



Tourism Shocks and Airline Stock Market Performance: An Event Study Analysis

Murad Manafli ^{1,*}

¹ Vistula University, Warsaw, Poland

ABSTRACT

This article examines the impact of tourism-related shocks on airline stock market performance. The problem is important because airlines depend strongly on international mobility, passenger confidence, fuel costs, safety perceptions, and public policy decisions. The study is designed for short-run event analysis around clearly identified shock dates, including health crises, geopolitical events, natural disasters, and wider economic policy uncertainty. The theoretical framework links market efficiency, abnormal returns, tourism risk, and investor expectations. Methodologically, the article uses an event study approach in which actual airline stock returns are compared with expected returns estimated through a market model. The difference is measured as abnormal return, while cumulative abnormal return and cumulative average abnormal return are used to evaluate the effect over alternative event windows. Economic policy uncertainty is treated as a conditioning variable rather than as a single event. The article contributes by presenting a transparent framework for comparing different tourism shocks and by clarifying how empirical results should be reported without unsupported statistical claims.

Keywords: tourism shocks; airline stocks; event study; abnormal returns; economic policy uncertainty; stock market performance

* Corresponding author: Vistula University, Warsaw, Poland
manaflimurad9@gmail.com

1. INTRODUCTION

The airline industry is closely connected with global tourism because air transport makes many international trips possible. At the same time, this sector is one of the most exposed parts of tourism. A sudden decline in passenger confidence, a health emergency, a terrorist incident, a geopolitical conflict, a fuel-price shock, or a major policy change can quickly affect expected revenues and market value. For this reason, airline shares offer a useful setting for studying how financial markets respond to tourism-related uncertainty.

The central purpose of this article is to examine how tourism shocks can be reflected in airline stock prices through an event study framework. The logic of the event study is simple but powerful: when new public information reaches the market, investors reassess the future cash flows and risks of listed companies. If the event is important for airlines, the actual stock return around the event date may differ from the return that would normally be expected from general market movement. This difference is the abnormal return.

Previous research shows that tourism and airline stocks are sensitive to crises, including disease outbreaks, terrorist events, geopolitical instability, oil-price movements, and economic policy uncertainty (Demiralay & Kılınçarslan, 2019; Hadi et al., 2019; Jeon, 2021; Liu et al., 2023; Zopiatis et al., 2017). However, many studies focus on one crisis, one country, or one financial indicator. A more integrated structure is needed to compare different types of tourism shocks under the same methodological logic.

This article addresses that need by combining three elements. First, tourism shocks are classified into health-related, geopolitical, and natural-disaster categories. Second, airline stock performance is evaluated through abnormal returns, cumulative abnormal returns, and statistical tests. Third, economic policy uncertainty is included as a conditioning factor because uncertainty about regulation, public support, taxes, restrictions, and macroeconomic policy can influence investor confidence even when the direct travel shock is not the same in every country.

The article does not present invented empirical values. It sets out a polished and transparent article structure in which the final empirical results must be calculated from real daily airline stock prices, benchmark index data, and clearly fixed event dates. This is important because event-study conclusions depend heavily on data accuracy, window selection, and the absence of overlapping news. The contribution is therefore methodological and analytical: it clarifies how the study should be implemented and how the results should be interpreted in a reliable manner.

2. LITERATURE REVIEW

2.1 Tourism Shocks, Uncertainty, and Financial Market Reaction

Tourism demand is highly sensitive to uncertainty. Households may postpone leisure travel when safety, income, or travel rules become unclear. Firms in the tourism chain may also experience weaker cash flows when passenger numbers fall, routes are disrupted, or operating costs increase. These real-economy effects can be quickly reflected in stock prices because investors value companies according to expected future performance and perceived risk.

Economic policy uncertainty has become an important variable in studies of tourism and financial markets. Liu et al. (2023) show that both global and domestic policy uncertainty can influence tourism stock market behaviour. Jeon (2021) also connects tourism uncertainty with airline stock markets, showing that airlines are affected by changing expectations about travel, safety, and policy conditions. This literature suggests that uncertainty does not only affect macroeconomic aggregates; it can also change sector-level valuations.

In tourism markets, uncertainty has several channels. It may reduce consumption of non-essential travel, raise financing and insurance costs, weaken investor confidence, and increase stock-price volatility. For airline companies, these channels are stronger because revenues depend on load

factors, international routes, fleet utilization, fuel costs, and government rules. A tourism shock can therefore affect both the demand side and the cost side of the airline business.

