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Fiscal and Monetary Policies Effect on Borsa Istanbul (BIST) Performance

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Abstract

Our paper examines the impacts of monetary and fiscal policies on Borsa Istanbul (BIST) performance in Turkey. In the established model, government expenditures, tax revenue, budget deficit, money supply (M2), interest rate, gdp growth rate included as independent variables and BIST stock market capitalisation as dependent variable for last 25 years (1995 to 2020). Firstly, Augmented Dickey - Fuller (ADF) and Philips Perron (PP) unit root tests have been performed to the series for stationarity. To confirm long run relationship, Autoregressive Distributed Lag (ARDL) cointegration technique has been applied. Subsequently, error correction method has been used for analyzing short run relationship between series and causality relationship has been tested by granger casuality test.

The test results indicate the existence of long run relationship between both policies and stock market performance. In the short run, it is concluded that the budget deficit has a positive effect on the stock market performance and the economic growth has a negative effect on the stock market performance. The results also pointed out there is a bidirectional causality relationship between budget deficit and stock market performance. GDP growth also is the cause of stock market performance.

Keywords: Monetary Policy, Fiscal Policy, Autoregressive Distributed Lag (ARDL), VECM Granger Causality

JEL Classification: E44, E52, G18, C32

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Maliye ve Para Politikalarının Borsa İstanbul Performansı Üzerindeki Etkisi

Öz

Bu makalede para ve maliye politikalarının Borsa İstanbul (BIST) performansı üzerindeki etkisini incelemekteyiz. Kurulan modelde 1995-2020 yılları arası kamu harcamaları, vergi gelirleri, bütçe açığı, para arzı (M2), faiz oranı, gayri safi yurt içi hasıla büyüme oranı ve borsa kapitalizasyonu değişkenleri kullanılmıştır. Serilerin durağanlığı ADF (Augmented Dickey Fuller) ve PP (Philips Perron)birim kök testleriyle test edilmiştir. Uzun dönem ilişkinin varlığını tespit için Gecikmesi dağıtılmış otoregresif eşbütünleşme tekniği kullanılmıştır. Daha sonra seriler arasında kısa dönem ilişkiyi analiz etmek için hata düzültme modeli ve nedensellik ilişkisinin tespiti için de granger nedensellik analizi kullanılmıştır.
Test sonuçları her iki politika ile borsa performansı arasında uzun dönemli bir ilişkinin varlığını göstermektedir. Kısa dönemde ise bütçe açığının borsa performansı üzerinde pozitif ve ekonomik büyümenin de borsa performansı üzerinde negatif etkili olduğu sonucuna ulaşılmıştır. Granger nedensellik testine göre bütçe açığı ile borsa performansı arasında çift yönlü bir nedensellik olduğu, ekonomik büyümenin de borsa performansının nedeni olduğu ortaya konmuştur.

Anahtar Kelimeler: Para Politikası, Mali Politika, ARDL, VECM Granger Nedensellik

JEL Sınıflandırmaları: E44, E52, G18,C32

Introduction

Turkey's economy got stuck in high inflation rates, budget deficits and high government expenditures to achieve economic growth for long years. The effectiveness of the economy policies implemented depends on money and capital markets' depth and regularity. The monetary and fiscal policies should be consistent with each other in order to achieve their goal. While monetary policy keeps the interest rate high in order to control inflation, that is, while following a tight monetary policy, if the fiscal policy follows a loose policy that supports growth with tax cuts, spending increases and thus budget deficits, two different objectives will be pursued together.

Considered globally, assessing whether fiscal policy and monetary policy can be a means of stability, especially for emerging markets, is a very important issue for policymakers. As for monetary policy, its effectiveness in controlling inflation and increasing production is still discussed in the literature. Different conclusions have also been made about the macroeconomic implications for fiscal policy, large fiscal deficits can exclude private spending but then a fiscal stimulus led by public investment can

accelerate the economic recovery, especially after the collapse of an asset price bubble (Agnello and Sousa, 2011:1058)**.** Both policies are used to regulate the economy.

