GJEBS
Global Journal of Economics and Business Studies
Küresel İktisat ve İşletme Çalışmaları Dergisi
http: //dergipark.org.tr/gumusgjebs - ISSN: 2147-415X
Bahar-2019 Spring-2019
Cilt: 8 Sayı: 15 (61-68) Volume: 8 Issue: 15 (61-68)

THE ROLE OF MACROECONOMIC INDICATORS ON BIST 100 STOCK PRICE INDEX: EVIDENCE FROM TURKEY

Abdullah Ferit EROL[1] **Sinan AYTEKİN**[2]

ABSTRACT

The stock exchange indices are an indicator that is calculated according to the weights of equities that measure the proportional changes of equity prices and returns of the selected companies. Besides the company-specific factors affecting the equity prices of companies, there are also macroeconomic factors. As a result of the influence of these factors on equity prices occur changes in the indices. From this point of view, the study, it is aimed to measure the effect of selected macroeconomic variables on BIST 100 index. The BIST 100 Index has been used as dependent variable, the Inflation Ratio, the Overnight Lending Interest Rate, the Golden Ounce Price, the Industrial Production Index and the Growth Rate have been used as the independent variable in the study. Scope of the study, quarterly data between 2009: Q4-2018: Q3 periods are analyzed by the Multivariate Linear Regression Model. According to the results of the analysis, between BIST 100 index and the Overnight Lending Interest Rate, the Industrial Production Index and the Inflation Rate have been found statistically significant relationship. On the other hand, between BIST 100 index and the Growth Rate and the Golden Ounce Price variables haven't got statistically significant relationship.

Keywords: Borsa Istanbul (BIST), Macroeconomic Variables, Multivariate Linear Regression Analysis.

JEL Codes: C32, C82, G32.

MAKROEKONOMİK DEĞİŞKENLERİN BORSA İSTANBUL ENDEKSİ ÜZERİNDEKİ ETKİSİ: TÜRKİYE ÖRNEĞİ

ÖZET

Borsa endeksleri, seçilmiş işletmelerin pay fiyatlarının ve getirilerinin oransal değişimlerini ölçen, pay senetlerinin ağırlıklarına göre hesaplanan bir göstergedir. İşletmelerin pay fiyatlarını etkileyen işletmeye özgü faktörlerin varlığının yanı sıra makroekonomik faktörler de bulunmaktadır. Pay fiyatlarının bu faktörlerden etkilenmesi sonucunda endekslerde de değişimler meydana gelmektedir. Buradan hareketle çalışmada, seçilmiş makroekonomik değişkenlerin BIST 100 endeksi üzerine etkisinin ölçülmesi amaçlanmıştır. Çalışmada bağımlı değişken olarak BIST 100 Endeksi, bağımsız değişkenler olarak ise Enflasyon Oranı, Gecelik Borç Verme Faiz Oranı, Altın Ons Fiyatı, Sanayi Üretim Endeksi ve Büyüme Oranı kullanılmıştır. Çalışma kapsamında 2009: Q4-2018: Q3 dönemleri arasındaki üçer aylık veriler çoklu doğrusal regresyon modeli yardımıyla analiz edilmiştir. Analiz sonucuna göre, BIST 100 Endeksi ile Gecelik Borç Verme Faiz Oranı, Sanayi Üretim Endeksi ve Enflasyon Oranı değişkenleri arasında istatistiki olarak anlamlı ilişkiler tespit edilmiştir. Buna karşın BIST 100 Endeksi ile Büyüme Oranı ve Altın Ons Fiyatı değişkenleri arasında istatistiki olarak anlamlı ilişki olduğuna dair bulgulara ulaşılamamıştır.

Anahtar Kelimeler: Borsa İstanbul (BIST), Makroekonomik Değişkenler, Çoklu Doğrusal Regresyon Analizi.

JEL Kodları: C32, C82, G32.

1. INTRODUCTION

Indices enable the comparison of the return on investment to equities and alternative investment returns. Therefore, the indices are significant and indispensable indicators for the relevant sectors especially the investors (Sayılgan, 2017: 48).

