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THE EFFECT OF COUNTRY RISK ON STOCK PRICES: AN APPLICATION IN BORSA ISTANBUL

ÜLKE RİSKİNİN HİSSE SENEDİ FİYATLARINA ETKİSİ: BORSA İSTANBUL'DA BİR UYGULAMA

Resch. Asst. Esen KARA[1]
Prof. Dr. Lale KARABIYIK[2]

ABSTRACT

This study examines the effects of country risk premiums on the stock prices. For this purpose, the relationship between the variables of economic risk, financial risk, political risk and country risk commonly used and calculated by the ICRG (International Country Risk Guide) and the BIST100 index has been analysed, for the period of 1999:01-2013:12, by using Johansen Cointegration Test and Vector Error Correction Model. The findings obtained from the study reveal the presence of a short and long-term causality moving from the risk premiums in question to the stock prices. The regression estimates carried out indicate that the premiums of economic, financial, political and county risks have a negative effect over the stock prices.

Key Words: *Country Risk, Stock Prices, Vector Error Correction Model.*

Jel Codes: *G00.*

ÖZET

Bu çalışmada, ülke risk primlerinin hisse senedi fiyatları üzerindeki etkisi incelenmektedir. Bu amaçla, son dönemlerde çalışmalarda sıklıkla kullanılan ve güvenilirliği kabul edilmiş ICRG (International Country Risk Guide) tarafından hesaplanan ekonomik risk, finansal risk, politik risk ve ülke riski değişkenleri ile BİST100 endeksi arasındaki ilişki, 1999:01-2013:12 dönemi için, Johansen Eşbütünleşme Testi ve Vektör Hata Düzeltme Modeline Dayalı Nedensellik Testi ile analiz edilmiştir. Araştırmadan elde eden bulgular, söz konusu risk primlerinden hisse senedi fiyatlarına doğru kısa ve uzun dönemli bir nedenselliğin varlığını ortaya koymaktadır. Yapılan regresyon tahminleri, ekonomik, finansal, politik ve ülke risk primlerinin hisse senedi fiyatlarını olumsuz yönde etkilediğine işaret etmektedir.

Anahtar Kelimeler: *Ülke Riski, Hisse Senedi Fiyatları, Vektör Hata Düzeltme Modeli.*

Jel Kodları: *G00.*

1. INTRODUCTION

The country risk that represents the readiness and capability of a country to fulfill international obligations and the relationship of this risk with the stock prices have recently become a hot topic of discussion of the financial literature. Country risk includes the credit obligations in a country or all the risks that depend upon economic, financial and social conditions likely to have an effect over the investments made in that country (Hoti and McAleer, 2004:539). In this connection, country risk is considered within the context of

[1] Uludağ University, Faculty of Economics and Administrative Sciences, Department of Business, esencimilli@uludag.edu.tr
[2] Uludağ University, Faculty of Economics and Administrative Sciences, Department of Business, lale@uludag.edu.tr

systematic risks that stem from economic, political, financial and other environmental conditions and that affect all the units available in the economy simultaneously but to different degrees (Tanrıöven and Aksoy, 2011:120) , and that occur beyond the control of the investors (Fabozzi and Modigliani, 1995:194).

The concept of country risk defined as the possibility of the emergence of economic and political incidences that are likely to generate changes over the expected returns of investments is correlated with the possibility of being able to generate the required foreign currency to cover for the current and future debts of a country (Kosmidou and Zopounidis, 2004: 30). Therefore, in this day and age in which the national economies have increasingly become interdependent on one another due to the influence of globalization, national and international investors together with the financial institutions are affected by the economic, financial and political conditions of countries and this particular situation reveals the necessity of a risk management mechanism that is based on the careful consideration of the countrys' risks (Bouchet *et al.*, 2003:2).

The concept of country risk entered into the literature (Yapraklı and Güngör, 2007:201) thanks to the examination of the relationship between the country risks (nationalisation, confiscation, obstructing profit transfers etc.) that the multinational companies faced in 1960s and 1970s, and the foreign direct capital investments, and gained importance as a result of the fluctuations in interest rates, exchange rates and prices of goods that occurred after the collapse of the Bretton Woods in 1973, and the speedy increase in the international debts of underdeveloped countries in 1970s (Çam, 2010:17).

