

# The Effect of Turkey's CDS Premium on Borsa Istanbul Indices from an Investor Sentiment Perspective: A Fourier-Based Analysis

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**Abstract:** This research examines the effect of the country's CDS premium on Borsa Istanbul indices within the framework of investor sentiment using a cointegration test. The main reason to analyze this is to detect which sectors the CDS premium creates investor sentiment. In this context, it tests Fourier-based methods on daily data from 29/12/2014 to 25/12/2024. This study, different from other studies in the literature, uses the sectoral decomposition and Fourier-based tests that can also model unknown sudden and smooth transitions. The reason for choosing this method is that it is believed to optimally reflect the structural breaks in the Borsa Istanbul, which is volatile politically and economically. Among the selected stock market indices, the Turkey CDS premium only affects the Borsa Istanbul Real Estate Investment Trust and Borsa Istanbul Construction, with the effect being statistically significant and a cointegration relationship emerging. This result suggests that the high cost of investments in these sectors and the sensitivity of these sectors to monetary policy decisions and rate changes are reflected in the country's CDS premium and affect the decisions in the sectors in question.

**Keywords:** Credit Default Swap, Borsa Istanbul Index, Fourier Cointegration Test, Investor Sentiment  
**Jel Codes:** G40, G41, G19

## *Yatırımcı Duyarlılığı Perspektifinden Türkiye CDS Priminin Borsa İstanbul Endekslerine Etkisi: Fourier Tabanlı Bir İnceleme*

**Öz:** Bu çalışma, yatırımcı duyarlılığı kapsamında ülke CDS priminin Borsa İstanbul endekslerine etkisini eş bütünleşme testi ile incelemektedir. Araştırmada sektörel bir inceleme yapılmaktadır. Bundaki neden CDS priminin hangi sektörlerde duyarlılık yaşattığını tespit etmektir. 29/12/2014-25/12/2024 dönemine ait günlük veriler kullanılarak, Fourier temelli testler uygulanmıştır. Literatürdeki çalışmalara katkı olarak, konuya daha ayrıntılı bakabilmek için bu çalışmada sektörel ayrıştırma yapılmış, ayrıca bilinmeyen ani ve yumuşak geçişleri de modelleyebilen Fourier temelli testler kullanılmıştır. Yöntemin seçilmesindeki neden politik ve ekonomik açıdan volatil olan borsa İstanbul'un yapısal kırılmalarının yapısını en optimal şekilde yansıtaacağı düşünüldüğü içindir. Türkiye CDS priminin seçilen borsa endekslerinden sadece Borsa İstanbul Gayrimenkul Yatırım Ortaklığı ve Borsa İstanbul İnşaat'a etkisi istatistiksel olarak anlamlı bulunmuş, eş bütünleşme ilişkisi ortaya çıkmıştır. Bu sonuç söz konusu sektörlerde yatırımların yüksek maliyetli olması; sektörlerin uygulanan para politikası kararları ve faiz oranlarındaki değişikliklere duyarlı olması gibi nedenlerden dolayı olabilir. Sonuçlar, sayılan nedenlerin ülke CDS primine yansiyarak bu sektörlerdeki kararları etkilediği şeklinde yorumlanabilir.

**Anahtar Kelimeler:** Kredi Temerrüt Takası, Borsa İstanbul Endeksleri, Fourier Eş bütünleşme Testi, Yatırımcı Duyarlılığı

