpretation Guideline

Correlation	Negative	Positive
Low	-0,29 to -0,10	0,10 to 0,29
Medium	-0,49 to -0,30	0,30 to 0,49
High	-0,50 to -1,00	0,50 to 1,00

*High and positive correlations.

** High and negative correlations.

***Highest medium and positive correlations.

2.2 SAMPLE

Selected/preferred macro-economic variables are quite important factors for stocks. The stocks directly affected from macro economic variables.

Figure 2: Selected macro economics variables are below;

Exchange rate TRL /USD	Interest rate
Producer Price Index	Employment rate
Consumer Price Index	Unemployment rate
Index rate ISE-100	Gold ratio
Inflation rate	

2.2.1 Description of Sample

Between the previous year's estimates with the actual value was calculated forecast error for each company. In continuation, the value of the company by taking the monthly average forecast error has been reached on a single.

There are deviations in some periods and dummy series has been used for deviation. Outlines the issues for the problems of period

During the thesis, examine the relationship between macroeconomic factors and forecast error. Descriptive statics of Macro Economics Effect for Dependent Variable is Forecast error and Independent Variables period of 2005:1 – 2015:12

The sample descriptive of the variables is table 2.

2.2.1.2 Price, Value and Valuation Concepts and Company Valuation

Price, value and valuation concepts of a company's valuation before being made it should be understood that the relationship between concepts. These concepts have different meanings although close to each other. The three concepts will be announced separately, the difference will try to show in the way. Price and value is different concepts, this reasons,

- Receivables and payables don't have enough knowledge, data and have uncertainty,
- Number of Receivables and payables don't have enough for market
- Have taken leave of rational
- The bargain made out to be connected to a rate between to receivables and payables,
- Determination the ceiling and base prices proceed from government policies.

If the way of thinking to this point the view as the following;

Value: The value has a lot of mean. The value of the goods or services offered for sale represents the price determined by buyers and sellers. Value in another meaning to seek advice from the consumer to the product or service fees will be sufficient considering the amount of technical and economic, social profit is the sum of the monetary. Value is not the same meaning as price but value price is also a concept that can explain. Price is the value obtained Money, Price, the values obtained for the money; goods and services required for the purchase is defined as a seller of goods or the amount of money they want to give up on services.

Their value and prices move illustrates the differences in valuation concepts with this mean.

Valuation: The value of goods or services is expressed in monetary terms of determining all activities performed. "Determining the monetary value of economic assets other than money to a company valuation of buildings, land, machinery and equipment, inventory of goods, etc. Of total assets in the form of value appreciation and defined as estimated. (Yalçın, 2014, p.27)" valuation in another mean, as money belongs to the company for the calculation of the value of unaccounted money building economic assets, land, machinery and equipment, said as the total value of assets such as inventories of goods . Value and valuation put forward two different blood values and although close to each other valuation concepts.

Company valuation: The first purpose of a company is to maximize profit organizations. A second objective was to raise his value for each period spent after the start of the company's activities and to maximize its value. Managed to increase profits it is to achieve what is important to increase the value of the company. Company values, to the extent that today prevent the maximization of profits in modern financial markets have become important.

When a company is viewed through the eyes of investors, investors are interested in the long term and even if this relates to a company's short-term profit maximization of the value of the effects on the company's investor interests stocks." For a maximum of the company's net present value, the company is effectively used and each of assets owned, managed to give the maximum contribution possible by the specified purpose. (Yalçın, 2014)" The main purpose of the company stated that the valuation of the company, while maximizing the profit the company in the 1900s are now defined as to maximize the net present value for the shareholders of the company.

Recently opened to the public in many countries, including Turkey and privatizations, mergers and acquisitions is that they supply as well as the stock exchanges in conjunction with the effect of improving capital market and demand has substantially increased. So it falls in forced onto every type of investor valuation.

The market value of the company as we know, with the number of shares is calculated by multiplying the company's stock market value. Company values and reflecting the reality of great importance for people with accurate regarding trading with investors tried to determine in the stock market. In our country, actively functioning and that there is a market everyone's reach, the amount equivalent to the market value of the company values often. as well as the availability undeniable that the right approach was not justified . Unable to clarify exactly which reflect the actual value of the market value can be accessed using a variety of approaches to different conclusions.

2.2.2 Macro Economic Variables

2.2.2.1 Exchange Rate USD/TRL

Exchange rate is the conversion rate between two national currencies. While changes in exchange rate affect many economic factors, it most importantly affects prices; therefore, the exchange rate is a significant macro factor in economics.

When a foreign currency price increases over the local currency, this will also reflect on general level of prices and increase it as well or vice versa. When a foreign currency decreases over the local currency, this would lead the general level of prices to a decrease.

Previous research, "As a change in foreign currency rates would change the prices of imported produces, it would also affect production costs." (Gül and Ekinci, 2006).

The opening of national economies to international capital acquirement in the 1970s, in other words, the developed nations attracting financial activities to their countries, lifting restrictions over the financial system or reducing them by deregulation, thus triggering financial liberalization rendered the exchange rate important. Consequently, controlling over capital flow was lifted and international investments appeared.

The changes in the fixed exchange rate regime and the increase in instability, equally in the 1970s, increased uncertainty in exchange rates and also volatility. Therefore, a correlation between stock bonds and exchange rates emerged, which needed to be examined and observed more frequently.

The removal of restrictions on foreign capital with the globalizing financial markets caused changes in exchange rate volatility. These changes in exchange rates cause changes in import and export, and also increase the stock bond values according to the portfolio approach, therefore increases the value of companies. The increase in stock bonds also increases the interest rate levels. The increase in interest rates trigger demand in domestic currency, therefore the national currency is appreciated.

Meanwhile, many functions emerge in financial markets as they are globalized. One of them is that the savings are sought to be effectively converted into investments.

This situation renders the effects of exchange rates over stock bonds an appealing research subject. In this study, the nominal currency is selected to be the US Dollar. Nominal currency is the value of a currency over another currency.

2.2.2.1.1 Traditional Approach and Portfolio Approach

The studies conducted until now deduced the relationship between stock bonds and exchange rates into two explanations.

Traditional Approach: According to the traditional approach, changes in exchange rates trigger change in the stock bond prices. The changes in exchange rates cause such an effect as they affect a company's value, competitive power, assets and liabilities. These changes that affect companies' profitability also alter their stock bond value. According to the traditional approach, the foreign currency losing value, which also means local currency gaining value, would decrease stock bond prices. (Abdalla ve Murinde, 1997.), (Smyth and Nandha, 2003.), (Beer and Hebein 2008.), (Rahman and Uddin 2009.), (Alagidede,Panagiotidis and Zhang 2010,transfers from İşcan, 2011).

Portfolio Approach: According to the portfolio approach, stock bonds are affected by exchange rates. An increase in stock bond prices would increase investor's financial wealth and also money demand. Since this increase in money demand would cause foreign currency to lose value, the investor would sell their foreign currency assets and buy more stock bonds. Increasing money demand would indirectly increase interest rates; this would aim foreign investors to invest in the country. The increase in money demand would cause decrease in foreign currency value. According to the portfolio approach, there is an inverse relationship between the stock bond prices and the exchange rates. (Abdalla and Murinde, 1997.), (Smyth and Nandha, 2003.), (Beer and Hebein 2008.), (Rahman and Uddin 2009.), (Alagidede,Panagiotidis and Zhang 2010.) transfers from İşcan, 2011).

2.2.2.2 Interest Rate

The interest may be generally explained as investors planning to save, giving up their daily yields on their investments. The money owners know they would get interest, when they give up on their product or service demands and want to acquire assets.

According to Keynes, interest is the fee paid in exchange to persons, in case they give up on keeping their money. Keynes, in his explanation of interest, put money on analysis and defends that the interest rate in economy is dependent on money offer and demand. Interest is not the fee of saving, but of giving up liquidity (keeping money).

Interest rates primarily measure monetary capital and then the real capital. The share certificate prices hold importance regarding business gains. High interest rates and consequently decreasing share certificate prices cause investors and consumers to reduce their expenses. If high share certificate prices are accompanied by low or stable interest rates, it may be said that the conditions are suitable for entrepreneurs to invest.

2.2.2.3 Inflation Rate, CPI and PPI Rates

Inflation may be defined as the situation where real growth in production falls behind the real growth in financial income. The most common definition for inflation is, meanwhile, the situation where general level of prices increase rapidly and constantly. However, a unit of increase in prices is a price hike, not inflation. For a situation to be qualified as inflation, the increase should be constant and above a certain level.

The causes of inflation in Turkey are;

- The industrialization strategy in Turkey is focused on domestic demand; therefore the economy is contained by factors such as overpriced currency rate, interest ceilings, and customs tariffs. As the exchange rate policy affects the exports negatively, it causes a bottleneck in foreign currency, triggering higher costs, and increased import inputs. Therefore, the economy remains defenseless against external shocks.
- The constant public deficits are financed by internal debts, therefore affecting inflation expectations negatively. Public Economic Enterprises having a low pricing strategy to provide inexpensive industrial inputs,

causes these enterprises make losses, also triggers budget deficits and indirectly monetary easing.

- Agricultural subvention policies are mostly implemented due to political concerns. The prices are kept over market prices.
- Political instability and election economies also cause inflation.
- The financing provided by privatized public enterprises are used to cover increasing public expense deficits, rather than areas like education or public health.
- Turkey becoming a foreign-dependent country regarding production, the increases in oil and natural gas prices, increase in public expenses, changes in taxes and recently in exchange rates are also among the reasons causing inflation.

