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Measuring the Financial Anxiety Index

Samet Gürsoy [1], Mert Baran Tunçel [2], Serdar Yaman [2] & İbrahim Halil Ekşi [3]

[1] Burdur Mehmet Akif Ersoy University, Bucak Zeliha Tolunay School of Applied Technology and Management.Customs Business Department.
[2] Sirnak University, Department of Accounting and Tax.
[3] Gaziantep University, Facuty of Economics Department of Business.

Abstract

This paper presents a new indicator that assesses Turkiye's financial stability/instability from 2008 to 2023 based on six key variables (Geopolitical Risk, Exchange Rate, Unemployment Rate, Inflation Rate, Credit Default Swap, and BIST 100 index). The indicator in question, which we call the Financial Anxiety Index (FAI), includes these six critical variables, which have not been analysed together before, and provides detailed information about the market stability in Turkiye. Each variable represents a different dimension affecting financial stability and is included in a seven-stage methodological process with different weights to calculate the FAI. The FAI describes periods of negative financial sensitivity, such as increasing unemployment, rising inflation, decline in stock market performance, depreciation of the national currency against the US dollar, and increase in geopolitical risks, while the stiuations of positive financial sensitivity are perceived as the opposite of these conditions.

Keywords Financial Anxiety Index · Financial Sensitivity · Risk Assessment

Jel Codes E44 , G01, and E58

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Corresponding author: İbrahim Halil Ekşi eksihalil@gmail.com

Measuring the Financial Anxiety Index

The sense of confidence that investors gain because of political, geopolitical, and economic events can affect investors' risk perceptions and may cause investments to be directed towards or away from financial markets. Risk aversion behaviour, also known as the fear of losing the assets saved despite adverse developments, is effective in investors' decision-making processes. Individual investors' risk perception and tolerance are not solely determined by objective economic indicators; they are also shaped by a range of demographic and psychological factors, which in turn influence portfolio preferences (Grable and Joo, 2004). Macroeconomic shocks, pandemics, interest rate fluctuations, currency crises, and broader economic disruptions alter both risk perception and investment allocation decisions. Investors are risk averse and tend to withdraw from investment funds during crisis periods (Kaplanski and Levy, 2010). During times of increased market volume and heightened volatility, investors demonstrate more conservative behaviour, preferring to allocate their capital to lower-risk financial instruments (Daigler and Wiley, 1999). Heightened perceptions of financial market risk, whether driven by economic or non-economic factors, can increase investor anxiety and a corresponding shift in behaviour aimed at safeguarding assets.

In contrast to the rational investor model proposed by Modern Portfolio Theory (Markowitz, 1952), which posits that investors make decisions by balancing risk and return, and the Efficient Market Hypothesis (Fama, 1970), which categorises markets based on their informational efficiency, behavioural finance theory (Kahneman and Tversky, 1973, 1979; DeBondt and Thaler, 1985, 1987) suggests that a range of emotional, cognitive, and psychological factors often lead investors to make irrational decisions. Kahneman and Tversky (1973, 1979) stated that investors exhibit different investment behaviours and depart from rationality under similar conditions in different periods and explained this situation with Prospect Theory. Similarly, DeBondt and Thaler (1985, 1987) argued that asset prices tend to overreact to new information, particularly political, geopolitical, and economic developments, and that such overreactions are symptomatic of irrational investor behaviour. This phenomenon is encapsulated in their Overreaction Hypothesis. The behavioural finance literature reveals that economic indicators and emotional, cognitive, and psychological processes are influential in the investment decisions of financial market investors and shows that emotions, prejudices, perceptions, and information acquisition styles affect investor risk perception and financial anxiety level.

More succinctly, while financial stress generally refers to a short-term response to specific external shocks, financial anxiety represents a more persistent emotional state of uncertainty about the future. Accordingly, this study uses the term financial anxiety instead of stress, referring to the long-term behavioural and perceptual components rooted in both economic indicators and psychological triggers.

On the other hand, the Financial Anxiety Index developed in this study is fundamentally based on behavioural finance theory. Furthermore, recognising that economic actors do not always behave rationally in the face of uncertainty, the index also incorporates psychological factors of perceived financial risk, such as anxiety, pessimism, and insecurity, which traditional financial stress indices often overlook.

Although there is a long history of studies on the importance of a strong and stable financial system for economies, the significance of these concepts has gained increased attention following the era of global financial liberalisation. The scale and cost of financial crises, which have increased in frequency with financial liberalisation, have heightened the need for policymakers to ensure a strong financial system and maintain financial stability. A prime example is the 2007-2008 global financial crisis, which originated in the United States. After this crisis, the need to quantify financial stress and identify systemic risk channels became a key priority for regulatory authorities (Chadwick and Ozturk, 2019). Following the global financial crisis, regulatory authorities, researchers, private sector firms, and central banks developed various measures and indices to assess the health and stability of financial systems. These indices are often termed "Financial Stress Indices" (FSI) or "Financial Conditions Indices" (FCI), depending on the specific variables and methodologies used in their construction (Kliesen et al., 2012).

The literature presents various studies focused on constructing financial stress indices. For instance, Hanschel and Monnin (2005) created a stress index for the Swiss banking system, while Illing and Liu (2006) devised an index to gauge stress in the Canadian financial system. Balakrishnan et al. (2009) designed a financial stress index tailored to emerging countries. Similarly, Çevik et al. (2013a) provided an index specifically for transition economies, using different variables. Melvin and Taylor (2009), on the other hand, constructed an index for advanced economies. Specific countries have also seen the development of these indices. For Switzerland, Hanschel and Monnin (2005) contributed an index. Huotari (2015) developed FSI for Finland, and Filatov (2021) for Ukraine. Türkiye, the sample of this study, has several indices developed by Elekdağ et al. (2010), Çevik et al. (2013b), and Chadwick and Ozturk (2019). Various financial stress indices have been developed for the US, with notable contributions from Hakkio and Keeton (2009), Oet et al. (2011), and Hubrich and Tetlow (2014). Additionally, the Federal Reserve Bank of St. Louis is a member. Louis created a widely recognised financial stress index for the United States (FRED, 2024). Rather than focusing on a certain country, Monin (2019) created a financial stress index that encompasses global financial markets.

Efforts to develop a financial stress index have not reached a consensus on what constitutes financial stress. Definitions vary among researchers: Grimaldi (2010, 2011) describes financial stress as the product of interactions between shocks and market vulnerabilities, whereas Louzis and Vouldis (2013) define it as realised systemic risk. Another perspective is that financial stress is directly related to the functioning of financial markets (Sandahl et al. 2011; Carlson et al. 2014). Monin (2019), focusing on the common elements of these definitions, views financial stress as disruptions in the normal functioning of financial markets. Given the lack of consensus, various methodologies are used to construct financial stress indices. Lo Duca and Peltonen (2011) created indices for developed and developing countries by transforming the arithmetic average of five raw stress indicators. Hollo et al. (2012) built an index by combining risk measures from five financial market segments and their subcomponents. Balakrishnan et al. (2011) constructed an index using different submarket variables, such as stock market returns, banking market, and foreign exchange market in developing countries. Likewise, Hollo et al. (2012) and Lo Duca and Peltonen (2011) emphasised indices focused on money markets, brokerage houses, stock and bond markets, and foreign exchange markets. Some researchers have taken a broader approach. Çevik et al. (2016) constructed an index incorporating public debt, stock market return volatility, and foreign exchange market pressure. Chadwick and Ozturk (2019) developed an index using variables related to the foreign exchange market, bond market, money market, banking sector, and stock market. Filatov (2021), on the other hand, created a financial stress index by incorporating five sub-indices representing the banking sector, households, corporate sector, government bonds, and the foreign exchange market.