In addition to these developments, the economic crisis of the capitalist world in 1970s expedited globalization, as the period of enlargement ended in the post-war period, there was a concentration of cheap input and quest for new markets on the global scale for development and higher profits and the international financial markets went into a process of a rapid change thanks to the opportunities brought about by the new technologies (Köne, 2003:235). The total of funds circulating in the markets as a result of globalization increased more than all the other economic developments and their indicators, the instruments used in the financial markets diversified in response to meeting many needs and got even more complicated (Afşar, 2004). All these developments augmented the unpredictability in the markets and exposed the investors to greater risks than before.

Country risk is composed of the combination of the variables of economic risk, financial risk and political risks. There are studies available in the literature demonstrating that stock markets are sensitive to the combination of risks in question. In this connection, the purpose of the present study is to examine the effect of the premiums of economic risk, financial risk, political risk and country risk over the stock prices.

In the following part of the study, the theoretical framework of the relationship between the stock prices and risk premiums was dealt with. In section three, the relevant studies in the literature were reviewed; section four dealt with the data, methodology and the model; in the final section, the findings of the study were evaluated.

2. THE THEORETICAL FRAMEWORK

The most common method used to calculate the value of stocks is discounted cash flow model or dividend discount model.

$$p_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + ... + \frac{D_n}{(1+k_e)^n} + \frac{P_n}{(1+k_e)^n} = \sum_{t=1}^{n} \frac{D_t}{(1+k_e)^t} + \frac{P_n}{(1+k_e)^n}$$

The stock price here (P_0), the present value of the expected future dividends ($\frac{D_t}{(1+k_e)^t}$) and the expected stock price kept in reserve in the course of n is composed of the totality of current value of ($\frac{P_n}{(1+k_e)^n}$) k_e in the model signifies the expected rate of return (efficiency rate-discount rate), which is the total of risk-free interest rate and risk premiums (Karabıyık and Anbar, 2010). Any change likely to occur in the expected cash flow (Dt and Pn) or discount rate (k_e) will have effect over the stock prices. Since discount rate depend on the variables of risk-free interest rate and risk premiums, stock prices and their returns will be affected by the macroeconomic developments in the economy (Chen *et all.*, 1986: 385; Flannery and Protopapadakis, 2002:752; Ayaydın and Karaaslan, 2013:246). Therefore, it is possible to suggest that country risk that harbours the effects of economic, financial and political developments will have an effect over the stock prices of the companies that are operative in the country in question.

3. LITERATURE REVIEW

The process of change brought about by globalization and the crises experienced in economies increased risks and uncertainties, and caused the formation of an environment of insecurity. In this connection, it is possible to say that the studies on the country risk that determines the attractiveness of national economies and their competitiveness have an important place in the relevant literature. Starting particularly in 1980s, it has been observed that the studies examining the effects of country risk on stock returns have become widespread, and that in majority of these studies, economic, financial and political risk premiums used in calculating the macroeconomic factors have been emphasised (Bchini, 2013). The general insight of researches in those studies is that the risks in question have a negative effect on stock prices in developed and developing countries.

Hassan *et al.* (2003) concluded in their study carried out with the data from 10 Central Asia and African countries for the period of 1984-1999 that economic, financial and political risk premiums had a significant effect over the stock market fluctuations and return estimations. In their study they carried out by using the data of 117 countries for the period of 1984-1995, Erb *et al.* (1996) revealed the existence of a negative relationship between country risk indexes calculated for each country by the International Country Risk Guide (ICRG) and the the expected return on the stock market. In his study he carried out using the data of 13 countries for the period of 1997-2002 Mateus (2004) concluded that the country-specific risk factors had a significant and negative effect on stock returns. In their study in which they used ICRG economic risk and financial risk premiums of 9 Central and South African countries, Bansal and Dahlquist (2001) found that the risk premiums in question had a negative effect on stocks and stock market performances of the countries with low country risk were higher. In their study, Stankevičienė *et al.* (2014) stated that economic, financial, social and political instabilities augmented the risk of investments and that they were effective on returns more than expected. Using the data obtained from ICRAG at ISE for the period of 1986-2006, Yapraklı and Güngör (2007) found that economic, political and financial risks had a negative effect over stock prices. In their study in which they used the data of 12 banks traded at ISE for the period of 2003-20112:4,