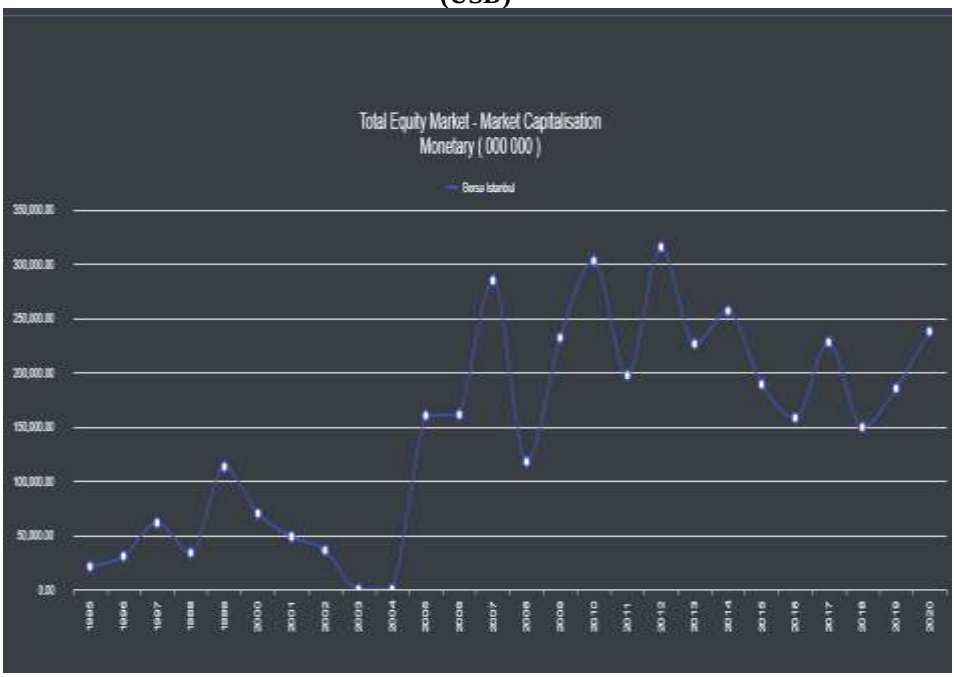
On Borsa Istanbul in 2020, 479 companies listed with market capitalization of 1.766.091,31 million TL. While Borsa Istanbul's operating income reached 2.5 billion TL, the net profit increased by 43 percent compared to the previous year and exceeded 1.4 billion TL. The exchange's solo net profit increased by 127 percent compared to the previous year. Borsa Istanbul's number of investors also increased by 64 percent, reaching 2 million. In 2020, when index records came one after another, the highest transaction volumes of all time were experienced in all markets. In 2020, 8 companies that made a total of 1.1 billion TL public offering in Borsa Istanbul were taken into a quotation and approximately 200 billion TL was provided by the issuance of 1.254 debt instruments (https://www.borsaistanbul.com/tr/).

This study consists of four sections. The theoretical framework is drawn in the first section of the study, and the literature is given in the second section. The third section contains information about the data and methods used. The results of the analysis are interpreted and policy proposal is made in the conclusion section.

1. Theoretical Framework

The capital market has proved to be an important source of opportunity for both companies and investors seeking to increase their prosperity in perhaps the most difficult year of recent history. The Figure 1 below shows the total equity market capitalization of Borsa Istanbul by years from 1995 to 2020.

Figure 1. Market Capitalization of Borsa Istanbul (USD)



Source: The World Federation of Exchanges (WFE)

In economic policies, some sub-policies can be carefully combined. Because some of these policies can eliminate the influence of others. It is important what the macroeconomic goal set is. Which policy will be implemented in order to achieve the determined target should be determined correctly. Considering the policy priority on the general macroeconomic balance equation, it can be seen in Table 1.

Table 1. Preference Priority in Policies

Equilibrium	Primary Choice	Supportive Policy
(S-I)	Monetary policy	Fiscal policy
(T-G)	Fiscal policy	Monetary policy
(X-M)	Foreign trade policy	Fiscal policy

Source: Eğilmez and Kumcu, 2020:245

Economic growth refers to the increase in production from one year to the next. What we mean by increase here is the actual increase, that is, growth that occurs as a result of an increase in the number of commodities and services available, rather than a

rise in prices.Table 2 shows the gdp growth rates of some countries for the last two years and for the next year.