[1] Lecturer, Batman Universiy, Kozluk Vocational school, erolferit@gmail.com
[2] Assoc. Prof., Balıkesir University, İİBF, saytekin@balikesir.edu.tr

Abdullah Ferit EROL – ORCID NO: 0000-0001-6898-7540
Sinan AYTEKİN – ORCID NO: 0000-0003-1502-2643

Makale Gönderme Tarihi / Article Sending Date: 24 Mart 2019
Makale Kabul Tarihi / Article Acceptance Date: 04 Temmuz 2019

Makale Künye Bilgisi / To Cite This Article: EROL, Abdullah Ferit & Sinan AYTEKİN *(2019).* "The Role of Macroeconomic Indicators on BIST 100 Stock Price Index: Evidence from Turkey", *Global Journal of Economics and Business Studies, Cilt: 8, Sayı: 15, 61-68.*

In a capital market, whose stock exchange indices are efficient, the prices of equities are correcting themselves quickly according to the new information. In other words, they reflect all information regarding the equities' prices. Equities' prices are used as main indicator in economy since they reflect the general economic condition (Ray, 2012: 470). In addition to this, the indices formed by the equity prices have an important place in economy. Stock exchange indices are playing a key role in the mobilization of the capitals of developed and developing countries and most investors determine their return expectations by considering many variables. Macroeconomic factors are included among these variables (Talla, 2013: 7). Because macroeconomic variables affect the cash flow of many companies, so investors can change their investment preferences (Flannery and Protopapadakis, 2002 :751).

In the 1980s and 1990s, unexpected fluctuations were observed on the stock exchange values of many countries. Most researchers have suggested that these fluctuations may be caused by macroeconomic variables (Özer, Kaya and Özer, 2011: 164). For this reason, many researchers have done various studies to explain the relation between macroeconomic variables and equity prices (Menike 2006: 50).

Even though the Turkish stock exchange grew rapidly, it is smaller when compared to developed stock exchanges. That is why, Turkish capital market is affecting more from speculative activities, manipulations and economic changes compared to developed stock exchanges (Açıkalın, Aktaş and Ünal, 2008: 9).

One of the reasons for this study is to examine the effects of macroeconomic factors on share returns and to conduct a scientific study for investors. Another reason is the inadequacy of the studies conducted in Turkey.

The purpose of this study is to investigate the effect of the selected macroeconomic variables on BIST 100 index. In order to examine the relation between the variables included in the study, Multivariate Linear Regression Analysis was used. In the analysis, quarterly data between the periods 2009: Q4-2018: Q3 were used. In the study, chapters of literature study, data set and method, evaluation of analysis results and conclusion were included respectively.

2. LITERATURE REVIEW

Some studies in the literature about the national and international capital markets were summarized in Table 1.

Table 1. Literature Review

Author(s)	Year	Variables	Method	Result
Albeni and Demir	2005	ISE Financial Sector Shares, Inflation Rate, Public Expenditures, GNP Rate of Change, Private and Public Investment Expenditures, Dollar and Mark Rates, Treasury Bond Interest Rate, Saving Deposit Interest Rate, International Portfolio Investments, Money Supply, Privatization, Cumhuriyet Gold and Internal debts	Multivariate Regression Analysis	According to the results of the study, a 1% increase in the deposit interest rate causes a 2% decrease in the equity price. This situation shows that the investor prefers different investment areas. It also concluded that there is a negative relation between financial sector stocks and international portfolio investments and the German mark variable. Generally, it was concluded that the fact that Turkish Stock exchange is developing, the result that it will be significantly affected by the macroeconomic variables should not be overlooked.
Abugri	2006	Latin American Countries Stock exchange Indices, Foreign Exchange Rate, Interest Rate, Industrial Production and Money Supply	VAR	Using a six-variable vector autoregressive (VAR) model, the study found that macroeconomic factors were efficient in explaining returns in stock markets. They also concluded that the selected variables affect markets with varying importance and magnitude and that these findings have an important role in the decision-making of investors and other interested parties.