Ayaydın and Karaaslan (2013) revealed that economic risk, political risk, financial risk and country risk had a negative effect over the stock prices.

In their study in which they analysed the Russian stock market, Goriaev and Zabotkin (2006) concluded that stock prices were sensitive to macroeconomic variables and the increase in economic risks had a price-decreasing effect on stock prices. Girard and Omran (2005) carried out a study on Arab capital markets and concluded that the big and large stock markets outside the USA were more risky than small markets in respect of country risks, and that economic and political risks affected the stock returns negatively. Another finding of the researchers obtained in their study was that the political risk has greater effect over stock prices than the economic risk. In their separate studies in which Hanousek and Filer (2000) examined the developing markets in Europe and Carmichael and Samson (2003) analysed the Toronto stock exchange, both studies similarly found that there was no direct and strong relationship between macroeconomic variables and stock returns. Nevertheless, in his study where he used the data of 20 developing markets, Harvey (1995) suggested that there was a positive relationship between macroeconomic risk factors and stock returns and that these markets offered higher returns in comparison to developed country markets. Similarly, Bekaert and Harvey (1997) stated that there was a low level of volatility in the markets of outward-oriented developing countries, and revealed that despite their macroeconomic risks, these markets offered higher returns.

In their study they carried out for 6 Latin America countries for the period of 1985-1997, Clark and Kassimatis (2004) concluded that the financial risk premiums in 5 countries was a significant variable in explicating the performance of stock markets and that the increase in the financial risk premiums had a negative effect over the stock returns.

Bekaert and Harvey (1997) suggested in their study that the increase in political risk has a negative effect over the rates of return. Similarly, in their study in which they examined the Hong Kong stock market, Chan and Wei (1996) concluded that the political risk had an effect on stock volatility and that some undesirable developments affected stock returns negatively. In his study in which he examined the German economy for the period of 1880-1940, Bittlingmayer (1998) stated that there was a relationship between the political risk that increased together with the political uncertainties and stock prices. In their study on the Hong Kong stock market, Kim and Mei (2001) concluded that political developments had a significant and opposite effect over stock market returns and that negative political developments had greater effect than positive developments. In their study on 22 developing markets, Mei and Guo (2004) suggested that the periods of political uncertainties were followed by financial crises and, therefore, stock markets were negatively affected by these developments. In their study in which they analysed Chinese stock market, Zhang and Zao (2004) concluded that the political risks had a great effect over the company value. In their study they carried out in 31 countries for the period of 1988-1995, Perotti and Oijen (2001) suggested that a decrease in political risks made a positive contribution to the development of stock markets of the countries in question.

4. METHODOLOGY and DATA

This study examines the effects of economic, financial and political risk premiums comprising the country risk of Turkey on the stock prices for the period of 1999:1-2013:12. For this purpose, the monthly time series data regarding BIST100 index was used. The unit root conditions of the time series in the study have been examined by the Augmented Dickey-Fuller (ADF) unit root test developed by Dickey and Fuller (1981). The presence of cointegration in the models concerned was examined by the Johansen cointegration test developed by Johansen (1988), and Johansen and Juselius (1990). After detecting the cointegration relationship among the variables, the long run and short run dynamics among the variables concerned was analysed with the Vector Error Correction Model (VECM).

4.1. The Purpose of the Study, Data and Method

The present study examines the effects of economic, financial and political risk premiums comprising the country risk of Turkey on the stock prices for the period of 1999:1-2013:12. For this purpose, the monthly time series data regarding BIST100 index, for the period in question have been obtained from the website of Borsa Istanbul (www.borsaistanbul.com). The data of economic, financial, and political risk premiums comprising the country risk, on the other hand, have been obtained from ICRG (International Country Risk Guide), which is highly reliable and frequently used in empirical studies.