2.2 Classification of Tourism Shocks

A clear classification of shocks is necessary before empirical testing. Tourism shocks are not identical. A health-related shock, such as a pandemic, can directly reduce mobility through travel restrictions and fear of infection. A geopolitical shock can affect route safety, sanctions, airspace access, insurance premiums, and passenger confidence. A natural disaster may damage infrastructure or reduce demand for a specific destination, but its effect may be more local and temporary.

The classification also matters for recovery expectations. Health crises may create long periods of uncertainty if restrictions change repeatedly. Geopolitical crises may generate higher route costs and security concerns even after the first event date. Natural disasters may have sharp but geographically limited effects. Separating these categories allows the study to compare whether the market response differs across shock types instead of treating all tourism crises as one group.

Table 1. Classification of Tourism Shocks and Main Transmission Channels

Shock category	Examples	Main airline channel	Expected market concern
Health-related shocks	Pandemics, epidemics, travel-health alerts	Passenger demand, travel restrictions, load factors	Duration of restrictions and speed of recovery
Geopolitical shocks	War, terrorism, sanctions, airspace closure	Route changes, safety risk, insurance, fuel and operating costs	Regional exposure and operational disruption
Natural disasters	Earthquakes, volcanic eruptions, severe storms	Airport disruption, destination demand, cancellations	Local damage and temporary capacity loss
Policy uncertainty shocks	Unclear regulation, support packages, taxation, border rules	Investor confidence, expected earnings, financing conditions	Policy delay and uncertainty about government response

Source: Author's construction based on Jeon (2021), Liu et al. (2023), Papagianni et al. (2023), and Zopiatis et al. (2017).

2.3 Airline Stock Performance Under External Shocks

Airline stocks have been studied under several types of external pressure. Fuel-price changes are important because fuel is one of the largest operating costs for airlines. Kristjanpoller and Concha (2016) and Horobeş et al. (2022) show that oil-price volatility can influence airline stock returns. Geopolitical risk can also affect airline values through safety concerns, route restrictions, and higher operational uncertainty (Cai et al., 2025; Papagianni et al., 2023).

Public health shocks have received particular attention after COVID-19. Yiğit and Canöz (2020) found that European airline stocks reacted negatively to the pandemic through event-study analysis. Kumari et al. (2021) also show that air-travel restrictions can produce abnormal stock-market reactions. These studies support the view that airline valuations respond quickly when investors receive information that changes expectations about travel activity.

The literature also shows that crisis effects are not always equal across firms. Airlines with stronger balance sheets, more domestic routes, or lower regional exposure may react differently from airlines with higher debt, greater international dependence, or weaker liquidity. For this reason, an event study should not only examine the average reaction but also allow comparisons across firms, regions, and shock categories.

2.4 Event Study Methodology in Financial Research

The event study method is widely used in financial research because it isolates the stock-market effect of a clearly dated event. In this method, a researcher first defines the event date, then estimates the normal return of the stock during a pre-event estimation window. The abnormal return is

calculated as the difference between the actual return and the expected return during the event window. Event studies are especially useful when the researcher wants to understand how quickly markets incorporate new information into prices (Ghoul et al., 2022; Pandey & Kumari, 2020).

The method requires careful design. The event date should be the first official public announcement or the earliest reliable date when the market could react. The event window should be long enough to capture early leakage and delayed adjustment but not so long that unrelated news dominates the result. The estimation window should be far enough before the event to estimate normal behaviour without contamination from the shock itself. These choices are central to the validity of the final findings (Hadi et al., 2019; Tse et al., 2024).

3. MODEL SPECIFICATION AND DATA

3.1 Model Specification

The empirical logic of the study is based on the market model. The dependent variable is the daily return of each airline stock. The main explanatory variable in the expected-return model is the daily return of the relevant benchmark market index. The model estimates the normal relationship between the airline stock and the market during the estimation window. This relationship is then used to calculate the expected return in the event window.