**Jel Kodları:** G40, G41, G19

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## 1. Introduction

The presence of irrational investors affects market efficiency and effectiveness, leading to the market's inability to reach equilibrium; this situation is explained by investor sentiment. The mentioned deviations refer to anomalies, and the field of behavioral finance deals with identifying their causes. Contrary to traditional finance theory, in such situations, it is observed that individuals do not make rational decisions in portfolio selection but instead act based on rumors and make decisions without being sure of the accuracy of information or news entering the market or even when they are sure, they react excessively or insufficiently (De Bondt & Thaler, 1985; De Long et al., 1990; Shleifer & Vishny, 1997; Daniel et al., 1997). These situations are an undeniable reality of the presence of investor perceptions, attitudes, and behaviors in financial markets. This reality is accepted today, but identifying the variable that can represent the presence of investor sentiment in financial markets is still being researched. Investors need to be well-informed about the market before making a decision. Also, Individuals who are about to make investment decisions primarily want to trust the administration, economy, and stock market of the country they are going to trade in. Afterward, they begin to calculate costs/profits/losses. When it comes to trusting the country, they refer to the ratings of reliable institutions/organizations. This is where credit rating agencies and CDS premiums come into play. The increasing criticism of credit rating agencies in recent times and the challenges associated with their periodic calculations make their use more difficult. On the other hand, CDS premiums, which adjust immediately according to positive/negative news or information about the country, are more closely considered by investors. Moreover, the country's CDS premium represents the level of confidence in the country. Therefore, it is a reflection of the investor's point of view. The impact of this perspective on stock markets is a popular topic in the literature. Because finding answers to questions such as what the profitability level of a country's stock market with a rising CDS premium and how costs take shape helps researchers achieve their goals. In this context, the study investigates the existence of the effect of sovereign CDS premium on investor sentiment in Borsa Istanbul. Sectoral research was conducted. The reason for this is to examine in detail in which sectors the sovereign CDS premium creates sensitivity, which is often neglected in the literature. Various co-integration tests have been used to analyze the relationship between CDS and stock market indices, and the results have differed. Traditional co-integration tests in time series have been criticized for not taking into consideration sudden and smooth transitions. The need to utilize the advantages of newly developed co-integration tests to conduct replication studies has led to this study. The cointegration test to be used is the Fourier-Shin cointegration test developed by Tsong et al. (2016), which does not require detecting the number, structure, and timing of structural breaks in a time series. Fourier-based tests that account for smooth transitions is applied to Turkey, as it has experiences periods such as COVID-19, the Russia-Ukraine War, and stagflation, which are thought to reflect these transitions most optimally. The aim is to make an optimal calculation by leveraging the advantages of these tests.

The contribution of this study to the literature is that it both analyzes sectoral decomposition in detail and goes beyond traditional methods by using Fourier-based tests that can model structural breaks more realistically. Thus, the relationship between investor sentiment and sector-based risk sentiment is revealed in a more in-depth and analytical approach.

The literature reviews in the second section of the research; in the third section, the research discusses the dataset and methodology; in the fourth section, the research reports the findings; and in the final section, the research presents the results and recommendations.

## 2. Literature Review

Various methods are used to analyze the short- and long-term relationship between CDS premiums and BIST indices. Even in studies where similar methods apply, results can vary. Reasons for this include differences in the dataset period, strengths or weaknesses of the methods, and so on. The literature focuses on the methods and results to better compare our research findings.

Among the studies obtained using Johansen cointegration method, Başarır & Keten (2016), Tufaner (2021) found a long-run relationship between CDS and BIST100, while Evci (2020) and Özekenci (2023) did not detect cointegration.

In studies that use the ARDL bounds test approach Akyol & Baltacı (2018) and Pazarıcı et al. (2022) find a significant relationship between CDS premiums and the BIST100, while Karşlıoğlu & Sevim (2022) do not detect such a relationship. İlhan & Bayır (2021) find that CDS premiums negatively impact the BIST Industrial and BIST Financial indices. Ezanoğlu (2022) does not find cointegration between CDS premiums and the BIST Bank index but identifies a unidirectional causality relationship. On the other hand, Çetinkaya & Üçler (2024) find that CDS premiums has a significant and negative effect on the BIST-100, BIST-Financial, and BIST-Industrial indices.