While working with the time-series data, in order for the findings obtained from the regression analysis to reflect the factual relationship, it should be tested whether the data has a stationary structure. It is because using nonstationary time series generates the problem of spurious regression (Granger and Newbold, 1974:111, Gujarati; 2004:792). Even if there might be some deviation from the average value in a stationary series as a result of sudden shocks, the values converge to the average in due course. However, in addition to the temporary shocks whose effects on variables vanish in a couple of periods, it is possible to talk about permanent shocks as well whose effects are long-lasting, and the presence of unit root indicate those permanent shocks. The trend generated by the permanent shocks prevents the convergence of the series towards a particular value. With regards to stationarity defined as the convergence of variables towards a particular value, this trend has the characteristics of nonstationary and by definition, due to the unpredictable coincidental characteristic of shocks, this particular trend is referred to as "stochastic trend" (Akal *et al*., 2012:7).

In order to test whether the time series used in the present study was stationary, Augmented Dickey-Fuller (ADF) unit root test developed by Dickey and Fuller (1981) was used. ADF testing includes three different regression relationships as indicated in the equations below (Sandalcılar, 2012: 7).

$$\Delta y_t = \rho y_{t-1} + \sum_{i=1}^{k} \beta i \, \Delta y_{t-1} + \varepsilon_t \qquad (1)$$

$$\Delta y_t = \alpha + \rho y_{t-1} + \sum_{i=1}^{k} \beta i \, \Delta y_{t-1} + \varepsilon_t \qquad (2)$$

$$\Delta y_t = \alpha + \delta_t + \rho y_{t-1} + \sum_{i=1}^{k} \beta i \, \Delta y_{t-1} + \varepsilon_t \qquad (3)$$

Here Δy_t signifies the first difference of the variable whose stationary analysis has been made; t signifies time; k signifies lag length; Δy_{t-1} signifies the lagged difference terms;

and ε_t, signifies subsequent independent error term whose average is zero and variance is stationary. In each case, empty hypothesis is ρ = 0. In other words, in ADF test hypotheses, it is tested whether the coefficient ρ available in equations is statistically equal to zero. If the zero hypothesis is not rejected at the end of the test, it is concluded that the series is not stationary.

The presence of a long run equilibrium relationship between time series is tested through cointegration tests. The fact that extracting the difference in an attempt to ensure stationary causes loss of information in series may also abolish the relationships between the series. The process of extracting the difference causes the effects of short run shocks of the series and the long run relationship to disappear. Therefore, since the long term information get lost during the process concerned; the regression analyses between the series that have been made stationary through extracting the difference will not generate any long run relationship. However, the cointegration theory allows the linear combinations of nonstationary series to be tested whether they are stationary, and the long run equilibrium relationships to be examined in case of a stationary relationship. The fact that series are cointegrated demonstrates that each variable within the system are under the effect of a common stochastic trend instead of a unique external and permanent shocks (Tarı and Yıldırım, 2009:101; Işık *et al*., 2004: 332).

For cointegration analysis to be made, the degree of cointegration for each and every variable has to be determined. The cointegration method to be employed depending on whether the degrees of variables' cointegration are the same may vary. Should the cointegration degrees of series be the same, then it will be possible implement both the Engle-Granger contegration method developed by Engle-Granger (1987) and the Johansen cointegration approach developed by Johansen and Juselius (1990). However, it is not possible to implement these approaches in the cases in which the cointegration degrees of the series are different. The problem of unable to implement the cointegration method to the series whose cointegration degrees are different eliminates the ARDL (Autoregressive Distributed Lag) approach developed by Pesaran and Shin (1997), and Pesaran *et al*. (2001) (Altıntaş, 2009:20). Even though this particular method that can be represented as limit test approach enables both of the variables of I(0) and I(1) to be available in the model, it is necessary for the dependant variable to be I(1) again, and the independent variable to be I(2) and have higher degree of cointegraton (Özmen and Koçak, 2012:7). The test statistics used in this method is based on Wald or F test representing common significance, and the calculated F statistics is compared (Şimşek, 2004:11) with the Pesaran top and bottom table values (Pesaran *et al*., 1999), and after cointegration relationship is detected between the series, ARDL models are set up in order to determine long and short run relationships (Karagöl *et al*., 2007:76).