Inflation is among the most important macroeconomic factors in Turkey. Inflation represents the price of a basket containing several goods (the average of goods in the basket). When several goods are in question; the prices of some goods may change while others do not, or all the prices may change at once. Therefore, it should be definitely known that it is not a situation where prices rise constantly. As there are a lot of changes in the basket, we can consider the volatility seen in the graph to be normal. The producer price index (PPI) and the consumer price index (CPI) are also analyzed, and they will be mentioned separately.

Note; Used in this thesis the inflation rate is the annual rate of increase in CPI.

PPI and CPI Rates; As all the places where services and products in economy are marketed cannot be defined, prices of some amounts of goods sold in some places are selected to represent the general situation. The consumer price index and the producer price index are the most important and remarkable indexes that define the inflation. Theoretically, the consumer price index is the index measuring the price changes in products and services for household consumption over time, while the producer price index compares the producer prices for goods produced for domestic consumption over time.

Among these factors that are present in CPI, but not PPI; the tax impact particularly causes many deviations. The uncertainty in tax increase or decrease cause CPI not to be estimated correctly and also creates imbalance in its increases and decreases. CPI is a more comprehensive index than PPI. Therefore, CPI is more commonly used.

Producer price index measures price received by producers at the first commercial sale. Change in this index is the first aggregate inflation measure available for the month. Food and energy are large components of the PPI. As with the CPI, the PPI excluding food and energy price are often affected by temporary and non-economic factors such as weather. [4]

Customer Price Index; As a thumb rule, while constituting the consumer price index, a widespread survey is conducted. Based on the survey results, a monthly customer price index basket is defined. CPI is also known as the purchasing power of the national currency.

Producer Price Index; Wholesale goods prices principally aim to measure the input costs of producers. Therefore, the ratio of final products is low among them. The services are also not included. However, all basic inputs are included.

Among these factors that are present in CPI, but not PPI; the tax impact particularly causes many deviations. The uncertainty in tax increase or decrease cause CPI not to be estimated correctly and also creates imbalance in its increases and decreases. Therefore, PPI is more commonly used.

Regarding the constitution of PPI and CPI in Turkey; the factors that are included in CPI but not in PPI are listed below;

- Tax impact

[4] According to Bloomberg websites; Producer Price Index meaning.

- Fresh fruits and vegetables, clothing*
- Private Consumption Tax (retail fuel prices)
- Service consumption group
- Tobacco range
- Agriculture and unprocessed foods

*It Affects PPI in a limited manner

2.2.2.4 Unemployment Rate

Employment constitutes a major challenge in all economies, developed or emerging. The unemployment may not be associated with an economy being good or poor. In any way, unemployment may cause problems in all fields. Beside its economic aspects, the social aspects of unemployment constitute a major factor.

Persons that are capable of working and willing to work, but unable to find a job in the current payment and working conditions are considered to be unemployed.

The international standard definition of unemployment is as below;

- Not having a job,
- Being ready to work,
- Looking for a job.

For a person to be deemed to be unemployed, they have to fulfill all these three criteria. (Kanca, 2012, pp.1-18)

Generally, unemployment is categorized as below; Deliberate (voluntary) unemployment, involuntary unemployment, temporary (frictional) unemployment, seasonal unemployment, cyclical unemployment, technological unemployment, structural unemployment, disguised unemployment.

Unemployment, a macroeconomic factor, is also caused by the impacts of macroeconomic factors. As it is well-known, in an economy, as the real GDP decreases, the produced goods and services also decrease, reducing the amount of labor employed, therefore increasing unemployment.

2.2.2.5 Employment Rate

Employment and economic growth are deemed to be two factors very closely associated. From time to time, they are considered to be equivalent of each other. However, employment translates to the increase of services and goods produced by a country over time and it leads to economic growth. While it might not be the only factor, it certainly has an important share. Employment remains among nations' most important macroeconomic objectives; it makes economic growth, improving citizens' life standards and welfare possible.

Employment is a very important factor for the workforce market and for the economy in general. Employment represents the employees in a workforce, and it is a result of the production process. In this process, the entrepreneur who tries to fulfill people's needs by combining production factors and producing services and goods, uses labor as a factor, makes use of it and yields a share of created value to labor in exchange. (Özdemir, Ersöz and Sarıoğlu, 2006).

Employment is also the antidote of unemployment; however employment does not always tackle unemployment, even though it seems to have to power to do.

As it may be seen in our graph cover the 2005-2015 periods, the employment in Turkey is in a constant rise. While employment is expected to improve the society, reduce unemployment and create economic growth, in reality, we face the fact that it does not reduce unemployment and it does not fully create economic growth. As the rapid increase of population in Turkey makes accumulation in youth population inevitable; the employment, as opposed to developed nations, cannot tackle unemployment since the investment and job opportunities in Turkey are not sufficient.

Economic growth is the improvement of a society's producing capacity to produce sought service and goods. The production rate of an economy depends on technological advancements, as well as the amount and quality of resources that it possesses. (Güllap, 1994).

Growing economy not causing sufficient employment is not a case unique to Turkey. The United States is a similar case, and the reason for that is considered to be the productivity increase cannot be met. The growing of economy depends on sharing the work to current workers, rather than recruiting new employees by enterprises.

As the employment rate of the workforce also defines how other production resources will be used; GDP will be dependent on employment rate and the productivity rate of the employed workforce (Doğan, 2012).

2.2.2.6 Gold Ratio

Gold is the metal, the discovery of which resulted in the most important results due to its superior physical and chemical features.

Gold is among the precious metals that are used for reserve and exchange. Gold constituted the foundation of the monetary system in the period between 1870 and 1930, it resumed to be a key reserve tool fully convertible to dollar during the Bretton-Woods System between 1944 and 1973 (Aytekin et al., 2000). When the convertibility of gold over dollar ended, gold ceased to be an exchange tool, and became an investible savings tool and the reserve tool of the Federal Reserve. The uncertainty in the market in the early 2000s triggered investment in gold, to such an extent that gold prices recorded hikes during the global crisis years.

2.2.2.7 Index Rate of ISE-100

An index is an indicator or measure of something, and in finance, it typically refers to a statistical measure of change in a securities market. In the case of financial markets, stock and bond market indices consist of a hypothetical portfolio of securities representing a particular market or a segment of it.[5]

There are four index periods for ISE 30, ISE 50 and ISE 100 indices, namely, January-March, April-June, July-September and October-December.[6]

ISE have two indices in share market; price indices and return indices;

ISE Stock Indices are calculated both in terms of Price and Return. The only difference between the Price Index and Return Index is related to cash dividend payments. In cash dividend payments, the divisor of the Return Index is adjusted assuming that the dividend paid is invested in the constituents in proportion to their weights; whilst the divisor of the Price index is not adjusted assuming that the dividend paid is excluded from the portfolio.

In my research, I use average of price in the indices in the stock market. The index rates are collected from the Central Bank daily rates in the 2005-2015 periods.

2.2.3 Dummy Variables

Dummy variable is used to include qualitative variables in regression models. It usually takes value such as 0 and 1. Available in dependent and independent variables in models. In our study, the independent variables established to support dummy series show a change of daily, monthly or yearly. In the study the three dummy variables has been used in the series. A note about dummy's used in analysis.

The interest rate of dummy series was included some regression. The series featured months in the January 2005-June 2009 period. Because of the values well above average in that aforementioned period, there was a deviation. As seen is the graph in 2. The ten-year average value is 9, 5. Therefore, when they were put in regression with other variables, a more significant result was expected and

5 http://www.investopedia.com/terms/i/index.asp

6 (2016, November) "ISE Stock Indices Ground Rules" Borsa Istanbul Index and Data Department.

reached. When we somehow discard the periods with high volatility, we reach the conclusion that the interest rate, along with other variables, may explain the forecast errors.

The inflation rate of dummy series was included some regression. Because of the values well above average in that aforementioned period, there was a deviation. As seen is the graph in 3. As the average inflation 8, 30, for months over 10, 0 dummy series were required.

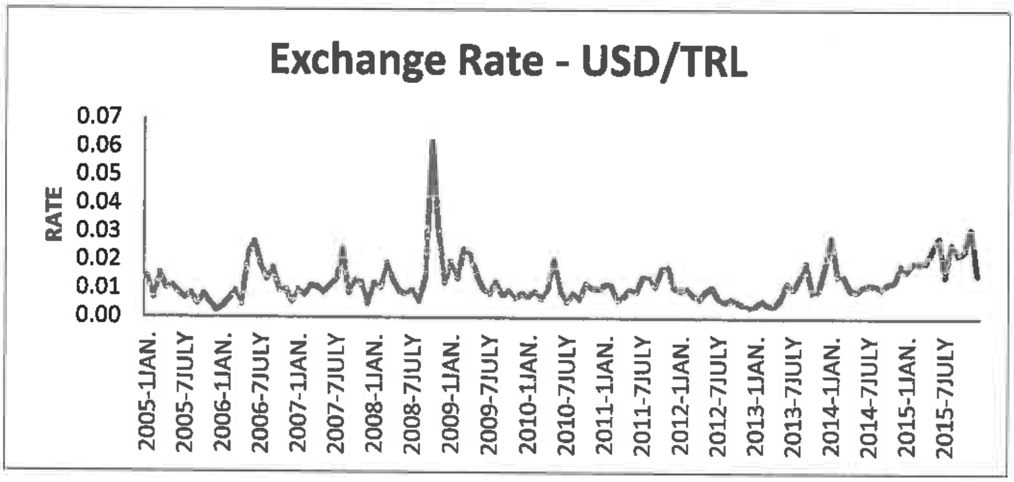
Consumer Price Index rate dummy; As the ten year average of the consumer price index is 0,7 it was constructed with the months and years over 2. It includes October 2008, 2009, 2011 and May 2011. It helped the regression reached a significant result. As seen is the graph in 5. There was no literature supporting the coincidence of 2008, 2009, and 2010 in October. It can be stressed that it was affected by the 2008 crisis.