Unlike the country-based financial stress indices commonly found in the literature, this study focuses on the concept of financial anxiety and aims to develop an index accordingly. Financial anxiety generally denotes feelings of economic uncertainty and elevated levels of economic anxiety or insecurity. This concept has gained prominence due to recent economic crises, wars, and the COVID-19 pandemic, which have amplified anxiety and insecurity among commercial organisations, individuals, and even governments (Zainal et al., 2022). The concept of anxiety, typically examined at the individual level in the literature (Shapiro and Burchell, 2012; Archuleta et al, 2013; Grable et al, 2014; Pijoh et al., 2020; Basyouni and El Keshky, 2021; Bareket-Bojmel et al, 2021; Hasler et al., 2021; Perry et al, 2023), is often linked to various adverse events, such as the 2008-2009 global financial crisis, the Covid-19 pandemic, elections, domestic turmoils, and war, as in financial stress indices. The concept of anxiety is closely related to terms such as stress, pressure, and fragility. For instance, financial fragility refers to weaknesses stemming from financial conditions or the structure of financial systems, whereas financial pressure is expressed as a continuous variable that can reach extreme values during a crisis (Illing and Liu, 2003). These associations that anxiety extends beyond personal concerns to encompass broader socioeconomic factors. Moreover, while stress typically denotes an immediate and short-term psychological response to external stimuli, anxiety encompasses more enduring emotional states characterised by anticipatory worry and negative expectations about the future. Given the growing impact of geopolitical risks on investors' anxiety levels and the inclusion of geopolitical risk as a key variable in the empirical model of this study, the concept of anxiety is preferred over stress. This terminological choice reflects the study's focus on long-term anticipatory responses rather than short-term psychological reactions. By examining anxiety in this context, this study gains insights into how these stressors impact not only individuals but also financial systems and economies as a whole.

The sound functioning and predictability of the financial system are crucial for a country's macroeconomic stability, making the close and continuous monitoring of financial market anxiety a necessity. Understanding the underlying reasons for financial system developments, especially those driven by various dynamics, and evaluating these changes holistically through an index is becoming increasingly important. The scales designed to address this need allow us to form an idea of whether there is a disruption in the markets, to create an aggregate picture, and to compare different periods of stress.

The primary objective of this paper is to construct a comprehensive financial anxiety index for Türkiye. Türkiye, the focus of this study, is a significant country for developing a financial anxiety index due to its unique economic and political landscape. Over the past 30 years, Türkiye has experienced numerous periods of financial stress, including economic crises, coup attempts, terrorist incidents, political upheavals, and wars in neighbouring countries. These events have had substantial impacts on the financial system and contribute to the overall sense of economic anxiety. Türkiye has faced two major economic crises in 1994 and 2001. However, before the 2008 global financial crisis, the Turkish economy experienced notable economic growth. As an emerging country, Türkiye was among the most affected by the 2007-2008 global financial crisis. The repercussions of the crisis led to increased financial stress from early 2008 onward, causing significant turbulence in the Turkish economy. In addition to economic crises, the Gezi Park protests in 2013 and the coup attempt in July 2016 significantly impacted Türkiye's economy. Wars in neighbouring countries, notably Iraq in 2003 and Syria in 2011, along with subsequent refugee flows, also disrupted Türkiye's economic balance, leading to increased unemployment, job insecurity, and economic pressures. Moreover, the COVID-19 pandemic, which emerged in China in 2019 and affected the world throughout 2020 and 2021, also had a substantial negative impact on the Turkish economy. To quantify the stress, pressure, and vulnerabilities arising from these economic, political, and global crises, this study develops a financial anxiety index. The index measures various dimensions of financial stability, incorporating variables such as the stock market, foreign exchange market, inflation, unemployment, country risk, and geopolitical risk. These factors represent key aspects of the Turkish economy and collectively offer a comprehensive view of financial anxiety within the country's financial markets. This approach allows for a detailed analysis of how different events and conditions contribute to financial stress, providing a useful tool for policymakers, analysts, and investors to assess financial stability and respond to emerging risks.

To the best of our knowledge, this is the first study to measure financial anxiety at the country level. This index covers the period from 2008 to 2023, encompassing both global (such as the 2008 global financial crisis, COVID-19 pandemic, Russia-Ukraine conflict, and Israel-Hamas conflict) and local (such as elections, the July 15 coup attempt, and the 2018 Pastor Brunson events) economic-political events. By measuring such an index in Türkiye, an emerging country, this study aims to provide valuable insights for policymakers and investors. The use of geopolitical risk and credit default swap (CDS) premiums in constructing the financial anxiety index represents the innovative aspect and originality of this study. This study offers a novel approach to capturing a broader range of factors contributing to financial anxiety in a single measure. The development of statistical scales for monitoring the level of anxiety in financial markets may be useful for policymakers in predicting crises and taking preventive macro steps by analysing movements in financial markets. This approach offers a comprehensive framework to understand and track financial anxiety under rapidly changing global and local conditions. It aims to facilitate a deeper understanding of financial markets' reactions to various stressors and serve as a valuable tool for proactive crisis management.

The study starts with an introductory section that outlines the theoretical framework and reviewed relevant literature, followed by data, methodology, and conclusion sections.

Data

The dataset comprises six key variables, each representing a different dimension of financial stability. These variables were selected to provide a comprehensive view of the factors contributing to financial anxiety in Türkiye. (1) The BIST 100 Index represents the performance of Türkiye's stock market, offering insights into investor sentiment and market trends. The BIST 100 Index is used to capture fluctuations in stock prices and overall market volatility. (2) Foreign exchange market (EXC), the USD/TRY exchange rate reflects the relative value of the Turkish lira against the US dollar. This variable serves as an indicator of currency stability and can signal broader economic trends. (3) Inflation rate represents the overall economic outlook. Providing a measure of price level changes, inflation is a key macroeconomic indicator that influences purchasing power, consumer confidence, and monetary policy and can affect financial stability. (4) Unemployment rate represents job insecurity and labour market conditions. High unemployment can lead to high job insecurity, decreased consumer spending, and increased economic uncertainty. (5) Credit Default Swap (CDS) premiums reflect the perceived risk of default on sovereign debt. CDS premiums are a critical indicator of credit risk and investment sentiment, particularly for foreign investors. (6) Geopolitical risk index (GPR) represents various political and social developments, including civil unrest, terrorist incidents, riots, political or military tensions, and wars within or around the country. GPR provides insights into factors that can affect relations between countries and, consequently, financial stability. Our data period spans from 2008 to 2023, providing a comprehensive timeframe that captures both global and local economic-political events. Table 1

Table 1
Variables used in the FAI measurement

Variables	Abbreviation	Data source
Geopolitic Risk Index	GPR	EPU
Credit default swap premiums (5 Yıllık)	CDS	INV
Unemployement rate	EMP	TCMB
Inflation rate	INF	
Foreign exchange rate (USD/TRY)	EXC	
Borsa Istanbul 100 Index	BIST	INV

Utilising a combination of these variables to measure the FAI offers several notable advantages: (1) It provides a comprehensive perspective on economic stability/instability and the health of financial markets; (2) By using these variables, early warning signals about possible risks can be obtained, and measures can be taken to prevent adverse conditions; (3) It can help policymakers in macroeconomic policy decisions; (4) It provides important information to investors in understanding market conditions and shaping their decisions on future investments.

