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Research Article

Crises, Protests, and Political Turbulence: An Event Study of Risk Appetite in Türkiye

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Abstract

Introduction: This study investigates major whether economic, political, geopolitical, and social events in Türkiye shape investor risk appetite and whether the market response differs y across event types. Understanding these dynamics is important for characterizing risk-on/risk-off regimes and for designing event-contingent risk management and policy responses.

Method: We conduct an event study covering selected events over 2008–2025. Risk appetite is measured by an equally weighted composite index (TRRAI) combining sovereign credit risk (5-year CDS), the exchange rate (USD/TRY), equity returns (BIST-100), and BIST volatility. We estimate abnormal outcomes using (i) an MSCI World–based market model for BIST-100 and (ii) a VIX-based abnormal-change model for TRRAI to control for global risk sentiment. We compare reactions across multiple event windows and decompose TRRAI to quantify component-level contributions.

Results or Findings: Global systemic shocks (e.g., the global financial crisis and COVID-19) generate larger and more persistent risk-off responses in both BIST-100 and TRRAI, in wider windows. Domestic uncertainty and institution- or security-related shocks (e.g., protests, institutional disruptions, and the coup attempt) significantly depress risk appetite in shorter windows, while policy-regime shifts and macroprudential interventions exhibit more asymmetric effects in magnitude and persistence. Events involving uncertainty resolution—such as election processes—tend to trigger milder and more heterogeneous short-run reactions.

Discussion or Conclusion: The evidence indicates that risk-off dynamics transmit through distinct channels depending on event type: CDS and FX dominate in some episodes, equities in others, and volatility is particularly salient during global shocks.

Keywords: risk appetite, event study, cds, Bist-100, Türkiye

JEL Codes: G12, G14, E44, F30

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Araştırma Makalesi

Krizler, Protestolar ve Siyasi Çalkantılar: Türkiye'de Risk İştahına İlişkin Bir Olay Çalışması

Ali Özer^a

Öz

Giriş: Bu çalışma, Türkiye'deki başlıca ekonomik, politik, jeopolitik ve sosyal olayların yatırımcıların risk iştahını biçimlendirip biçimlendirmede ve piyasa tepkisinin olay türlerine göre farklılaşıp farklılaşmadığını araştırmaktadır. Bu dinamiklerin anlaşılması; risk-on/risk-off rejimlerinin karakterize edilmesi ve olaylara bağlı risk yönetimi ile politika tepkilerinin tasarlanması açısından önem taşımaktadır.

Yöntem: 2008–2025 dönemini kapsayan ve seçilmiş olaylardan oluşan bir olay çalışması yürütülmüştür. Risk iştahı, ülke riskini (5 yıllık CDS), döviz kurunu (USD/TRY), hisse senedi getirilerini (BIST-100) ve BIST volatilitelerini birleştiren eşit ağırlıklı bileşik bir endeks (TRRAI) ile ölçülmüştür. Anormal sonuçlar (i) BIST-100 için MSCI World'e dayalı piyasa modeli ve (ii) küresel risk duyarlılığını kontrol etmek amacıyla TRRAI için VIX'e dayalı anormal değişim modeli kullanılarak tahmin edilmiştir. Tepkiler farklı olay pencereleri boyunca karşılaştırılmış; ayrıca TRRAI ayrıştırılarak bileşen düzeyinde katkılar ortaya konmuştur.

Sonuçlar ya da Bulgular: Küresel sistemik şoklar (ör. küresel finansal kriz ve COVID-19), daha geniş olay pencerelerinde, hem BIST-100 hem de TRRAI'de daha büyük ve daha kalıcı risk-off tepkileri üretmektedir. Yurt içi belirsizlik ile kurum- veya güvenlik- temelli şoklar (ör. protestolar, kurumsal kesintiler ve darbe girişimi) kısa pencerelerde risk iştahını anlamlı ölçüde azaltmaktadır. Buna karşılık politika rejimi değişimleri ve makroihtiyati müdahaleler büyüklük ve kalıcılık bakımından daha asimetrik etkiler sergilemektedir. Belirsizliğin çözülmesine işaret eden süreçler—seçimler gibi—genellikle daha ılımlı ve kısa dönemde daha heterojen tepkilerle ilişkilidir.

Tartışma ya da Yapılan Çıkarımlar: Bulgular, risk-off dinamiklerinin olay türüne bağlı olarak farklı kanallar üzerinden aktarıldığını göstermektedir: Bazı dönemlerde CDS ve döviz kuru, diğerlerinde hisse senetleri belirleyici olurken; volatilité özellikle küresel şoklar sırasında daha baskın bir rol oynamaktadır.

Anahtar Kelimeler: risk iştahı, olay çalışması, cds, Bist-100, Türkiye

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Introduction

Financial markets cannot be explained solely by macroeconomic fundamentals; investor perceptions, expectations, psychology, and socio-political developments often shape pricing in material ways. Risk appetite is a central concept that reflects investors' willingness to bear risk, and shifts in perceived risk are frequently priced simultaneously through multiple channels such as equities, exchange rates, and sovereign credit risk premia. Over the post-2008 period, Türkiye has experienced global shocks, institutional ruptures, mass protests, security/terror shocks, geopolitical tensions, and monetary-policy regime shifts, all of which have increased market volatility and repeatedly reshaped risk perceptions (Baker & Wurgler, 2007; Shiller, 2015). It is also emphasized that, when global risk rises synchronously, "global common volatility" shocks can strengthen cross-country synchronized risk-off behavior—so the impact of local events may amplify through interactions with the global risk regime (Engle & Campos-Martins, 2023). In this sense, Türkiye provides a suitable setting in which changes in risk appetite can be observed concurrently across multiple market segments.

Traditional finance theories, including Modern Portfolio Theory (Markowitz, 1952), the Capital Asset Pricing Model (Sharpe, 1964; Lintner, 1965), and the Arbitrage Pricing Theory (Ross, 1976), emphasize the risk–return relationship under the assumptions of rational investors and informationally efficient markets. However, crises and price anomalies observed since the 1980s have highlighted the explanatory limits of purely rational paradigms. Behavioral finance, building on prospect theory (Kahneman & Tversky, 1979), introduced a complementary perspective by explicitly analyzing how psychological mechanisms influence investment decisions. This line of research shows that non-rational behavior and psychological factors can materially affect market prices, making investor perceptions and risk attitudes central to understanding financial decision-making. Consequently, investor sentiment, risk perceptions, and risk appetite have become widely studied constructs in the literature (Baker & Wurgler, 2007; Tetlock, 2007). For Türkiye in particular, recent evidence that links the sentiment/perception channel to foreign portfolio flows supports the view that measuring risk appetite should not be confined to "fundamentals" alone (Güneş, et al., 2024).

Behavioral finance further suggests that investors do not always act fully rationally, and that changes in sentiment, attention, and perceived uncertainty can generate measurable effects on asset prices and risk premia. This perspective implies that risk appetite may fluctuate not only with "fundamentals," but also through information and perception channels such as news flow and uncertainty shocks (Baker & Wurgler, 2007; Tetlock, 2007).

Relatedly, the policy-uncertainty and geopolitical-risk literatures indicate that financial pricing responds to event shocks not only via macroeconomic fundamentals but also through uncertainty itself. Baker, Bloom, and Davis (2016) document strong links between news-based economic policy uncertainty shocks and both financial and real variables, while Caldara and Iacoviello (2022) show that increases in news-based geopolitical risk can generate downside risks to economic activity and financial markets. This framework strengthens the theoretical motivation for the event categories emphasized in this study, particularly institutional/constitutional disruptions and geopolitical/foreign-policy episodes (Baker et al., 2016; Caldara & Iacoviello, 2022). In addition, there is direct empirical evidence that mass protests and social unrest can affect financial markets. The IMF's "Pricing Protest" study reports that social unrest events can systematically reduce cumulative abnormal returns in equity markets and that the effect may be more pronounced in emerging economies, which is consistent with an expectation of short-run risk-off effects from large-scale protest shocks in Türkiye (Barrett et al., 2021). More recent and expanded evidence (using multi-country, multi-

event settings) also confirms that the negative market response to social unrest can be statistically systematic (Barrett et al., 2024).

A critical step in event-study designs is the accurate dating of when an event is first incorporated into prices. With digitalization and real-time news dissemination, political and social developments can reach broad investor audiences rapidly, prompting fast updates in expectations. In this context, the news-flow and investor-attention channel can amplify the impact of event shocks on risk perceptions and risk appetite (Bollen et al., 2011; Ranco et al., 2015). This dynamic is particularly relevant in emerging markets such as Türkiye. Accordingly, this study defines the event day ($t = 0$) as the date when the event is first reflected in a strong and salient wave of news coverage, and it additionally conducts sensitivity checks using alternative event-date definitions. When the event occurs outside a trading session or on a non-trading day, we operationally set $t = 0$ to the first subsequent trading day to capture the earliest point at which market prices can incorporate the information. Appendix A reports, for each event, the calendar event date, the event day used in the analysis ($t = 0$), the implied shift in trading days, and an operational timing classification (Trading-hours-or-same-day versus After-close-or-non-trading-day). Moreover, recent methodological discussions on event-study implementation details (event-window choice, overlapping-event risk, interpretive biases) explicitly recommend building designs that are transparent and replicable (Eden et al., 2022).

In emerging markets, risk-off episodes are often associated with sharp reversals in global portfolio flows, exerting simultaneous pressure on sovereign risk premia (CDS), exchange rates, and equity markets. In Türkiye, changes in risk appetite are frequently observed concurrently in (i) the sovereign risk premium (CDS), (ii) exchange-rate dynamics (USD/TRY), (iii) equity pricing (BIST), and (iv) market volatility. Therefore, measuring risk appetite and analyzing event-driven reactions in this setting requires a framework that jointly tracks multiple market channels rather than relying on a single asset class. This multi-market approach is also consistent with the financial stress index literature, which argues that financial stress cannot be adequately captured by one indicator and that composite measures constructed from several market segments better represent stress regimes (Illing & Liu, 2006; Holló et al., 2012). Illing and Liu (2006), for example, emphasize that composite indicators derived from different segments can better characterize stress states, while Holló, Kremer, and Lo Duca (2012) propose a composite methodology to measure systemic stress by combining multiple market blocks. This literature provides a theoretical basis for constructing TRRAI as a multi-component index spanning CDS, FX, equities, and volatility (Illing & Liu, 2006; Holló et al., 2012). Evidence that CDS–exchange rate interactions and spillovers can intensify during “market fear” periods supports the need to track multiple channels jointly (Feng et al., 2021). In addition, evidence that connectedness between Turkish CDS volatility and FX/equity derivatives markets can vary across volatility regimes suggests that event shocks may be transmitted with different intensities across multiple markets (Gök et al., 2023).