2.2.4 Sample Statistic

Exchange Rate –USD/ TRL Graph

This exchange rate graph covering the 2005-2015 periods, we observe the lowest exchange rate in late 2005 and early 2006. The one-year period between August 2008 and August 2009 may be considered to be the period where the exchange rate increased the most. To explain the increase in 2008, facts like the money having been kept in the country, and the conditions having been unstable for investment. The global crisis increased the volatility in exchange rate.

Figure 3: The movement of Exchange Rate Between 2005-2015

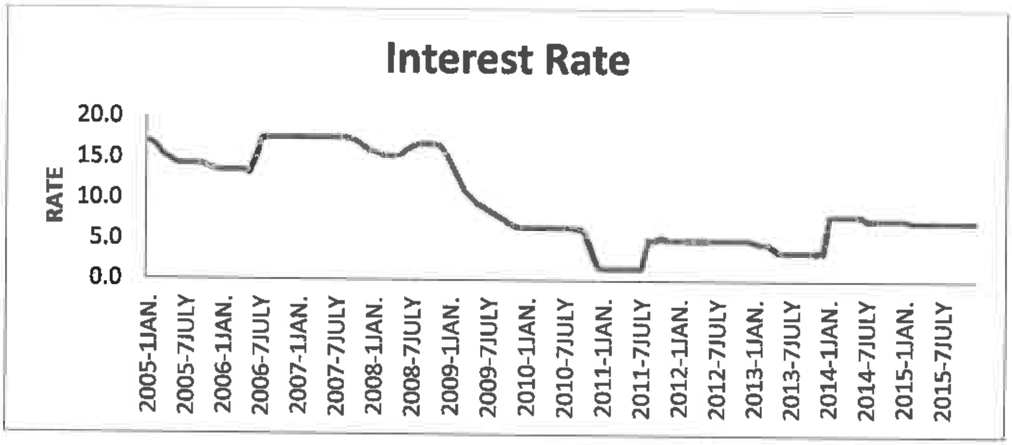


Interest Rate Graph

In the 2005-2015 period, the minimum interest rates were observed as 1,5 - 1,7% in December 2010 – July 2011, then an unexpected increase was recorded. As easily seen in the graph, the lowest interest rate in the ten-year period is in December 2010. An increase starts and reaches its peak in July 2006, and through almost the entire year 2007, the interest rate floats around 17%. Equally, as it can be seen in the graph, the interest rate is a macroeconomic factor heavily dependent in uncertainty.

The interest rates are constituted under the thumb of many other macroeconomic variables, therefore the interest rate may not be expected to be stable for a long period. Accordingly, while analyzing regressions, in order to avoid the interest rate yielding wrong or fake results, the data are being stabilized.

Figure 4: The movement of Interest Rate between 2005-2015

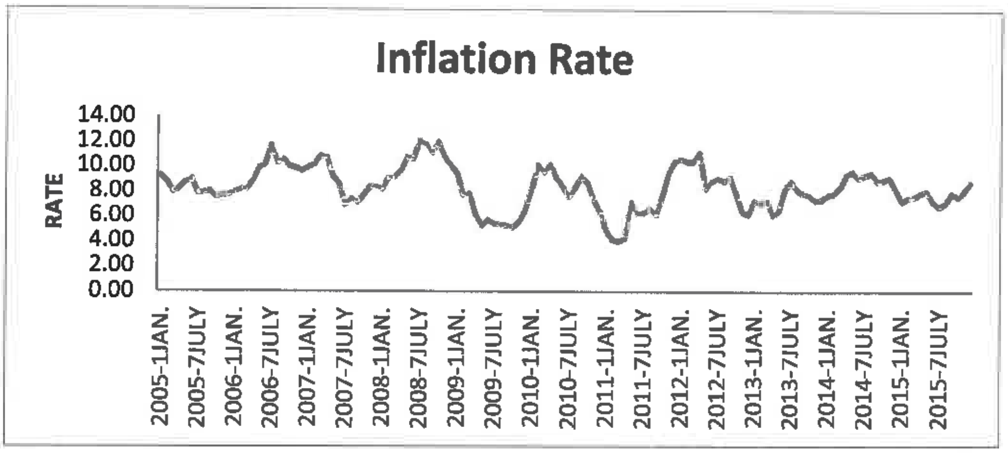


Inflation Rate, Producer Price Index, Consumer Price Index

Inflation Rate on Graph

The lowest value of inflation is between 3, 9% - 5, 0% in the January-March 2011 period, while the highest inflation was recorded as 11,10-12, 08% in the July-October 2008 period. Additionally, two hikes reaching 11,7% and 11,2% are observed, respectively in July 2006 and April 2012. To avoid any erroneous results caused by inflation during the regression analysis, a stabilized graph is presented comparatively in appendix 1.

Figure 5: The movement of Inflation Between 2005-2015



Producer Price Index Rate Graph

The lowest PPI was recorded in June 2011 and 2012, respectively as -1, 43% and -0, 9%; while the highest PPI was recorded as in October 2008, 2009 and 2011, respectively as 2, 6%, 2, 4% and 3, 27%.

Figure 6: The movement of Producer Price Index between 2005-2015

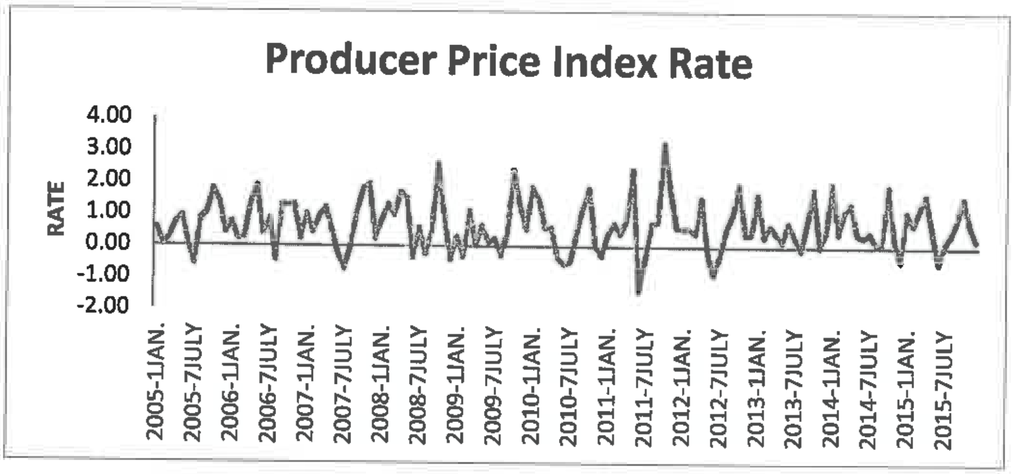
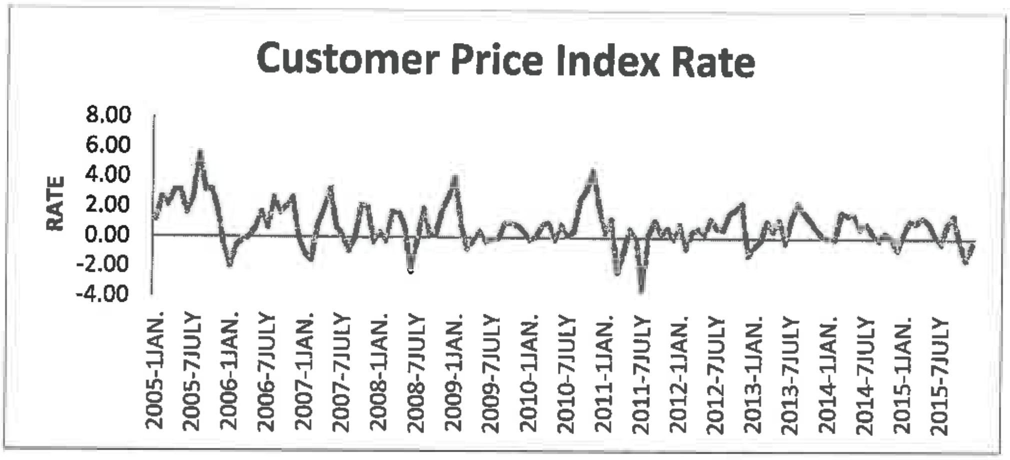


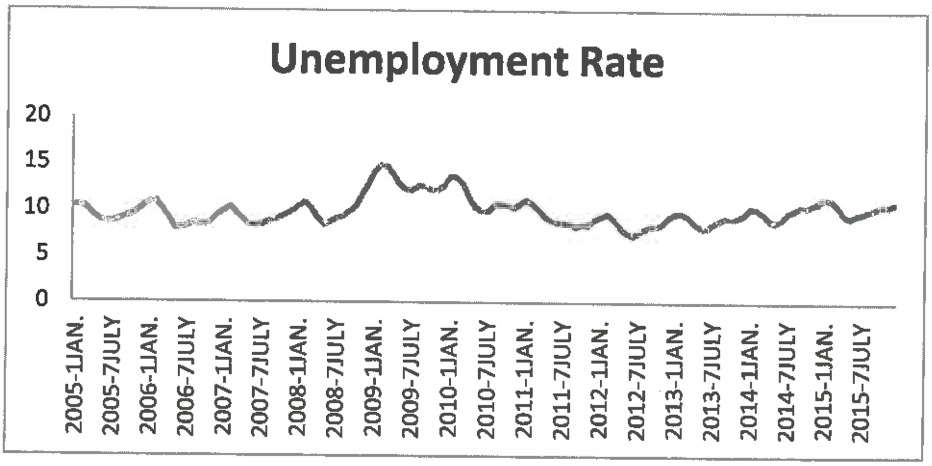
Figure 7: The movement of Customer Price Index between 2005-2015



Unemployment Rate Graph

The lowest unemployment rate was recorded in May-July 2012 period between 7, 5%-8, 0%, while the highest unemployment rate was recorded in February-April 2009 period between 14% and 15%. In this graph, even though it covers a small period, once again we observe that there is no stability.