The daily stock return can be calculated as a log return. The market model is then estimated separately for each airline during the estimation window. The basic specification is:

$$R_{it} = \ln(P_{it} / P_{i,t-1})$$

$$R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it}$$

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

$$CAR_i(t1, t2) = \text{sum } AR_{it} \text{ from } t1 \text{ to } t2$$

$$CAAR(t1, t2) = (1 / N) \text{sum } CAR_i(t1, t2)$$

In these expressions, R_{it} is the return of airline i on day t , R_{mt} is the market return on day t , α_i and β_i are estimated with pre-event data, AR_{it} is the abnormal return, CAR is the cumulative abnormal return for one airline, and $CAAR$ is the average cumulative abnormal return across the airline sample. This specification separates the event-related part of the return from general market movement.

Economic policy uncertainty is not treated as a single event because it is a time-varying index. It can be added to the design in two ways. The first way is to divide events into high-EPU and low-EPU periods according to the EPU value near the event date. The second way is to estimate a cross-sectional explanation of CAR using shock type, EPU level, and their interaction. This allows the article to ask whether similar tourism shocks have stronger effects when policy uncertainty is already high.

Table 2. Main Variables Used in the Event Study Framework

Variable	Notation	Measurement	Role in analysis
Airline stock return	R_{it}	Daily log return from adjusted closing prices	Dependent return series
Market return	R_{mt}	Daily log return of benchmark market index	Expected-return benchmark
Abnormal return	AR_{it}	Actual return minus expected return	Event-day reaction
Cumulative abnormal return	CAR	Sum of abnormal returns over selected window	Firm-level event impact
Cumulative average abnormal return	$CAAR$	Average CAR across airlines or events	Sample-level event impact
Economic policy uncertainty	EPU	Index value near event date	Conditioning or interaction variable

Source: Author's construction based on standard event-study methodology and the structure suggested by Ghoul et al. (2022), Jeon (2021), and Pandey and Kumari (2020).

3.2 Data

The final empirical version of this article should use daily adjusted closing prices for publicly traded airlines and daily values of a suitable benchmark market index. The airline sample must be fixed before the calculations begin. Each airline should have a clear ticker, exchange, country, trading currency, and benchmark index. Firms with large gaps in daily prices or limited trading history should be excluded because missing data can distort abnormal returns.

The event list must also be fixed before the analysis. For each tourism shock, the article should identify the exact event date, shock category, first reliable public announcement, affected region, and source of event verification. If the event date is unclear, or if another major market-moving event occurs inside the same window, that observation should be treated cautiously or excluded. This step is essential because abnormal returns can only be interpreted credibly when the event date is precise.

The data section should include a sample table with the airline names and event dates. This prevents the study from appearing as a purely theoretical discussion and allows readers to check the empirical design. Since the present manuscript did not include final daily stock-price calculations, the tables in the article are presented as reporting structures rather than as completed empirical evidence.

Table 3. Required Data Structure Before Running the Event Study

Data item	Required information	Reason for inclusion
Airline sample	Airline name, ticker, exchange, country, trading currency	Defines the firms included in the calculation
Benchmark index	National, regional, or broad market index linked to the airline stock	Estimates expected returns
Shock event	Event name, category, exact announcement date, affected region	Defines the event window
Stock-price series	Daily adjusted closing prices for airline and market index	Calculates daily returns
EPU measure	EPU index value close to event date	Tests whether uncertainty conditions change the market response

Source: Author's reporting structure based on event-study data requirements.

4. METHODOLOGY

4.1 Event Window and Estimation Window

The window design is central to the event study. The estimation window is used to estimate normal stock-return behaviour before the shock. The event window is used to measure the market reaction around the announcement date. In this article, the main design uses an estimation window from day -250 to day -21 and a full event window from day -20 to day +20. Day 0 is the official announcement day of the tourism shock.

The pre-event sub-window from day -20 to day -1 allows the study to detect possible information leakage or early market adjustment. The post-event sub-window from day +1 to day +20 allows the study to observe delayed reactions and short-term correction. The same logic can be tested with narrower windows such as (-1, +1), (-3, +3), and (0, +5) to check robustness.

Table 4. Specification of Estimation and Event Windows

Window type	Relative day range	Number of trading days	Main purpose
Estimation window	-250 to -21	230	Estimate normal returns and market sensitivity
Pre-event sub-window	-20 to -1	20	Detect information leakage or early adjustment
Event day	0	1	Measure immediate market reaction
Post-event sub-window	+1 to +20	20	Observe delayed reaction and short-term correction
Full event window	-20 to +20	41	Measure overall short-run impact of the tourism shock

Source: Author's design based on Tse et al. (2024), Yiğit and Canöz (2020), Ergün (2024), and Manzoor (2017).