Table 2. Selected Economies of GDP Growth

	GDPGrowth	GDP Growth Estimate	
Countries	2019	2020	2021
Argentina	–2,1	–10,4	4,5
Australia	1,9	–2,9	3,5
Brazil	1,4	–4,5	3,6
Canada	1,9	–5,5	3,6
China	6,0	2,3	8,1
France	1,5	–9,0	5,5
Germany	0,6	–5,4	3,5
Indonesia	5,0	–1,9	4,8
Iran	–6,5	–1,5	3,0
Italy	0,3	–9,2	3,0
Japan	0,3	–5,1	3,1
Korea	2,0	–1,1	3,1
Malaysia	4,3	–5,8	7,0
Mexico	–0,1	–8,5	4,3
Netherlands	1,7	–4,1	3,0
Nigeria	2,2	–3,2	1,5
Philippines	6,0	–9,6	6,6
South Africa	0,2	–7,5	2,8
Spain	2,0	–11,1	5,9
Turkey	0,9	1,2	6,0
United Kingdom	1,4	–10,0	4,5
United States	2,2	–3,4	5,1

Source: IMF, World Economic Outlook, January 2021 Update

According to the economics literature, the effects of government policies on the stock market differ. From perspective of the Ricardian equivalence hypothesis, rational individuals can estimate the expected tax burden due to current and expected deficits and use this information when making current decisions. Investors do not adjust their investments according to current policy statements because they are aware that the budget deficit will create an increase in taxes in the future. On the contrary, Blanchard

(1981) and many others have suggested that government policies regarding fiscal and monetary policies, stimulate stock market index or performance. Tobin (1969) and followers are particularly interested in behavioral analysis of monetary variables within the general portfolio management model. The mechanism by which the fiscal deficit and money progress affect stock returns to support the real and financial sector. The demand for money or other assets can be thought of as a ratio of people's total demand for assets. In this case, the return rates of the assets will be decisive. In other words, the share of an asset in total assets will change in direct proportion to that asset's own rate and inversely proportional to the interest rates of other assets. Unlike Keynes, Tobin proposed that the demand for assets depends not only on her own interest rate, but also on the interest rate of other assets. Fiscal policy will be influenced by macroeconomic conditions and entirely fiscal policy decisions are always unpredictable by investors contrary to the Ricardo hypothesis, and may affect stock market performance. While fiscal policy decisions entirely may be foreseen by market participants, this policy decisions may affect equity market performance later because of lag effect. From a Keynesian perspective, the effectiveness of monetary policy instruments is limited. Increasing public expenditures and revenues, as one of the monetary policy tools, will increase aggregate demand. Therefore, in order to reduce inflation, the contractionary fiscal policy should be implemented by following the budget surplus policy and during the recession, monetary expansion will be achieved with the budget deficit (Bozkurt and Göğül, 2010). Keynesians argues that fiscal contraction leads to a temporary contraction through total demand channel.

Today, central banks have become institutions responsible only for the stability of the national currency, that is, for the execution of monetary policy, unlike the duties assigned to them in the past. Central banks managed monetary policy with three main instruments until the global crisis: interest rate policy, open market operations (API) and provisions policy. There is a prevalent view in the literature that expansionary monetary policy practices increase inflationary tendencies in the long run. For monetary policy, price stability has been accepted as the primary goal in the long run. Three basic monetary policy strategies have been determined to attain the monetary policy goals: exchange rate targeting, monetary targeting, and inflation targeting. Monetary policy instruments are interest rates and money supply while fiscal policy instruments are public expenditures, taxes and borrowing.

2. Literature Review

The existence of a considerable literature that has shown the impact of changes on central bank policies lead to an immediate adjustment of prices at financial markets. In their analysis, Bernanke and Kuttner (2005) found that a 25 basis point reduction in the federal funds target rate led in a 1% increase in broad stock indices. The stock market is influenced by monetary policy. Many studies have found that the stock values of companies with diverse characteristics respond to monetary policy in different ways.

Ozdagli and Velikov (2020:321), developed a monetary policy risk (MPR) index based on observable company characteristics that previous studies have linked stock prices to monetary policy sentiment. As the Federal Reserve responds to economic shocks with expansionary monetary policy, stocks exposed to high monetary policy receive lower returns, providing a hedge against shocks.