Figure 8: The movement of Unemployment between 2005-2015

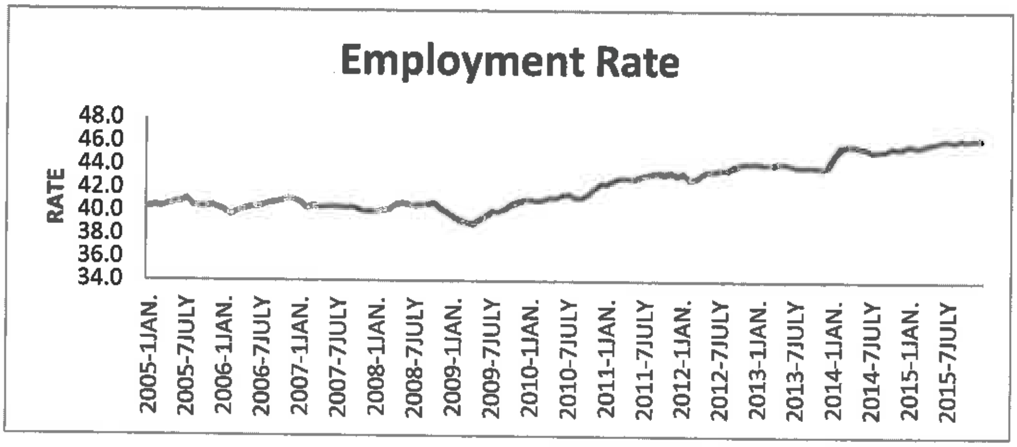


The graphs regarding this period, before and after stabilization are given comparatively in appendix 1.

Employment Rate Graph

In the graph covering the employment in the 2005-2015 period, the lowest employment is recorded in the January-June 2009 period. After June, an increase in employment is observed. This fall in the year 2009 may be explained by the global crisis in 2008 affecting the industries and service sector negatively.

Figure 9: The movement of Employment Rate between 2005-2015



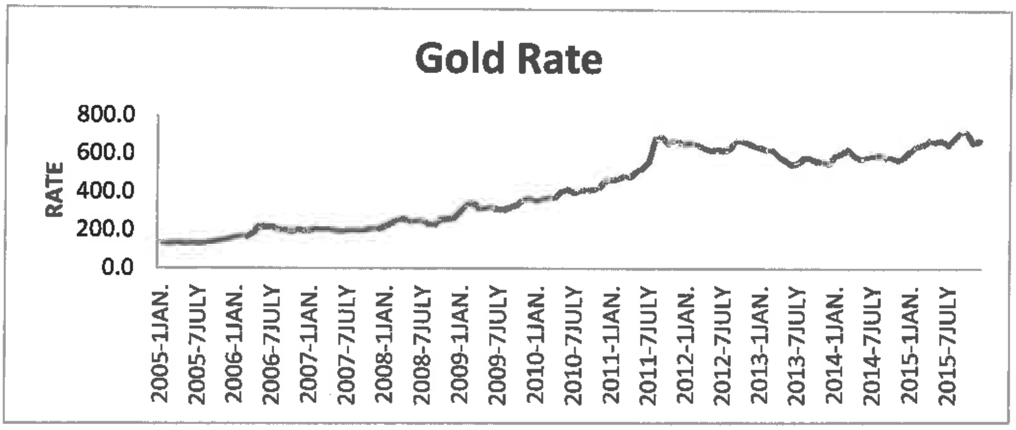
Gold Ratio Graph

The gold ratio is 676,5 in June 2015, in September-October it reaches its highest value of 719,5, and decreases back to 676,5 in December 2015.

In the literature review, it is observed that this increase-decrease trend depended on political instability. The 2008 crisis period also had important impact on gold prices.

From July 2007 on, the national crisis in the United States caused by high-risk mortgage credits, rapidly affected financial markets, then the whole world, turning into the birth of a global crisis.

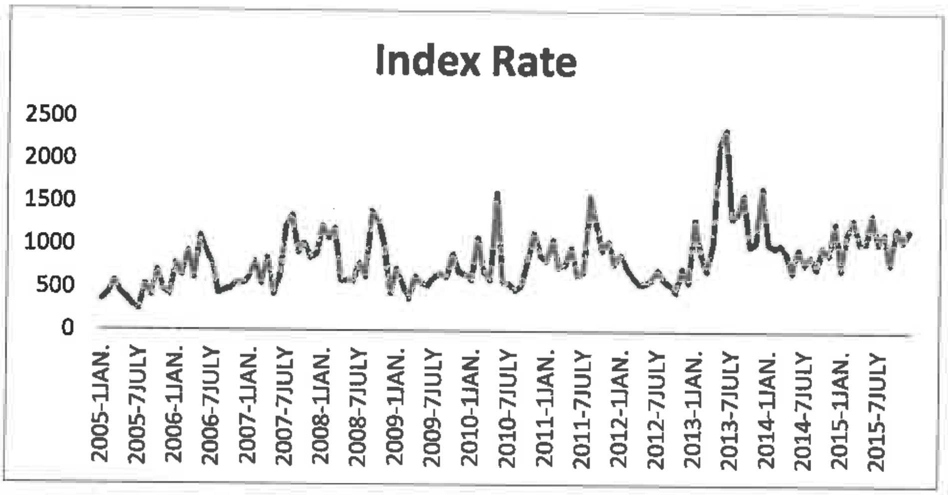
Figure 10: The movement of Gold Ratio Between 2005-2015



Index Rate Graph

Index rate 2008 is a more unstable progress than in previous years. The highest index rate is 2211.38 in May 2013 and 2373. 06 in June 2013.Between 2005-2015 average of index rate is 847.85. The protests, which are called as "occupy gezi" case in our country, have affected the index very much. The differences in the index rates of protest are showing as of clearly. Late in 2014, index rate is more stable compared to the other years. Index rate 2014 and later years can be said to be less affected by external factors.

Figure 11: The movement of Index Rate Between 2005-2015



CHAPTER 3

EMPRICAL FINDINGS

3.1 Multivariate Analysis of Macro Variables on Analyst Forecast Error

In this thesis, I aimed to determine impacts of forecast on independent variables by examining the regressions of forecaster errors and when the independent variables are stationary. Analysis of independent variables are used together in the multiple regressions and shown in table 3.

Although some of variables of thirteen models have meaningful correlations, excepting model 1 and model 8, the regression has a meaningless result. The meaningless result of stationary and related variables is examined. That is why, two models, which have meaningful regression result, are elaborated in this section.

Model 1: Exchange Rate and Forecast Error

The logarithmic exchange rate is stationary. Also, the first seasonal differencing forecast error is stationary. As a result of the regression equation, the probability of log exchange is 0.04 and coefficient is 0.53 at a significance level of 0.05. So, the stationary logarithmic exchange rate is 53% as a result of regression through one unit increase and decrease in the period of 2005 and 2015.

In the study that uses the monthly stock bond prices and exchange rate data in the United States in the 1974-1978 period, states that there is a positive relationship between stock bond prices and the US Dollar, and in long-term it has a stronger impact, compared to long term.(Aggarwal, 1981).

Previous research, reached the conclusion that there was a relationship between stock bond yields and the US Dollar, and the changes in exchange rate had varying degrees of impact in different industries, having studied the impact of the changes in Dollar over American industries. (Jorion P. 1991).

Examines the effects of unexpected moves in exchange rates on American multinational companies, and reached the findings that the decrease in US Dollar value had a positive effect on multinational companies' stock bond yields. (Gao,2000 transfer from İşcan, 2011).

In studied the long-term relationship between the S&P500 index and the US Dollar. In this study, using co-integration analysis results, the researchers state that, while there is no long-term relationship between the stock bonds and the US Dollar, in short-term there is a bidirectional relationship, based on empirical experiment-based findings. (Bahmani–Oskooee and Sohrabian, 1992 transfer from Akel and Gazel 2014).

Meanwhile,

The relationship between stock bond prices and the exchange rate was first studied by (Franck and Young, 1972). Analyzing the impact of exchange rate corrections over multinational company stock bond prices, they reached the conclusion that "there was no significant relationship between the stock bond prices and the exchange rates."

Their studies found out that there were differences per structures of national economies, in other words per their import and export structures. They discovered that foreign currency valuation affected stock bond prices negatively in export-oriented countries, and positively in import-oriented countries. (Ma and Kao 1990, 24, pp. 523-536).

Previous research studied the effects of exchange rate changes over stock bond prices in the Turkish economy. They found out that the Turkish Lira losing value over the US Dollar increased cash flow, profitability and the value of national companies due to increasing exports. (Doğan and Yalçın, 2007).

Model 8: Unemployment and Consumer Price Index

The case of logarithmic consumer price index rate is stationary. Also, the first seasonal differencing unemployment rate and forecast error is stationary. Both of independent variables at the significance level of 0.01 have the probability of producer price index as 0.005 and the coefficiency as 0.73. In the case of the first seasonal differencing of unemployment, its probability is 0.002 and its coefficiency is 1.63.

The studied 20 OECD member countries for the 1974-1989 periods through diagonal country co-integration analysis. Researchers detected an inverse-U relationship between average unemployment rate and yearly average growth variables. In other words, countries with low or high growth rates had low unemployment rates in those periods, whereas countries with mid-size growth rates had high unemployment rates. (Aghion-Howitt,1992, from transfer Aksu, 2017).