4.2 Calculation of Abnormal Returns

After the expected return is estimated through the market model, the abnormal return is obtained by subtracting expected return from actual return. A negative abnormal return means that the airline stock performed worse than expected given normal market movement. A positive abnormal return means that it performed better than expected. Cumulative abnormal return is then calculated by adding daily abnormal returns over the selected event window.

The study should report actual returns, expected returns, abnormal returns, CAR, and CAAR separately. This separation is important because abnormal return is not the same as raw stock return. A market-wide downturn may reduce the actual return of an airline stock even if the airline-specific abnormal return is small. The event study corrects for this by comparing the airline return with the expected return generated from the market model.

Table 5. Alternative Event Windows for CAR and CAAR Reporting

Event window	Purpose	Interpretation after calculation
(-1, +1)	Immediate reaction around announcement day	Shows the sharpest short-run response
(-3, +3)	Short adjustment period	Captures limited early leakage and delayed response
(0, +5)	Post-announcement adjustment	Shows whether the reaction continues after day 0
(-10, +10)	Wider short-run window	Captures slower market absorption of information
(-20, +20)	Full event window	Measures the overall short-run effect and aftershocks

Source: Author's reporting template; final CAR and CAAR values must be calculated from daily stock-price data.

4.3 Statistical Significance Testing

Abnormal returns should not be interpreted only by their sign or size. They should also be tested statistically to determine whether the market reaction is likely to be different from random price movement. Parametric tests are useful when abnormal returns are approximately normally distributed. Non-parametric tests are useful during crisis periods because airline stocks may show extreme values, volatility clustering, and non-normal return distributions.

The cross-sectional t-test can be used to test whether CAAR differs from zero across firms for a specific window. A time-series t-test can be used for daily abnormal returns. The Corrado rank test and generalized sign test provide additional robustness because they rely less heavily on normality assumptions. Using more than one test improves the credibility of the final interpretation.

Table 6. Statistical Tests Applied to Abnormal Returns

Test type	Null hypothesis	Application level	Reason for use
Cross-sectional t-test	CAAR = 0	Across firms for a selected window	Tests average cumulative effect
Time-series t-test	Average AR _t = 0	Day-by-day analysis	Identifies the strongest reaction days
Corrado rank test	Ranked abnormal returns are unchanged	Across days and firms	Robust to outliers and non-normality
Generalized sign test	Probability of positive AR = 0.5	Direction of effect	Shows whether reactions are mostly negative or positive

Source: Author's design based on standard event-study testing procedures.

5. EMPIRICAL RESULTS AND DISCUSSION

The final empirical results should be presented only after the event-study dataset has been completed. The estimation window should first show normal trading behaviour and market sensitivity. The event window should then show whether abnormal returns change after the tourism shock. If the abnormal returns are negative and statistically significant, this would indicate that the

shock reduced airline market value beyond general market movement. If the values are insignificant, the event cannot be interpreted as having a reliable abnormal effect.

The descriptive statistics should compare the estimation period and the event period. Higher standard deviation, negative skewness, or heavier tails during the event period would suggest that shocks increase market instability. However, these interpretations must be based on calculated values rather than assumptions. The corrected article therefore treats all result tables as empirical reporting structures until the real data are inserted.

The abnormal return pattern should be examined around the event date. Small abnormal returns before day 0 would suggest limited information leakage, while strong abnormal returns before day 0 may indicate that investors already anticipated the shock. A large abnormal return on day 0 would suggest a direct market reaction to public information. Continued abnormal returns after day 0 may indicate delayed adjustment, new related information, or slower price discovery.

The results should also be compared across shock categories. Health-related shocks may affect airlines through restrictions and reduced mobility. Geopolitical shocks may affect routes, airspace, safety perception, and operating costs. Natural disasters may produce more local and temporary effects. Economic policy uncertainty may strengthen the reaction if investors are already uncertain about government responses, public support, or the wider macroeconomic environment.