One of the most significant sources of financial stress and pressure is the risks and unpredictability caused by uncertainty. Uncertainty and the accompanying risks arise not only from political and economic governance crises but also from geopolitical risk factors such as war, political tensions, and terrorist incidents occurring within or around the country (Khoo and Cheung, 2021). Caldara and Iacoviello (2022) produced a geopolitical risk index by evaluating various events such as war threats, peace threats, nuclear threats, military buildup, terrorist threats, beginning of war, escalation of war, and terrorist acts on a country-by-country basis through 8 categories. To the best of our knowledge, this is the first study to use geopolitical risk in measuring financial anxiety.

Measuring the financial anxiety index

The primary goal in developing the Financial Anxiety Index is to provide a quantitative and comprehensive tool for analysing the effects of financial and economic conditions on economic stakeholders. A percentage transformation was applied to the GPR, CDS, EMP, INF, EXC, and BIST variables used in the FAI measurement using the formula $\frac{t_1-t_0}{t_0}$. A seven-stage methodological process was used to measure the FAI.

1st stage: Calculating the arithmetic averages for all variables

In the first stage, arithmetic averages are calculated for each variable, as indicated in equation (1), by dividing the sum of all period values for each variable by the total number of periods.

$$\mu_x = \frac{\sum_{i=1}^{T} x_t}{T} \quad (1)$$

In Equation (1), x represents the variables, μ_x denotes the arithmetic average for each variable, x_t is the value for each variable in period t, and T is the total number of periods.

2nd stage: Calculating the standard deviations for all variables

The standard deviation quantifies the extent to which the values in a dataset deviate from the mean. Equation (2) was used to calculate the standard deviation for each variable.

In equation (2), σ_x is the standard deviation for each variable. Through this process, it is determined how far the data values deviate from the mean. Using Equation (2), standard deviations were calculated for each variable, providing a measure of how much the data points deviate from the mean.

3rd stage: Standardisation process

Standardised values enable the comparison of different variables on a common scale, facilitating a clearer understanding of the data, and supporting various analytical techniques. Each variable is standardised using equation (3).

$Z_{x_t} = \frac{x_t - \mu_x}{\sigma_x}$ (3)

In equation (3), Z_{x_t} denotes the standardised series for each variable x in period t. A common unit of measurement is obtained by standardising for all variables.

4th stage: Calculating the averages of standardised values

Calculating the means of the standardised values yields an overall average of the standardised values of all variables for each observation (in this case for each month, since our dataset is monthly), as shown in Equation (4).

$\text{Ȥ}_x = \frac{\sum_{\dot{I}=1}^{T} Z_{x_t}}{T}$ (4)

In equation (4), Ȥ_x represents the average of the standardised values for each variable x. Equation (4) helps us understand how each time period, in this case each month, performs in terms of all variables. If the computed average of the standardised values is positive, the indicators in that month generally perform above their averages. Conversely, if the average is negative, it that the indicators generally perform below their averages during that month.

5th stage: Calculating the mean index and correlations of each variable with the mean index

The mean index (M) is first calculated by taking the arithmetic mean of all Z_{x_t} for each period t as shown in equation (5). To determine the trends towards the mean for each variable, the covariance of each Z_{x_t} with the M is calculated as in Equation (7), and then the correlation is calculated as in Equation (8).

$M = \frac{\sum_{i=1}^{N} Z_{x_t}}{N}$ (5)

$\mu_M = \frac{\sum_{i=1}^{T} M}{T}$ (6)

$COV_{(\text{Ȥ}_x, M)} = \sum_{i=1}^{T} \frac{\left(Z_{x_t} - \text{Ȥ}_x\right)(M - \mu_M)}{T-1}$ (7)

$\rho_{(\text{Ȥ}_x, M)} = \frac{COV_{(\text{Ȥ}_x, M)}}{\sigma_{\text{Ȥ}_x}\sigma_M}$ (8)

In equations 5-8, N represents the number of variables, M is the mean index, μ_M denotes the periodic arithmetic mean of the M, and ρ is the correlation coefficient.

6th stage: Calculating the weights of variables

Unlike many studies in the literature, this study does not treat all variables equally in the index measurement. Instead, we calculate the weights of the variables based on their correlation with the row means. This approach allows for a more detailed analysis of the relationship between each variable and all other variables in the dataset, providing insights into the role each variable plays in overall variation. By calculating the weights based on the correlation with the mean index (or general trend), we determine how closely each variable aligns with the general trend or given index. Variables with higher correlation values are considered more reflective of the general trend, thus carrying greater importance. The weight of each variable in the index is calculated as described in Equation (9), which involves dividing the correlation of the standardised value of a given variable with the mean index by the sum of the correlations of all variables.

$$w_x = \frac{\rho_{(Z_x, M)}}{\sum_{i=1}^{N} \rho_{(Z_x, M)}} \quad (9)$$

In equation (9), w_x denotes the weight in the index for each variable x. Table 2 the weights determined for each variable used in the FAI measurement as a result of Equation (9).

Table 2

Weights of variables

Variable	Weight	Rank
GPR	0,188152515	2
EXC	0,172239582	3
EMP	0,147910935	5
INF	0,212236602	1
CDS	0,165227833	4
BIST	0,114232534	6

Table 2 highlights the significance of inflation for financial anxiety. When the weights of the variables in Table 2 are analysed, it is evident that the variable with the greatest impact on the FAI is inflation, representing the macroeconomic outlook, with a weight of 21.12%. In contrast, the variable with the least impact is the BIST 100 Index, which represents stock market performance, with a weight of 11.42%. Geopolitical risk, with a weight of 18.81%, is also a significant variable in predicting financial stress and pressure in Türkiye. The foreign exchange rate, which has seen a significant increase since 2021, ranks third with a weight of 17.22%. The CDS premium, which has exhibited high volatility since 2018 and reached 820 points in mid-2022, ranks fourth with a weight of 16.52%. The unemployment rate, an important indicator of the national economy that also represents job insecurity, ranks fifth with a weight of 14.79%. The correspondence between the variables and FAI can also be observed through the time path graphs in Appendix 1

Figure 1

Scatter plot and regression lines between the Financial Anxiety Index and its components

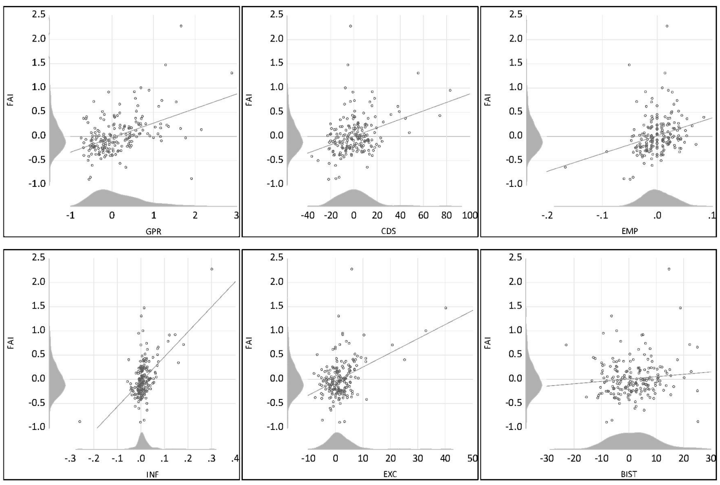

Figure 1's evident from Fig. 1 that all stressors exhibit positive effects on the FAI, with inflation exerting the most significant stress-increasing effect, whereas the stock market has the least stress-increasing effect.