There are fewer research on the impact of fiscal policy on the prices of traded securities than there are on the impact of fiscal policy on macroeconomic indicators. Recent related studies suggest that fiscal policy, such as the articles of Darrat (1988), Arin and others (2009), plays also an important role in stock market returns. Regarding monetary policy, Bernanke and Gertler (1989) argue that monetary policies are more efficient during recessions known bear markets than enlargement periods known bull markets.

Another study by Tavares and Valkanov (2003) claims that fiscal policies affect financial markets directly through bond markets and interest rates, as well as indirectly through stock market returns. Especially in the studies for developing countries markets debt-financed spending increases country exposure, while a tax financed change in government spending lowers margins, suggesting investors prefer the latter. Ardagna (2009), in his study about OECD countries, emphasized that financial arrangements for a more robust financial structure (fiscal consolidation in the form of a decrease in government debt) often lead to increases in stock prices. Kanalıcı and Nargeleçekenler (2009) analysed with the VAR model and they have indicated that the strict monetary policy shock has the ability to lower stock prices while initially having an interest rate rising effect in both the short and long term. According to Vonnak (2010), there may be a positive association between stock market and monetary policy shocks, which contradicts the research. The positive relationship between stock yields and monetary policy shocks may also be inevitable considering the asymmetrical relationship. Contrary to popular belief, Xin (2012), Galebotswe ve Tlhalefang (2012) stated that there may also be a positive association between monetary policy shocks and stock yields, which could be owing to monetary policy shocks' asymmetrical effect.

According to the findings of Mbanga and Darrat (2016)'s paper, there is a clear long-term relationship between fiscal policy and stock prices. However, this is not the case for monetary policy. Unexpected monetary policy components, such as larger-than-expected reductions in the Federal funds target rate, tend to lower the S&P volatility risk premium on financial asset prices (Gospodinov and Jamali, 2012;509). The findings suggest that the stock market's volatility response to the Fed's unexpected rate changes is significant.

However, researches using the bank interest rate or interest rate as a proxy of monetary policy have found that the reaction of financial markets to monetary politics

may also be inconsistent. When we shift our focus from studies in developed countries to studies on less developed and emerging markets; Hsing revealed that the Polish stock market index was not affected by the ratio of state deficits and debt to GDP and was negatively affected by the short term rate, in Poland between 1999 and 2012 (Hsing, 2013:19). Furthermore, Afonso and Sousa (2011) discovered that a sudden increase in government spending has a positive and long-lasting impact on housing prices, but a negative impact on stock prices and that stock prices adapt faster than housing prices. On the other hand Sharma, Mahendru and Srivastava (2019) examined the effects of central bank policies on financial markets between 2013 and 2016 by comparing it with other similar countries, as well as with the USA and the UK. Using the country effect in their study, they concluded that the financial markets in India responded positively to the central bank policies.

Another study was conducted by Karagöz and Keskin (2016) from Turkey that examined the impact of fiscal policies on macroeconomic indicators by Bayesian VAR method, from 2003 to 2015 period. As a result of the analysis, it has been revealed that government expenditures and revenues have a minimal effect on basic economic indicators such as gdp, interest rate, stock market index, foreign debt and consumer price index.

In relevant literature, Monetarists and Keynesians have different opinions about economic impact of fiscal and monetary policies. The revival of Keynesian theory appeared before the 2008-2009 crisis period and continued after the crisis period. According to Dominique Strauss-Kahn, director of the IMF, had called for an increase in fiscal deficits and a global fiscal stimulus program for the most developed countries, implying that a stimulus of 2% of global GDP was required to help maintain growth in Davos (Giles and Tett, 2008). Prior to the crisis, active fiscal policy was abandoned in policies in more industrialized and advanced democracies (Blinder, 2004). However, in an open global economy, Keynesian policies will help stabilize the economy in the post-crisis period (Farrel and Quiggin, 2017:6). The implementation of more active fiscal policies will have the effect of stimulating demand, increasing imports and creating free incentives that will support the international economy.