Ngene et al. (2014), using a momentum threshold autoregressive (MTAR) approach, identify a relationship between CDS premiums and BIST. Topaloğlu & Ege (2020) conduct a comprehensive methodological study on the long-term cointegration relationship between CDS premiums and BIST100. Tests by Engle & Granger (1987), Phillips & Ouliaris (1990), Shin (1994), Gregory & Hansen (1996a, 1996b), Cis & Sanso (2006), Arai & Kurozumi (2007), and Tsong et al. (2016) use the finding of long-term cointegration between CDS premiums and BIST100. Furthermore, they identify a negative and significant relationship between CDS premiums and BIST100.

Başarır & Keten (2016) find a bidirectional causality between CDS premiums and stocks in short-term relationships. Using the Hacker-Hatemi-J (2006) causality test, Bektur & Malcıoğlu (2017) identify a unidirectional relationship between CDS premiums and the stock market. Using the causality test in mean and variance, Çevik & Buğan (2019) identify a bidirectional causality relationship between the two series. Sarıgül & Şengelen (2020), Evci (2020), and Tufaner (2021) applying the Granger causality test, find a unidirectional causality relationship from CDS premiums to BIST100. In contrast, Karşlıoğlu & Sevim (2022) and Değirmenci & Pabuççu (2024), using the same method, identify a bidirectional causality relationship. Using the VAR-based Granger causality test, Altuntaş & Ersoy (2020) identify a bidirectional causality relationship between CDS premiums and the BIST Bank, while Garayev et al. (2021) find a unidirectional causality relationship. Demir & Dinç (2021) do not identify any causality relationship between CDS premiums and BIST. Using the nonlinear and Fourier Toda-Yamamoto causality test, Şak (2021) also finds no nonlinear causality relationship between CDS premiums and the BIST Industrial index. According to the Fourier Toda-Yamamoto test, Şak (2021) identifies a unidirectional causality from the BIST Industrial index to CDS premiums. Using FMOLS, DOLS, and CCR methods, Özekenci (2023) finds that a 1% increase in CDS premiums results in a decrease of 28.2%, 34.3%, and 29% in the BIST100 index, respectively. Applying the Toda-Yamamoto causality test, Saparca & Yenipazarlı (2023) identify a bidirectional causality relationship between BIST100 and CDS premiums.

The methodological diversity of the studies on the relationship between CDS premiums and Borsa Istanbul indices in the literature is remarkable. However, most of these researches are based on the general BIST100 index and do not differentiate on a sectoral basis. Moreover, most of the methods used are based on classical tests that assume the time of structural breaks. This has led to significant inconsistencies among the findings. For instance, the fact that even studies using the same methodology produce different results can be explained by factors such as data set coverage, analysis period and methodological limitations. The original contribution of this study to the literature is that it analyzes the impact of the CDS premium at the sectoral level and finds out which sectors

are more sensitive. Moreover, Fourier-based co-integration tests provide more accurate results by taking into account unknown structural breaks, which is a methodological innovation that goes beyond the existing methods. Overall, there is no clear consensus in the literature on the direction and existence of the relationship between CDS and BIST indices. In this context, this study fills an important gap in the literature both as one of the rare sectoral applications and with its advanced methodological framework.

### 3. Data Set and Methodology

This section discusses the variables used to detect the cointegration relationship between the country's CDS premium and BIST indices, as well as the methods applied.

#### 3.1. Data Set

The data, covering the period from 29/12/2014 to 25/12/2024, with a daily frequency, is obtained from investing.com. The 5-year CDS premium is selected for Turkey's CDS premium due to its higher liquidity and greater preference in the literature. This study was conducted within some limitations. First, the analysis is limited to daily data for the period between 29.12.2014 - 25.12.2024; therefore, long-term historical comparisons cannot be made. Moreover, only the 5-year Turkey CDS premium is used to represent investor sentiment, and CDS data with different terms are excluded from the analysis. In the sectoral analysis, a limited number of Borsa Istanbul indices are used and no generalization is made for all sectors. Although the Fourier-based cointegration test is effective in revealing long-run structural relationships, it may be limited in explaining short-term dynamics. In this framework, the results obtained should be evaluated from a long-run perspective. The indices included in the research are presented in Table 1.