Although the influence of unemployment on financial anxiety appears limited, geopolitical risks, country risk, and exchange rate volatility emerge as crucial determinants of financial anxiety.

The Financial Anxiety Index is a continuous indicator that reflects the perceived levels of economic uncertainty, insecurity, and financial stress experienced by individuals and markets. It is theoretically designed to take values within the range of −∞ to i. A movement of the index towards positive values indicates increasing pessimism, uncertainty, and financial anxiety regarding future expectations among investors and economic agents. In contrast, a shift towards negative values signals relative optimism, financial confidence, and lower levels of anxiety. Values approaching zero may be interpreted as indicative of a neutral sentiment prevailing across the system. This structure enables the index to be effectively used in time series and panel data analyses as either a dependent or independent variable. Given its sensitivity to both directional and intensity-based changes, the index constitutes a parametric and analytically robust measure, offering a strong theoretical foundation for interpretability in future econometric studies.

7th stage: Calculating the index score

The FAI score is calculated by summing the products of the weights for each variable and the corresponding standardised data, with the weights determined by their correlation with the mean index (or general trend), as outlined in Equation (10).

$$FAI = \left(Z_{GPR_t} {*} w_{GPR}\right) + \left(Z_{EXC_t} {*} w_{EXC}\right) + \left(Z_{EMP_t} {*} w_{EMP}\right) + \left(Z_{INF} {*} w_{INF}\right) + \left(Z_{CDS_t} {*} w_{CDS}\right) + \left(Z_{BIST_t} {*} w_{BIST}\right) \quad (10)$$

The seven-stage methodology we follow in this study to derive the FAI score provides a comprehensive and nuanced understanding of financial anxiety and its underlying contributors. This approach allows us to: (1) Evaluate the diverse factors that contribute to financial anxiety, considering multiple dimensions of financial stability; (2) Assign appropriate weights to each variable, indicating their relative importance in contributing to the index; (3) Combine these weighted variables into a single measure, resulting in an index that reflects the overall level of financial anxiety; (4) Gain insights into how different variables interact with and influence the index, facilitating a more detailed analysis; (5) Use the index to track trends over time, identifying periods of heightened financial anxiety or instability; (6) Offer a practical tool for stakeholders to understand financial conditions and make informed decisions; (7) Establish a framework for future studies on financial anxiety, providing a standardised approach to index development and analysis.

The FAI calculated because of the seven-step methodology for the period March 2008-November 2023 is shown in Figure 2.

Figure 2

Financial Anxiety Index for Türkiye

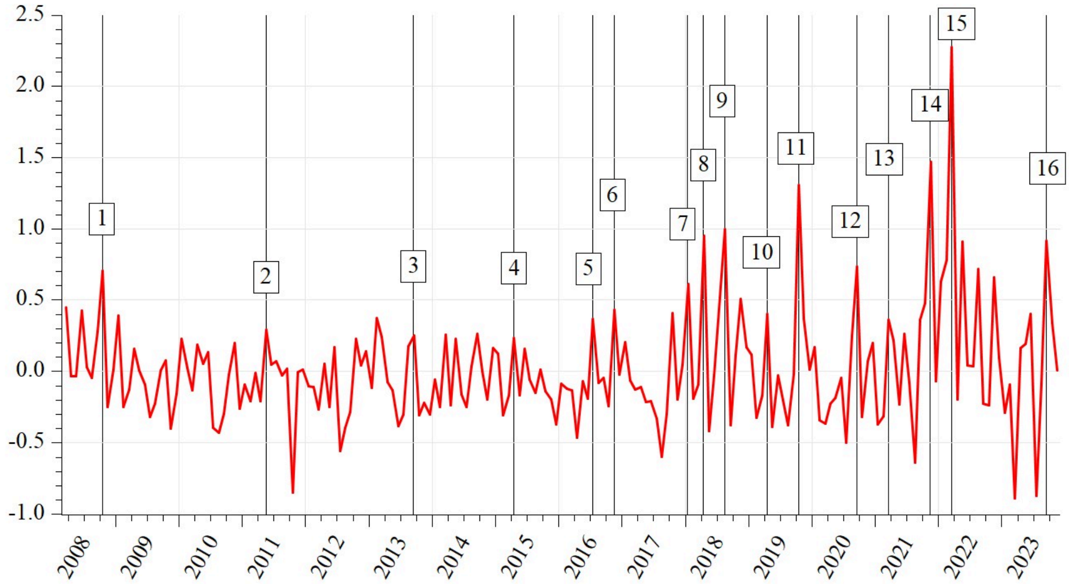

Figure 2 also clearly shows that financial anxiety increases during major geopolitical shocks, such as the July 2016 coup attempt and the COVID-19 pandemic. The Financial Anxiety Index in Figure 2 accurately reflects whether there is anxiety in the markets. Figure 1 shows that the 2008 global financial crisis, domestic political tensions, internal security threats, external security threats, attempted coups, cross-border operations, international diplomatic crises, transition to a presidential system, COVID-19 pandemic, wars, and economic policy shifts are the main drivers of financial anxiety. The Financial Anxiety Index successfully captured the impact of many economic, political, and geopolitical events on financial stress and pressure during the 2008-2023 period. Upon examining the periods when financial anxiety increased in Türkiye, we derived the following conclusions:

1. 2008 global financial crisis: The US-centred crisis had a profound impact on global economies and financial systems, and the Turkish economy was no exception. The downturn led to a significant decline in foreign investments, a contraction in export markets, and disruptions in credit flows, all of which had adverse effects on Türkiye's financial markets.

2. The Arab Spring: The Arab Spring is a series of uprisings and political movements that began in the early 2010s in Tunisia and quickly spread across several Arab countries, including Syria, Libya, Egypt, and Yemen, among others. This wave of political turmoil created uncertainty for Türkiye's trade and investment partnerships in the Middle East, leading to significant economic and financial consequences. The negative developments in the region led to a decline in tourist arrivals and consequently lower Türkiye’s tourism revenues. The problems in the region have dampened foreign investors' interest in Türkiye.

3. *Gezi Park protests*: The Gezi Park protests, which began as a demonstration against the proposed development of a shopping mall in Gezi Park, Taksim, Istanbul, evolved into widespread anti-government protests in 2013. The events attracted global attention and led to a significant shift in investor sentiment. Credit rating agencies issued negative assessments of Turkey's credit rating in response to the protests and the broader political unrest. The political uncertainty stemming from the protests caused a loss

of investor confidence. The political turmoil and associated loss of investor confidence also affected Turkey's foreign trade volume.

4. The resumption of conflicts between Türkiye and the PKK terrorist organisation: In 2015, the renewed conflict between Türkiye and the PKK terrorist organisation resulted in a significant escalation of internal security issues, which had a series of adverse effects on the Turkish economy. The resurgence of violence and terrorism led to heightened security concerns across Turkey. This undermined the confidence of both national and international investors, causing them to reconsider or withdraw their investments, leading to a noticeable decline in capital inflow. The escalation in violence and security risks caused a sharp decline in tourism. Many businesses in the Southeastern Anatolia region suffered losses.