Table 1. Literature Review (Continued)

Author(s)	Year	Variables	Method	Result
Gan, Lee, Yong and Zhang	2006	New Zealand Stock Exchange Index, Inflation Rate Foreign Exchange Rate, GDP, Money Supply, Long and Short Term Interest Rates and Oil Prices	Granger Causality and Johansen Cointegration Analysis	It is concluded that there is a long-term relation between stock exchange index and macroeconomic variables. According to the result of causality analysis, it is determined that the stock market index is not causal relation with any variables.
Brahmasrene and Jiranyakul	2007	Thailand Stock Exchange, Industrial Production Index, Money Supply, Inflation Rate, Foreign Exchange Rate, Interest Rates and Oil Price	Unit Root Test, Cointegration and Granger Causality Analysis	They have concluded in the study that economic activities have a positive and strong impact on the stock exchange. Also, while the money supply had a positive effect on the stock exchange returns, it was found that inflation, oil price shocks and nominal exchange rate movements affected the stock exchange returns negatively.
Aydemir and Demirhan	2009	ISE 100 Index, Foreign Exchange Rate	Granger Causality Analysis	According to the empirical results of the study, it is concluded that there is a dual causal relation between the exchange rate and the index.
Hussainey and Ngoc	2009	Vietnam Stock Exchange, Interest Rates and Industrial Production	VAR	In the study, while the industrial production affected the equity prices, they concluded that the interest rates had no effect.
Zügül and Şahin	2009	ISE 100 Index, Money Supply, Foreign Exchange Rate, Interest Rate and Inflation	Multivariate Regression Analysis	According to the findings of the study, while there is a negative relation between share returns and money supply, foreign exchange rate and interest rate, they have concluded that there is a positive relation between inflation rate.
Gençtürk	2009	ISE 100 Index, Treasury Bond Interest Rate, CPI, Money Supply, Industrial Production Index, Exchange Rate of Dollar and Gold Prices	Multivariate Linear Regression Analysis	A significant correlation was found with all variables included in the study. While the CPI, gold prices and money supply variables of the equity prices have significantly give positive results, it has been concluded that there is a significant negative relation with the industrial production index, Exchange Rate of Dollar and Treasury bond interest rate.
Sharma and Mahendru	2010	India Equity Prices, Gold Price, Foreign Exchange Reserve, Foreign Exchange Rate and Inflation	Multivariate Regression Analysis	According to the results of the study, it is concluded that the foreign exchange rate and gold prices have effect on the equity prices and the other independent variables have no effect on them.
Cihangir and Kandemir	2010	ISE 30 Index, Consumer Price Index, Rate of Exports Meeting Imports, Capacity Utilization Rate, Gold Prices, Average Foreign Exchange Rate Basket, Treasury Bond Interest Rate, Deposit Interest Rate, Current Account Balance, Money Supply, Industrial Production Index and Domestic Debt Stock	Arbitrage Pricing Model	Among the independent variables included in the study, they concluded that only the CPI variable was positive and significant.
Adaramola	2011	Nigeria Stock exchange, Money Supply, Interest Rate, Foreign Exchange Rate, Inflation Rate, Oil Prices and Growth Rate	Panel Data Analysis	It was revealed that among all of the macroeconomic factors included in the study except inflation rate and money supply have effect on equity prices. According to the scientific results of the study, the macroeconomic variables have important effect on stocks of the enterprises in Nigeria.