**Table 1.** Indices Used in the Research

BIST Code	Index	BIST Code	Index
XU100	BIST 100	XUHIZ	BIST Services
XBANK	BIST Banks	XILTM	BIST Telecommunication
XBLSM	BIST Information Technology	XINSA	BIST Construction
XELKT	BIST Electricity	XUMAL	BIST Financials
XGMYO	BIST Real Estate Investment Trusts	XUSIN	BIST Industrials

**Source:** Created by the author.

#### 3.2. Fourier KPSS Stationarity Test

Becker, Enders & Lee (2006) expand the stationary test, known as the KPSS test, developed by Kwiatkowski et al. (1992), by incorporating Fourier functions to create a new stationarity test. The primary reason for using Fourier functions in this test is that these functions can model unknown sudden and smooth transitions. The most important feature of the test is that the position, shape, and number of structural breaks are not crucial in this test. In the test that Becker et al. (2006) develop, where the null hypothesis defines stationarity, the necessary test statistic is calculated by first estimating the models below using the OLS (Ordinary Least Squares) method and obtaining the residuals from these models:

$$y_t = \alpha + \gamma_1 \sin\left(\frac{2\pi kt}{T}\right) + \gamma_2 \cos\left(\frac{2\pi kt}{T}\right) + \varepsilon_t \quad (1)$$

$$y_t = \alpha + \beta_t + \gamma_1 \sin\left(\frac{2\pi kt}{T}\right) + \gamma_2 \cos\left(\frac{2\pi kt}{T}\right) + \varepsilon_t \quad (2)$$

The value of  $\pi$  is taken as 3.1428.

$\varepsilon_t$  When estimating these models, it is crucial to determine the correct number of frequencies. The appropriate frequency number is the value that minimizes the sum of residual squares of the models in (1) and (2).

$$\tau_\mu(k) \text{ veya } \tau_\tau(k) = \frac{1}{T^2} \frac{\sum_{t=1}^T \tilde{S}_t(k)^2}{\tilde{\sigma}^2} \quad (3)$$

In the above equation,  $\tilde{S}_t(k) = \sum_{t=1}^T \varepsilon_t$  where  $\varepsilon_t$  represents the residuals obtained from equation (2). The non-parametric estimate of  $\sigma$  derives from the weight sequence  $w_j$ , where  $j=1,2,3,\dots,l$ , and the method for selecting the pruning delay parameter yields l.

$$\sigma^2 = \tilde{\alpha}_0 + 2 \sum_{j=1}^l w_j \tilde{\alpha}_j \quad (4)$$

In this equation,  $\tilde{\alpha}_j$  represents the  $j$ th sample autocovariance of the residuals obtained from estimating equation (2). When determining the optimal value of  $K$ , the value of  $k$  that minimizes sum of squared residuals is preferred.

If a nonlinear trend is present during the data generation stage, the classical KPSS stationarity test yields more substantial results than the Fourier KPSS stationarity test. At this point, Becker et al. (2006) test the absence of a nonlinear trend using the null hypothesis of the following equation:

$$F_1(k) = \frac{(SSR_0 - SSR_1(k))/2}{SSR_1(k)/(T-q)} \quad (5)$$

In the above equation,  $SSR_0$  represents the sum of squared residuals from the regression where the null hypothesis is accepted,  $SSR_1(k)$  represents the sum of squared residuals obtained from equation (2), and  $q$  denotes the number of independent variables. The use of the F test is applicable when the null hypothesis of stationarity is rejected. In their study, Becker et al. (2006) suggest that if the null hypothesis cannot be rejected in the F test, it indicates that the trigonometric terms are insignificant. In such a case, the results of the classical KPSS test should be considered.