The equation system of the series whose cointegration degree is the same in the Johansen (1988) cointegration test is based on the VAR (Vector Auto Regression) analysis where the level and lagged value of every variable available in the system is located (Tarı and Yıldırım, 2009:109). The VAR model is a time series equation system that shows how the variables that are thought to be in interaction with each other affect one another. There are two different likelihood ratios in this test. One of them is the maximum eigenvalue test and the other one is trace test. The presence of cointegration vector in highest r number in the maximum eigenvalue test is tested against the alternative hypothesis that claims the presence of cointegration in r+1 number. In the trace test, on the other hand, the presence of cointegration vector in the highest r number is tested against the alternative hypothesis that claims the presence of cointegration in r+1 number (Kasman and Kasman, 2004: 127). The equation system in this test is defined as in equality 4.

$$\Delta X_t = \Gamma_t \Delta X_{t-1} + \ldots + \Gamma_{k-1} \Delta X_{t-k} - + \Pi \Delta X_{t-k} + \varepsilon_t \quad (4)$$

$$\Gamma_i = - I + \Pi_1 + \ldots + \Pi_{1i}\ , i=1, \ldots, k$$

Π in the equation signifies the coefficients matrix. The rank of coefficients matrix gives the number of cointegrated relationship available within the system and if the rank is equal to zero, it is stated that there is no cointegration relationship among the variables constituting the X vector. On the other hand, it is decided that should the rank be equal to 1, the cointegration relationship among the variables is 1; should the rank be higher than 1, there is more than one cointegration relationship among the variables. In the Johansen cointegration test, the basic hypothesis explaining that rank in the first stage is equal to r or smaller than r is compared with the alternative hypothesis. This comparison is made by means of comparing the statistics of the trace and eigenvalue tests with the critical values. When the test statistics are greater than critical value, the basis hypothesis is rejected and the alternative one is accepted. In the second stage, the basic hypothesis claiming that rank is equal to r and the alternative hypothesis claiming r+1 are compared. The critical values compared in tests were indicated by Johansen and Juselius (1990) (Tarı and Yıldırım, 2009:100-101).

The cointegration analysis is a process in which the presence of a long run balance relationship among the series is examined; however, it does not provide any information about the direction of the relationship among the variables (Granger, 1969). In the case of the presence of cointegration among the series, there will at least be a one-way causality relationship among the variables, and the relationship in question is to be examined by using the "Vector Error Correction Model" (VECM) (Engle and Granger, 1987).

When there is cointegration relationship between the series and the coefficient of the error correction term is significant, using the standard causality analysis may lead the researcher to think that there exists no causality relationship, which indeed does. In this connection, using VECM in cointegrated series will be appropriate (Demirhan, 2005:81). The VECM generated in accordance with the standard Granger causality model by adding the error correction term can be demonstrated by the equations number (5) and (6).

$$\Delta Y_t = \beta_0 + \sum_{i=1}^{n} \beta_{1i} \Delta Y_{t-i} + \sum_{i=1}^{n} {}_i\, \beta_{2i} \Delta X_{t-i} + \beta_{d} \lambda_{t-1} + \varepsilon_t \quad (5)$$

$$\Delta X_t = \gamma_o + \sum_{i=1}^{n} \gamma_{1i} \Delta Y_{t-i} + \sum_{i=1}^{n} {}_i\, \gamma_{2i} \Delta X_{t-i} + \gamma_{d} \delta_{t-1} + \omega_t \quad (6)$$