GJEBS
Global Journal of Economics and Business Studies
Küresel İktisat ve İşletme Çalışmaları Dergisi
http: //dergipark.org.tr/gumusgjebs - ISSN: 2147-415X
Bahar-2019 Spring-2019
Cilt: 8 Sayı: 15 (61-68) Volume: 8 Issue: 15 (61-68)

Table 1. Literature Review (Continued)

Author(s)	Year	Variables	Method	Result
Hosseini, Ahmad and Lai	2011	China and India Stock Exchange, Oil Prices, Money Supply, Industrial Production and Inflation Rate	Johansen-Juselius Cointegration and Vector Error Correction Model	The authors, using data from China and India, concluded that the macroeconomic data of both countries affected the stock indices.
Kuwornu and Owusu-Nantwi	2011	Ghana Stock Exchange Index Return, Inflation Rate, Crude Oil Prices, Foreign Exchange Rates and Interest Rates	Regression Analysis	It was determined that the consumer price index (inflation rate), foreign exchange rate and treasury bond interest rate, among the macroeconomic factors determined in the study, affect the stock exchange returns. While the CPI had a significant positive effect, it was concluded that the exchange rate and the interest rate on Treasury bills had a negative effect on the stock return. It was revealed that the crude oil prices have no effect on stock exchange index.
Sayılgan and Süslü	2011	11 Different Emerging Countries Index, Foreign Exchange Rate, Inflation Rate, Interest Rate, GDP, S&P 500 Index, Oil Prices and Money Supply	Panel Data Analysis	It was determined that there is a significant relation between foreign exchange rate, inflation rate and S&P 500 index with return. Significant results cannot be obtained with other variables.
Bekhet and Mugableh	2012	Malaysia Stock Exchange, Money Supply, Foreign Exchange Rate, GDP, PPI and CPI	Vector Error Correction Model	According to the results of the study, it was observed that there was a negative relation between PPI, CPI, foreign exchange rate and money supply with stock index and a positive relation between GDP with stock index. And in the short term, it was found that there was a negative relation between GDP, PPI and foreign exchange rate with stock index, and a positive relation between inflation and money supply.
Hsing and Hsieh	2012	Poland Stock Exchange, Industrial Production, Public Borrowings/GDP, Foreign Exchange Rate, Inflation Rate and Treasury Bills Interest Rate,	ARCH and GARCH Model	It was concluded that the increase in the industrial production, low Public Borrowings/GDP, low treasury bills interest rate, low rate value, low expected inflation rate will positively affect the Polish index, and high money supply/GDP rate will positively affect the stock exchange index. Also, it was determined that the foreign exchange rate has negative effect on the index.
Aktaş and Akdağ	2013	BIST 100 Index, Deposit Interest Rate, CPI, Exchange Rate of Dollar, Exchange Rate of Euro, Unemployment Rate, Industrial Production Index, Export Amount, Capacity Utilization Rate, Gold Prices, Consumer Confidence Index and Crude Oil Prices	Multivariate Regression Analysis and Granger Causality Analysis	According to the results of the study analysis, it has been determined that the deposit interest rate, CPI, exchange rate of dollar, capacity utilization rate and consumer confidence index have significant effects on the stock exchange index. On the other hand, in the causality analysis, it was concluded that there is mutual causality between the stock exchange index and the capacity utilization rate.
Ouma and Muriu	2014	Kenyan Stock Exchange Index Return, Interest Rate, Money Supply, Foreign Exchange Rate and Inflation	Regression Analysis	According to the findings of the study, money supply, foreign exchange rates and inflation affect the stock exchange returns in Kenya. While the money supply and inflation have positive effects on the index, the foreign exchange rates have a negative effect. It was concluded that in the long term, the interest rate had no effect.

When the literature was examined in general, it can be said that there is not a practice unity in macroeconomic variables which are thought to affect stock exchange indices or returns in both Turkey and international capital markets.

3. DATA SET AND METHOD

The variables used in the Model taken into account in the study are shown in Table 2.

Table 2. The Variables Used in the Study and the Quality of the Variables

Working Period: 2009: Q4 - 2018: Q3		
Variables	Definition	Data Sources
BIST100	Borsa Istanbul BIST 100 index is the closing value of the last trading day in quarter period	FINNET
OLR	CBRT overnight lending interest rate on the last trading day in quarter period	CBRT
GDP	Gross Domestic Product (growth) quarter period changes	TURKSTAT
GOP	Borsa Istanbul Precious Metals and Precious Diamonds Market closing value in ounce on the last trading day in quarter period	FINNET
IPI	Industrial Production Index [2015=100] (Monthly) (NACE REV.2)	TURKSTAT
CPI	Change in Consumer Price Index compared to the same month of the previous year	TURKSTAT