### 3.3. Fourier SHIN Cointegration Test

Tsong et al. (2016) develop the FSHIN (Fourier-Shin Cointegration Test), which is widely used in current research. This cointegration test does not require the identification of the structure, number, and time of structural breaks in the series to determine the long-run relationship between variables. In this method, all series to be analyzed should be I (1). In the FSHIN cointegration test, the model below considers (Tsong et al., 2016, p.n. 1087-1089):

$$y_t = d_t + x_t' \beta + \eta_t \quad (6)$$

In this equation,  $\eta_t = \gamma_t + v_{1t}$ ,  $\gamma_0 = 0$  and  $\gamma_t = \gamma_{t-1} + v_t$ , ve  $x_t = x_{t-1} + v_{2t}$ . Since  $v_{1t}$  and  $v_{2t}$  are stationary,  $x_t$  and  $\gamma_t$  are stationary in their first differences. The deterministic component  $d_t$  presented above is defined by the following equation:

$$d_t = \sum_{i=0}^m \delta_i t^i + f_t \quad (7)$$

In the above equation,  $f_t$  is a Fourier function and is defined as follows:

$$f_t = \alpha_1 \sin\left(\frac{2\pi kt}{T}\right) + \alpha_2 \cos\left(\frac{2\pi kt}{T}\right) \quad (8)$$

In equation (8),  $k$  represents the Fourier frequency value,  $T$  represents the sample size, and  $t$  represents the trend.

$$y_t = \alpha_0 + \alpha_1 \sin\left(\frac{2\pi kt}{T}\right) + \alpha_2 \cos\left(\frac{2\pi kt}{T}\right) + x_t' \beta + v_{1t} \quad (9)$$

In equation (9), the necessity of the trigonometric terms is tested using the F statistic. The FSHIN test statistic is calculated with the following equation:

$$CI_f^m = T^{-2} \hat{w}_1^{-2} \sum_{t=1}^T S_t^2 \quad (10)$$

In the above equation,  $\hat{w}_1$ ,  $\hat{v}_{1t}$  represent the long-run variance estimators, and  $S_t^2 = \sum_{t=1}^T \hat{v}_{1t}$  represents the partial sum of the error terms obtained from equation (6). If the  $CI_f^m$  statistic is smaller than the critical values from the table, it indicates the existence of a cointegration relationship between the variables under structural breaks.

*Hypotheses of the test:*

$H_0$ : There is a cointegration relationship.

$H_1$ : There is no cointegration relationship.

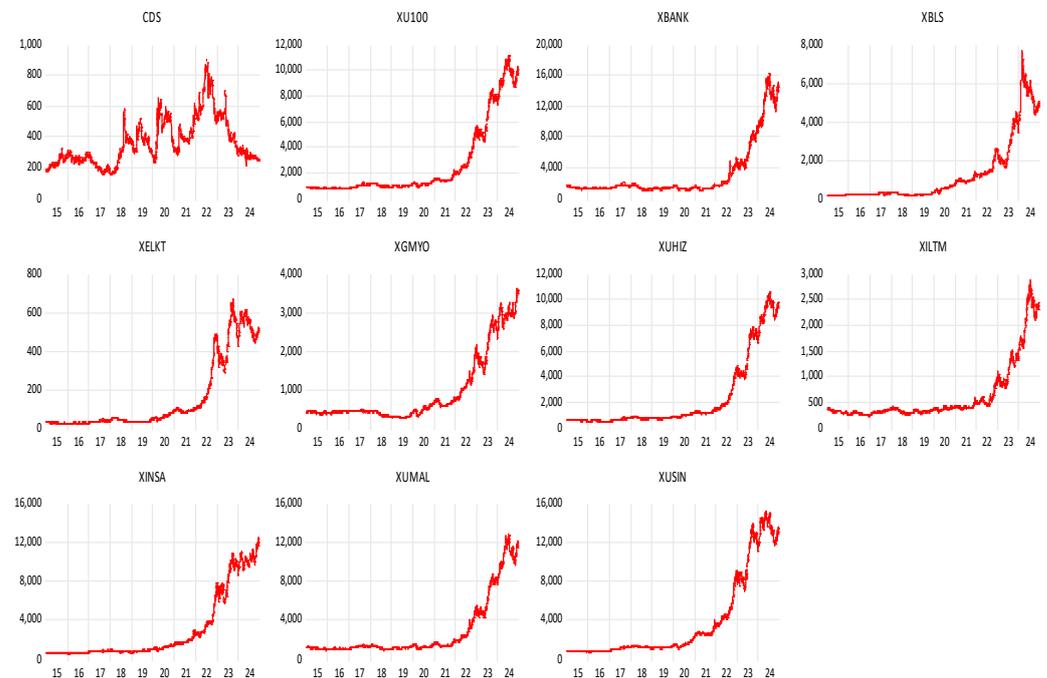
The study by Tsong et al. (2016, p. 1091) provides the table critical values in this test. If the obtained test statistic is smaller than the table critical value, the null hypothesis cannot be rejected, and it is concluded that there is a cointegration relationship between the series.