5. FETO coup attempt: The 2016 coup attempt by the Parallel State Structure (FETO/PSS) in Turkey had profound and far-reaching economic consequences, leading to significant instability and uncertainty. The coup attempt caused a sharp drop in the value of the Turkish lira, reflecting a loss of confidence in Turkey's political stability and economic resilience. This depreciation increased import costs and added inflationary pressure to the economy. Major credit rating agencies downgraded Turkey's credit ratings, citing heightened political risk and uncertainty. The coup attempt and the ensuing security concerns led to a substantial drop in tourist arrivals. Lastly, the coup attempt triggered significant volatility in Türkiye's financial markets, especially stock markets.

6. Operation Euphrates Shield: This military operation, launched by Türkiye in 2016, aimed to enhance border security by targeting terrorist organisations YPG and ISIS in northern Syria and to facilitate the safe return of Syrian refugees by establishing a secure zone in the area. However, the operation had several economic repercussions, including increased defence expenditures, a decline in investor confidence, and disruptions in tourism and foreign trade.

7-8. Operation Olive Branch: In 2018, this operation was carried out in Afrin, Syria, to ensure security in the region, resulting in increased volatility in exchange rates, decreased investor confidence and increased defence expenditures

9. Brunson crisis and rising tensions with the United States, and Türkiye's transition to a presidential system: The arrest of US citizen Pastor Andrew Brunson in 2016 due to alleged connections with terrorist organisations, triggered a diplomatic crisis between the United States and Türkiye. The resulting escalation in tensions had significant economic consequences, particularly after the US imposed economic sanctions on Türkiye in the last quarter of 2017. In 2018, Brunson was released. However, because of this diplomatic crisis, the Turkish lira fell sharply, credit rating agencies downgraded Türkiye's ratings, international investors' confidence in Türkiye declined, and foreign capital inflows slowed down. Another development in Türkiye during the same period was the transition to the presidential system, which was approved by the 2017 referendum and started to be implemented on 9 July 2018. With the transition to this system, investor concerns have emerged in terms of transparency and accountability.

10. Local elections and political uncertainties due to the cancellation of Istanbul elections: In 2019, political uncertainties and the annulment of the local elections held in Türkiye in an economic centre such as Istanbul put pressure on the Turkish lira and caused fluctuations in exchange rates. In addition, this situation had a negative impact on foreign investors' interest in Turkish markets.

11. Start of Operation Peace Spring: The start of Operation Peace Spring in 2019, an important initiative in Turkey's security policies aimed at establishing a safe zone in northern Syria, had notable economic repercussions. With the start of Operation Peace Spring, the Turkish lira experienced a significant loss in value against the US dollar and the Euro. This depreciation reflected increased concerns about geopolitical risks and the potential economic impact of the operation. At the beginning of the operation, Borsa Istanbul, Turkey's primary stock exchange, experienced noticeable declines. In particular, foreign investors' confidence in Turkish markets was broken.

12-13-14. COVID-19 pandemic and tensions in the Eastern Mediterranean: The COVID-19 pandemic had a profound impact on the Turkish economy, as did the simultaneous geopolitical tensions in the Eastern Mediterranean. The quarantine and restrictions imposed due to the COVID-19 pandemic have caused serious contractions in many sectors in Türkiye, including tourism, hospitality, retail, and manufacturing. In addition, due to the recession and slowdown in the economy caused by the pandemic, layoffs increased, consumer confidence decreased, and the Turkish lira depreciated. In the same period, Türkiye also experienced tensions in the Eastern Mediterranean with countries such as Greece, Cyprus, Egypt, Israel, and Libya. These geopolitical disputes heightened the perception of risk among investors and contributed to the depreciation of the Turkish lira.

15. Russia-Ukraine War: The conflict between Russia and Ukraine, which began on February 24, 2022, had a substantial impact on the global economy and significantly affected Turkey. Russia is a crucial supplier of natural gas and oil to Turkey, and Ukraine is a major source of some key agricultural products. This war, which continues to this day, led to an increase in Türkiye's energy import costs and food prices. This rise in energy and food prices created additional economic pressures and further triggered inflation. In the same period, the Turkish lira depreciated.

16. Loss of confidence in the markets and serious depreciation of the Turkish lira as a result of two separate policies on interest and inflation: The Turkish central bank's adoption of contrasting policies regarding the cause-and-effect relationship between interest rates and inflation has led to significant instability in the markets. Initially, the central bank pursued a low interest rate policy to stimulate economic growth by encouraging consumption and investment. However, this approach raised concerns among domestic and foreign investors, as it downplay the risk of rising inflation and the importance of stabilising the currency. The outcome of this policy was a sharp depreciation of the Turkish Lira within a short period of one year, along with a surge in inflation to record highs. This market reaction highlighted the risks of pursuing an aggressive growth strategy at the expense of monetary stability and signalled that investors were losing confidence in the central bank's approach. The central bank followed the opposite policy, raising the interest rate from 8.5% in January 2023 to 50% in March 2024. As a result, Turkey's inconsistent interest rate and inflation policies led to a loss of confidence in the financial markets, a severe depreciation of the Turkish lira, and record high inflation.

Although the sixteen developments outlined in this study were not directly used in the construction of the index, the Financial Anxiety Index demonstrated notable responsiveness during the periods in which these geopolitical, political, and economic events occurred. The observed increases in the index during episodes such as the 2008 global financial crisis, the Gezi Park protests, regional military operations, the COVID-19 pandemic, and recent shifts in monetary policy indicate a strong sensitivity to external shocks. The temporal alignment between the index's fluctuations and the timing of these events highlights its empirical validity and effectiveness in capturing changes in investor sentiment and financial stress. In this regard, the listed events serve as external benchmarks that indirectly validate the index's reliability, reinforcing its potential as a robust indicator for use in future econometric applications.

Conclusion

We propose and implement a quantitative and comprehensive tool to analyse the impact of economic-political events on economic stakeholders in Türkiye. Unlike country-based financial stress indices in the literature, we focus on the concept of financial anxiety and develop the Financial Anxiety Index (FAI) for Türkiye. Our dataset covering the period 2008-2023, a period of significant economic-political events both globally and locally for Türkiye, consists of six key variables representing economic stability, business insecurity, country risk, foreign exchange market, stock market, and geopolitical risks.

The FAI offers detailed insights into the financial stability of the Turkish market, notably highlighting the impact of geopolitical, political, and economic events on market dynamics. Empirical findings underscore the significance of events such as the 2008 global financial crisis, shifts in Türkiye's economic policies in recent years, and fluctuations in exchange rates as economic triggers of financial anxiety. Specifically, the findings indicate that the ramifications of heightened exchange rate volatility, central bank interest rate policies, and its effects on inflation are pivotal drivers of financial anxiety and provide useful information for policymakers.

Another significant determinant of financial anxiety is geopolitical risk. Heightened geopolitical risk tends to dampen investment enthusiasm and is correlated with an elevated likelihood of calamity, posing greater downside risks to GDP growth. Political and geopolitical factors, such as domestic and external political tensions, threats of domestic and external war and terrorism, disruptions to peaceful environments, recurrent cross-border operations, elections, coup attempts, and the transition to the presidential system, have been identified as key influences shaping the level of financial anxiety throughout the period from 2008 to 2023. Additionally, the COVID-19 pandemic has emerged as a pivotal event intensifying financial anxiety in the markets. Apart from the health concerns it causes, the pandemic's adverse effects on international supply chains and business operations have heightened job insecurity and induced volatility in the FAI. Overall, the FAI successfully captures the repercussions of numerous economic, political, and geopolitical events on financial stress and pressure throughout the 2008-2023 period, effectively indicating past stress episodes.