3. Data and Methodology

The annual data set for the 25-years period 1995-2020 was used in the scope of the study. The collected data sets, the country's fiscal and monetary policies in response to the Istanbul stock market performance was examined. The variables were obtained from the World Federation of Stock Exchanges data portal, the statistics of the Central Bank of the Republic of Turkey and the World Bank data portal. Stock market capitalization is taken into account in the measurement of stock market performance. Money supply (M2) and interest rate are used to measure monetary policy. The interest

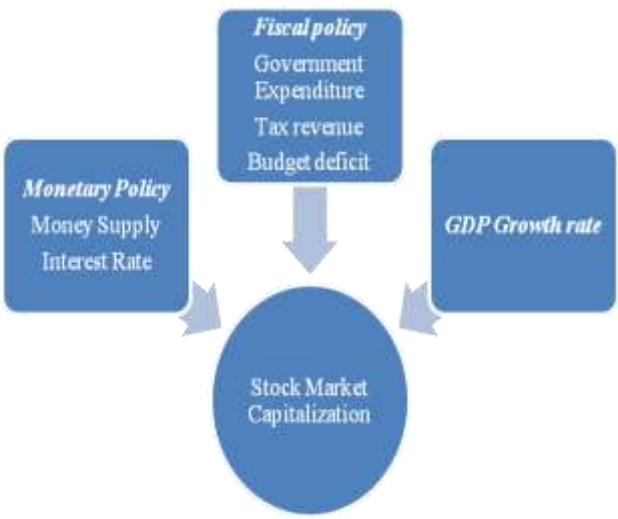
rate represents the policy rate of public banks in Turkey and is M2, which includes money supply, foreign currency, time deposits and current deposits. Fiscal policy indicators are government expenditures, budget deficit and tax revenues.

Two asymptotic tests, Augmented Dickey - Fuller and Philips-Perron unit root tests were used to determine the integration order of the variables. Autoregressive distributed lag (ARDL) Boundary test was used to test the long-term relationship between stock market performance indicator and monetary and fiscal policies. Since the concepts of cointegration and error correction mechanism (ECM) are very closely related, it is better to first think of ECM as an appropriate reparameterization of the general linear autoregressive distributed lag model (ARDL) in order to understand ECM (Asteriou and Hall, 2007:311). When two variables such as x and y are cointegrated, it is important to include both short-term and long-term effects. Further, causal relationship has been analyzed using Granger causality test. The following empirical model has been developed:

$$LOGCAP = \alpha + \beta_1(LOGEXPG) + \beta2(LOGTAXR) + \beta3(LOGBDEF) + \beta4(RATE) + \beta5(LOGMS)+\beta6(GDP) + \varepsilon \quad (1)$$

In this model, logcap is log of market capitalization and an indicator of stock market performance. logexpg, logtaxr and logbdef variables represent government expenditures, tax revenue and budget deficit, rate is interest rate, logms is log of money supply (M2) and gdp is gross domestic products' annual growth rate.

Figure 2. The Established Model and Variables



3.1. Unit Root Tests

Stationarity is an important issue in time series because shocks are temporary in stationary time series and eliminates the effects due to the series' return to long-term average values over time. In addition, non-stationary time series will necessarily contain permanent components. Augmented Dickey - Fuller and Philips-Perron unit root tests are used to test the stationarity. Both tests' null hypothesis is that neither series is stationary. Stationarity was tested at both levels and first differences for the variables used in the study.Test statistics and probability values are given in table 3. Tests results show the rejection of null hypothesis at first difference for four variables. Test results supports each other and indicate that money supply, gdp and rate variables are I(0) and the cap, expenditure, taxrate and budget deficit series are integrated of order one I(I).

Table 3. Augmented Dickey - Fuller and Philips Perron Unit Root Tests Results

Augmented Dickey Fuller Test Results(ADF)									
	Level C		Level C and Trend		1st.Difference C		1st.Differ. C & Trend		Lev.
Variable	stats	prob	stats	prob	stats	prob	stats	prob	
logcap	1.48	0.52	1.71	0.715	4.81	0.00***	4.75	0.004***	I(I)
logms	6.83	0.00***	4.52	0.00***	3.03	0.04**	3.35	0.082	I(0)
logexpg	1.48	0.523	1.72	0.711	4.85	0.00***	4.92	0.003***	I(I)
gdp	4.35	0.00***	4.26	0.01**	7.80	0.00***	7.61	0.000***	I(0)
rate	3.31	0.025**	2.06	0.537	6.37	0.00***	6.71	0.000***	I(0)
logtaxr	1.32	0.601	1.82	0.664	4.72	0.00***	4.74	0.004***	I(I)
logbdef	2.81	0.07*	3.52	0.061*	3.53	0.017**	4.02	0.021**	I(I)