3.2 Multivariate Analysis of Macro Variables on Analyst Forecast Error Using Dummy Variables

The new models are composed considering dummy variables, which are influenced by external factors that are meaningless when they are stationary. In the new models, regressions are established by considering stationary variables. There are 11 new models that are shown in table 4. Dummy variables are elaborated in the sample section.

Model 1: Exchange Rate, Interest Rate and Dummy Interest

The forecast error is defined as the dependent variable, while interest rate and exchange rate are selected as the independent variables. The logarithm of the exchange rate is stabilized by the first seasonal differencing of interest rate and used as such. The constructed dummy series is a series covering the January 2005 – June 2009 period. In Figure 4, the logarithm and the first seasonal differencing of independent variables did not yield sufficient results, since the interest rate having an unusual trend in those years destabilized the series.

By constructing a dummy series stabilizing the series regarding that period, after regression analysis, we reached the conclusion that interest rate explained forecast error negatively and exchange rate positively. The regression is found to be significant. The data supporting significance are given in Table 4.

One unit of increase in logarithmic exchange rate causes 1, 92 unit of increase and the first seasonal differencing interest rate a decrease of 0.70 units in forecast error.

Considering the years for which the dummy series are constructed, the liquidity insufficiency in the January 2005 – June 2009 period should be taken into account. Since the liquidity insufficiency has an impact on the increase of the interest rate, in these periods it is normal that interest rates are high.

Examine whether there is a relation between independent variables determined by ISE indexes and dependent variables such as consumer price index, money supply, interest rate, exchange rate, foreign trade balance and industrial production index in their studies. As a result of their study, exchange rate, consumer price index and money supply have positively influenced the ISE index, interest rate, and foreign trade balance negatively affected, and industrial production index does not affect the ISE index. (Yılmaz et al., 2006 transfer from Kaya, Ali Özer, Nevin Özer, 2011).

He reached the conclusion that emission exchange rate and interest rate linearly explained the IMKB 100 index variable, whereas the inflation variable did not have an effect on the IMKB index. (Durucasu, 1997).

Model 2: Logarithmic Exchange Rate, Interest Rate, Logarithmic Inflation and Dummy Variables (Dummy Interest and Dummy Inflation)

The forecast error is the dependent variable, and its relationship with interest rate, inflation and exchange rate are analyzed. For these three independent variables to together constitute a significant regression, dummy series for interest rate and inflation are employed. By the help of dummy series; interest rate and inflation independent variables explain the forecast error.

We reached the conclusion that interest rate and inflation rate explained forecast error negatively and exchange rate positively. The regression is found to be significant. The data supporting significance are given in table 4.

There have been several studies on the impact of exchange rate and inflation over stock bond yield. As these studies analyzed different periods and different set of countries, the results vary. Therefore, the studies in the literature review are not completely in harmony.

A unit of increase in exchange rate causes an increase of 1, 20 units in forecast error. A unit of increase in interest rate and inflation causes a decrease of 0, 73 and 1.11 unit in forecast error.

Previous research, the impact of inflation over stock bond yields. The researcher, as a result, found out that there was a positive relationship between stock bond yields and inflation for the 1990-2007 periods. . (Horasan, 2008 transfer from Kaya, Çömlekçi, Kara, 2013).

In our study covering the 2005-2015 periods, we can also observe inflation's impact over forecast error.

Examine the relationship between exchange rates, foreign currency reserves, inflation rate, gold prices and the stock bond prices in India for the January 2008 – January 2009 period. Researchers stated that inflation rate and foreign currency reserves did not affect stock bond prices, whereas exchange rates and gold prices had a significant relationship with the stock bond prices. (Horasan, 2008 transfer from Kaya, Çömlekçi, Kara, 2013).

Previous research, the effect of interest rate, inflation, exchange rate and money offer macro variables over stock bond prices in Turkey for the 1986-1998 period, using regression analysis, percental change and logarithmic models, and reached the conclusion that exchange rate and inflation did not have any effect on stock bonds, but money offer and interest rate did. (Durukan, 1999).

Model 3: Logarithmic Exchange rate, Logarithmic Consumer Price Index and Dummy CPI

In this thesis, we examined the 2005 and 2015 period, there is a positive correlation CPI rate and Exchange rate. Because of, used in combination of two variables. In addition dummy CPI was added. As a result, a unit of increase in exchange rate causes an increase of 1, 52 units and a unit of increase in the Consumer Price Index causes an increase of 5, 98 units in forecast error.

In other words, both variables showed a positive increase. We reached the conclusion that CPI rate and exchange rate explained forecast error positively. The R^2 value of 0, 2611 support the significance of the analysis. The regression is found to be significant. The data supporting significance are given in table 4.

The first study on the impact of inflation over stock bond yield by (Fama, 1981.) presents a positive relationship between stock bond yields and real variables, in parallel with the Fisher hypothesis, or the indicator effect hypothesis. (Later, Lee 1992.), using multiple variance approach, supported Fama's study regarding real production, but argued that the results were not explanatory regarding inflation.

Model 4: Logarithmic Exchange Rate, Logarithmic Consumer Price Index, Logarithmic Index ISE-100 and Dummy PPI.

The fourth model was created by adding Logarithmic Index Rate ISE-100 to model third. A unit of increase in exchange rate causes an increase of 1, 96 units in forecast error. A unit of increase in the Consumer Price Index causes a decrease of 0, 48 and the Index rate causes a decrease of 1, 39 units in forecast error.

We reached the conclusion that CPI rate explained forecast error negatively, Index rate negatively and exchange rate positively. R^2 value of 0, 2961 support the significance of the regression. The regression is found to be significant. The data supporting significance are given in table 4.

He reached the conclusion that emission exchange rate and interest rate linearly explained the IMKB 100 index variable, whereas the inflation variable did not have an effect on the IMKB index. (Durucasu 1997).

Previous research, used the multiple regression model least square estimation method covering the 2002-2012 period in order to analyze the relationship between interest rate, money offer, industrial production index, exchange rate and the IMKB 100 index, and they found out that there was a positive relationship between stock bond yields and money offer, and a negative relationship between stock bond yields and exchange rate. (Kaya, Çömlekçi, Kara, 2013).

Model 5: Logarithmic Exchange Rate, Logarithmic Consumer Price Index, Logarithmic Interest Rate and Dummy CPI.

The fourth model was created by adding Logarithmic Interest Rate to model third. A unit of increase in exchange rate causes an increase of 1, 41 units in forecast error. A unit of increase in the Consumer Price Index rate causes a decrease of 0, 48 and unit in forecast error. A unit of increase in the interest rate causes a decrease of 0, 67 units in forecast error. R^2 value of 0, 2875 support the significance of the regression. The regression is found to be significant. The data supporting significance are given in table 4.

We reached the conclusion that interest rate explained forecast error positively, CPI rate negatively and exchange rate positively.

The studied ISE values and the CPI through time series analysis for Turkey in the 1995-2003 period and found a negative relationship with the CPI. Duman and Karamustafa, 2004 transfer from Kaya, Ali Özer, Nevin Özer 2011).

In analyzed the effects of exchange rate and inflation over stock bonds in Turkey for the 2001-2008 period, using multiple linear regression model and found out that inflation and exchange rate variables had a negative effect on stock bonds. (Gençtürk, 2009).

Previous research, by Flannery and James (1984), Cook and Hahn (1988), Bae (1990), Fung andLie (1990), Kwan (1991), Gjerde and Saettem (1999), and Achsani and Strohe (2002), it was detected that the unexpected changes in interest rates had the power to explain stock bond yields and the relationship in between was negative. (Flannery and James, 1984, Cook and Hahn, 1988, Bae 1990, Fung and Lie 1990, Kwan, 1991, Gjerde and Saettem, 1999, and Achsani and Strohe, 2002, transfer from Kaya, Ali Özer, Nevin Özer 2011).

Model 6: Logarithmic Exchange Rate, Logarithmic Consumer Price Index, Logarithmic Unemployment Rate and Dummy CPI.

In Model 6, the regression was analyzed with logarithm of three variables. As of results, a unit of increase in unemployment rate causes an increase of 0,7283 unit in forecast error. A unit of increase in the Consumer Price Index causes a decrease of 0, 55unit in forecast error and a unit of increase in exchange rate causes an increase of 1, 73 units in forecast error.

We reached the conclusion that CPI rate explained forecast error negatively, Exchange rate and Unemployment rate positively. The regression is found to be significant. The data supporting significance are given in table 4.

Using the monthly data for the 1986-2007 periods, examined the relationship between CPI and PPI indexes in Malaysia, and detected that the level values of both series were not stable, and they became stable after their first seasonal differences were taken. In the Granger causality test with first seasonal differences taken, there is a unidirectional causality from PPI to CPI. (Ghazali,Yee,and Muhammad,2008 transfer from Saraç, Karagöz, 2010).

Model 7: Logarithmic Exchange Rate, Logarithmic Consumer Price Index, Logarithmic Unemployment Rate, Logarithmic Gold Ratio and Dummy CPI.

A unit of increase in unemployment rate causes an increase of 0,68 unit in forecast error. A unit of increase in the Consumer Price Index causes a decrease of 0, 58 unit in forecast error. A unit of increase in exchange rate causes an increase of 1, 85 units in forecast error. A unit of increase in the Gold Ratio causes a decrease of 0, 81 units in forecast error.

We reached the conclusion that PPI rate and Gold Ratio explained forecast error negatively, Exchange rate and Unemployment rate, positively. The R^2 value of 0, 3336 support the significance of the regression. The regression is found to be significant. The data supporting significance are given in table 4.