#### 4. Findings

This section presents the time path graphs of the variables used to determine the cointegration relationship between the country's CDS premium and Borsa Istanbul indices, along with the descriptive statistics, tests applied, and findings.

##### 4.1. Descriptive Statistics

To take advantage of the tests to be applied, it is necessary to examine the structures of the series. For this purpose, the time series graphs of the series used in the study are presented in Figure 1, and the descriptive statistics are provided in Table 2.



**Figure 1.** Time Series Graphs of the Variables (Source: Created by the author.)

Examining the graphs of the series (Figure 1), it is observed that the variables show cyclical fluctuations and trends at the level. It can be stated that global/national events (such as COVID-19, the Russia-Ukraine War, the stagflation period, etc.) during the examined period have caused structural breaks.

**Table 2.** Descriptive Statistics of the Variables

Variables	Average	Median	Max.	Min.	Std.Deviation	Skewness	Kurtosis	JB
CDS	361,51	312,65	906,00	155,20	3616,69	1,02	3,60	472,68***
XU100	2599,72	1104,55	11172,75	685,68	2890,74	1,65	4,24	1291,50***
XBANK	3108,57	1494,00	16158,44	935,64		2,17	6,55	3288,64***
XBLS	1212,03	323,72	7697,52	137,91	1647,27	1,90	5,60	2213,42***
XELKT	149,82	46,88	668,90	22,74	186,86	1,40	3,34	832,19***
XGMYO	926,80	440,63	3612,72	239,91	894,03	1,53	3,90	1066,45***
XUHIZ	2243,65	843,65	10596,15	460,49	2786,10	1,73	4,51	1482,19***
XILTM	613,61	364,81	2866,00	231,85	585,55	2,19	6,82	3534,45***
XINSA	2868,50	930,98	12505,29	528,84	3392,59	1,44	3,47	884,35***
XUMAL	2802,89	1287,13	12784,87	897,86	3117,70	1,85	5,07	1879,51***
XUSIN	3776,49	1318,65	15180,15	700,65	4343,72	1,44	3,55	898,23***

**Note:** \*\*\*, It represents the 1% significance level. (**Source:** Created by the author.)

By examining the descriptive statistics of the series included in the research (Table 2), we observe that all have a positive mean. XUSIN has the highest standard deviation, while CDS premium has the lowest. The skewness values indicate a right-skewed distribution, while the kurtosis values suggest excess kurtosis, implying fat tails and a leptokurtic distribution. The Jarque-Bera test statistic confirms that the series deviates from normality.

#### 4.2. Fourier KPSS Stationarity Test Analysis Results

The research employs the Fourier KPSS test to determine the stationarity levels of the series. Table 3 presents the results of the Fourier KPSS test applied to the level values and first-differenced series of the logarithmically transformed data.