Table 7. Reporting Structure for Empirical Results by Shock Category

Shock category	Event window	CAAR (%)	t-statistic	Corrado Z	Sign-test p-value	Decision
Health-related shocks	(-3, +3)	To be calculated	To be calculated	To be calculated	To be calculated	To be decided after final test
Geopolitical shocks	(-3, +3)	To be calculated	To be calculated	To be calculated	To be calculated	To be decided after final test
Natural disasters	(-3, +3)	To be calculated	To be calculated	To be calculated	To be calculated	To be decided after final test
High-EPU events	(-3, +3)	To be calculated	To be calculated	To be calculated	To be calculated	To be decided after final test
Low-EPU events	(-3, +3)	To be calculated	To be calculated	To be calculated	To be calculated	To be decided after final test

Source: Author's reporting template; values and significance decisions must be inserted after the final event-study calculations.

The comparison with existing literature should be made after the final CAR and CAAR values are obtained. If airline stocks show significant negative abnormal returns after health shocks, the results would be consistent with studies on COVID-19 and air-travel restrictions (Kumari et al., 2021; Yiğit & Canöz, 2020). If geopolitical shocks show strong negative reactions, the findings would be close to research on terrorism, conflict, and travel risk (Demiralay & Kılınçarslan, 2019; Hadi et al., 2019; Papagianni et al., 2023).

The practical implications are relevant for investors and policymakers. Investors may use event-study evidence to understand whether airline shares are especially exposed to certain shock categories. Portfolio decisions should consider that diversification within aviation may not protect investors when the same shock affects many airlines at once. Policymakers can use the evidence to design clearer communication, coordinated travel rules, and targeted support for aviation and tourism during crises.

The main limitation of the study is the need for precise event dates and clean daily stock data. Some shocks unfold gradually, which makes day 0 difficult to identify. Overlapping news can also bias abnormal returns. Daily data may miss intraday reactions, and a standard market model may not capture all sources of risk during extreme volatility. Future research can extend the framework by using high-frequency data, multifactor models, GARCH-type volatility models, and firm-level indicators such as leverage, liquidity, route network, and passenger load factor.

6. CONCLUSION

This article presents a structured event-study framework for analysing the effect of tourism shocks on airline stock market performance. The study is built on the idea that airline shares react when investors receive new information about mobility, demand, safety, operating costs, and policy uncertainty. The event-study approach is appropriate because it separates actual stock returns from expected market-based returns and measures the difference as abnormal return.

The article also clarifies the role of economic policy uncertainty. EPU should not be treated as a single event because it changes over time. Instead, it should be used as a conditioning variable or as part of an interaction model. This makes it possible to compare whether tourism shocks have stronger market effects during periods of high uncertainty.

A key correction in the final version is that illustrative numbers are not treated as empirical evidence. All CAR, CAAR, t-statistics, p-values, and significance decisions must be calculated from real daily data after the airline sample and event list are fixed. This protects the article from unsupported conclusions and improves methodological transparency. The final empirical version can contribute to tourism finance, airline risk analysis, and crisis-management policy by showing how different categories of tourism shocks are priced by financial markets.

Author Contributions: Conceptualization, M.M.; methodology, M.M.; formal analysis, M.M.; investigation, M.M.; writing-original draft preparation, M.M.; writing-review and editing, M.M. The author has read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Conflicts of Interest: The author declares no conflict of interest.