Previous research, found out that gold price, inflation rate, average exchange rate and the ISE 30 index had a positive interaction with stock bond yields. (Atan, Boztosun, Kayacan 2005).

In these studies the effects of macroeconomic indicators over financial sector stock bond prices, and detected positive relationship between gold as a precious metal and the stock bonds. (Albeni and Demir 2005).

Previous research, examines the degrees of macroeconomic factors affecting stock bond prices, it was stated that the most important variable to affect the index was the treasure interest rate and a negative relationship with the IMKB index was found. Additionally, there was a negative relationship between other variables such as gold prices and industrial production index and the stock bond prices. (Mumcu, 2006).

Model 8; Logarithmic Exchange Rate, Logarithmic Consumer Price Index, Employment Rate, Logarithmic Gold Ratio and Dummy CPI.

A unit of increase in employment rate causes a decrease of 0, 72 unit in forecast error. A unit of increase in the Consumer Price Index causes a decrease of 0, 44 unit in forecast error. A unit of increase in exchange rate causes an increase of 1, 83 units in forecast error. A unit of increase in the Gold Ratio causes an increase of 1, 54 units in forecast error.

We reached the conclusion that CPI rate and Employment Rate explained forecast error negatively, Exchange rate and Gold Ratio, positively. The regression is found to be significant. The data supporting significance are given in table 4.

Previous research, examined the short and long-term relationship between gold prices and exchange rates through co-integration tests. In this study covering the January 1976-December 1990 period, there is a strong negative relationship between gold prices and exchange rates. Dooley, M.P., Isard, P. and Taylor, M.P. (1992). Transfer from Toraman, Bayramoğlu, Başarır, 2011).

Previous research, examines the 1970-1976 period, underline that there is a positive correlation between gold prices and inflation. Jaffe (1989) studying the 1971-1987 period, argue that, while gold prices and inflation move in the same direction, gold prices are not in such a strong relationship with inflation, that they would be protected against it. (Ratner, 1992.), (Topçu, 2010).

In their study covering the 1986-1995 period, using the IMKB index, gold prices, Dollar, Mark, money offer (M1) and interest rate variables, it was detected that generally in all variables, the first reaction was weak, but in the following periods, there was a significant and strong relationship.(Kargı, 1998 from transfer Çakır, 2012).

Model 9: Logarithmic Exchange Rate, First difference Inflation Rate, Employment Rate, Logarithmic Gold Ratio and Dummy CPI.

A unit of increase in inflation causes a decrease of 0, 50 unit in forecast error. A unit of increase in the employment rate causes a decrease of 0, 71 unit in forecast error. A unit of increase in exchange rate causes an increase of 1, 79 units in forecast error. A unit of increase in the Gold Ratio causes an increase of 1, 50 units in forecast error.

We reached the conclusion that inflation rate and employment rate explained forecast error negatively, gold ratio and exchange rate positively. The R^2 value of 0,3892 support the significance of the regression. The data supporting significance are given in table 4.

Note: The reason for using PPI's dummy series in this regression is inflation, same proportional increases and decreases are observed in the PPI as well as in inflation, therefore the series was used. It helped the regression reached a significant result.

Examined the interaction between stock bond prices and interest rates in Greece. As a result of the study, despite the close relationship between inflation and interest rates, the stock bond prices at the Athens Stock Market were rather affected by inflation, than the interest rates (Arpergis., Eleftheriou 2002, transfer from Sheng-Yeh, Guan-Ru, Wu.).

Conducted an analysis on the relationship between selected macroeconomic variable and the IMKB 100 Index and detected a negative relationship between Gold and stock bonds. (Zengin, 2009 transfer from Kaya, Ali Özer, Nevin Özer 2011).

In the study using daily data for the 29 December 1979-31 March 1981 period, used a series of variables such as the US Dollar, interest rate, inflation expectation, silver prices, oil prices, and financial assets to explain gold prices. The results showed that there was a positive relationship between gold prices and inflation rate, oil prices and silver prices, whereas there was a negative relationship with the US Dollar, interest rate, and the Dow Jones Index. Koutsogiannis (1983) also included the political tension index comprised of political crises happened in that period into the study and reached the conclusion that political stability also contributed to gold prices. (Koutsogiannis, 1983 transfer from Worthington and Pahlavani, 2006).

Model 10: Logarithmic Exchange Rate, First difference Inflation Rate, Employment Rate, Interest Rate and Dummy Variables (Dummy CPI and Dummy Interest.)

When the regression is established, interest rate is stationary because it is used together with the interest rate of dummy series. A unit of increase in inflation causes a decrease of 0, 50 unit in forecast error. A unit of increase in the employment rate causes a decrease of 0, 60 unit in forecast error. A unit of increase in exchange rate causes an increase of 1, 60 units in forecast error. A unit of increase in interest rate causes an increase of 1, 23 units in forecast error.

We reached the conclusion that inflation rate and employment rate explained forecast error negatively, interest rate negatively and exchange rate positively. The R^2 value of 0,4226 support the significance of the regression. The data supporting significance are given in table 4.

In their study examining the interaction between inflation and stock bonds, detected a strong negative relationship between these two variables. Chopin and Zhong, 2001, pp.1-18)

Model 11: Logarithmic Unemployment Rate, Logarithmic Consumer Price Index and Dummy CPI.

A unit of increase in unemployment rate causes an increase of 0, 64 unit in forecast error. A unit of increase in the Consumer Price Index causes a decrease of 0, 55 unit in forecast error.

We reached the conclusion that unemployment rate explained forecast error positively and exchange rate negatively. The R^2 value of 0, 2112 support the significance of the regression. The data supporting significance are given in table 4.

In the study examining the relationship between stock bond yields and economic indicators, found out that there was a positive relationship between stock bond yields and money offer, government bond price index and the unemployment rate. Cheng 1995 from transfer Zügül and Şahin, 2009).

Applied a VAR analysis to a set of macroeconomic variables, such as economic growth, unemployment and interest rate, for the 2000 and 2010 periods. A positive relationship between inflation and unemployment was found. (Doğan, 2012, transfer from Bulut and Ümit 2013, p.133).

3.3 Analysis of Used Test's

3.3.1 Unit Root's Test

In this thesis, the stationary conditions of variables were used by taking unit root tests into consideration. Some of the variables could be stationary when it is logarithmic or in the condition of the first seasonal difference. In such circumstances, I prefer to use logarithmic form of the variables.

3.3.1.1 Augmented Dickey-Fuller and Phillips-Perron Tests

Augmented Dickey-Fuller test and Phillips Perron test are used as unit root tests in this thesis. The result of Augmented Dickey-Fuller test is shown in table 5. Table 6 presents the result of Phillips-Perron test.

Note;

* The status of the receipt of a difference.

** The status of the receipt of the two differences.

*** First, the logarithm is taken and then the status of the receipt of a difference.

**** Firstly, by calculating the standard deviation and then the status of the receipt of a difference.

3.3.2 Co-Integration Test

3.3.2.1 Granger Causality Test

The Granger Causality test shows the causality relationship between two variables and it is applied to determine the causality between the independent variables. In accordance with this, table 7 shows the significance level and values of interrelated variables.

3.3.3 Correlation

Together with calculations of correlation between dependent and independent variables, and the direction and strength of the relationship between the variables were examined. table 8 is composed based on correlations of variables.

Correlation	Negative	Positive
Low	-0,29 to -0,10	0,10 to 0,29
Medium	-0,49 to -0,30	0,30 to 0,49
High	-0,50 to -1,00	0,50 to 1,00

*High and positive correlations.

** High and negative correlations.

***Highest Medium and positive correlations.

CONCLUSION

Globalizing financial markets have a quality that affects the financial markets of all countries. Small or large fluctuation is not one's country's financial markets can easily affect the financial market of another country'. Analysis' have difficulty in having forecast for financial markets are very influenced by each other Research on econometric techniques has accrued for the reduction of the uncertainty of financial instrument.

As time goes by, Explain the uncertainty of financial instruments have been use models and method like VAR (Vector Autoregressive Model), Artificial neural nets, Okun's law, Monte Carlo simulation, simple and multiple linear regression. In this study, the most preferred multiple linear regression model was used.

In this study has been using twenty-three Companies are selected ISE 100 the financial and real estate and the firms that have not got enough information are excluded from the sample for depended variable. (Between to 2005:1 and 2015:12.) and has been using eight macroeconomics variable; Exchange rate, interest rate, inflation rate, index- ISE100, employment rate, unemployment rate, consumer price index- producer price index and gold ratio for the independent variable.

In the theoretical part of the thesis has been definition the depended variable and independent variables period of 2005:1 and 2015:12. In continuation focuses on graphical representations with periods of increase and decrease between 2005:1 and 2015:12.

In the treatment part of the thesis, primarily, it has been calculated correlations between macroeconomic variables. Then, Granger Causality Test was used to for macroeconomic variables and the ADF and PP tests for the stagnation of the macro variables were examined.

In the analysis part of the thesis, when calculating the forecast error have used actual and estimated values of twenty-three companies. The results of the analyses were compared with the literature have parallels and have not parallelled to the study.

According to the result of the analysis, the exchange rate has a positive effect on the forecast error at the 1% significance level. Interest rate has a negative effect on the forecast error at the 5% significance level**. Inflation rate has a negative effect on the forecast error at the 5% significance level. Index (ISE-100) has a negative effect on the forecast error at the 5% significance level. The employment rate has a negative effect on the forecast error at the 1% significance level. The unemployment rate has a positive effect on the forecast error at the 5% significance level. The Consumer price index has a negative effect on the forecast error at the 1% significance level ***. Gold ratio has a positive effect on the forecast error at the 5% significance level*.

* CPI, Unemployment and Exchange rate with Gold rate has a positive effect on the forecast error at the 1% significance level.