Philips Perron (PP) Test Results									
	Level C		Level C and Trend		1st.Difference C		1st.Differ. C and Trend		Lev.
Variable	stats	prob	stats	prob	stats	prob	stats	prob	
logcap	1.48	0.524	1.79	0.675	4.81	0.000***	4.75	0.004***	I(I)
logms	6.83	0.000***	4.67	0.005***	3.06	0.042**	3.29	0.091*	I(0)
logexpg	0.785	0.991	1.80	0.673	4.92	0.000***	5.96	0.000***	I(I)
gdp	4.352	0.002***	4.26	0.013**	8.47	0.000***	8.25	0.000***	I(0)
rate	3.604	0.013**	2.06	0.540	5.83	0.000***	6.23	0.000***	I(0)
logtaxr	1.338	0.595	1.82	0.664	4.72	0.001***	4.73	0.004***	I(I)
logbdef	0.118	0.239	3.53	0.057	6.33	0.000***	5.94	0.000***	I(I)

Note: * p-value <0.10, ** p-value <0.05, *** p-value <0.01. the rejection of the null hypothesis of non-stationarity.

Table 3 also includes the results of the Phillips Perron test, which are not significantly different from the ADF results.

3.2. ARDL Cointegration Analysis

The ARDL cointegration technique is the preferred technique when dealing with variables that are stationary at their level (I(0)) or difference (I(1)) or contain a combination of these. Co-integrated variables tend to respond to any deviation from the long-run, and this feature demonstrates the error correction model in which the short-run dynamics of the system's variables are affected by the deviation from equilibrium. The F-statistic (Wald test) determines the long-term relationship of the main variables (Nkoro and Uko, 2016:86). Although the ARDL cointegration technique does not

require testing for unit roots, it is preferable to perform the unit root test in order to determine the number of unit roots in the analyzed variables, which is what we did.

Table 4. Selected ARDL Model (1, 0, 1, 2, 1, 1, 2)

Dependent Variable: logcap				
Variables	Coefficient	Std. Error	t-Statistic	Prob.
logcap(-1)	-0.422632	0.289981	-1.457445	0.1790
logms	3.581281	1.572095	2.278031	0.0487**
logexpg	8.173656	2.739293	2.983856	0.0154**
logexpg(-1)	15.55046	7.093512	2.192209	0.0560*
logtaxr	-9.546961	3.035602	-3.144997	0.0118**
logtaxr(-1)	-17.15386	8.003281	-2.143353	0.0607
logtaxr(-2)	1.955706	0.844884	2.314764	0.0459**
gdp	-0.546069	0.187428	-2.913484	0.0172**
gdp(-1)	-0.526280	0.199274	-2.640984	0.0269**
logbdef	1.794096	0.941543	1.905484	0.0891
logbdef(-1)	2.250302	0.859621	2.617784	0.0279**
rate	-0.071499	0.043369	-1.648611	0.1336
rate(-1)	0.067200	0.026134	2.571427	0.0301**
rate(-2)	0.116652	0.034009	3.430001	0.0075***
c	-4.983167	29.12911	-0.171072	0.8680
Model Specification Tests				
R-squared 0.969306				
ARDL (1,0,1,2,1,1,2) Bound Test				
Test Statistic	Value		k	
F-statistic	6.702040		6	
Critical Value Bounds				
Significance	10%	5%	2.5%	1%
I0Bound	2.27	2.55	2.88	1.99
I1Bound	3.28	3.61	3.99	2.94

Note: * p-value <0.10, ** p-value <0.05, *** p-value <0.01 Null Hypothesis: No long-run relationships exist

The appropriate lag length can be selected by using available lag length selection criteria like Akaike Information Criterion (AIC), Schwartz Bayesian Criterion (SBC) and Hannan Quinn criterion (HQC). The ARDL (1,0,1,2,1,1,2) model is selected based on Akaike Information Criterion. Maximum dependent lags determined as 2 in this model, using automatic selection. The null hypothesis is rejected because the F statistic value (6.702) is above the critical values at all significance levels. In other words, there

is a long-term cointegration relationship between dependent and independent variables. According to specification tests for stability of estimated model; F-statistic 20.30104 (0.000042), Breusch-Godfrey Serial Correlation LM Test Prob. 0.066, Heteroskedasticity Test: Breusch-Pagan-Godfrey Prob. 0.515, Ramsey Reset F-statistic 245.9993 and prob. value 0.0505.