This study treats risk appetite as a latent construct and aims to measure Türkiye-specific risk-on/risk-off regimes through multiple market components, and to test the short-run pricing effects of selected political, social, and macro-financial events using an event-study methodology. Specifically, we report and compare (i) event-window reactions in equity pricing using BIST-100 and (ii) reactions in a holistic risk-appetite gauge, TRRAI, which combines CDS, exchange rates, equities, and volatility. The primary contribution is to make risk-on/risk-off dynamics comparable for the same event set by jointly reporting a single-market response (BIST-100) and a multi-market response (TRRAI) within a unified event-study design. This contribution is also consistent with evidence from Türkiye that examines—using daily data—

the relationship between equity markets and portfolio flows/monetary-policy responses (with controls such as CDS and FX), and it suggests that an event-based design can be powerful in capturing policy-regime shifts (Kartal et al., 2022).

The event-study methodology is a standard approach that quantifies the impact of a discrete event by measuring abnormal returns or abnormal changes around an event window. MacKinlay (1997) provides a systematic methodological framework, while Brown and Warner (1985) show that, with daily data, conventional tests typically perform well in short windows. Accordingly, this study applies an abnormal return–cumulative abnormal return (AR–CAR) framework for BIST-100 and measures abnormal changes in TRRAI across multiple windows, consistent with established practice (Brown & Warner, 1985; MacKinlay, 1997). To control for global risk sentiment, we use the VIX index, a widely employed proxy for expected volatility derived from option prices; its construction is documented in Cboe methodology materials (Cboe Global Markets, 2022). Beyond being an options-implied volatility gauge, the VIX also embeds a variance-risk-premium component and is therefore informative about time-varying risk compensation and market uncertainty. (Bekaert & Hoerova, 2014). In this study, ex-ante classification of events by their “dominant transmission channel” (i.e., not labeling ex post by looking at AR–CAR results) is a design preference aimed at reducing category ambiguity and hindsight bias (Eden et al., 2022).

The analysis is organized around the following research questions:

- (RQ1) Do risk appetite (TRRAI) and equity pricing (BIST-100) respond in the same direction in the short run around selected events in Türkiye?
- (RQ2) Do event effects differ systematically across event types (e.g., crisis/global shocks, protests, security shocks, geopolitical events, monetary-policy/macprudential interventions)?
- (RQ3) As the event window expands, do estimated reactions attenuate (transitory shocks) or cumulate (persistent shocks)?

These questions are evaluated using two complementary outputs for the same event set: (i) AR–CAR measures around event windows for BIST-100 and (ii) abnormal-change measures around event windows for TRRAI, which integrates CDS, FX, equities, and volatility. This dual-output design enables a direct comparison between pricing responses in a single asset class (equities) and a broader multi-market transmission (TRRAI). Although BIST returns are included as one of the components of the TRRAI index, the study also reports a separate AR–CAR event-study analysis for the BIST-100 index. These two measures serve distinct analytical purposes. The BIST AR–CAR analysis captures the immediate price reaction of the equity market and therefore represents a single-market pricing response to the event. In contrast, TRRAI is constructed as a multi-market indicator that aggregates information from sovereign risk (CDS spreads), exchange-rate dynamics (USD/TRY), equity performance (BIST returns), and market volatility. As a result, TRRAI reflects broader shifts in investor risk perception across several financial market segments rather than a single asset class. Reporting both measures allows the analysis to distinguish between equity-specific repricing and broader systemic risk-perception adjustments across markets. Importantly, the interpretation does not rely on the independence of these indicators; rather, their joint evaluation helps identify whether risk transmission operates primarily through equities or through credit, currency, and volatility channels. For RQ3, window-length sensitivity is assessed by examining how the magnitude and persistence of AR–CAR and TRRAI abnormal changes vary across short and wider windows; cumulative strengthening with wider windows is interpreted as evidence of persistence, whereas attenuation indicates more transitory effects.

The hypotheses tested in this framework are based on the expectations that (i) stress- and shock-type events induce contemporaneous risk-off responses in both TRRAI and BIST-100, (ii) the magnitude and persistence of responses differ by event type, and (iii) responses display attenuation or accumulation as a function of window length.

The remainder of the paper is structured as follows. The next section describes the dataset, event classification, and the construction of TRRAI. The methodology section details the event-window design and estimation approach. The results section presents event-level and event-type comparisons. The final section concludes with implications for policy and event-based risk management and outlines directions for future research.

Data and Methodology

Event set and classification approach

All series used in this study are at daily frequency. Daily close data are obtained for the BIST-100 index and the USD/TRY exchange rate, as well as Türkiye's 5-year sovereign CDS spread. We additionally use the VIX as a proxy for global risk sentiment and the MSCI World index as a benchmark for global equity market movements; these are also collected at daily close from the respective data providers. All series are synchronized using the intersection of common trading days. Observations corresponding to non-overlapping holidays across markets are removed. The same aligned calendar is used consistently for the estimation window and for each event window in the event-study design.

We define major post-2008 episodes that are likely to affect risk appetite in Türkiye as events. The post-2008 start date is driven by data availability constraints for the variables employed. To enable systematic analysis, each event is assigned to a single category based on its dominant transmission channel (i.e., each event is mapped to exactly one type). The key rationale is that, although a given event may plausibly activate multiple channels simultaneously (for example, geopolitical tensions may affect both the exchange rate and inflation expectations), multi-label classification can introduce category ambiguity and complicate inference in an empirical event-study setting.

Dominant transmission channel refers to an ex-ante assessment of which risk component the event is most directly expected to trigger at the initial stage, given the nature of the event and how it is reflected in public information flows. In practice, this corresponds to determining whether the event primarily activates institutional/political uncertainty, domestic security risk, geopolitical/foreign-policy risk, a monetary-policy or macroprudential regime change, a macro-data threshold surprise, a natural-disaster/supply shock, or a globally synchronized risk-off shock. Importantly, the classification is not determined ex post by inspecting AR–CAR results. Instead, the event-date definition is fixed and the coding is based on the information set available about the event's characteristics and contemporaneous public narrative.

The coding scheme is designed to be consistent with: (i) the news-based policy-uncertainty framework documenting the pricing effects of institutional and policy disruptions (Baker et al., 2016); (ii) the news-based geopolitical risk approach for wars, interstate tensions, and foreign-policy shocks (Caldara & Iacoviello, 2022); (iii) empirical evidence on social unrest and protests affecting financial markets in an event-study setting (Barrett et al., 2021); and (iv) standard event-study methodology (Brown & Warner, 1985; MacKinlay, 1997).

Classification decisions follow a practical set of rules. An event is coded as: (a) domestic financial crisis/market stress if it directly signals stress in the financial system; (b) monetary policy/macprudential if it involves a policy-rate regime change or a macroprudential instrument shift; (c) geopolitics/foreign policy if it features cross-border conflict, military operations, or major international tensions; (d) security/terror if it involves domestic security shocks such as terror attacks or a coup attempt; (e) protests/social unrest if it is primarily a mass protest episode; (f) institutional/constitutional if it materially alters constitutional or institutional architecture; (g) elections/political power dynamics if it is election-related; (h) macro data shock if it corresponds to a threshold-type macroeconomic announcement; (i) natural disaster for large-scale disasters such as earthquakes; and (j) global shock for synchronized global risk-off episodes. The emphasis in separating monetary-policy events is motivated by the well-established point that the unexpected component of policy actions can transmit strongly into financial prices (Kuttner, 2001).

We classify events into ten mutually exclusive event-type categories (E1–E10) based on the dominant ex-ante transmission channel. To make this coding logic transparent, Table 1 defines the event-type scheme (E1–E10). The subsequent section presents the event list classified under this scheme in Table 2.

Table 1

Event-Type Scheme (E1–E10)

Code	Event type	Scope (summary)
E1	Domestic Financial Crisis & Market Stress	Stress regimes such as banking, FX, or sovereign-debt crises
E2	Elections & Political Power Dynamics	National/local elections; shifts in political balance and related uncertainty
E3	Institutional/Constitutional–Legal Change	Referendums, system changes, major institutional ruptures
E4	Protests & Social Unrest	Mass protests and broad-based social unrest episodes
E5	Security & Terror	Domestic security shocks such as terror attacks and coup attempts
E6	Geopolitics/Foreign Policy & Military Operations	Wars, cross-border operations, and major international tensions
E7	Monetary Policy, Macroprudential Measures & Financial Regulation	Policy-rate regime shifts, macroprudential tools (e.g., FX-protected deposits), CBRT decisions, and major market/regulatory interventions
E8	Macro Data Shock	Threshold-type announcements/breaks in key macro indicators (e.g., inflation)
E9	Natural Disaster	Large-scale disasters such as earthquakes
E10	Global Shock	Synchronized global risk-off episodes (e.g., global financial or health shocks)

Note. Created by the author using microsoft excel statistical software.

In accordance with the diagram in Table 1, the event set used in the study and the type of each event assigned to the dominant channel are reported in Table 2.

Table 2*Event set and type coding*

Date	Event title	Event type	Rationale for classification
2008-09-15	Global financial crisis (post-Lehman shock)	E10	Collapse in global risk appetite → EM outflows / BIST volatility channel
2010-09-12	Constitutional Referendum	E3	Change in institutional/judicial–executive architecture → institutional risk-perception channel
2011-03-15	Syrian civil war / onset of uprising	E6	Persistent border-related geopolitical risk, migration, and security pressure → risk-premium channel
2013-05-28	Gezi Park protests (onset)	E4	Widespread protest wave → domestic political uncertainty and investor-perception channel
2013-12-17	17–25 December episode (first wave)	E3	Institutional–political crisis (perceived executive–judiciary conflict) → risk-premium channel
2015-07-20	Suruç attack	E5	Domestic security shock → flight-to-safety / volatility channel
2015-10-10	Ankara Train Station attack	E5	Large-scale terror shock → security premium and expectations channel
2015-11-24	Downing of Russian jet	E6	Sudden foreign-relations crisis → sanctions/tourism channel
2016-06-28	Atatürk Airport attack	E5	Security shock with tourism-revenue channel
2016-07-15	Coup attempt	E5	Extreme political-regime shock (domestic security) → sovereign risk (CDS) / FX channel
2017-04-16	Presidential system referendum	E3	Change in governance system → institutional framework / predictability channel
2018-08-10	2018 FX and debt crisis (critical wave)	E1	Domestic FX/debt stress → financial fragility and flight-to-safety channel
2019-10-09	Operation Peace Spring	E6	Military operation → foreign-policy and sanctions-risk channel
2020-03-11	COVID-19 (first case announcement)	E10	Global health shock → growth expectations, liquidity, and risk-off channel
2020-08-10	Eastern Mediterranean tensions (NAVTEX / Oruç Reis phase)	E6	Foreign-policy/energy tensions → sanctions and risk-premium channel
2021-04-22	Thodex crisis (withdrawals halted / collapse)	E7	Financial-market/regulatory shock (crypto platform failure) → trust and regulation-expectations channel
2021-12-20	Introduction of FX-protected deposits (announcement)	E7	Macprudential / FX-regime intervention → FX volatility and dollarization channel
2022-09-05	Inflation exceeds 80% (Aug CPI release)	E8	Data-threshold shock → real returns, policy expectations, risk premium
2023-02-06	Kahramanmaraş earthquakes	E9	Large-scale supply shock and fiscal/reconstruction implications → growth–inflation–risk-premium channel
2023-05-28	Presidential election (runoff)	E2	Closure of political uncertainty / repricing → risk premium and policy-expectations channel
2023-06-22	Rate-hike cycle (first hike)	E7	Signal of monetary-policy regime shift → FX / CDS / capital-flows channel
2023-07-20	Policy rate hike (continuation)	E7	Continued tightening → expectations and risk-premium channel
2024-03-31	2024 local elections	E2	Perceived domestic political-balance shift → risk premium and expectations channel

Date	Event title	Event type	Rationale for classification
2025-08-23	Termination of FX-protected deposits	E7	Closure of a policy instrument (normalization) → TRY demand / FX-dynamics channel

Note. Created by the author using microsoft excel statistical software.