In equations number (5) and (6), n represents optimal lag length; ε_t and ω_t represent error terms that do not have a serial correlation. The symbols of λ and δ represent the first lagged value of error terms (ECM) that has been obtained from a long run cointegration relationship and show the dimension of past instability. The β_1, β_2, γ_1 and γ_2 coefficients in the equation represent the short run causality relationship between the variables; β_{d} and $\gamma_{d,}$ on the other hand, represent the long run causality relationship. If the estimated coefficients (β_1, β_2) for the lagged value of X in the equation number (5) are statistically significant, it is stated that X in the short run is the Granger cause of Y. The fact that the error term coefficient (β_{d}) included into the model from the cointegration relationship is statistically significant is an indication of the fact that X in the long run is the Granger cause of Y (Sandalcılar, 2012: 8-9). The same is true for equation (6) as well.

4.2. The Model of the Study

The models used with the purpose of determining the effects of country risk premiums on the stock prices are as in the following:

Model 1: $lnXU100_t = \alpha_o + \alpha_1 lnER_t + \varepsilon_t$ (7)

Model 2: $lnXU100_t = \beta_o + \beta_1 lnFR_t + \varepsilon_t$ (8)

Model 3: $lnXU100_t = \gamma_o + \gamma_1 lnPR_t + \varepsilon_t$ (9)

Model 4: $lnXU100_t = \delta_o + \delta_1 lnCR_t + \varepsilon_t$ (10)

The dependent variable in all models is the BIST100 composite index. The independent variables available in the models, on the other hand, are economic risk premium (ER), financial risk premium (FR), political risk premium (PR) and country risk premium (CR).

The International Country Risk Guide (ICRG) calculates the country risk based on 22 different factors. Of these 22 factors, 5 are used in calculating economic risks; 5 in financial risks; and 12 in political risks. The factors used in calculating risk premiums are shown in Table 1. The maximum values of economic and financial risks are “50” and the minimum are “0”. While the value of “50”, the highest one, represents the lowest risk potential for the risk factor concerned, “0”, the lowest value signifies the highest risk potential for the risk factor. The political risk premium range is “100-0” and this means that as the risk premium decreases, the political risk increases. In other words, the lowest value for each risk premium is the highest risk index in calculations. The country risk premium, on the other hand, is calculated by means of the equation number (11) in a way to include all the three risk combinations and the force of the political risk within the country risk premium is 50% and the force of the financial and economic risks is 25% (Erb *et al*., 1996:30).

$CR = 0,5 (ER + FR + PR)$ (11)

Table1: Factors Used in Calculating Risk Premiums

Economic Risk	**Financial Risk**	**Political Risk**
GDP per capita Real GDP growth rate Annual inflation rate Budget balance to GDP Current account to GDP	External debt to GDP External debt service to exports Current account to exports Net international liquidity Exchange rate stability	Government stability Socio economic conditions Investment profile Internal conflicts External conflicts Corruption Military's political influence Religious tensions Laws and regulations Ethnic tensions Democratic accountability Bureaucracy quality

Due to the disadvantage to be generated by the fact that the risk factor has an ascending order in the risk premiums as calculated by the ICRG, the data has been corrected to mean that as the numbers became smaller, the risk premiums decreased as well. The whole data used in the study has been cleared of seasonality through the method of moving averages and has been converted into a logarithm in an attempt to stabilize the variation of the data.

5. ANALYSES and FINDINGS

5.1. Unit Root Test

While working with the times series data, it is possible to encounter the problem of spurious regression in the results obtained through the regression analysis. In response to this problem, the series need to be rendered stationary (Granger and Newbold, 1974:111, Gujarati, 2004:792). Therefore, the unit root conditions of the series in the study have been examined by the Augmented Dickey-Fuller (ADF) unit root test developed by Dickey and Fuller (1981) and the results are shown in Table 2.