** CPI and Exchange rate with Interest rate has a positive effect on the forecast error at the %5 significance level.

*** Exchange rate and CPI has a positive effect on the forecast error at the %1 significance level.

REFERENCES

Abdalla I.S.A., Murinde V. 1997, Exchange Rate and Stock Price Interaction In emerging Financial Markets : Evidence on India, Korea, Pakistan and the Philippines, Applied Financial Economics 7: 25-35.

Aggarwal, R. 1981, Exchange rates and Stock Prices: A study of U.S. Capital Markets Under Floating Exchange Rates: Akron Business and Economics Revies 12: 7-12.

Aksu, L.(2017) "Türkiye'de Istihdam, Verimlilik ve İktisadi Büyüme İlişkilerinin Analizi" Journal of Economic Policy Researches Vol.4, Issue:1, 2017, 39-94.

Alagidede, P., Panagiotidis, T. and Zhang, X. 2010, Causul Relationship Between Stock Prices and Exchange Rates, Stirling Economics Discussion Paper 2010-05, http://www.stir.ac.uk/media/schools/management/documents/workingpapers/SEDP-2010-05-Alagidede-Panagiotidis-Zhang.pdf.

Albeni, M., Demir, Y. (2005). "Makroekonomik Göstergelerin Mali Sektör Hisse Senedi Fiyatlarına Etkisi (İMKB Uygulamalı)", Muğla University. Journal of Social Sciences, spring, No. 14. P.5.

Arpergis, N. Eleftheriou, S. (2002) " Interest rates, inflation and stock price: the case of Athens Stock Exchange" journal of policy Modeling 24:231-236).

Atan M., Dervis B.ve Murat K., (2005), "Arbitraj Fiyatlama Yaklasımının İMKB"de Test Edilmesi", 9. Symposium of International Finance, Gazi University, Turkey.

Bahmani-Oskooee, M. And Sohrabian A. 1992, Stock Prices and Effective Exchange Rate of The Dollar, Applied Economics 24:459-464.

Beer, F. and Hebein, F. 2008 An Assessment of the Stock Market and Exchange Rate Dynamics In Industrialized and Emerging Markets, International Business& Economics Research Journal 7(8):59-70.

Çakır A. (2012) Arbitraf Fiyatlama Teorisi ve IMKB Sektör Endekleri Üzerine Uygulaması. Kadir Has University of Social Science Institutes, Turkey .

Cheng A.C.S. (1995)"The uk stock market and economic factors a new approach"Journal of Business Finance and accounting No.22, pp. 129-142.

Clark, T. (1995), "Do Producer Prices Lead Consumer Prices?", Federal Reserve Bank of Kansas City Economic Review, (80), 25-39.

Duman M. and Karamustafa O. (2004), "Türkiye'de Hisse Senedi getirileri, Enflasyon ve Reel Üretim İlişkisi" , Accounting and finance Journal number:21.

Durucasu H. (1997); "Ekonomik Göstergelerin IMKB'ye Etkisinin Analizi", Anadolu University, Istanbul. Journal of the Faculty of Economics and administrative Sciences, pp.121-150.

Doğan, N. And Yalçın, Y. 2007, The effects of the Exchange Rate Movements on the Istanbul Stock Exchange, Applied Financial Economic Letters 3:39-46.

Doğan, T.T. (2012) "Macroeconomic Variales and Unemployment: The Case of Turkey" Journal of Economics and Financial Issues, 2(1):71-78.

Franck, P. And Young A.1972, Stock Price Reaction of Multinational Firms to Exchange Realigments, Financial Management 1:66-73.

Gao, T.2000, Exchange Rate Movements and the Profitability of U.S. Multinationals, Journal of International Money and Finance 19: 117-134.

Ghazali, M. F., Yee, O. A. ve Muhammad, M. Z. (2008), "Do Producer Prices Cause Consumer Prices: Some Empirical Evidence", International Journal of Business and Management, 3 (11), 78-82.

İşcan E.(2011) "Döviz kurları ve Hisse Senedi Piyasası Arasındaki Etkileşim Türkiye Örneği (Aralık 2001-Aralık 2009)" Çukurova University, Turkey. Journal of Electronic and Social Sciences. Number: 35, pp. 237-251. (www.esosder.org).

Jorion P. 1991, The Pricing of Exchange Rate Risk in the Stock Market, Journal of Financial and Quantitative Analysis, 26:363-376.

Kanca, O.C. (2012)"Türkiye'de işsizlik ve iktiadi Büyüme Arasındaki Nedenselliğin Ampirik Analizi" Kafkas University Institute of Social Science Journals. Vol. 21, No. 2, pp. 1-18.

Kargı, N. (1998) "Ekonomik Kalkınma, Tasarruf ve Sermaye Piyasası ilişkileri: Türkiye Örneği." SPK Puplishing No. 115, Ankara.

Koutsoyiannis, A. (1983) A short-run pricing model for a speculative asset, tested Duman M. and Karamustafa O. (2004), "Türkiye'de Hisse Senedi getirileri, Enflasyon ve Reel Üretim İlişkisi" , Accounting and finance Journal number:21.

Ma, C. K. and Kao G.W. 1990, On Exchange Rate Changes and Stock Price Reactions, Journal of Policy Modeling 24: 523-536.

Mukherje, T.K. and Naka, A. (1995); Dynamic Rlations Between Macroeconomic Variables and The Japanese Stock Market: an Application of a Vector Error Correction Model", Journal of Financial Research,18, (1995), s:223-237.

Rahman, M.L. and Uddin, J. 2009: Dynamic Relationship between Stock Price and Exchange Rates: Evidence from Three South Asian Countries, International Business Research 2: 167-174.

Özer A, Kaya A. and ÖZER Nevrin (2011) "Hisse Senedi Fiyatları ile Makroekonomik Değişkenlerin Etkileşimi" Dokuz Eylül University, Journal of the Faculty of Economics and administrative Sciences.

Saraç B. and Karagöz, K. (2010) "Türkiye'de Tüketici ve Üretici Fiyatları Arasındaki İlişki: Yapısal Kırılma ve Sınır Testi" Journal of Finance no. 159, December.

Sayılgan G. ve Süslü C. (2011) " Makroekonomik faktörlerin hisse senedi getirilerine etkisi: Türkiye ve Gelişmekte Olan Piyasalar Üzerine Bir İnceleme" BDDK Bankacılık ve Finansal Piyasalar, 5(1),73-96.

Sheng-Yeh, W. Guan-Ru, C. Wu, M.H. "A nonlinear relationship between stock prices and interest rates : evidence for G-8 countries" Global Business and Economics Research Journal ISSN: 2302-4593 Vol. 3 (11): 1 – 17.

Smyth R. And Nandha, M. 2003, Bivariate Causality Between Exchange rate and Stock Prices in South Asia, Applied Economic Letters 10: 699-704.

Toraman, C. Başarır, Ç. Bayramoğlu M.F.(2011) Determination of Factors Affecting the price of Gold: A study of MGARCH Model Business and Economics Research Journal Vol. 2 No. pp. 37-50 ISSN: 1309-2448.

Ümit Ö.A, Bulut E. (2013); Türkiye'de İşsizliği Etkileyen Faktörlerin Kısmi EKK Regresyon Yöntemi ile Analizi 2005-2010 Dönemi, Dumlupınar University, Turkey. Journal of Social Sciences No. 37, July.

Worthington, A. C. and Pahlavani, M. (2006)" Gold investment as an inflationary hedge: Cointegration evidence with allowance for endogenous structural breaks" University of Wollongong and University of Sistan and Baluchistan, Iran.

Yılmaz, Ö.G. (2005),"Türkiye Ekonomisinde Büyüme ile İşsizlik Oranları Arasındaki Nedensellik İlişkisi" Econometri and Statistic Vol.2, pp.11-29.

Yurttankaçmaz Ç. (2012) "Döviz Kuru ve Enflasyonun Hisse Senedi Getirileri Üzerindeki Etkisi" Atatürk University, Turkey, EKEV Academi Journal, number:51, pp: 309-410.

Zengin, N. (2009) Seçilmiş Makroekonomik Göstergeler ile IMKB-100 Endeksi Arasındaki İlişkinin Analizi, Marmara University, Institute of banking and insurance, Master thesis, Istanbul.

Zügül, M. Şahin, C. (2009) "IMKB100 Endeksi ile Bazı Makro Ekonomik Değişkenler Arasındaki İlişkiyi İncelemeye Yönelik Bir Uygulama.", Number,16, International Academic Peer-reviewed Journal of Social Science.

Table 1: Companies used to calculate forecast error.

-	ARCLK	ARCELIK A.S.
-	BIMAS	BIM BIRLESIK MAGAZALAR A.S.
-	CCOLA	COCA COLA ICECEK A.S.
-	DOAS	DOGUS OTOMOTIV SERVIS VE TICARET A.S.
-	ENKAI	ENKA INSAAT VE SANAYI A.S.
-	EREGL	EREGLI DEMIR VE CELIK FABRIKALAR TIC..A.S.
-	FROTO	FORD OTOMOTIV SANAYI A.S.
-	KCHOL	KOC HOLDING A.S.
-	KOZAL	KOZA ALTIN ISLETMELERI A.S.
-	KRDMD	KARDEMIR KARABUK DEMIR CELIK SANAYI VE TIC. A.S.
-	OTKAR	OTOKAR OTOMOTIV VE SAVUNMA SANAYI A.S.
-	PETKM	PETKIM PETROKIMYA HOLDING A.S.
-	PGSUS	PEGASUS HAVA TASIMACILIGI A.S.
-	SAHOL	HACI OMER SABANCI HOLDING A.S.
-	SISE	TURKIYE SISE VE CAM FABRIKALARI A.S.
-	TAVHL	TAV TURK HAVALIMANLARI HOLDING A.S.
-	TCELL	TURKCELL ILETISIM HIZMETLERI A.S.
-	THYAO	TURK HAVA YOLLARI A.O.
-	TKFEN	TEKFEN HOLDING A.S.
-	TOASA	TOFAS-TURK OTOMOBIL FABRIKASI A.S.
-	TTKOM	TURK TELEKOMUNIKASYON A.S.
-	TUPRS	TUPRAS-TURKIYE PETROL RAFINERILERI A.S.
-	ULKER	ULKER BISKUVI SANAYI A.S.