Table 2 outlines the distribution of events by type and the definitions of “event day” to be used in the empirical analysis. The following subsection introduces the AR–CAR event study methodology used to measure the impact of these events on financial variables.

AR–CAR (Event Study) methodology

To quantify market reactions to events, this study employs the standard event-study framework (MacKinlay, 1997; Brown & Warner, 1985). The core idea is to define the deviation of the realized return from its “normal” (expected) level around the event date as the abnormal return (AR) and to cumulate these deviations over the event window to obtain the cumulative abnormal return (CAR).

Prior work shows that, when implemented with daily data, conventional tests generally exhibit good statistical properties and can deliver reliable inference, particularly in short event windows (Brown & Warner, 1985). In line with this practice, we specify the estimation window and event windows as follows:

Estimation window: [−250, −30] trading days

Event day: $t = 0$

Event windows: baseline [−10, +10]; robustness windows [−1, +1] and [−3, +3]

This design allows the effects of the events listed in Table 2 to be assessed over alternative time scales. After defining event windows, we specify the normal-return model and compute AR and CAR as follows.

Return definition

For BIST-100, the daily log return is defined as:

$$R_t^{BIST} = \ln(P_t) - \ln(P_{t-1}) \quad (1)$$

where P_t denotes the closing value of the index on day t .

Normal return model (market model)

We use the standard market model for daily returns:

$$R_t^{BIST} = \alpha + \beta R_t^m + \varepsilon_t \quad (2)$$

where R_t^m is the reference series representing the global market return (MSCI World in this study). The parameters α and β are estimated by OLS over the estimation window [−250, −30] (MacKinlay, 1997).

Abnormal return (AR) and cumulative abnormal return (CAR)

The abnormal return during the event window is computed as:

$$AR_t^{BIST} = R_t^{BIST} - (\hat{\alpha} + \hat{\beta} R_t^m) \quad (3)$$

For an event window $[\tau_1, \tau_2]$, the cumulative abnormal return is:

$$CAR^{BIST}_{[\tau_1, \tau_2]} = \sum_{t=\tau_1}^{\tau_2} AR_t^{BIST} \quad (4)$$

The baseline event window is $[-10, +10]$, and robustness results are additionally reported for $[-1, +1]$ and $[-3, +3]$. Up to this point, the methodology captures event-driven reactions in the equity market. However, because risk appetite is inherently multidimensional and cannot be reduced to a single market, the next subsection motivates how risk appetite is measured (single proxy versus composite index) and proposes an index construction that is suitable for this study.

Measuring risk appetite: single proxy or composite index?

In emerging-market economies such as Türkiye, which are highly sensitive to external financing conditions, risk appetite is a latent phenomenon that cannot be directly observed in a single market. Instead, it materializes simultaneously across multiple segments—most notably sovereign credit risk, the exchange rate, and the equity market. Accordingly, the objective of a composite-index design is to extract the common component of indicators that are expected to co-move during risk-off episodes. The financial stress and risk-index literature emphasizes that composite indices combining measures such as credit risk premia (CDS/spreads), exchange-rate dynamics, and equity returns/volatility can reduce measurement error relative to single-indicator proxies and can distinguish stress regimes more consistently. In the context of Türkiye, jointly tracking CDS, the exchange rate, and equity-market volatility helps capture shifts in country risk perceptions through multiple market channels.

In this study, the component set is chosen based on a clear economic mapping. The CDS series captures the sovereign risk premium; USD/TRY reflects perceived risk toward the Turkish lira; BIST returns proxy the equity-market manifestation of risk-on/risk-off pricing; and BIST volatility represents elevated uncertainty and stress that typically intensify during risk-off periods (Illing & Liu, 2006; Holló et al., 2012; Ekinçi, 2013).

The main analysis adopts the composite-index approach, thereby integrating event effects transmitted through credit, FX, and equity channels into a single dependent variable. To preserve transparency and interpretability, the underlying components (CDS, USD/TRY, BIST returns, and volatility) are also reported as part of robustness and interpretation. The index components and sign harmonization are presented in Table 3.

Table 3

Risk appetite index (TRRAI)

Component	Symbol	Measure	Risk-off direction	Note
5-year Türkiye CDS (USD)	(CDS _t)	Daily change	↑	Sovereign risk premium
USD/TRY	(FX _t)	Daily log change	↑	TRY depreciation is risk-off
BIST-100	(EQ _t)	Daily log return	↓	Equity up-moves are risk-on; sign is reversed
BIST volatility	(VOL _t)	20-trading-day rolling standard deviation	↑	Higher volatility is risk-off

Note. Created by the author

The sign harmonization in Table 3 follows a simple rationale. Increases in CDS, the exchange rate, and volatility reinforce risk-off behavior, whereas equity returns proxy risk-on conditions and are therefore included with the opposite sign. In the next step, the four

components are standardized to a common scale and combined using equal weights. As a result, TRRAI is designed to summarize the common risk-appetite component reflected jointly across credit, FX, equity, and volatility channels into a single series.

Composite risk appetite index: TRRAI (Turkey Risk-Return Appetite Index)

In this study, risk appetite is measured by TRRAI, an equally weighted composite index constructed from four market-based components. The index is built in three steps: (i) calendar alignment and sample initialization, (ii) standardization (z-scores), and (iii) sign-harmonized aggregation under equal weights.

(i) Data alignment and sample start

TRRAI is computed at daily frequency. Because the volatility component, VOL_t , is defined as a 20-trading-day rolling standard deviation, the earliest day on which the index can be computed is the first observation after at least 20 trading days. The sample therefore starts on the first date for which all four components are simultaneously available, and all series are aligned on a common trading-day calendar.

(ii) Standardization (z-scores)

Because the components are measured on different scales, each component is transformed into a comparable metric using z-score standardization. For each component:

$$Z_{k,t} = \frac{x_{k,t} - \mu_k}{\sigma_k} \quad (5)$$

where $x_{k,t} \in \{ CDS_t, \Delta \ln(FX_t), R_t^{BIST}, VOL_t \}$; μ_k and σ_k denote the sample mean and sample standard deviation of component k , respectively. Since R_t^{BIST} is already defined as a daily log return, no additional differencing is applied.

(iii) Equal-weighted composite stress and risk appetite index

We first compute a composite “stress” measure that is increasing in the risk-off direction. The components are combined using equal weights, $w_k = 1/4$. Equal weighting is adopted as the baseline specification because it (a) improves interpretability and (b) mitigates data-driven overfitting risks associated with estimating weights. In addition, equal weights provide a transparent benchmark in which each market block (CDS, FX, equities, and volatility) contributes symmetrically to the composite risk-perception indicator. Data-driven weighting schemes—such as principal component analysis (PCA) or latent-factor approaches—may produce weights that are highly sensitive to sample-specific volatility structures and may mechanically assign excessive influence to the most volatile component. Such behavior can reduce interpretability and comparability across samples. For these reasons, the present study retains equal weighting as the baseline specification and treats alternative weighting approaches as conceptually relevant but not necessary for the core identification strategy in the event-study setting. This approach is consistent with the composite financial stress literature emphasizing transparent aggregation across market segments (Illing & Liu, 2006; Holló et al., 2012). Accordingly, the Turkey composite stress index is defined as:

$$FSI_t^{TR} = \frac{1}{4} (Z_{CDS,t} + Z_{FX,t} - Z_{EQ,t} + Z_{VOL,t}) \quad (6)$$

where the equity component enters with a negative sign to ensure sign harmonization in the risk-off direction. Finally, to make the main index interpretable as “higher values = higher risk appetite (risk-on),” we invert the sign and define TRRAI as:

$$TRRAI_t = -FSI_t^{TR} \quad (7)$$

Under this definition, increases in TRRAI indicate a decline in overall risk perceptions for Turkish assets (risk-on), whereas decreases in TRRAI correspond to a strengthening of flight-to-safety behavior (risk-off).

Measuring abnormal effects: VIX-referenced TRRAI and MSCI World-referenced AR-CAR for BIST-100

In this study, the “normal” component is defined using different benchmark series for the two dependent variables:

- Risk appetite index (TRRAI): adjusted using the VIX, which proxies global risk sentiment.
- BIST-100 returns: adjusted using the MSCI World index, which represents global equity market returns.

The motivation for this distinction is as follows. TRRAI is a Türkiye-specific risk-on/risk-off measure constructed from multiple domestic market segments; therefore, a benchmark capturing exogenous shifts in global risk appetite (VIX) provides a more direct external reference for its normal variation. By contrast, BIST-100 is an equity-market return series, for which specifying a market model against a global equity benchmark (MSCI World) is standard practice. Specifically, over the estimation window $[-250, -30]$, we estimate the benchmark model $TRRAI_t = \gamma + \delta VIX_t + \varepsilon_t$. We define abnormal TRRAI movements as the residual component $A\Delta TRRAI_t = \varepsilon_t$ and cumulate it within each event window to obtain cumulative abnormal changes (CA Δ TRRAI).