The FAI serves as a valuable tool for policymakers, allowing them to accurately assess the level of financial anxiety in real time. This capability proves particularly beneficial for central banks in crafting crisis prevention policies, where timely responses are critical. The index can inform monetary policy decisions, enhance the timing of macroprudential interventions, and guide the design of targeted financial literacy programmes. Furthermore, it can provide valuable insights to international investors by helping them assess the level of financial anxiety in different countries and shape their investment strategies accordingly. Policymakers can use the FAI to detect rising uncertainty and market vulnerabilities at an early stage, enabling the development of proactive macroprudential policies. In periods of heightened geopolitical risk and economic uncertainty, the index can function as a warning mechanism, facilitating timely interventions to restore investor confidence. Because of its practical methodology and accessible data, the index can be expanded internationally to encompass groups of countries with diverse economic and geopolitical profiles.

In future research endeavours, examining the susceptibility of the FAI to internal and external shocks will contribute significantly to the literature, offering vital insights for national policymakers tasked with effectively mitigating adverse spillovers in global financial markets. Future studies may also examine the interactions between the FAI— a novel tool in economics and finance— and indicators such as foreign direct investment, portfolio investments, country risk assessments, investor sentiment, economic development metrics, financial stability, and the occurrence of financial bubbles.

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Author Details

Samet Gürsoy (Asst. Prof. Dr.)
[1] Burdur Mehmet Akif Ersoy University, Bucak Zeliha Tolunay School of Applied Technology and Management.Customs Business Department.
0000-0003-1020-7438

Mert Baran Tunçel (Asst. Prof. Dr.)
[2] Sirnak University, Department of Accounting and Tax.
0000-0001-8554-8080

Serdar Yaman (Assoc. Prof. Dr.)
[2] Sirnak University, Department of Accounting and Tax.
0000-0002-8316-0805

İbrahim Halil Ekşi (Prof. Dr.)
[3] Gaziantep University, Facuty of Economics Department of Business.
0000-0002-0239-3253 eksihalil@gmail.com

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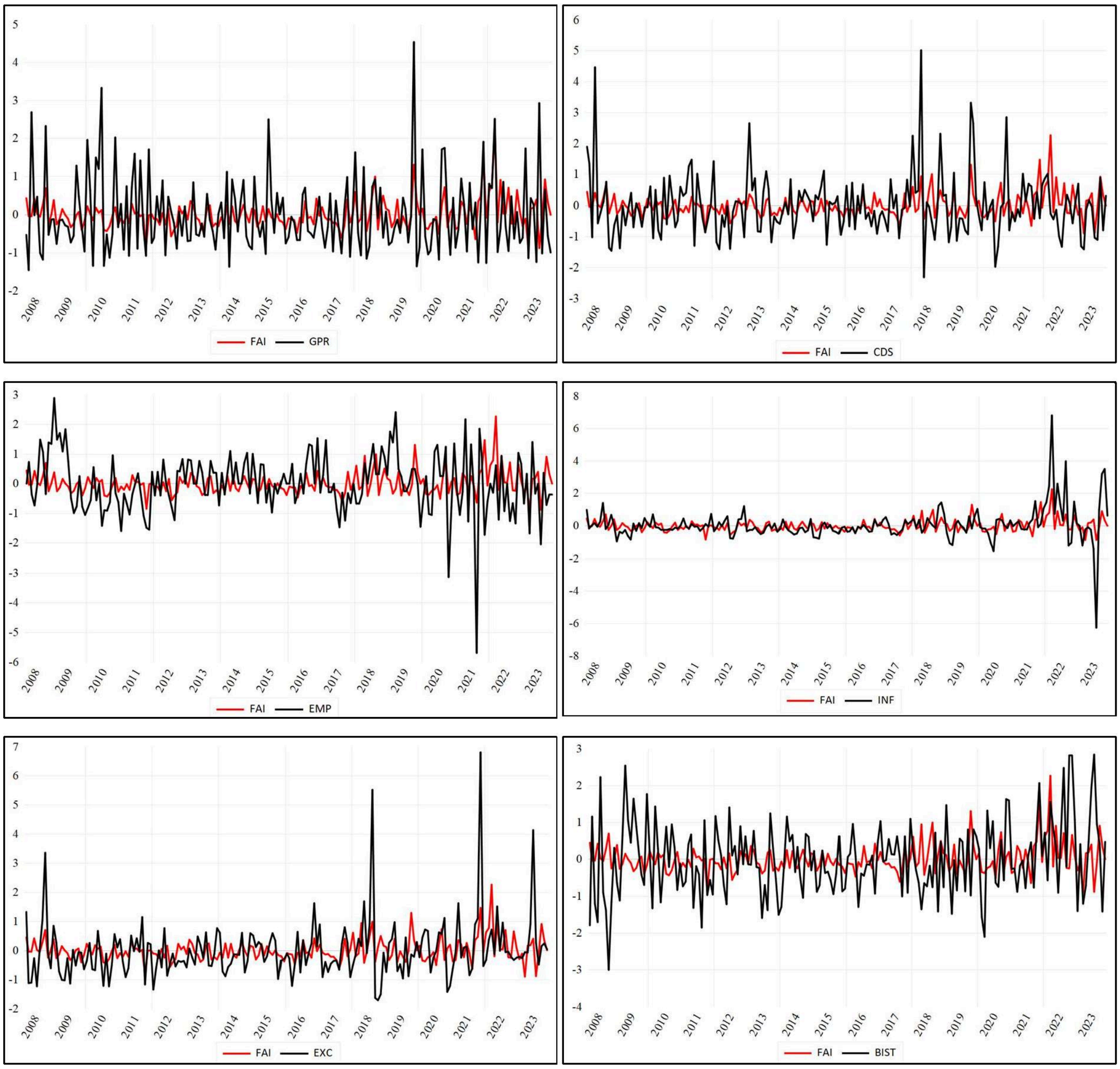
Appendix