Table 2: ADF Unit Root Test

Variable	Level Value/ First Difference	Augmented Dickey-Fuller (ADF) Test Statistic	Result
XU100	Level	-3.3377 (12)	I(1)
	First Difference	-11.4413 (11)*	
ER	Level	-3.1429 (12)	I(1)
	First Difference	-12.2856 (11)*	
FR	Level	-3.0098 (12)	I(1)
	First Difference	-10.9742 (11)*	
PR	Level	-2.8610 (12)	I(1)
	First Difference	-10.8715 (11)*	
CR	Level	-2.9207 (12)	I(1)
	First Difference	-11.1253 (11)*	

Note: The values in the ADF test in parenthesis are the lag lengths selected by using the Schwarz Information criteria and the maximum lag length has been taken as 12. The symbol * represents the 1% level of significance.

When the results in Table 2 are examined, it is seen that the zero hypothesis that there is unit root in the series is not rejected and that the series are not stationary at level values. Upon the detection that the series are not stationary at level values, the ADF test has been used again in order to determine whether they are stationary in their first difference, and the zero hypothesis that the series have unit roots in their first difference has been rejected at the level of 1% significance.

5.2. Cointegration Tests

In order for cointegration analysis to be made, the cointegration degree of each variable has to be determined. The cointegration method to be applied depending on whether the cointegration degrees of variables are the same varies. When the results of unit root test are examined, it is seen that the cointegration degrees of series of all models are the same. Therefore, it is possible to say that the presence of cointegration in the models concerned can be examined by the Johansen cointegration test developed by Johansen (1988), and Johansen and Juselius (1990).

Before the cointegration tests are implemented, it is necessary to construct a VAR model and determine the lag numbers of the models. Accordingly, by using the criterion of LR (Likelihood), FPE (Final Prediction Error), AIC (Akaike Information Criterion), SC

(Shwarz Information Criterion), HQ (Hannan-Quinn Information Criterion), the most appropriate lag length has been determined as 3.

Table 3: Johansen Cointegration Test

Model	Maximum Eigenvalue Test				Trace Test			
	Null (H0) Hypothesis	Alternative Hipothesis	Test Statistic	%5 Critical Value	Null (H0) Hypothesis	Alternative Hipothesis	Test Statistic	%5 Critical Value
Model 1	r=0	r≥1	15.1095**	14.264	r=0	r=1	18.3199**	15.494
	r≤1	r≥2	3.2104	3.841	r≤1	r=2	3.2104	3.841
Model 2	r=0	r≥1	13.7592***	12.296	r=0	r=1	15.8497**	15.494
	r≤1	r≥2	2.0905	2.706	r≤1	r=2	2.0905	3.841
Model 3	r=0	r≥1	14.6629**	14.264	r=0	r=1	16.4304**	15.494
	r≤1	r≥2	1.7675	3.841	r≤1	r=2	1.7675	3.841
Model 4	r=0	r≥1	14.9006**	14.264	r=0	r=1	16.8256**	15.494
	r≤1	r≥2	1.9251	3.841	r≤1	r=2	1.9251	3.841

In Table 3, the findings obtained as a result of cointegration test performed according to by the Johansen cointegration test developed by Johansen (1988), and Johansen and Juselius (1990) method are shown. Based on this, in each model, it is possible to talk about the presence of a long run relationship among the series taken up both for the maximum eigenvalue tests and the trace test. In all the models, the trace test value for the null hypothesis (r=0) claiming that there isn't any cointegrated vector is higher than the critical value of 5% significance level. The maximum eigenvalue test, on the other hand, is higher than the critical value of 10% significance level in Model 2 and higher than the 5% critical value of significance level in the other model. Based on the findings obtained, there is the presence of a long run relationship between stock prices and economic risk, financial risk, political risk and country risk series. In other words, among the series taken up, there is at least one cointegrated vector. The values calculated for the tested hypotheses claiming that there is more than one cointegrated vector among the series are smaller than the critical values. Therefore, the hypotheses claiming that there is more than one cointegrated vector among the series are rejected and it has been decided that there is only one cointegrated vector among the series. According to the parameter estimations obtained from the cointegration relationship normalized with regards to XU100, a 1% change in economic, financial, political and country risk premiums will cause on the BIST100 index the changes of 0.61-%, 0.71-%, 0.58-% and 0.75-% respectively.