Results

Descriptive statistics for the variables used in this study are reported in Table 4. All variables are observed at daily frequency, and after applying the relevant transformations and aligning the calendar, the final sample consists of 4,187 observations. The sample covers a sufficiently long post-event period for the final event in the dataset, ensuring that the widest event window $[-10, +10]$ is fully observable for all events and that no forward-dated (out-of-sample) observations are required for AR-CAR or CA Δ TRRAI calculations. The fact that all variables share the same number of observations indicates that the series are aligned on a common trading-day calendar and that the dataset is balanced.

Table 4*Descriptive statistics*

Variables	N	Mean	Std. dev.	Min	Max
TRRAI (4-component index, level)	4187	0.001182	0.556362	-8.048016	5.432600
CDS (daily change)	4187	0,00057	0,03364	-0,22092	0,49108
USD/TRY ($\Delta \ln$)	4187	0.000842	0.010120	-0.293974	0.147066
BIST-100 (log return)	4187	0.000807	0.017517	-0.362394	0.094219
BIST-100 volatility (20-day rolling s.d.)	4187	0.015566	0.008098	0.005252	0.093804
VIX ($\Delta \ln$)	4187	-0.000123	0.079898	-0.442449	1.031882
MSCI World (log return)	4187	0.000395	0.013647	-0.343223	0.109644
TRRAI ($\Delta \ln$ / daily change)	4187	0.000046	0.067968	-2.198158	1.908242

All series are aligned on a common trading-day calendar. CDS is measured as a daily change. BIST-100 and MSCI World are defined as daily log returns ($\Delta \ln$). USD/TRY, VIX, and TRRAI are defined as daily log changes ($\Delta \ln$). BIST-100 volatility is computed as the 20-trading-day rolling standard deviation of returns.

Note. Created by the author using microsoft excel and stata statistical softwares.

Table 4 summarizes the descriptive properties of the aligned series. The near-zero mean of TRRAI in levels is consistent with its standardized construction, while its wide range indicates that the sample period features pronounced risk-on and risk-off regimes and that risk appetite can fluctuate sharply over time. The daily-change series for TRRAI further suggests that risk appetite generates meaningful shocks at the daily frequency and can therefore be informative for capturing short-run dynamics.

Changes in the sovereign CDS measure exhibit a limited average drift, but the wide dispersion and high volatility indicate that country risk perceptions are susceptible to abrupt day-to-day jumps and are highly shock-sensitive. Similarly, the broad distributions observed for USD/TRY and VIX changes suggest that FX-market conditions and global uncertainty can deteriorate and recover rapidly in specific episodes. MSCI World returns, used to control for global market conditions, display a more stable distribution overall, while still reflecting occasional sharp price movements at the global level.

Daily log returns on the BIST-100 show a limited mean drift but substantial variation, indicating notable day-to-day volatility in the equity market. The fact that the minimum return is more extreme than the maximum implies that negative shocks can produce sharper losses, consistent with relatively pronounced downside tail risk. BIST-100 volatility, computed as a rolling standard deviation of returns, exhibits marked episodic increases, suggesting a regime-like character in which volatility can rise quickly during stress periods and provides a complementary gauge of market risk. Overall, the descriptive statistics indicate a sample period characterized by high volatility, regime shifts, and asymmetric responses, and they support the use of TRRAI as a discriminating composite measure for analyzing risk-appetite dynamics in Türkiye.

Finally, we analyze the BIST-100 response around the political, economic, and geopolitical events defined in Section 2 using the event-study methodology. For each event, cumulative abnormal returns (CAR) computed over alternative windows are reported in Table 5. Using short $[-1, +1]$, medium $[-3, +3]$, and wide $[-10, +10]$ windows allows us to examine

both immediate and more persistent reactions and to assess whether shocks to the BIST-100 appear transitory or cumulative over time.

Table 5

BIST-100 event effects (CAR)

Type	Event	CAR [-1,+1]	t-stat. [-1,+1]	CAR [-3,+3]	t-stat. [-3,+3]	CAR [-10,+10]	t-stat. [-10,+10]
E10	Global financial crisis	-9.008	-2.203	-22.205	-3.555	-4.084	-0.377
E3	Constitutional Referendum	0.952	0.352	1.469	0.356	4.598	0.643
E6	Syrian civil war	4.123	1.855	3.069	0.904	2.954	0.502
E4	Gezi Park protests	-4.688	-2.450	-6.915	-2.366	-17.854	-3.527
E3	17–25 December episode	-6.414	-2.439	-7.923	-1.972	-13.203	-1.898
E5	Suruç attack	-2.316	-1.064	-3.935	-1.184	-5.219	-0.906
E5	Ankara Train Station attack	-0.963	-0.434	1.766	0.545	5.876	1.008
E6	Downing of Russian jet	-6.755	-2.982	-7.008	-1.926	-6.482	-1.013
E5	Atatürk Airport attack	-3.259	-1.188	-1.903	-0.461	-0.388	-0.053
E5	Coup attempt (15 July)	-8.532	-2.921	-8.290	-1.869	-7.278	-0.937
E3	Presidential system referendum	-0.946	-0.331	-0.329	-0.078	3.133	0.399
E1	2018 FX and debt crisis	-4.018	-1.934	-3.505	-1.105	-1.403	-0.255
E6	Operation Peace Spring	-2.714	-0.919	-4.281	-0.958	-8.876	-1.135
E10	COVID-19	-5.379	-2.361	-13.250	-3.808	-14.723	-2.443
E6	Eastern Mediterranean tensions	7.099	3.002	0.058	0.016	-9.192	-1.469
E7	Thodex crisis	-0.273	-0.123	-2.729	-0.803	-3.033	-0.515
E7	Introduction of FPD	-5.663	-1.908	-8.620	-1.921	-2.642	-0.333
E8	Inflation exceeds 80%	7.094	2.216	8.639	1.766	5.269	0.622
E9	Kahramanmaraş earthquakes	-6.671	-2.172	-2.851	-0.608	-14.864	-1.830
E2	Presidential election (runoff)	8.726	2.240	10.425	1.752	3.184	0.309
E7	Rate-hike cycle (first hike)	5.618	1.434	3.272	0.547	10.269	0.991
E7	Policy rate hike (continuation)	4.132	0.983	0.208	0.032	10.258	0.923
E2	2024 local elections	2.079	0.575	-0.314	-0.057	2.376	0.248
E7	Termination of FPD	1.667	0.582	3.438	0.786	-4.802	-0.634

FPD is FX-protected deposits

Note. Created by the author using microsoft excel and stata statistical softwares.

The results in Table 5 indicate that the BIST-100 exhibits heterogeneous and asymmetric responses across event types. Systemic shocks such as the global financial crisis and the COVID-19 pandemic generate pronounced negative CARs, particularly in the short and medium windows. Notably, the strong negative CAR following the first COVID-19 case announcement persists in the wide window, suggesting that global uncertainty shocks induce broad-based risk-off behavior in Türkiye's equity market and that the repricing is not confined to the immediate aftermath. Similarly, the clearly negative medium-window CAR for the global financial crisis indicates rapid transmission from deteriorating global risk appetite into BIST-100 pricing.

By contrast, events related to political processes—such as the constitutional referendum and presidential elections—tend to deliver positive or modest CARs in short and medium

windows. The consistently positive CARs around the constitutional referendum across windows suggest that expectations of uncertainty resolution may be priced favorably by market participants, although statistical power may be limited in some windows. Likewise, the positive short- and medium-window CARs around the presidential runoff election are consistent with a “closure of uncertainty” channel that can compress risk premia in the short run. The weakening of the effect in the wide window, however, suggests that the impact of political developments may often be concentrated over short-to-medium horizons.

For social unrest, terror attacks, and security-related shocks, the BIST-100 generally produces negative CARs in short windows. The Gezi Park protests and the 17–25 December episode display negative CARs in both short and wider windows, consistent with the view that investors interpret such episodes as high-uncertainty shocks. The coup attempt is associated with strongly negative CARs in short and medium windows, highlighting how domestic security shocks can rapidly worsen country-risk perceptions and trigger flight-to-safety dynamics. At the same time, for some events the effect attenuates or changes sign as the window widens, suggesting that markets can partially adjust over time and that recovery dynamics may emerge.

Results around macro-financial crises and policy interventions appear sensitive to the time horizon. The 2018 FX and debt crisis yields negative CARs in the short window, but the attenuation in wider windows may indicate partial pre-event pricing or a relatively rapid adjustment mechanism in the equity market. For monetary tightening steps (rate hikes), positive short-window CARs and the persistence of positive CARs in the wide window suggest that, in some episodes, tightening signals can be interpreted as uncertainty-reducing and credibility-enhancing. In contrast, while the termination of FX-protected deposits is associated with positive short and medium-window CARs, the wide-window effect turns negative, pointing to a more complex, time-varying pricing process that is likely sensitive to concurrent developments.

Overall, the AR–CAR evidence in Table 5 suggests that the BIST-100 reacts strongly and predominantly negatively to global systemic shocks and domestic events that elevate uncertainty, whereas developments perceived to reduce uncertainty or improve policy clarity can be priced more positively. These findings indicate that risk perceptions in Türkiye’s equity market are event-specific, time-varying, and asymmetric, and they provide a useful benchmark for interpreting the corresponding results based on the composite risk appetite index (TRRAI).

Table 6 reports the response of the Turkey Risk-Return Appetite Index (TRRAI) around selected political, economic, and geopolitical events using cumulative abnormal changes (CA Δ TRRAI) computed over alternative event windows. Within the event-study framework, short $[-1, +1]$, medium $[-3, +3]$, and wide $[-10, +10]$ windows are used to examine both immediate and more persistent dynamics in risk appetite. Positive CA Δ TRRAI values indicate increasing risk appetite (risk-on), whereas negative values correspond to a strengthening risk-off regime.