REFERENCES

- Abdi, Y., Li, X., & Càmara-Turull, X. (2023). Firm value in the airline industry: Perspectives on the impact of sustainability and COVID-19. *Humanities and Social Sciences Communications*, 10(1). <https://doi.org/10.1057/s41599-023-01644-8>
- Blampied, N., & Mahadeo, S. M. R. (2024). Airline industry equities under external uncertainty shocks. *Economics Letters*, 244, 111994. <https://doi.org/10.1016/j.econlet.2024.111994>
- Born, J. A. (2021). The impact of serious safety incidents on airline stocks. *International Journal of Financial Research*, 12(4), 1. <https://doi.org/10.5430/ijfr.v12n4p1>
- Cai, Y., Fu, X., & Zhang, Y. (2025). Geopolitical risks and airlines stock return: Implications to the financial stability of European airlines. *Transport Policy*. <https://doi.org/10.1016/j.tranpol.2025.05.001>
- Demiralay, S., & Kılıncarslan, E. (2019). The impact of geopolitical risks on travel and leisure stocks. *Tourism Management*, 75, 460. <https://doi.org/10.1016/j.tourman.2019.06.013>
- Ergün, Z. C. (2024). The impact of international conflicts on the cryptocurrency market: The case of Israel-Palestine conflict. *Politik Ekonomik Kuram*, 8(1), 67. <https://doi.org/10.30586/pek.1401735>
- Fateme, K.-Y., & Sajjad, Z. (2023). Economic policy uncertainty: A review on applications and measurement methods with focus on text mining methods. *arXiv*. <https://doi.org/10.48550/arxiv.2308.10304>
- Ghoul, S. E., Guedhami, O., Mansi, S., & Sy, O. (2022). Event studies in international finance research. *Journal of International Business Studies*, 54(2), 344. <https://doi.org/10.1057/s41267-022-00534-6>
- Hadi, D. M., Katiroçlu, S., & Adaoçlu, C. (2019). The vulnerability of tourism firms' stocks to terrorist incidents. *Current Issues in Tourism*, 23(9), 1138. <https://doi.org/10.1080/13683500.2019.1592124>
- Horobet, A., Zlatea, M. L. E., Belaşcu, L., & Dumitrescu, D. G. (2022). Oil price volatility and airlines' stock returns: Evidence from the global aviation industry. *Journal of Business Economics and Management*, 23(2), 284. <https://doi.org/10.3846/jbem.2022.16094>
- Jeon, J.-H. (2021). The impact of tourism uncertainty on airline stock markets in Korea: A quantile regression approach. *Journal of Business Economics and Management*, 22(4), 923. <https://doi.org/10.3846/jbem.2021.14668>

- Javid, A. Y., & Bilal, A. (2020). Event study and impulse indicator saturation analysis to assess reaction of terrorist and political events: Evidence from oil and gas sector of Pakistan. *Journal of Quantitative Methods*, 4(1), 1. <https://doi.org/10.29145/2020/jqm/040104>
- Kristjanpoller, W., & Concha, D. (2016). Impact of fuel price fluctuations on airline stock returns. *Applied Energy*, 178, 496. <https://doi.org/10.1016/j.apenergy.2016.06.089>
- Kumari, V., Tiwari, B. K., & Pandey, D. K. (2021). How the global airline industry behaved to restrictions on air travel to India? An event study analysis. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3925992>
- Liu, H., Yang, P., Song, H., & Wu, D. C. (2023). Global and domestic economic policy uncertainties and tourism stock market: Evidence from China. *Tourism Economics*, 30(3), 567. <https://doi.org/10.1177/13548166231173171>
- Manzoor, H. (2017). Impact of dividends announcements on stock returns: Evidence from Karachi Stock Market. *American Research Journal of Business and Management*. <https://doi.org/10.21694/2379-1047.15009>
- Mosiejko, L., & Bernardelli, M. (2024). Applying event analysis to selected markets' reaction to the Russian invasion on Ukraine. *Journal of Management and Financial Sciences*, 16(49). <https://doi.org/10.33119/jmfs.2023.49.1>
- Pandey, D. K., & Kumari, V. (2020). Effects of merger and acquisition announcements on stock returns: An empirical study of banks listed on NSE and NYSE. *The Review of Finance and Banking*, 12(1), 49. <https://doi.org/10.24818/rfb.20.12.01.04>
- Papagianni, E., Evgenidis, A., Tsagkanos, A., & Megalooikonomou, V. (2023). Tourism demand in the face of geopolitical risk: Insights from a cross-country analysis. *Journal of Travel Research*, 63(8), 2094. <https://doi.org/10.1177/00472875231206539>
- Suryani, A. W., & Pertiwi, K. D. (2021). Lombok's tsunami and stock abnormal returns. *Accounting Analysis Journal*, 10(1), 1. <https://doi.org/10.15294/aaj.v10i1.42584>
- Tse, Y. K., Dong, K., Sun, R., & Mason, R. (2024). Recovering from geopolitical risk: An event study of Huawei's semiconductor supply chain. *International Journal of Production Economics*, 275, 109347. <https://doi.org/10.1016/j.ijpe.2024.109347>
- Yiğit, F., & Canöz, İ. (2020). The reaction of airline stocks in Europe to the COVID-19 pandemic: An event study methodology. *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi*, 19(39), 1309. <https://doi.org/10.46928/iticusbe.831057>
- Zopiatis, A., Savva, C. S., Lambertides, N., & McAleer, M. (2017). Tourism stocks in times of crises: An econometric investigation of non-macro factors. *Advances in Economics, Business and Management Research*. <https://doi.org/10.2991/icefs-17.2017.5>