**Table 3.** Fourier KPSS Stationarity Test Analysis Results

	Variable	k	Level Value		k	Difference Series	
			Test Ist.	F-test		Test Ist.	F-test
XU100	Constant	1	6.7564***	1640.4346***	1	0.04685	4.1603
	Constant & Fixed	1	0.4796***	8655.0075***	2	0.03297	2.5955
XBANK	Constant	1	6.3772***	1186.4253***	1	0.06455	3.329
	Constant & Fixed	1	0.5336***	7921.9069***	3	0.05269	1.0686
XBLS	Constant	1	6.2980***	2331.5903***	3	0.17926	4.1975
	Constant & Fixed	1	0.4787***	3767.2069***	3	0.06575	3.9882
XELKT	Constant	1	6.4738***	2269.6734***	1	0.05632	3.947
	Constant & Fixed	1	0.3924***	3986.8772***	4	0.09063	4.0844
XGMYO	Constant	1	6.3912***	2617.6324***	1	0.02085	4.693
	Constant & Fixed	1	0.3160***	10866.0100***	1	0.0204	2.0008
XUHIZ	Constant	1	6.6890***	1682.754***	1	0.07333	5.136
	Constant & Fixed	1	0.5937***	6724.1508***	2	0.0462	2.7274
XILTM	Constant	1	6.2191***	1322.3988***	1	0.08752	1.7748
	Constant & Fixed	1	0.6507***	4758.3909***	3	0.02421	0.8554
XINSA	Constant	1	6.8373***	2224.1010***	1	0.02403	2.9711
	Constant & Fixed	1	0.4013***	10679.9840***	1	0.02359	1.287
XUMAL	Constant	1	6.6452***	1490.6842***	1	0.0503	4.1977
	Constant & Fixed	1	0.4489***	9711.4460***	2	0.04042	1.4528
XUSIN	Constant	1	6.7826***	2036.4982***	1	0.04981	3.7985
	Constant & Fixed	1	0.4658***	6271.7960***	2	0.04436	2.9605
CDS	Constant	1	0.3491***	2062.0835***	3	0.0749	2.3593
	Constant & Fixed	1	0.3451***	1016.9735***	3	0.03025	2.0915

**Note:** The critical values are obtained from Table 1 in Becker et al. (2006, p. 389). \*\*\* represents the 1% significance level. (**Source:** Created by the author.)

When the Fourier KPSS test is applied to the level values of the series after taking their natural logarithms, the calculated values exceed the critical values. With this result, the null hypothesis, which suggests that the series are stationary, is rejected. After taking the first difference of the series and reapplying the test, the calculated values are smaller than the critical values. This result leads to the failure to reject the null hypothesis, and

the series becomes stationary at the same level. After the stationarity test, an F-test is applied to assess the significance of the trigonometric terms. As mentioned in the model section, if the F-test statistic is not greater than the critical value, the classical KPSS test should be used. In the analysis, the F-test statistics for the level values of the series are more significant than the 1% significance level. Therefore, it is concluded that the trigonometric terms are significant and necessary, confirming the applicability of the Fourier KPSS stationarity test.

#### 4.3. Fourier SHIN Cointegration Test Analysis Results

The results of the Fourier-Shin cointegration test applied to analyze the long-term relationship between country's CDS premiums and stock indices are presented in Table 4:

**Table 4.** Fourier SHIN Cointegration Test Analysis Results

Independent Variable	Dependent Variable	k	FSHIN Test	F-Test	L	Probability
CDS	XU100	1	0.099***	5.540**	4	0.003
CDS	XBANK	1	0.098***	7.331***	4	0.000
CDS	XBLS	1	0.104***	21.119***	4	0.000
CDS	XELKT	1	0.105***	5.428**	4	0.004
CDS	XGMYO	1	0.040	5.411**	4	0.004
CDS	XUHIZ	1	0.110***	3.329*	4	0.035
CDS	XILTM	1	0.106***	11.575***	4	0.000
CDS	XINSA	1	0.061	10.553***	4	0.000
CDS	XUMAL	1	0.090***	7.695***	4	0.000
CDS	XUSIN	1	0.105***	2.540	4	0.009

**Note:** The critical values are obtained from Table 1 in Tsong et al. (2016, p. 1091). \*\*\*, \*\*, and \* represent the 1%, 5%, and 10% significance levels, respectively. When k=1, the critical values for the significance levels are 0.063 for 1%, 0.048 for 5% and 0.042 for 10%. The F-test values are 5.860, 4.019, and 3.306, respectively.