Table 6*Event effects on CAATRRAI*

Type	Event	CAATRRAI [-1,+1]	t-stat. [-1,+1]	CAATRRAI [-3,+3]	t-stat. [-3,+3]	CAATRRAI [-10,+10]	t-stat. [-10,+10]
E10	Global financial crisis	0.367	0.433	-1.545	-1.194	-0.915	-0.408
E3	Constitutional Referendum	0.111	0.164	0.009	0.008	0.317	0.177
E6	Syrian civil war	0.030	0.052	-0.675	-0.779	-0.416	-0.277
E4	Gezi Park protests	-6.105	-1.427	-0.007	-0.001	-1.923	-0.170
E3	17–25 December episode	-10.238	-1.668	-9.085	-0.969	-6.396	-0.394
E5	Suruç attack	0.158	0.277	0.217	0.199	-0.595	-0.308
E5	Ankara Train Station attack	-0.720	-1.308	-0.092	-0.110	-0.258	-0.178
E6	Downing of Russian jet	-0.972	-1.748	-0.322	-0.379	-0.570	-0.383
E5	Atatürk Airport attack	-0.302	-0.625	-0.134	-0.182	-0.777	-0.611
E5	Coup attempt (15 July)	-17.968	-2.985	-11.635	-1.266	-1.778	-0.112
E3	Presidential system referendum	0.418	0.069	0.400	0.043	0.660	0.041
E1	2018 FX and debt crisis	-2.372	-3.730	1.079	1.111	1.553	0.930
E6	Operation Peace Spring	-0.271	-0.593	-0.551	-0.794	-1.161	-0.957
E10	COVID-19	-9.664	-1.338	-24.572	-2.228	-22.105	-2.378
E6	Eastern Mediterranean tensions	0.055	0.106	-0.032	-0.041	-0.115	-0.087
E7	Thodex crisis	0.021	0.038	-0.072	-0.086	-0.559	-0.375
E7	Introduction of FPD	-3.702	-5.162	0.347	0.317	-0.586	-0.308
E8	Inflation exceeds 80%	4.493	0.297	-1.673	-0.072	-4.287	-0.107
E9	Kahramanmaraş earthquakes	-20.875	-1.928	2.859	0.173	-0.010	-0.005
E2	Presidential election (runoff)	0.408	0.473	-0.221	-0.167	-1.508	-0.660
E7	Rate-hike cycle (first hike)	0.350	0.407	-0.442	-0.337	0.477	0.210
E7	Policy rate hike (continuation)	0.740	0.836	-0.327	-0.242	-0.072	-0.031
E2	2024 local elections	-5.248	-0.569	9.405	0.668	-1.064	-0.044
E7	Termination of FPD	-2.620	-0.426	-1.018	-0.108	-7.023	-0.431

FPD is FX-protected deposits

Note. Created by the author using microsoft excel and stata statistical softwares.

The results in Table 6 indicate that TRRAI responds strongly—and predominantly negatively—to events characterized by elevated uncertainty. Among global shocks, the COVID-19 episode shows a risk-appetite deterioration that is already negative in the short window and deepens substantially in the medium and wide windows, indicating that global uncertainty rapidly intensifies risk-off behavior in Türkiye’s financial markets. For the global financial crisis, the short-window estimate is mildly positive, but it turns negative in the medium and wide windows, suggesting that the inferred response is sensitive to window length and that the initial-day movement may have been offset by subsequent adjustment through other channels.

For episodes dominated by domestic uncertainty and institutional disruptions, TRRAI produces rapid and sharp declines, confirming the composite index’s sensitivity to country-specific risk shocks. The Gezi Park episode yields a pronounced short-window risk-off response, while the 17–25 December episode remains negative across short, medium, and wide windows, consistent with the interpretation that perceived institutional–political crisis

compresses risk appetite. Similarly, the coup attempt is associated with a very large negative short-window response and continued negative effects in the medium window, indicating that domestic security shocks can strengthen the risk-off regime sharply, likely through the FX and sovereign risk premium channels.

By contrast, political-process events such as the constitutional referendum and the presidential system referendum are associated with positive or limited $CA\Delta TRRAI$ values in short windows. This pattern is consistent with the notion that such events may, in some cases, be interpreted as uncertainty-resolving and thus supportive of risk appetite. The modest magnitude, however, suggests that the effect of political developments on risk appetite may depend on the event's surprise component and concurrent macro-financial conditions.

Results around macro-financial crises and policy interventions indicate that risk appetite is sensitive to the time horizon. For the 2018 FX and debt crisis and the introduction of FX-protected deposits, the short-window reaction is risk-off, but partial recovery signs emerge in the medium window, suggesting that markets may rebalance risk perceptions after the initial shock through adjustment and policy-response channels. For the inflation-threshold episode, the short-window response is positive, whereas medium and wide windows weaken or turn negative, implying that macro-data threshold news may initially be interpreted through a policy-response-expectations channel, but can subsequently be dominated by concerns about the growth–inflation path.

Finally, for several events, negative short-run $CA\Delta TRRAI$ values attenuate or reverse in medium and wide windows, indicating that risk appetite can react quickly yet transiently to shocks in Türkiye's markets. Overall, Table 6 shows that $TRRAI$ captures both global and domestic uncertainty shocks and that risk appetite dynamics are event-specific, horizon-dependent, and asymmetric. These findings provide empirical support for using $TRRAI$ as a reliable risk-perception proxy in subsequent econometric analysis.

Table 7 jointly reports, for the $[-1, +1]$ window, the events that generate the strongest short-run risk-off effects according to $TRRAI$ and the contemporaneous BIST-100 response. This comparison is intended to reveal the extent to which sharp declines in risk appetite translate into equity-market pricing and whether the direction and magnitude of the two measures align in the short run.

Table 7*Strongest risk-off events based on TRRAI and the BIST-100 response ([-1, +1])*

Type	Event	BIST CAR [-1,+1] (%)	t-stat. (BIST)	TRRAICA $\Delta[-1,+1]$	t-stat. (TRRAI)
E9	Kahramanmaraş earthquakes	-6.671	-2.172	-20.875	-1.928
E5	Coup attempt (15 July)	-8.532	-2.921	-17.968	-2.985
E3	17–25 December episode	-6.414	-2.439	-10.238	-1.668
E10	COVID-19	-5.379	-2.361	-9.664	-1.338
E4	Gezi Park protests	-4.688	-2.450	-6.105	-1.427
E2	2024 local elections	2.079	0.575	-5.248	-0.569
E7	Introduction of FX-protected deposits	-5.663	-1.908	-3.702	-5.162
E7	Termination of FX-protected deposits	1.667	0.582	-2.620	-0.426
E1	2018 FX and debt crisis	-4.018	-1.934	-2.372	-3.730
E6	Downing of Russian jet	-6.755	-2.982	-0.972	-1.748

Note. Created by the author using microsoft excel statistical software.

The results in Table 7 indicate that events associated with pronounced declines in TRRAI largely coincide with economically and statistically meaningful negative cumulative abnormal returns in the BIST-100. For the Kahramanmaraş earthquakes and the coup attempt—two episodes producing the sharpest short-window deteriorations in risk appetite—the steep declines in TRRAI occur simultaneously with strongly negative BIST CARs, indicating rapid transmission of the risk-off regime into equity pricing. Similarly, for high-uncertainty events such as the 17–25 December episode, the Gezi Park protests, and the first COVID-19 case announcement, deteriorations in risk appetite align with sizable negative repricing in equity returns. Taken together, these patterns suggest that a worsening of risk perceptions as captured by TRRAI is, in the short run, associated with a clear flight-to-safety response in Türkiye’s equity market.

At the same time, some events exhibit a non-aligned responses between TRRAI and BIST-100. The 2024 local elections and the termination of FX-protected deposits illustrate cases in which TRRAI signals risk-off in the short window while BIST CARs are positive. This pattern suggests that equity pricing may reflect not only contemporaneous risk perceptions but also the perceived policy direction and normalization expectations, the extent of pre-event pricing, and concurrent expectation channels. Thus, while TRRAI and BIST-100 often move in the same direction, the equity market may price certain events through a different expectation set.

Table 7 also highlights that a policy-regime step such as the introduction of FX-protected deposits generates a strong risk-off coincidence in both TRRAI and BIST-100, consistent with the view that markets may interpret unconventional policy interventions as heightened uncertainty signals in the short run. By contrast, within the same policy category, the termination of the instrument is associated with a positive BIST response, indicating that the content and context of a policy action (e.g., perceived normalization and improved predictability) can reverse the direction of equity pricing. This distinction is consistent with the broader finding that effects within E7-type events can be asymmetric at the event level.

Overall, Table 7 shows that TRRAI-identified risk-off regimes largely coincide with negative cumulative abnormal returns in the BIST-100, supporting TRRAI as a reliable composite gauge of short-run risk perceptions in Türkiye's financial markets. Nevertheless, the presence of events for which TRRAI is negative while BIST CARs are positive or muted indicates that equity-market responses can vary with event characteristics, policy expectations, and the degree of pre-event pricing. These findings imply that sharp deteriorations in risk appetite typically transmit quickly and negatively to equities, while certain policy transitions may generate more complex pricing patterns, underscoring TRRAI's usefulness as a complementary and powerful analytical tool.

Having examined event-level reactions for the strongest risk-off episodes identified by TRRAI, we next deepen the analysis at the event-type level. To this end, Table 8 groups similar events and reports mean and median BIST CAR and TRRAI CAA values across alternative windows ($[-1, +1]$, $[-3, +3]$, and $[-10, +10]$), enabling a comparative assessment of short- and longer-horizon reactions by event type.

Table 8

Mean/median effect sizes by event type

		BIST100					
Type	Events	CAR (-1,+1)	CAR (-1,+1)	CAR (-3,+3)	CAR (-3,+3)	CAR (-10,+10)	CAR (-10,+10)
		Mean(%)	Med.(%)	Mean(%)	Med.(%)	Mean(%)	Med.(%)
E1	1	-4.018	-4.018	-3.505	-3.505	-1.403	-1.403
E2	2	5.403	5.403	5.056	5.056	2.780	2.780
E3	3	-2.136	-0.946	-2.261	-0.329	-1.824	3.133
E4	1	-4.688	-4.688	-6.915	-6.915	-17.854	-17.854
E5	4	-3.768	-2.787	-3.090	-2.919	-1.752	-2.804
E6	4	0.438	0.705	-2.040	-2.111	-5.399	-7.679
E7	5	1.096	1.667	-0.886	0.208	2.010	-2.642
E8	1	7.094	7.094	8.639	8.639	5.269	5.269
E9	1	-6.671	-6.671	-2.851	-2.851	-14.864	-14.864
E10	2	-7.193	-7.193	-17.727	-17.727	-9.404	-9.404
		TRRAI					
E1	1	-2.372	-2.372	1.079	1.079	1.553	1.553
E2	2	-2.420	-2.420	4.592	4.592	-1.286	-1.286
E3	3	-3.236	0.111	-2.892	0.009	-1.806	0.317
E4	1	-6.105	-6.105	-0.007	-0.007	-1.923	-1.923
E5	4	-4.708	-0.511	-2.911	-0.113	-0.852	-0.686
E6	4	-0.290	-0.121	-0.395	-0.436	-0.566	-0.493
E7	5	-1.042	0.021	-0.302	-0.327	-1.553	-0.559
E8	1	4.493	4.493	-1.673	-1.673	-4.287	-4.287
E9	1	-20.875	-20.875	2.859	2.859	-0.010	-0.010
E10	2	-4.649	-4.649	-13.058	-13.058	-11.510	-11.510

Note. Created by the author using microsoft excel statistical software.