Appendix 1

Financial Anxiety Index and its components



Appendix 2

Financial Anxiety Index and its components

Date	EMP	INF	EXC	CDS	GPR	BIST
01.03.2008	0.000	0.052	9.360	32.290	−0.178	87.130
01.04.2008	0.022	0.003	−4.500	23.330	−0.738	111.410
01.05.2008	−0.011	0.011	−4.380	−15.110	1.776	91.950
01.06.2008	−0.021	0.017	0.390	74.410	0.137	87.790
01.07.2008	0.000	0.007	−5.070	−7.640	0.433	120.270
01.08.2008	0.043	0.021	1.970	−1.820	−0.469	94.410
01.09.2008	0.031	0.070	7.770	3.700	−0.573	90.480
01.10.2008	−0.010	0.001	20.810	13.980	1.550	77.200
01.11.2008	0.041	0.012	1.490	−20.710	−0.179	92.390
01.12.2008	0.039	0.039	−1.580	−22.370	0.069	104.470
01.01.2009	0.085	0.013	6.670	−8.910	0.072	96.540
01.02.2009	0.043	−0.031	3.460	−3.470	−0.318	92.650
01.03.2009	0.050	−0.005	−2.240	−20.880	0.054	107.230
01.04.2009	0.032	−0.010	−3.830	1.360	0.064	122.850
01.05.2009	0.054	−0.001	−3.920	−8.900	−0.025	110.590
01.06.2009	0.022	−0.017	0.380	0.000	−0.050	105.560
01.07.2009	−0.014	−0.026	−4.570	8.350	−0.296	115.410
01.08.2009	−0.029	0.016	1.990	−10.000	−0.192	109.170
01.09.2009	−0.022	−0.003	−1.100	2.930	0.916	102.920
01.10.2009	0.008	0.017	1.520	−1.550	0.436	98.490
01.11.2009	−0.023	0.004	1.450	−9.540	−0.036	96.110
01.12.2009	−0.031	0.030	−1.830	0.680	−0.446	116.480
01.01.2010	−0.024	0.016	−0.210	0.720	1.327	103.460
01.02.2010	−0.016	0.008	3.320	11.680	0.531	90.950
01.03.2010	0.017	0.041	−1.780	−15.710	−0.672	113.750
01.04.2010	−0.016	0.007	−1.940	9.930	1.047	104.280
01.05.2010	0.000	0.005	5.670	−11.520	0.865	92.240
01.06.2010	−0.042	−0.001	0.810	−16.560	2.158	100.830
01.07.2010	−0.026	−0.001	−4.980	16.100	−0.671	109.170
01.08.2010	−0.027	−0.001	1.250	−8.390	−0.173	100.180
01.09.2010	−0.018	0.001	−5.140	17.020	−0.546	109.670
01.10.2010	0.028	−0.001	−1.050	4.840	−0.162	104.540
01.11.2010	−0.009	0.005	5.020	−9.950	1.369	95.040
01.12.2010	−0.018	0.002	2.460	−6.370	−0.057	101.000
01.01.2011	−0.047	0.011	4.060	11.440	0.321	95.870
01.02.2011	−0.010	0.030	−0.370	6.680	−0.412	96.850
01.03.2011	−0.020	0.008	−3.330	8.270	0.599	105.140
01.04.2011	−0.030	0.003	−1.570	22.180	−0.512	107.470

Date	EMP	INF	EXC	CDS	GPR	BIST
01.05.2011	−0.010	0.015	4.790	25.600	0.584	91.040
01.06.2011	0.000	0.007	1.680	−19.680	1.112	100.350
01.07.2011	0.011	0.009	4.200	18.080	−0.401	98.460
01.08.2011	−0.010	−0.003	1.630	5.040	1.004	86.600
01.09.2011	−0.032	0.004	8.370	−4.600	−0.027	110.650
01.10.2011	−0.043	0.015	−4.780	−12.580	−0.512	93.920
01.11.2011	−0.045	0.008	3.290	−5.200	1.174	97.250
01.12.2011	0.012	0.042	3.040	2.100	−0.305	94.040
01.01.2012	−0.012	−0.005	−5.710	24.620	−0.222	111.520
01.02.2012	0.012	0.005	−1.590	−17.910	0.437	106.210
01.03.2012	−0.012	0.019	1.910	−21.440	0.027	102.800
01.04.2012	0.024	0.009	−1.460	−3.550	0.680	96.130
01.05.2012	0.000	0.023	6.240	−9.610	−0.507	91.820
01.06.2012	−0.012	0.035	−3.020	1.200	0.430	113.510
01.07.2012	−0.024	−0.023	−0.810	−21.150	0.197	102.750
01.08.2012	−0.036	−0.023	1.310	−1.810	0.013	104.840
01.09.2012	0.013	−0.004	−1.220	3.930	−0.395	98.560
01.10.2012	0.012	0.027	−0.160	3.550	0.199	109.240
01.11.2012	0.024	0.029	−0.350	2.390	−0.193	100.730
01.12.2012	0.000	0.062	−0.200	−15.240	0.280	107.050
01.01.2013	0.024	−0.005	−1.390	9.470	−0.277	100.740
01.02.2013	0.023	−0.001	2.250	44.760	−0.266	100.700
01.03.2013	0.000	−0.001	0.580	9.670	0.655	108.280
01.04.2013	0.000	0.006	−0.880	15.740	−0.169	100.170
01.05.2013	0.023	−0.004	4.610	−12.020	−0.189	99.930
01.06.2013	0.011	−0.012	2.840	−12.330	0.006	88.730
01.07.2013	−0.011	−0.009	0.340	9.250	−0.210	96.180
01.08.2013	−0.011	0.008	5.430	19.550	0.475	90.480
01.09.2013	0.022	0.014	−1.060	10.350	0.058	112.190
01.10.2013	0.011	0.003	−1.120	−17.800	−0.115	104.210
01.11.2013	0.011	0.016	1.190	−3.960	−0.413	97.590
01.12.2013	−0.022	−0.005	6.240	−7.050	0.157	89.510
01.01.2014	0.011	0.001	5.350	−8.100	0.343	91.230
01.02.2014	−0.011	0.027	−2.270	−1.510	−0.229	101.120
01.03.2014	0.011	0.008	−3.110	3.460	0.817	111.480
01.04.2014	0.033	−0.002	−1.320	−3.130	−0.684	105.930
01.05.2014	0.000	−0.007	−0.730	15.340	0.696	107.330
01.06.2014	0.021	−0.013	1.050	−15.730	0.404	98.990
01.07.2014	0.000	−0.010	1.070	−6.770	−0.122	104.670
01.08.2014	0.000	0.004	1.030	9.370	0.345	97.760

Date	EMP	INF	EXC	CDS	GPR	BIST
01.09.2014	0.021	0.005	5.280	3.900	0.693	93.310
01.10.2014	0.030	−0.007	−2.380	9.870	−0.202	107.530
01.11.2014	−0.010	−0.002	−0.200	6.790	−0.349	106.940
01.12.2014	0.030	0.028	5.180	3.700	−0.406	99.480
01.01.2015	0.010	−0.020	4.790	−6.630	0.747	103.760
01.02.2015	−0.019	−0.022	2.550	7.070	0.039	94.610
01.03.2015	0.019	−0.024	3.550	4.830	−0.207	96.080
01.04.2015	0.019	0.011	2.870	11.450	0.036	103.840
01.05.2015	−0.019	0.018	−0.350	19.690	−0.483	98.850
01.06.2015	0.000	0.004	0.700	−19.160	1.656	99.120
01.07.2015	−0.029	0.012	3.330	3.730	0.376	97.160
01.08.2015	0.000	−0.003	5.190	2.250	−0.147	94.120
01.09.2015	−0.010	−0.006	3.800	3.010	0.492	98.660
01.10.2015	0.000	−0.010	−3.660	6.420	0.149	107.010
01.11.2015	0.010	0.006	−0.070	−13.760	0.420	94.740
01.12.2015	0.000	0.008	0.160	−6.610	−0.317	95.340
01.01.2016	0.000	−0.005	1.290	11.960	−0.218	102.450
01.02.2016	0.020	−0.005	0.340	−9.400	0.112	103.170
01.03.2016	−0.019	0.006	−5.000	13.380	0.019	109.830
01.04.2016	−0.010	−0.009	−0.760	−11.050	−0.262	102.470
01.05.2016	0.010	0.007	5.510	6.770	−0.260	91.180
01.06.2016	−0.010	0.003	−2.430	−2.430	0.470	98.730
01.07.2016	0.020	0.013	3.840	12.500	0.574	98.160
01.08.2016	0.039	0.004	−1.010	−5.260	−0.119	100.750
01.09.2016	0.037	−0.006	1.390	−2.170	−0.152	100.680
01.10.2016	0.000	−0.005	3.160	−9.360	−0.225	102.680
01.11.2016	0.045	0.026	11.090	−1.050	0.058	94.220
01.12.2016	−0.009	0.011	2.640	−13.380	0.432	105.600
01.01.2017	0.009	0.011	6.960	−3.860	−0.069	110.440
01.02.2017	0.043	0.025	−3.340	−1.430	−0.383	101.370
01.03.2017	−0.008	0.034	−0.330	−6.030	−0.053	101.680
01.04.2017	−0.008	0.015	−2.300	−11.980	0.482	106.420
01.05.2017	0.000	−0.013	−0.690	15.320	−0.443	103.050
01.06.2017	−0.025	−0.009	−0.160	0.050	0.372	102.970
01.07.2017	−0.043	−0.015	−0.050	7.170	−0.064	107.060
01.08.2017	−0.009	−0.008	−1.890	−15.690	−0.470	102.310
01.09.2017	−0.036	0.000	3.210	−0.510	0.223	93.540
01.10.2017	−0.009	0.024	6.410	0.350	0.739	107.030
01.11.2017	−0.019	0.015	3.350	15.070	−0.527	94.410
01.12.2017	0.000	0.021	−3.290	1.110	0.221	110.910