Table 2: Descriptive statics of Macro Economics Effect for Depented Variable is Forecasterror and Indepented Variables

(N = 132)

	Mean	**Median**	**Standard Deviation**	**Minimum**	**Maximum**
F.Error	7.186	4.735	8.534	1.912	47.510
Exchange Rate	0.012	0.010	0.007	0.002	0.062
Interest Rate	9.584	7.500	5.236	1.500	17.500
Inflation Rate	8.296	8.175	1.678	12.060	3.990
Customer Price Index Rate	0.796	0.640	1.351	-3.540	5.590
Producer Price Index Rate	0.658	0.560	0.777	-1.430	3.270
Unemployment Rate	9.895	9.600	1.506	7.300	14.800
Employment Rate	42.280	41.200	2.167	38.900	46.300
Index ISE-100	847.840	785.240	354.150	249.990	2323.060
Gold Rate	415.830	404.620	198.550	126.200	719.400

Table: 3 Multivariate Analyses of Macro Variables on Analyst Forecast Error.

Models	1	2	3	4	5	6	7	8	9	10	11	12	13
Exchange Rate USD/TRL	**0.53 (0.0415)**	0.53 (0.0396)	0.27 (0.3001)	0.60 (0.0267)	0.60 (0.0306	0.46 (0.1193)			0.56 (0.0433)	0.51 (0.0714)	0.54 (0.0532)	1.11 (0.0241)	0.35 (0.1843)
Interest Rate		-0.35 (0.5533)	-0.46 (0.4124)			0.85 (0.2458)							0.18 (0.0874)
Inflation Rate			5.45 (0.0068)									0.76 (0.0104)	0.54 (0.2291)
Consumer Price Index Rate				0.38 (0.3789)	0.40 (0.3662)	0.38 (0.3843)		**0.73 (0.0051)**	0.45 (0.3104)	0.46 (0.2985)	0.36 (0.4158)		
Unemployment Rate							-0.25 (0.1654)	**1.63 (0.0025)**	0.92 (0.3001)	0.96 (0.2823)			
Employment Rate							0.03 (0.8210)				-0.45 (0.2622)	0.26 (0.1994)	0.09 (0.7163)
Gold Rate										-0.53 (0.5314)	1.06 (0.5063)	-1.20 (0.1344)	
Index Rate of ISE-100					0.41 (0.7342)								
R^2 (Adjusted R^2 Square)	0.0487	0.0390	0.1330	0.0703	0.0545	0.0769	0.0024	0.1185	0.0719	0.0611	0.0629	0.0760	0.0771

-The significant coefficient are in bold.

- The numbers in the parentheses are p-value.

- Observation: 132

Table 4: Multivariate Analysis of Macro Variables on Analyst Forecast Error Using Dummy Variables.

Models	1	2	3	4	5	6	7	8	9	10	11
Exchange Rate USD/TRL	1.92 (0.0000)	1.96 (0.0000)	1.52 (0.0002)	1.96 (0.0000)	1.41 (0.0005)	1.73 (0.0001)	1.85 (0.0000)	1.83 (0.0000)	1.79 (0.0000)	1.60 (0.0001)	
Interest Rate	-0.70 (0.0239)	-0.73 (0.0181)			0.67 (0.0327)					0.23 (0.0221)	
Inflation Rate		-2.75 (0.0262)							-0.50 (0.0322)	-0.50 (0.0274)	
Consumer Price Index Rate			5.98 (0.0000)	-0.48 (0.0193)	-0.48 (0.0191)	-0.55 (0.0148)	-0.58 (0.0098)	-0.44 (0.0215)			-0.55 (0.0221)
Unemployment Rate						0.73 (0.0184)	0.68 (0.027)				0.64 (0.0494)
Employment Rate								-0.72 (0.0000)	-0.71 (0.0000)	-0.60 (0.0000)	
Gold Rate							-0.81 (0.0000)	1.54 (0.0124)	1.50 (0.0150)		
Index Rate of ISE-100				-1.39 (0.0136)							
Dummy Interest	1.04 (0.0185)	1.11 (0.0136)								-3.75 (0.0009)	
Dummy Inflation		1.73 (0.0170)									
Dummy CPI			-0.46 (0.0273)	6.16 (0.0000)	6.31 (0.0000)	6.09	6.17 (0.0457)	5.24 (0.0000)	5.21 (0.0000)	5.53 (0.0000)	6.93 (0.0000)
R^2 (Adjusted R^2 Square)	0.1782	0.2122	0.2436	0.2738	0.2649	0.2857	0.3043	0.3638	0.3648	0.3946	0.1908

- The numbers in the parentheses are p-value.
- Observation: 132

Table 5: Augmented Dickey-Fuller Test for Variables.

		Dickey Fuller Test Statistic	Test Critical Values			Prob.	
			1%	5%	10%		
Y:	Forecast Error	-5.2740	-2.5837	-1.9434	-1.6150	0.0000	*
X1	Exchange Rate TRL/USD	-2.8257	-2.5845	-1.9435	-1.6149	0.0050	***
X2	Interest Rate	-7.9676	-2.5828	-1.9433	-1.6150	0.0000	*
X3	Inflation Rate	-7.6031	-2.5845	-1.9435	-1.6149	0.0000	*
X4	Consumer price index (CPI)	-8.5662	-2.5843	-1.9435	-1.6149	0.0000	****
X5	Producer price index (PPI)	-5.4411	-2.5827	-1.9432	-1.6150	0.0000	*
X6	Unemployment Rate	-9.5583	-2.5828	-1.9435	-1.6149	0.0000	**
X7	Employment Rate	-8.3966	-2.5828	-1.9433	-1.6150	0.0000	*
X8	Gold Rate	-8.7840	-2.5828	-1.9433	-1.6150	0.0000	*
X9	Index Rate ISE-100	-4.0020	-2.5847	-1.9435	-1.6149	0.0001	*

* The status of the receipt of a difference

** The status of the receipt of the two differences

*** First, the logarithm is taken and then the status of the receipt of a difference.

**** Firstly, by calculating the standard deviation and then the status of the receipt of a difference.

Table 6: Phillips Perron Test for Variables.

	Phillips Perron Test Statistic	Test Critical Values 1%	5%	10%	Prob.
Y: Forecast Error	-10.0567	-2.5828	-1.9433	-1.6150	0.0000 *
X1: Exchange Rate TRL/USD	-49.9884	-2.5828	-1.9433	-1.6150	0.0000 *
X2: Interest Rate	-7.9991	-2.5828	-1.9433	-1.6150	0.0000 *
X3: Inflation Rate	-10.0580	-2.5828	-1.9433	-1.6150	0.0000 *
X4: Consumer price index (CPI)	-6.3297	-2.5828	-1.9433	-1.6150	0.0000 *
X5: Producer price index (PPI)	-5.4087	-2.5828	-1.9433	-1.6150	0.0000 *
X6: Unemployment Rate	-4.7567	-2.5828	-1.9433	-1.6150	0.0000 *
X7: Employment Rate	-8.3966	-2.5828	-1.9433	-1.6150	0.0000 *
X8: Gold Rate	-8.8178	-2.5828	-1.9433	-1.6150	0.0000 *
X9: Index Rate ISE-100	-24.9892	-2.5828	-1.9433	-1.6150	0.0000 *

* The status of the receipt of a difference

Table 7: Granger Causality Test

	Chi Sq	Prob.	
Dependent Variable = Interest Rate			
PPI	15.8619	0.0004	*
Exchange Rate TRL/USD	7.1889	0.0275	**
Dependent Variable = Unemployment Rate			
Interest Rate	5.6536	0.0592	***
Employment Rate	14.0404	0.0009	*
Dependent Variable = Employment Rate			
Interest Rate	4.9648	0.0835	***
Dependent Variable = PPI			
Inflation Rate	7.6893	0.0214	**

*, **, *** denote 1%, 5%, 10% significance level relatively.

Table 8: Correlation of independent and dependent variables.

	Forecast Error	*Index Rate*	*Exchange Rate*	*Consumer Price Index*	*Producer Price Index*	*Interest Rate*	*Inflation Rate*	*Unemployment Rate*	*Employment Rate*	*Gold Ratio*
Forecast Error	1									
Index Rate	-0.0767	1								
Exchange Rate	0.4083***	0.3611	1							
Consumer Price Index	-0.0599	0.0748	0.1689	1						
Producer Price Index	0.0240	-0.1770	-0.0436	0.1243	1					
Interest Rate	0.1255	-0.3115	0.1171	0.0490	0.19880	1				
Inflation Rate	0.0664	-0.1180	0.1580	0.1075	0.15835	0.4912***	1			
Unemployment Rate	0.6059*	-0.1295	0.1351	-0.0053	-0.10801	-0.0183	-0.2381	1		
Employment Rate	-0.3059	0.4094***	0.1456	0.0039	-0.13806	-0.6335**	-0.1374	-0.26356	1	
Gold Ratio	-0.1072	0.3987	0.1064	0.0076	-0.21572	-0.8227**	-0.2154	-0.13522	0.88651*	1