The evidence in Table 8 shows that responses of both BIST-100 and TRRAI vary markedly by event type, in both magnitude and persistence. For global shocks (E10), the BIST response becomes substantially more negative as the window widens, indicating that the global risk-off regime is not confined to the event day but unfolds over several days. Consistent with this pattern, TRRAI exhibits strongly negative values in medium and wide windows, suggesting that global shocks generate persistent flight-to-safety dynamics across Turkish assets. By contrast, for the domestic financial crisis category (E1), BIST CAR remains negative but

attenuates in wider windows, while TRRAI turns positive in the medium and wide windows, pointing to a potential role for post-shock adjustment and policy-response channels.

For domestic political and institutional categories (E3) and the mass-protest category (E4), the evidence is heterogeneous. The protest event (E4) produces strong negative responses in the short window for both BIST and TRRAI, consistent with a broad-based deterioration in risk perceptions across channels. Within E3, negative mean effects coexist with less negative or even positive medians in wider windows, indicating substantial cross-event dispersion and a potential influence of outliers. For TRRAI, the contrast between a negative mean and a near-zero/positive median in the short window similarly suggests that institutional episodes vary considerably in how sharply they deteriorate risk appetite.

Security and terror events (E5) generate clearly negative average BIST CARs in short and medium windows, consistent with accelerated flight-to-safety in equities following security shocks. The attenuation of the negative effect in the wide window suggests partial market adjustment or recovery dynamics. TRRAI also shows negative short-window means in E5, confirming an initial deterioration in risk perceptions, while the less negative medians point to heterogeneity across episodes.

For geopolitical events (E6), BIST responses become more negative as the window widens: the short-window mean is slightly positive, whereas medium and wide windows turn distinctly negative, consistent with the idea that risk-premium and uncertainty channels may be priced more gradually over several days. TRRAI shows small negative effects in the short window and a strengthening of negative effects in medium and wide windows, suggesting that geopolitical tensions feed into risk perceptions in a more cumulative manner.

For policy regime and economic-policy events (E7), the divergence between means and medians is pronounced, highlighting strong event-level asymmetry. In BIST, the mean is positive in the short window, turns negative in the medium window, and returns to positive in the wide window, while the median remains positive in the short window, suggesting that some policy steps can be interpreted as uncertainty-reducing and thus priced favorably. In TRRAI, the negative short-window mean alongside a near-zero/positive median indicates that E7 is not a uniformly risk-off category. This pattern is consistent with the notion that the surprise component of policy actions, the communication framework, and the extent of pre-event pricing play a critical role in shaping the direction of market reactions.

Finally, despite being based on a limited number of events, E8 and E9 display noteworthy patterns. For E8, BIST CAR is strongly positive across all windows, whereas TRRAI is positive in the short window but turns negative in the medium and wide windows, suggesting that macro-threshold announcements may initially be interpreted via a policy-response-expectations channel but can later be dominated by concerns about the inflation–growth trade-off and the risk premium. For E9, BIST exhibits large and persistent negative effects, while TRRAI shows an extremely sharp short-window decline followed by rapid attenuation, implying that while disasters can leave deep imprints on equity pricing, the composite risk-appetite measure may rebalance over time as different components adjust.

Overall, Table 8 indicates that BIST responses are closely related to event type, scope, and the extent to which pricing unfolds over time, whereas TRRAI produces stronger and more persistent risk-off signals especially for global shocks and high-uncertainty domestic disruptions. These results underscore that risk perceptions in Türkiye’s financial markets differ

meaningfully by event type and that the composite risk-appetite approach (TRRAI) offers an informative framework for capturing market dynamics in systemic episodes.

Having summarized event-level co-movements in Table 7 and type-level mean/median magnitudes in Table 8, we next consider through which channels the risk-on/risk-off responses are transmitted. Because TRRAI combines sovereign credit risk (CDS), the exchange rate (USD/TRY), equity returns (BIST), and volatility, identifying the dominant component(s) is informative. To this end, Table 9 decomposes the short-window $[-1, +1]$ TRRAI response into component contributions by event type and reports the dominant component and its share.

Table 9

Component contributions to TRRAI by event type: dominant channel and share

Event type	Dominant component	Dominant share (%)	2nd component	2nd share (%)
E1	CDS	50.558	USD/TRY	38.689
E2	CDS	37.058	BIST (equity)	27.522
E3	BIST (equity)	60.793	CDS	17.434
E4	BIST (equity)	63.676	USD/TRY	23.826
E5	BIST (equity)	37.549	CDS	29.272
E6	BIST (equity)	54.590	CDS	23.974
E7	BIST (equity)	56.858	USD/TRY	20.854
E8	CDS	42.327	BIST (equity)	33.340
E9	BIST (equity)	70.568	CDS	26.026
E10	Volatility	40.738	BIST (equity)	21.899

TRRAI is constructed by z-score standardizing the components—CDS, USD/TRY, BIST returns (with sign reversed), and BIST volatility—and combining them with equal weights (1/4). For the $[-1, +1]$ event window, component contributions are based on the weighted cumulative sum of each component's abnormal change (AC) over the same window. "Share (%)" is computed, by event type, as the ratio of the absolute magnitude of a component's contribution to the sum of absolute magnitudes across components (i.e., it emphasizes magnitude rather than direction).

Note. Created by the author using microsoft excel statistical software.

Table 9 decomposes the short-window $[-1, +1]$ TRRAI response into component contributions at the event-type level, highlighting the empirical relevance of TRRAI's multi-component structure. The results indicate that the dominant transmission channel varies systematically across event types. For domestic financial stress/crisis events (E1) and elections/political power dynamics (E2), the dominance of the CDS component suggests that risk perceptions in these episodes are priced primarily through the sovereign risk premium. By contrast, for institutional/constitutional disruptions (E3), protests and social unrest (E4), security and terror shocks (E5), and policy–macroprudential/regulatory shocks (E7), the equity component (BIST) accounts for the largest share, implying that short-run risk appetite responses are frequently transmitted through equity pricing. For natural disasters (E9), the particularly high equity share indicates that initial repricing tends to concentrate in the domestic equity channel. In global shock episodes (E10), the prominence of the volatility component points to a regime in which risk-off dynamics operate mainly through volatility, with risk perceptions becoming most visible via the uncertainty/volatility channel.

Overall, Table 9 strengthens the empirical rationale for a composite approach: risk perceptions can be transmitted through different market segments depending on the nature of the shock—CDS and FX in some cases, equities in others, and volatility during global systemic episodes. Accordingly, relying on a single proxy is likely to miss important aspects of the transmission mechanism. The multi-component TRRAI framework offers a more encompassing lens for interpreting both the co-movements and divergences documented in Table 7 and the type-level effect magnitudes summarized in Table 8.

In the next step, we present event-time plots ($t = -10, \dots, +10$) of average responses by event type to trace the dynamic pattern of adjustment around the event date. These figures visualize the timing of reactions (immediate versus delayed) in both BIST abnormal returns and TRRAI changes, thereby complementing the window-based evidence by revealing the underlying response dynamics.