Date	EMP	INF	EXC	CDS	GPR	BIST
01.01.2018	−0.019	0.028	−0.910	38.150	1.132	103.640
01.02.2018	−0.020	0.006	1.150	8.450	−0.148	99.520
01.03.2018	−0.010	0.026	4.120	9.480	−0.504	96.620
01.04.2018	0.020	−0.008	2.690	83.340	0.897	90.740
01.05.2018	0.000	0.002	11.390	−36.220	−0.554	96.520
01.06.2018	0.020	0.031	1.390	3.250	−0.359	95.890
01.07.2018	0.039	0.019	7.130	0.850	0.594	100.450
01.08.2018	0.009	0.010	33.040	−7.180	0.702	95.640
01.09.2018	0.009	0.003	−7.370	−16.450	0.093	107.800
01.10.2018	0.037	0.063	−7.800	0.280	0.580	90.240
01.11.2018	0.027	0.072	−6.640	39.370	−0.224	105.780
01.12.2018	0.009	0.041	1.460	6.760	0.197	95.650
01.01.2019	0.052	−0.010	−2.350	7.410	−0.336	114.030
01.02.2019	0.041	−0.036	3.340	−17.850	−0.291	100.440
01.03.2019	0.071	−0.041	4.090	−9.980	−0.062	89.720
01.04.2019	0.015	0.012	7.380	18.650	0.063	101.740
01.05.2019	0.007	0.023	−2.140	−17.110	−0.143	94.940
01.06.2019	−0.007	0.011	−0.790	−5.180	0.417	106.510
01.07.2019	−0.007	0.005	−3.550	−5.420	0.244	105.800
01.08.2019	0.000	−0.009	4.370	−11.560	−0.299	94.750
01.09.2019	0.015	0.036	−3.120	−13.490	0.109	108.600
01.10.2019	0.014	0.003	1.130	55.710	2.888	93.750
01.11.2019	0.000	0.036	0.600	44.760	−0.679	108.570
01.12.2019	−0.043	0.054	3.510	5.620	−0.378	107.040
01.01.2020	−0.015	0.006	0.560	−3.580	1.175	104.120
01.02.2020	0.008	0.002	4.350	−11.480	−0.208	88.970
01.03.2020	−0.030	0.003	5.950	13.630	−0.487	84.570
01.04.2020	−0.031	−0.009	5.630	−5.530	−0.426	112.790
01.05.2020	0.032	−0.036	−2.380	0.930	0.075	104.360
01.06.2020	0.038	−0.056	0.470	4.600	0.058	110.430
01.07.2020	0.007	0.026	1.740	−30.770	−0.571	96.710
01.08.2020	0.007	0.028	5.430	−20.090	1.176	95.710
01.09.2020	0.036	0.025	5.010	0.650	1.205	106.180
01.10.2020	−0.092	0.010	8.140	2.850	0.145	97.130
01.11.2020	−0.023	0.004	−6.160	48.070	−0.494	115.390
01.12.2020	0.040	0.024	−5.050	−11.510	0.414	115.050
01.01.2021	−0.008	0.009	−1.640	−1.970	−0.382	99.780
01.02.2021	−0.031	0.016	1.510	−6.660	−0.093	99.860
01.03.2021	−0.008	0.022	11.090	−0.420	0.711	94.590
01.04.2021	0.064	0.002	0.480	−4.390	0.310	100.440

Date	EMP	INF	EXC	CDS	GPR	BIST
01.05.2021	−0.038	0.001	2.430	18.180	−0.440	101.620
01.06.2021	0.039	0.000	2.580	3.970	0.642	95.480
01.07.2021	−0.008	0.018	−2.920	12.900	−0.082	102.700
01.08.2021	−0.167	0.027	−1.630	11.740	0.338	105.680
01.09.2021	0.055	0.076	6.910	−5.520	−0.622	95.540
01.10.2021	0.026	0.006	8.060	8.620	0.195	108.220
01.11.2021	−0.050	0.015	40.280	−5.040	1.298	118.900
01.12.2021	−0.018	0.056	−1.170	12.400	−0.624	102.650
01.01.2022	0.000	0.072	0.000	15.810	0.628	107.840
01.02.2022	−0.009	0.116	3.960	18.100	0.571	97.150
01.03.2022	0.018	0.302	5.960	−2.640	1.668	114.750
01.04.2022	−0.036	0.042	1.210	−5.590	−0.450	108.830
01.05.2022	0.028	0.122	10.450	−0.610	−0.075	104.790
01.06.2022	−0.027	0.067	1.810	−14.540	0.663	94.440
01.07.2022	0.000	0.024	7.270	−20.200	−0.048	107.780
01.08.2022	−0.037	0.181	1.580	−2.950	−0.434	122.330
01.09.2022	−0.019	−0.042	1.670	7.350	0.443	100.280
01.10.2022	−0.039	−0.035	0.610	2.650	−0.235	125.120
01.11.2022	0.031	0.075	−0.020	−7.890	0.191	125.100
01.12.2022	0.020	0.016	0.420	3.510	−0.304	110.680
01.01.2023	−0.019	0.009	0.650	12.980	−0.221	90.330
01.02.2023	0.010	−0.042	0.400	−19.880	1.193	105.240
01.03.2023	−0.049	0.000	1.540	−21.600	−0.547	91.900
01.04.2023	0.041	0.007	1.430	−0.440	0.412	95.950
01.05.2023	−0.010	0.001	6.920	4.280	0.305	105.820
01.06.2023	0.000	−0.050	25.250	1.010	−0.608	117.850
01.07.2023	−0.060	−0.258	3.370	−15.330	1.920	125.310
01.08.2023	0.011	0.052	−0.880	−16.480	−0.477	109.710
01.09.2023	−0.021	0.147	2.680	16.130	0.547	105.270
01.10.2023	−0.011	0.161	3.280	−11.500	−0.191	90.150
01.11.2023	−0.011	0.037	2.050	6.700	−0.459	105.780