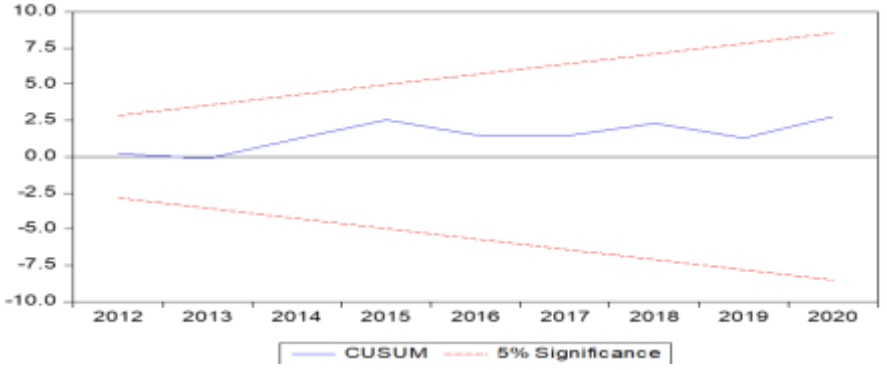
Table 5. Selected ARDL Cointegrating And Long Run Form Model (1,0,1,2,1,1,2)

Long Run Coefficients				
Dependent variable logcap				
Variables	Coefficient	Std.Error	t-statistic	Prob.
logms	2.5173	0.918	2.741	0.022**
logexpg	16.676	3.917	4.257	0.002***
logtaxr	-17.393	4.119	-4.22	0.002***
gdp	-0.753	0.205	-3.662	0.005***
logbdef	2.842	0.696	4.083	0.002***
rate	0.078	0.036	2.191	0.056*
c	-3.502	20.413	-0.171	0.867

Note:*p-value<0.10,**p-value<0.05,***p-value<0.01

According to the coefficients obtained in the above model, the logtaxr and gdp growth coefficients are negatively related to logcap and on the other hand logms, logexpg, logbdef and rate coefficients are positively related to logcap in the long run. The results provide support the argument of that the existence of long run relationship. The Figure 3 shows the result of CUSUM stability test. Results of CUSUM test depict that model statistics are within the interval bands, that means model is stable.

Figure 3. CUSUM Test Results



3.3. Vector Error Correction Model (VECM)

The error correction model (ECM) can be derived from ARDL testing using a simple linear transform path. Likewise, the ECM integrates the short-run dynamics with the long-run equilibrium without losing long-run information and avoids problems such as spurious relationship resulting from non-stationary data. The following equation can overcome losing long run information problem by using combinations of first differenced and lagged levels of cointegrated variables (Brooks, 2008: 339);

$$\Delta y_t = \beta_1 \Delta x_t + \beta_2 (y_{t-1} - \gamma\, x_{t-1}) + u_t \qquad (2)$$

This model is known as a balance correction model or error correction model. $yt-1 - \gamma\ xt-1$ is known as the error correction term. The error correction model has important advantages. Under the assumption that the variables are cointegrated, the error correction model includes both short-term and long-term effects. The variables in the model are stationary. Thus, standard regression methods are valid for the parameter estimator of the model. Each variable is a linear function of the past lags of both itself and the other variables. (Gujarati and Porter, 2009).