Figure 1

Event-time Average Responses for Type E1

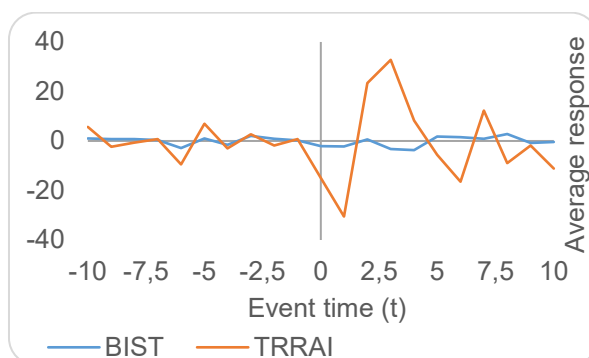


Figure 2

Event-time Average Responses for Type E2

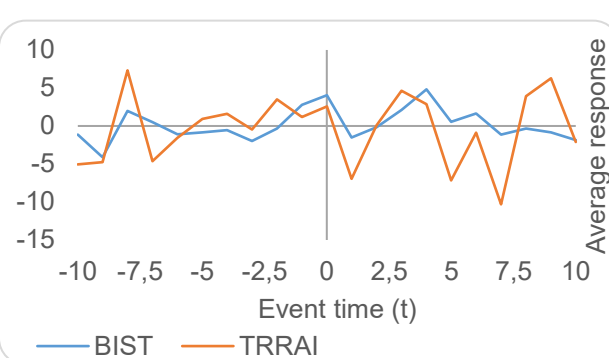


Figure 3

Event-time Average Responses for Type E3

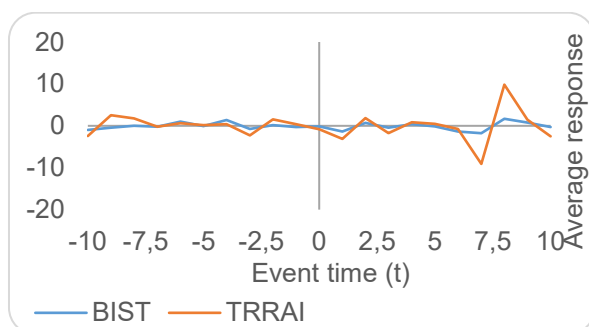


Figure 4

Event-time Average Responses for type E4

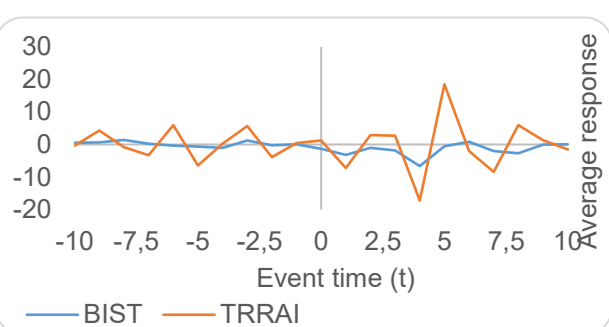
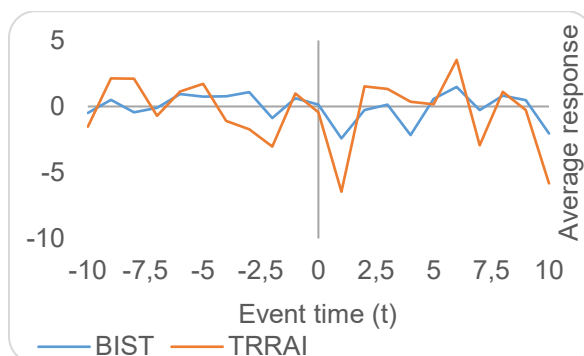
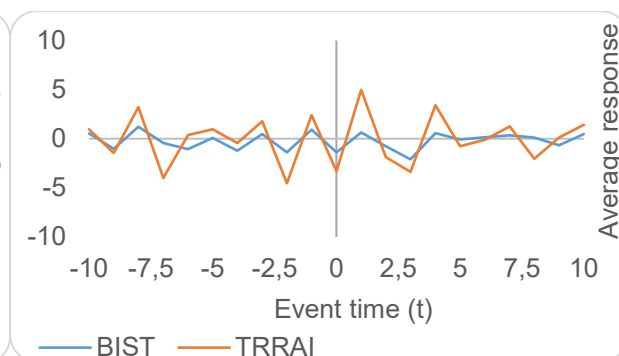
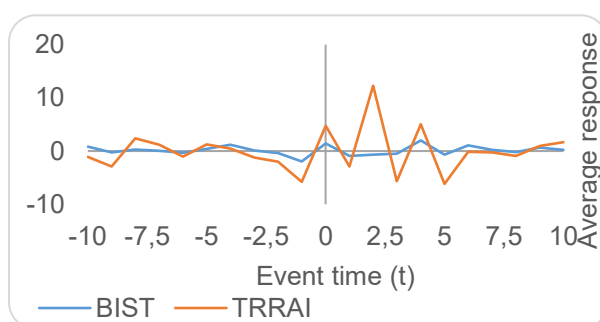
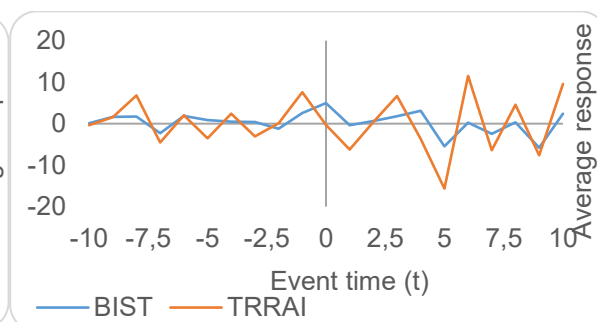
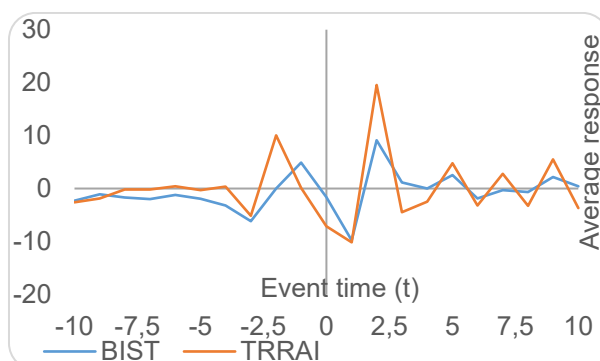
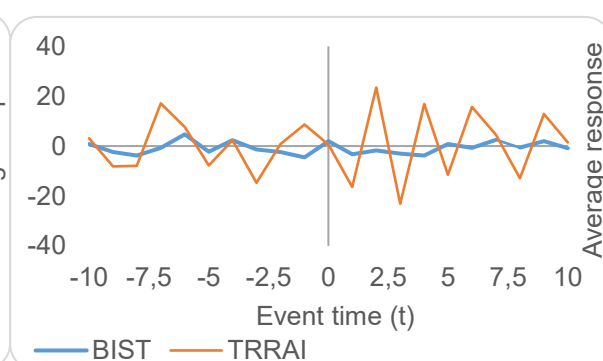


Figure 5*Event-time Average Responses for Type E5***Figure 6***Event-time Average Responses for Type E6***Figure 7***Event-time average responses for type E7***Figure 8***Event-time average responses for type E8***Figure 9***Event-time average responses for type E9***Figure 10***Event-time average responses for type E10*

Note. Figures (1-10) are created by the author using microsoft excel statistical software.

The figures complement the window-based evidence reported in Tables 7 and 8 by adding a dynamic perspective. While Table 8 summarizes mean/median effect magnitudes by

event type, the event-time profiles reveal when these effects concentrate around the event date, whether responses are immediate or delayed, and the extent to which impacts persist. In this sense, the figures make transparent which specific days drive differences across windows (e.g., $[-1, +1]$ versus $[-10, +10]$) by visualizing the accumulation of responses over event time. Moreover, even when mean/median values appear similar for a given type in Table 8, the event-time curves help distinguish between a “one-off shock” and a “cumulative repricing” pattern. The possibility that TRRAI and BIST curves exhibit different timing within the same type also provides dynamic support for the dominant-channel heterogeneity documented in Table 9 (CDS/FX versus equities versus volatility).

For global shocks (E10), the TRRAI response displays higher-amplitude and more persistent post-event fluctuations, indicating that risk-off regimes associated with global episodes tend to unfold over several days rather than being confined to the event day. This pattern is consistent with Table 8, where the adverse effects for E10 become more pronounced as the window widens, and it also aligns with Table 9, which identifies the volatility component as dominant for this type. Taken together, the evidence suggests that, in global shock episodes, risk perceptions in Turkish assets are transmitted most visibly through the volatility regime.

For natural disasters (E9) and the types associated with domestic security and institutional or social disruptions—particularly E5, E3, and E4—the responses are not uniformly concentrated exactly at $t = 0$. E9 exhibits a sharp movement around $t = 0$ followed by a pronounced rebound in the immediate post-event days, indicating a strong short-run shock with rapid subsequent adjustment. E5 shows relatively more “near-event” concentration (around $t \approx 0$ to $t \approx +1$), whereas E3 and E4 display more delayed and oscillatory post-event dynamics (with the larger swings emerging several days after the event), rather than a purely synchronized $t = 0$ response. The stronger deviations close to the event date in both BIST mean abnormal returns and TRRAI profiles (especially for E9 and E5) imply rapid transmission of deteriorating risk perceptions into equity pricing in the short run. This visual evidence is consistent with Table 7, where many of the sharpest short-window declines in TRRAI coincide with negative BIST CARs in the $[-1, +1]$ window.

By contrast, policy and macroprudential/regulatory shocks (E7) exhibit a more asymmetric pattern. The TRRAI curve can oscillate sharply in both directions after the event, suggesting fast updating of risk perceptions in response to policy actions. At the same time, the BIST response can reflect additional channels—such as “normalization” or improved predictability—leading to pricing in the opposite direction in certain episodes. When interpreted jointly with Table 7 (where some policy transitions show negative TRRAI alongside positive BIST CAR) and Table 9 (which highlights channel heterogeneity), the event-time evidence indicates that E7 should not be expected to generate a uniform, one-directional response.

Finally, for elections (E2) and geopolitical events (E6), the response profiles tend to be lower-amplitude and more oscillatory, suggesting that market reactions in these categories may be more heterogeneous and context-dependent. This provides visual support for the window sensitivity and mean/median divergences observed for these types in Table 8.

Overall, the figures complement the evidence in Tables 7–8 along three dimensions: (i) they identify the timing of responses (immediate versus delayed), (ii) they show whether short-run deviations evolve into persistent effects, and (iii) they strengthen the mechanism-based discussion of why TRRAI and BIST responses may diverge for some event types. Accordingly,

when used jointly with the window-based summary tables, the event-time plots improve interpretability and enhance the persuasiveness of the empirical findings.

Discussion

Taken together, the results indicate that risk-off responses in Turkish markets do not operate through a single channel; rather, the transmission mechanism reflects an event-specific “mix” of channels. While the BIST-100 results (Table 5) capture the direct equity-pricing response around events, TRRAI (Table 6) provides a broader measure of the common risk-perception component generated simultaneously across sovereign credit risk, the exchange rate, and volatility. Accordingly, the evidence suggests that a single-channel interpretation—such as “a negative BIST implies a risk-off episode”—can be incomplete, because in some periods risk perceptions are transmitted more strongly through CDS, FX, or volatility than through equities.

At the event level (Tables 5 and 6), high-uncertainty episodes tend to produce co-movement across the two measures: risk-off signals in TRRAI frequently coincide with negative CARs for BIST. This alignment is especially pronounced for shocks related to domestic security, institutional disruptions, social unrest, and natural disasters. Table 7 makes this co-movement particularly clear in the short window $[-1, +1]$ by showing that many of the events associated with the sharpest declines in TRRAI are also accompanied by statistically meaningful negative BIST responses. This pattern strengthens the inference that deteriorations in risk perceptions transmit rapidly to equity prices, implying that risk-off regimes often trigger swift short-run price adjustments.

At the same time, the non-aligned cases documented in Table 7—most notably for certain policy transitions and some election-related events—indicate that a risk-off signal does not always translate into an equity response of the same sign. In several of these episodes, TRRAI is negative in the short window while BIST generates a positive CAR, suggesting that markets may price two forces simultaneously: a deterioration in broad risk perceptions and an expectations update about policy direction and/or normalization that supports equities. Rather than implying inconsistency, this pattern points to channel-specific transmission: broad risk perceptions can worsen through CDS, FX, or volatility even when equities reprice positively due to perceived policy-path improvement or uncertainty resolution. Accordingly, focusing exclusively on equity-market reactions may understate risk-off dynamics when non-equity channels dominate the adjustment.

Statistical significance should also be interpreted with caution. Some event windows display economically meaningful effects with weaker t-statistics, partly because event-study inference is constrained by limited statistical power when certain categories contain only a small number of events. For this reason, the findings are evaluated jointly in terms of effect magnitude, window-length sensitivity (attenuation versus accumulation), and cross-measure consistency between BIST AR-CAR and $CA\Delta TRRAI$, rather than on the basis of any single test statistic alone.

Type-level summaries (Table 8) highlight that this heterogeneity has systematic components. For global shocks (E10), the fact that negative effects become more pronounced as the event window widens for both BIST and TRRAI implies that risk-off behavior is not confined to the event day but reflects a repricing process unfolding over several days. By contrast, for some categories—particularly policy/regulation and geopolitics—the larger mean-median gaps indicate that reactions are more heterogeneous across events, consistent with context-dependent pricing rather than a uniform response. This observation clarifies a central

implication of the study: beyond the magnitude of the average response, the dispersion and stability of responses also vary meaningfully by event type.

In this regard, the channel decomposition in Table 9 helps clarify the underlying mechanism. The dominance of the CDS component in types such as E1–E2 indicates that risk perceptions in these episodes are transmitted primarily through the sovereign risk premium. In contrast, the prominence of the equity component in types such as E3–E7 and E9 suggests that short-run risk-appetite responses often become most visible through equity pricing. For global shocks, the dominance of the volatility component points to a “volatility/stress regime” in which risk perceptions are most clearly reflected through heightened uncertainty. This component structure provides a coherent explanation for the co-movements and cross-measure differences documented in Table 7: when TRRAI declines mainly due to CDS/FX/volatility channels, it becomes more likely that BIST will not respond with the same sign or magnitude.