5.3. Vector Error Correction Model (VECM) and the Causality Relationship Among the Variables

After detecting the cointegration relationship among the variables, the long run and short run dynamics among the variables concerned will be analysed with the Vector Error Correction Model (VECM).

In order to determine the source of the causality that has emerged based on the vector error correction model, it is necessary to look into the Wald test applied to the coefficient of the descriptive variable and the t test applied to the coefficient of the error correction term. As a result of the Wald test applied, should the coefficient of descriptive variable be statistically significant according to F statistics or should the coefficient of error correction term be statistically significant according to the t statistics, it is possible to talk about the relationship of causality among the series (Demirhan, 2005:81). The estimation results based on Vector Error Correction Model are shown in Table 4.

Table 4: Vector Error Correction Model

Variables / Statistics	**ΔER**		**ΔFR**		**ΔPR**		**ΔCR**	
	F_{WALD} Statistic	Error Correction Parameter	F_{WALD} Statistic	Error Correction Parameter	F_{WALD} Statistic	Error Correction Parameter	F_{WALD} Statistic	Error Correction Parameter
XU100	5.7122*	-2.6322*	2.3771***	-2.9672*	5.5230*	-2.8164*	5.1630*	-2.7865*

When the results in Table 4 are examined, it is seen that the coefficients (β_d) of error correction term proving the long run effect are statistically significant at 1% level for all models. Therefore, it is possible to talk about the presence of a long run and powerful causality extending all the way from economic risk, financial risk, political risk and country risk down to stock prices. It is observed that the estimated coefficients for the lagged values of descriptive variable are statistically significant at 1% level for the Model 1, Model 3 and Model 4; and at 10% level for Model 2. Accordingly, it is possible to claim that there is a short run causality extending from economic risk, financial risk, political risk and country risk premiums to stock prices.

When Table 5 where the diagnostic tests such as J.B normality test, LM serial correlation test, ARCH changing variation test are shown are examined, it is clearly seen that the models are acceptable.

6. CONCLUSION

In this study, the effect of country risk which includes economic risk, financial risk and political risk premiums over the stock prices was examined for the period of 1999:01-2013:12. For this purpose, the risk premiums concerned for the period in question were obtained from the ICRG (International Country Risk Guide) whose reliability was acknowledged in the literature. Monthly time series data regarding BIST100 index, on the other hand, were obtained from the website of Borsa Istanbul. The relationship between the variables in the study were analysed by means of causality tests based on Johansen Cointegration method and Vector Error Correction Model.

Given the relevant studies on the subject in the literature, the general obtained result was that the country risk premiums affected the stock prices negatively. The results obtained from the present study are also compatible with this perspective. As a result of the cointegration analyses, it was revealed that the increase in economic, financial, political and country risk premiums caused a decrease on the BIST100 index. It was seen that the financial risk premium (-%0.71) defined as the self-sufficiency capability of a country among the other country risk premiums in the long run were more effective over the stock prices in comparison to other risk premiums; and the political risk premium (-%58) less effective. However, the comments that the share of political risk premium within country risk as calculated by ICRG was 50% should also be taken into consideration. In some studies done on developing countries, it was revealed that the change especially in political risk premiums affected the stock prices more in comparison to the developed markets.

As a result of the causality analyses based on the Vector Error Correction Model applied, it was concluded that there was a long run and powerful causality starting from economic risk, financial risk, political risk and country risk premiums down to stock prices. Similarly, it was also proved that there was a short run and powerful causality starting from economic risk, financial risk, political risk and country risk premiums down to stock prices. The short-term effect concerned was more powerful in economic, political and country risk premiums in comparison to financial risk premiums.

Given the fact that Borsa Istanbul is still a developing market, it is possible to say that it is normal for the market to price the macroeconomic, financial and political developments and for the investors sometimes to overreact against these developments. Individual and institutional investors will take into consideration systematic, unsystematic and systemic risks as well as the country risk in their future stock investments, and divert their investments to less risky countries. Therefore, it can be finally stated that the biggest responsibility in increasing the country's share from those investments lies with the politicians.

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