Table 6. ARDL Short Run (Vector Error Correction) Estimates

Dependent Variable d(logcap)			
Variables	Coefficient	Standart Error	t statistic and *p* value
d(logcap(-1))	0.106631	0.206004	0.517618 (0.6123)
d(logexpg(-1))	8.880015	5.775232	1.537603 (0.1450)
d(logms(-1))	-9.094612	4.886536	-1.861157 (0.0824)*
d(logtaxr(-1))	-8.859684	6.132775	-1.444645 (0.1691)
d(logbdef(-1))	3.820968	1.559618	2.449938 (0.0270)**
d(rate(-1))	0.035755	0.037866	0.944239 (0.3600)
d(gdp(-1))	-0.512913	0.173921	-2.949120 (0.0100)**
ect(-1)	-0.046751	0.020399	2.291833 (0.0368)**

Note: * p-value <0.10, ** p-value <0.05, *** p-value <0.01

The statistics in Table 6 show that there is a significant short-run relationship between the budget deficit and stock capitalization. Although it is possible for cointegration variables to deviate from their relationships in the short run, the relationships of the variables will return in the long run. The variable of lagged budget

deficit shows significant positive impact and lagged gdp has negative impact on stock market performance in short run. It is also possible to say that the money supply affects the stock market negatively at the 10% significance level. Here, the lagged error correction coefficient (ECT(-1)) should take a value greater than or equal to -1 and 0, be statistically significant and the size of this parameter indicates the speed of return to equilibrium (4.67%).

3.4. Granger Causality Analysis

Testing the concept of causality between variables was first put forward by Granger. In Granger causality analysis, the direction of the relationship between two variables is investigated. The significant summary results of the VECM Granger Causality test presented in the Table 7, for analysis of causal relationship between the variables, lag "1" has been used in Granger causality test.

Table 7. VECM Granger Causality / Wald Test Results

Direction of Causality	Chi-sq	Prob	Conclusion
d(logbdef)→d(logcap)	6.002198	0.0143**	Null hypothesis rejected
d(gdp) →d(logcap)	8.697307	0.0032***	Null hypothesis rejected
d(logbdef) →d(logms)	4.302115	0.0381**	Null hypothesis rejected
d(rate) →d(logms)	4.054358	0.044**	Null hypothesis rejected
d(gdp) →d(logms)	7.830262	0.0051***	Null hypothesis rejected
d(logms) →d(gdp)	5.966368	0.0146**	Null hypothesis rejected
d(logbdef) →d(gdp)	8.812033	0.003***	Null hypothesis rejected

Note: * p-value <0.10, ** p-value <0.05, *** p-value <0.01. **The null hypothesis**: "ΔX does not Granger cause ΔY"or "ΔY does not Granger cause ΔX". Whether the null hypothesis is rejected depends on the F statistics.

Only significant results have been reported as results of the test. The statistics of test indicates an unidirectional causality from budget deficit and gdp growth rate towards market capitalization at 5% level of significance. Among the fiscal policy

measures, only the budget deficit has emerged as the cause of the stock market capitalisation.

Conclusion

We used the following indicators as fiscal policy instruments in this study; governmet expenditure, tax revenue, budget deficit. Monetary policy also aimed at achieving price stability, which is its main objective, through direct and indirect monetary policy tools. The variables of money supply (M2) and short-term interest rate are considered as monetary policy tools. BIST market capitalization has been used as a stock market performance criterion in this study to investigate the effect of monetary and financial policies on the stock market. All series are annual and based on the period 1995-2020 for Turkey.

The methodology employed include unit root tests, ARDL cointegration test, estimation of the VECM and VECM Granger causality test. According to the coefficients obtained in the ARDL model, the tax revenue and GDP growth coefficients are negatively related to stock market performance and on the other hand money supply, government expenditure, budget deficit coefficients are positively related to stock market capitalization in the long run. The results provide support for our argument that the existence of long run relationship between monetary and fiscal policies and stock market performance. With the implementation of strict monetary policy, interest rates can rise and this can reduce stock prices through economic activities. Shiller (2001) expressed that speculative stock market bubbles caused by an oversupply in stock prices could be extinguished by raising interest rates after strict monetary policy. This supports the positive relationship between money supply (M2) so monetary policy and stock market performance in the long run.

According to short run statistics, a significant and positive short run association of stock market performance with only budget deficit. Furthermore, budget deficit is the granger cause of stock market performance and gdp growth also is the granger cause of stock market performance. In subsequent researches, different findings can be obtained by measuring the relationship between other economic variables (shocks) and stock market performance on an index basis or sectoral, will be beneficial for our capital market.

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