The event-time figures complement these findings by adding a time dimension: for some types, responses sharpen around $t = 0$, whereas for others effects accumulate in the days after the event and persist with oscillatory dynamics. This visual evidence links the window-sensitivity in Table 8 to a delayed or extended repricing mechanism. Conversely, in types characterized by sharp breaks followed by rapid stabilization, the effects are concentrated in the short window. Hence, the figures reinforce the interpretation that similar mean/median effects can arise through distinct dynamics (an immediate shock versus cumulative repricing), strengthening the overall interpretation.

Overall, the study shows that risk-off events in Turkish markets typically generate fast and adverse reactions, but the direction, magnitude, and persistence of these effects differ systematically by event type. BIST-based evidence provides a clear view of equity-market repricing, while TRRAI captures the joint risk-perception component across credit, FX, equity, and volatility, offering a more holistic perspective. Considering both measures jointly allows one to distinguish between regimes characterized by synchronized risk-off behavior and regimes characterized by channel heterogeneity, thereby underscoring the empirical necessity of reading risk appetite through multiple market segments in economies such as Türkiye that are highly sensitive to the country risk premium and the exchange-rate channel.

Conclusion

This study examines the effects of global and domestic risk-off events on Türkiye’s equity market within a holistic framework that measures risk perceptions using a composite index. The evidence shows that Türkiye’s equity market responds strongly—and predominantly negatively—to abrupt increases in uncertainty and perceived risk, particularly over short horizons. This finding implies that investors’ flight-to-safety tendencies are rapidly incorporated into prices and that market reactions occur with limited delay.

The results further indicate that market responses differ markedly by event characteristics. Financial and macroeconomic crises generate larger and more persistent negative effects than other event types, and these episodes tend to coincide with pronounced deteriorations in global risk sentiment. This pattern suggests that Turkish markets are more fragile in the presence of systemic risks and move in close coordination with shifts in global risk appetite during such periods. Type-level summaries show that, especially for global shocks (E10), adverse effects become more pronounced as the event window expands for both BIST and TRRAI, consistent with a repricing process that unfolds over several days. The event-time

profiles corroborate this mechanism by showing that for some types the response concentrates around $t = 0$, whereas for others it accumulates in post-event days and becomes more persistent.

By contrast, political developments, election episodes, and certain geopolitical events display more heterogeneous responses in both sign and magnitude. In some cases, negative effects are limited or transient, and in others markets appear to adjust quickly. These patterns suggest either partial pre-pricing of political/geopolitical risks or an investor perception that such uncertainties are comparatively more manageable. The presence of episodes in which TRRAI signals short-run risk-off while BIST produces a positive CAR indicates that equity prices may simultaneously reflect expectation management and perceived policy direction/normalization. This pattern underscores that reading risk perceptions through a single market segment can be insufficient and that TRRAI's multi-component structure plays a complementary role in capturing such differences.

When considered jointly, the behavior of the risk-perception index and equity-market responses points to a tight link between local market dynamics and global investor sentiment during risk-off regimes. In periods when uncertainty becomes global, pricing reactions are sharper and more synchronized; in more locally driven episodes, effects appear more episodic and sometimes less persistent. This reinforces the well-established sensitivity of emerging markets to global capital flows and international risk sentiment. The fact that many of the sharpest TRRAI declines coincide with negative short-window BIST CARs indicates rapid and often aligned transmission of deteriorating risk perceptions into equities. Importantly, the component decomposition shows that this co-movement does not necessarily arise through the same channel: CDS/FX can dominate in some types, equities in others, and volatility in global episodes.

Overall, the evidence suggests that risk-off events induce strong short-run price adjustments in Türkiye's equity market, while medium- and longer-horizon effects depend on the event type. Finally, we note that inference can be constrained by limited statistical power in categories with few events. Accordingly, conclusions are drawn by jointly considering economic magnitudes, window sensitivity, and the consistency between the equity-based AR-CAR evidence and the multi-market CAΔTRRAI evidence.

From an investor perspective, the results highlight the importance of portfolio diversification and event-based risk management; for policymakers, they underscore the need to monitor sources of uncertainty closely to safeguard financial stability. More broadly, the study contributes to the literature by demonstrating that risk-perception-based composite indicators provide a powerful tool for analyzing financial fragility in emerging markets. This contribution is strengthened by the joint use of BIST (the pricing channel) and TRRAI (the common risk component across multiple market segments), which enables the identification of both the direction of risk-off regimes and the composition of their transmission mechanisms.

The findings are consistent with the view that uncertainty shocks are priced through the risk-premium channel. In particular, for domestically driven uncertainty sources—such as institutional disruptions, protests, and security shocks—the ability of TRRAI to generate stronger risk-off signals via the CDS and exchange-rate components indicates that equities alone may not fully capture the underlying shift in risk perceptions. This reinforces the importance of measuring risk appetite through multiple market segments in economies such as Türkiye, where dollarization and sovereign risk-premium sensitivity are high. Policy-regime episodes, especially within E7, further illustrate that equity repricing and broader multi-market risk perceptions may adjust through different channels and on different horizons. This

observation is consistent with the type-level heterogeneity reported in Table 8 and with the timing differences visible in the event-time profiles.

These conclusion-level implications are consistent with related literatures in ways that mirror our empirical findings. First, our evidence that BIST and TRRAI can diverge for the same episodes—and that component contributions vary by event type—suggests that single-market proxies may be insufficient and that multi-market composite measures can provide complementary information (Illing & Liu, 2006; Holló et al., 2012). Second, our heterogeneous responses around political and geopolitical episodes, together with patterns consistent with partial pre-pricing in some cases, align with evidence that policy uncertainty and geopolitical risk are important channels through which uncertainty is priced in financial markets (Baker et al., 2016; Caldara & Iacoviello, 2022). Third, where domestically driven episodes involve social unrest/protests and security-related shocks, our results indicate pronounced short-run risk-off signals—at times captured more clearly in TRRAI than in equities alone—consistent with findings that protest-related instability can be associated with adverse market responses in emerging economies (Barrett et al., 2021; Barrett et al., 2024). Finally, our component decomposition shows that CDS and exchange-rate channels can dominate the aggregate risk-off signal in several event types, which is consistent with broader evidence that sovereign CDS–exchange rate spillovers are time-varying and can strengthen during “market fear” conditions (Feng et al., 2021) and with Türkiye-specific evidence of volatility connectedness across Turkish CDS spreads and FX-related markets that varies across volatility states and major events (Gök et al., 2023). In addition, the stronger and more synchronized responses observed during global shock episodes are consistent with Türkiye-focused evidence that foreign portfolio flows and global risk aversion are closely linked and can materially shape local market dynamics (Kartal et al., 2022; Güneş et al., 2024).

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Appendix

Appendix 1:

Table A

Event timing classification and event-day ($t = 0$) definition

Calendar Event Date	Event Title	Event Type	Event Day Used ($t = 0$)	Shift (Trading Days)	Timing Classification
2008-09-15	Global financial crisis (post-Lehman shock)	E10	2008-09-15	0	Trading-hours-or-same-day
2010-09-12	Constitutional Referendum	E3	2010-09-13	1	After-close-or-non-trading-day
2011-03-15	Syrian civil war / onset of uprising	E6	2011-03-15	0	Trading-hours-or-same-day
2013-05-28	Gezi Park protests (onset)	E4	2013-05-28	0	Trading-hours-or-same-day
2013-12-17	17–25 December episode (first wave)	E3	2013-12-17	0	Trading-hours-or-same-day
2015-07-20	Suruç attack	E5	2015-07-20	0	Trading-hours-or-same-day
2015-10-10	Ankara Train Station attack	E5	2015-10-12	1	After-close-or-non-trading-day
2015-11-24	Downing of Russian jet	E6	2015-11-24	0	Trading-hours-or-same-day
2016-06-28	Atatürk Airport attack	E5	2016-06-28	0	Trading-hours-or-same-day
2016-07-15	Coup attempt	E5	2016-07-15	0	Trading-hours-or-same-day
2017-04-16	Presidential system referendum	E3	2017-04-17	1	After-close-or-non-trading-day
2018-08-10	2018 FX and debt crisis (critical wave)	E1	2018-08-10	0	Trading-hours-or-same-day
2019-10-09	Operation Peace Spring	E6	2019-10-09	0	Trading-hours-or-same-day
2020-03-11	COVID-19 (first case announcement in Türkiye)	E10	2020-03-11	0	Trading-hours-or-same-day
2020-08-10	Eastern Mediterranean tensions (NAVTEX / Oruç Reis phase)	E6	2020-08-10	0	Trading-hours-or-same-day
2021-04-22	Thodex crisis (withdrawals halted / collapse)	E7	2021-04-22	0	Trading-hours-or-same-day
2021-12-20	Introduction of FX-protected deposits	E7	2021-12-20	0	Trading-hours-or-same-day
2022-09-05	Inflation exceeds 80% (August CPI release)	E8	2022-09-05	0	Trading-hours-or-same-day
2023-02-06	Kahramanmaraş earthquakes	E9	2023-02-06	0	Trading-hours-or-same-day
2023-05-28	Presidential election (runoff)	E2	2023-05-29	1	After-close-or-non-trading-day
2023-06-22	Start of monetary tightening cycle	E7	2023-06-22	0	Trading-hours-or-same-day

Calendar Event Date	Event Title	Event Type	Event Day Used (t = 0)	Shift (Trading Days)	Timing Classification
2023-07-20	Policy rate hike (continuation)	E7	2023-07-20	0	Trading-hours-or- same-day
2024-03-31	Local elections	E2	2024-04-01	1	After-close-or-non- trading-day
2025-08-23	Termination of FX-protected deposits	E7	2025-08-25	1	After-close-or-non- trading-day

Event day ($t = 0$) is defined as the first trading day on which the event could be incorporated into market prices. If the calendar event date falls on a non-trading day or if the first observable pricing occurs on the next trading day, the event day is shifted accordingly. The “Shift (Trading Days)” column reports the number of trading days between the calendar event date and the event day used in the analysis.

Note. Created by the author

Information About the Article/Makale Hakkında Bilgiler

The Ethical Rules for Research and Publication / Araştırma ve Yayın Etiği

The author declared that the ethical rules for research and publication followed while preparing the article.

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The draft process of the manuscript/ Taslağın Hazırlanma Süreci A.Ö, Data Collection/Verilerin Toplanması A.Ö, Writing the Manuscript/ Makalenin Yazılması A.Ö, Submit, Revision and Resubmit Process/ Başvuru, Düzeltme ve Yeniden Başvuru Süreci A.Ö.