**Source:** Created by the author.

According to the FSHIN test results, the calculated values for XGMYO and XINSA are smaller than the FSHIN critical values. Specifically, for XGMYO, with a frequency value of 1, the critical value at the 1% significance level is 0.063, and the test result is 0.040. For XINSA, with a frequency value of 1, the critical value at the 1% significance level is 0.063, and the test result is 0.061. In this case, the null hypothesis, testing the presence of a long-term relationship between the variables, cannot be rejected.

For the variables other than XGMYO and XINSA, the calculated values are more significant than the FSHIN critical values. For example, for XUTUM, with a frequency value of 1, the critical value at the 1% significance level is 0.063, and the test result is 0.081. In this case, the null hypothesis is rejected, testing the presence of a long-term relationship between the variables.

## 5. Conclusion

After the sensational events in credit rating agencies (Tekin, 2016, p. 183), parties considering investment have started to monitor CDS premiums more intensively. Country's CDS premiums represent an important indicator of risk appetite and trust for investors. Since they reflect the likelihood of a country defaulting, they also signify investors' sensitivity to risk. Additionally, CDS premiums are highly reliable due to their immediate response to negative events in the country. It is a well-known fact that investors closely monitor country's CDS premiums for these reasons. Therefore, this research investigates the long-term relationship between Turkey's CDS premiums and Borsa Istanbul indices and performs Fourier-based analyses. The reason for choosing this method is that it is believed to optimally reflect the structural breaks in Borsa Istanbul, which is volatile politically and economically. Additionally, the model established through Fourier tests can account for structural breaks less abruptly. Furthermore, it is capable of modeling unknown sudden and smooth transitions. As for the Fourier-Shin

cointegration test, calculated values for variables other than XGMYO and XINSA are more significant than the FSHIN critical values. In this case, the null hypothesis, which tests the presence of a long-term relationship between the variables, is rejected.

When the results obtained are evaluated in comparison with studies in the literature, they show similarities with the findings of Evcı (2020), Karşlıođlu & Sevim (2022), and Özekenci (2023), where no cointegration between CDS premiums and BIST100 is detected. The results are similar to those of Ezanođlu (2022), who finds no cointegration between CDS premiums and the BIST Banking Index, and Şak (2021), who finds no relationship between CDS premiums and the BIST Industry Index.

The effect of Turkey's CDS premiums on the Borsa Istanbul Real Estate Investment Trust and Borsa Istanbul Construction indices is statistically significant, and a cointegration relationship is established. These sectors are capital-intensive, and investment decisions lead to large-scale financing decisions. The costs of investing in these sectors are directly related to the country's conditions. Monetary policy decisions and changes in interest rates are reflected in the country's CDS premiums, which in turn affect the decisions in these sectors. The findings indicate that the construction and real estate sectors are particularly sensitive to investor sentiment, which provides important implications for policymakers. In order to prevent CDS-driven fluctuations in these sectors, a balanced strategy between interest rate policies and investment incentives is recommended. Moreover, macroeconomic stabilization measures to boost investor confidence may contribute to mitigating the potential negative effects on financial markets through CDS premiums. The study's main limitations include the fact that only certain sectors and single -term CDS data are analyzed. Therefore, future studies that analyze CDS data with different term structures and a larger range of sectors may provide more comprehensive results. In addition to time series analysis, it is also recommended to use different methodologies such as panel data or causality analysis to understand short-term dynamics.

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