In this study, Multivariate Linear Regression Model is used. And OLS is used as estimation model. The total number of data analyzed is 330. The relation between Multivariate regression is generally formed as below (Tarı, 2015: 65).

$$Y= b_0+b_1X_1+ b_2X_2+ b_3X_3+ \ldots\ldots\ldots\ldots+ b_kX_k+u$$

While Y is a dependent variable in this relation, each of the X's shows a different independent variable. u represents the error term. The regression model to be created based on this is as follows.

$$Y_{BIST100}= b_0+b_1X_{OLR} + b_2X_{GDP} + b_3X_{GOP} + b_4X_{IPI} + b_5X_{CPI} + u$$

There are some assumptions of Multivariate linear regression model. The first of these assumptions is the existence of a strong correlation between the independent variables and there should not be a problem of multicollinearity. Therefore, firstly the correlation between the variables should be investigated (Gürbüz and Şahin, 2016: 275-276). Then it should be tested whether there is normal distribution, no autocorrelation, no heteroscedasticity and the sum of residual values is 0.

4. FINDINGS

In order to determine whether there is a multi-collinearity problem, which is one of the basic assumptions of Multivariate linear regression analysis, Variance Inflasion Factor (VIF) values were found for each independent variable as a result of Coefficient Diagnostics test. The VIF values must be in between 1 and 5. When centered VIF values examined, it is seen that they were found to be in between 1,294 and 3,716. Accordingly, it can be said that there are no Multivariate correlation problems in the model.

On the other hand, for the autocorrelation problem, which is one of the important problems, the correlogram Q statistical values were examined by considering 16 different delay times and it was concluded that there was no autocorrelation.

Another assumption is whether there is a heteroscedasticity problem. Whether or not there was a heteroscedasticity problem was tested with the White test. If the test result is greater than 0.05 (0.344>0.05), it is said that there is no heteroscedasticity problem.

One of the assumptions that based on Multivariate linear regression analysis is normality assumption. Whether it shows a normal distribution was tested with Histogram Normally Test and the obtained Jarque-Bera probability value was found as 0.080. Since this value is greater than 0.05, it can be said that the data shows normal distribution.

Tablo 3. Regression Analysis Results

Dependent Variable BIST 100 Index					
Variables	Coefficient	Std. Error	t-Statistic	Prob.	Centered VIF
Cons.	6.7863	1.4629	4.6389	0.000	NA
OLR	-2.0375	1.1406	-1.7864	0.084*	3.388133
GDP	-0.0014	0.0076	-0.1900	0.851	1.196865
GOP	0.0518	0.1662	0.3114	0.758	1.135023
IPI	0.8878	0.1423	6.2399	0.000***	1.294765
CPI	0.0272	0.0118	2.3124	0.028**	3.616782
R-squared	0.694				
Adjusted R-squared	0.643				
F-statistic	13.586				
Prob(F-statistic)	0.000				
White	1.233				
White (Prob.)	0.344				
Jarque-Bera	5.047				
Jarque-Bera (Prob.)	0.080				
***%1, **%5, *%10 Significance Level					

When the regression results are evaluated, the selected independent variables explain approximately 70% of the dependent variable (R-square = 0.694). The F statistic in the table indicates that the created model is significant (Prob (F-statistic) =0.000<0.05). When the t-statistic values of the independent variables were examined, on one hand it can be said that OLR (0.084<0.10), IPI (0.000 <0.01) and CPI (0.028<0.05) independent variables were statistically significant and on the other hand GDP (0.851>0.10) and GOP (0.758>0.10) independent variables were not statistically significant.

When the coefficients of the variables are evaluated, it can be said that there is a negative relation between GVBO independent variable and the dependent variable, on the other hand, there is a positive relation between the IPI and CPI[3] independent variables and the dependent variable.

According to the results, it can be said that the increase of 1% in the OLR independent variable decreases the dependent variable by 2.0375%, and an increase of 1% in the IPI and the CPI variables increases it by 0.8878% and 0.0272%, respectively.

[3] The increase in inflation will affect the pricing process of assets. Therefore, it is obvious that the equities' prices will be affected by inflation. Considering that the equities represent real assets in the literature and that real assets are not affected in real terms by the changes in the nominal price level, the index value is expected to act together with the inflation due to the equities' prices (Taçali, 2008: 58).

5. CONCLUSION

In the 1970s and later years, rough fluctuations occurred in the capital market and caused the curiosity about the factors causing these fluctuations. Many researchers have suggested that the factors that cause fluctuations may be macroeconomic variables. For this purpose, some macroeconomic variables which are considered to affect BIST 100 index are taken into consideration and analyzed.

While OLR, IPI and CPI among the considered variables were statistically significant, the variables of GDP and GOP were not statistically significant.

When the analysis results compared with the studies conducted in Turkey, it shows parallelism with the studies of Zügül and Şahin (2009), Gençtürk (2009) and Aktaş and Akdağ (2013), in which the increase in the interest rates negatively affect the index generally. In some studies, it was concluded that there was no significant relation. On the other hand, for IPI variable, while Hsing and Hsieh (2012), were obtained the same results with their study, Gençtürk (2009) was obtained an opposite result. Finally, when the CPI variable is considered, the results of the analysis are similar to the results of Zügül and Şahin (2009), Cihangir and Kandemir (2010), Sayılgan and Süslü (2011).

And when evaluated in general terms, investors should not make an investment assessment by considering the GDP and Ounce price of the Gold. On the other hand, as the OLR increases, investments in the stock exchange are decreasing. Also, it can be said that as the Industrial Production Index and Inflation increase, investments in capital markets are also increasing.

REFERENCES

ABUGRI, Benjamin A. (2008), "Empirical Relationship between Macroeconomic Volatility and Stock Returns: Evidence from Latin American Markets." **International Review of Financial Analysis**, 17(2), 396-410.

ACIKALIN, Sezgin; Rafet AKTAS and Seyfettin UNAL (2008), "Relationships between Stock Markets and Macroeconomic Variables: An Empirical Analysis of the Istanbul Stock Exchange." **Investment Management and Financial Innovations**, 5(1), 8-16.

ADARAMOLA, Anthony O. (2011), "The Impact of Macroeconomic Indicators on Stock Prices in Nigeria." **Developing Country Studies**, 1(2), 1-14.

AKTAS, Metin and Saffet AKDAG (2013), "The Research on the Relation of Economic Factors and Stock Prices in Turkey." **International Journal of Social Science Research**, 2(1), 50-67.

ALBENI, Mesut and Yusuf DEMIR (2011), "The Effects of Macro Economic Indicators on Stock Prices of Financial Sector: An Application on Istanbul Stock Exchange." **Journal of Social Sciences and Humanities Researches**, 1(14), 1-18.

AYDEMIR, Oguzhan and Erdal DEMIRHAN (2009), "The Relationship between Stock Prices and Exchange Rates: Evidence from Turkey." **International Research Journal of Finance and Economics**, 23(2), 207-215.

BEKHET, Hussain A. and Mohamed Ibrahim MUGABLEH (2012), "Investigating Equilibrium Relationship between Macroeconomic Variables and Malaysian Stock Market Index through Bounds Tests Approach." **International Journal of Economics and Finance**, 4(10), 69-81.

CIHANGIR, Mehmet and Tugrul KANDEMIR (2010), "An Essay Concerning with Determining Macro Economical Factors Which Affect Share Stocks at Financial Crisis Terms by Arbitrage Pricing Model (Observations and Evaluations on November 2000 and February 2001 Financial Crises)." **Süleyman Demirel University the Journal of Faculty of Economics and Administrative Sciences**, 15(1), 257-296.

FLANNERY, Mark J. and Aris A. PROTOPAPADAKIS (2002), "Macroeconomic Factors Do Influence Aggregate Stock Returns." **The Review of Financial Studies**, 15(3), 751-782.

GAN, Christopher; Minsoo LEE; Hua Hwa Au YONG and Jun ZHANG (2006), "Macroeconomic Variables and Stock Market Interactions: New Zealand Evidence." **Investment Management and Financial Innovations**, 3(4), 89-101.

GENCTURK, Mehmet (2009), "The Effect of Macroeconomic Factors on Stock Prices in Financial Crises Periods." **Süleyman Demirel University the Journal of Faculty of Economics and Administrative Sciences**, 14(1), 127-136.

GURBUZ, Sait and Faruk SAHIN (2016), **Sosyal Bilimlerde Araştırma Yöntemleri**, 3. Baskı, Ankara: Seçkin Yayıncılık.

HOSSEINI, Seyed. M.; Zamri AHMAD and Yew W. LAI (2011), "The Role of Macroeconomic Variables on Stock Market Index in China and India." **International Journal of Economics and Finance,** 3(6), 233-243.

HSING, Yu and Wen-jen HSIEH (2012), "Impacts of Macroeconomic Variables on the Stock Market Index in Poland: New Evidence." **Journal of Business Economics and Management**, 13(2), 334-343.

HUSSAINEY, Khaled. and Le KHANH NGOC (2009), "The Impact of Macroeconomic Indicators on Vietnamese Stock Prices." **The Journal of Risk Finance**, 10(4), 321-332.

KUWORNU, John K. and Victor OWUSU-NANTWI (2011), "Macroeconomic Variables and Stock Market Returns: Full Information Maximum Likelihood Estimation." **Research Journal of Finance and Accounting**, 2(4), 49-63.

MENIKE, Lakse. M. C. S. (2006), "The Effect of Macroeconomic Variables on Stock Prices in Emerging Sri Lankan Stock Market." **Sabaragamuwa University Journal**, 6(1), 50-67.

OUMA, Wycliffe N. and Peter MURIU (2014), "The Impact of Macroeconomic Variables on Stock Market Returns in Kenya." **International Journal of Business and Commerce**, 3(11), 1-31.

OZER, Ali; Abdulkadir KAYA and Nevin OZER (2011), "Interaction of Macroeconomic Variables with Stock Prices." **Dokuz Eylul University Faculty of Economics and Administrative Sciences Journal**, 26(1), 163-182.

RAY, Sarbapriya (2012), "Testing Granger Causal Relationship between Macroeconomic Variables and Stock Price Behaviour: Evidence from India." **Advances in Applied Economics and Finance,** 3(1), 470-481.

SAYILGAN, Güven (2017), **Soru ve Yanıtlarıyla İşletme Finansmanı**. 7. Basım, Ankara: Siyasal Kitabevi.

SAYILGAN, Güven and Cemil SÜSLÜ (2011), "The Effect of Macroeconomic Factors on Stock Returns: A Study of Turkey and Emerging Markets." **Journal of BRSA Banking & Financial Markets**, 5(1), 73-96.

SHARMA, Gagan D. and Mandeep MAHENDRU (2010), "Impact of Macro-Economic Variables on Stock Prices in India." **Global Journal of Management and Business Research**, 10(7), 19-26.

TACALI, Eda D. (2008), Hisse Senedi Getirilerini Etkileyen Makroekonomik Faktörlerin Arbitraj Fiyatlama Modeli İle Analizi: Türkiye Örneği. Yüksek Lisans Tezi, Dokuz Eylül Üniversitesi Sosyal Bilimleri Enstitüsü.

TALLA, Joseph Tagne (2013), Impact of Macroeconomic Variables on the Stock Market Prices of the Stockholm Stock Exchange. Master's thesis in International Financial Analysis, Jönköping International Business School.

TARI, Recep (2010), **Ekonometri,** 11. Baskı, Kocaeli: Umuttepe Yayınları.

ZÜGÜL, Muhittin. and Cumhur SAHIN (2009), "An Application to Examine the Relationship between IMKB 100 Index and Some Macroeconomic Variables." **Akademik Bakış**, 16, 1-16.