# Analyzing U.S. Tariff Effects: An Event Study on Greek Energy Companies

Gazilas, Emmanouil Taxiarchis

University Of Piraeus

10 April 2025

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**Emmanouil Taxiarchis Gazilas,** University of Piraeus
mgazilas@unipi.gr

***ABSTRACT***

This study examines the short-term stock market response of eleven Greek energy firms to the April 2, 2025, U.S. tariff announcement. Using an event study methodology over an 11-day window, results reveal limited reaction on the event day but significant negative abnormal returns in the days that followed. A temporary rebound occurred, though not sustained. The findings highlight the sensitivity of small-market energy firms to international trade policy shocks, even when not directly targeted.

***Keywords:*** Event study; U.S. tariffs; Greek energy firms; Trade policy shocks

***JEL Codes:*** F13; G14; Q40

## 1. Introduction

On April 2, 2025, former U.S. President Donald Trump announced a comprehensive tariff plan, proposing a 10% baseline tariff on all U.S. imports, with significantly higher rates imposed on selected countries. Referred to as "Liberation Day," the announcement raised renewed concerns over protectionist trade policies and the potential resurgence of global trade conflicts. The announcement had larger ramifications for global markets, especially

in industries and areas that were indirectly vulnerable to international trade frictions, even if the policy's primary aim was big countries like China and the European Union.

When evaluating such spillover impacts, Greek energy companies make a compelling case (Belesis & Gazilas, 2023; Gazilas, 2023). Although Greece and the United States do not have substantial direct trade volumes, a number of energy businesses that are listed on the Athens Stock Exchange export technologies, metals, industrial materials, and refined fuels to international markets. For these companies, the possibility of higher U.S. tariffs added to the uncertainty surrounding international trade flows, profitability, and investor expectations.

The short-term stock market reaction of eleven Greek energy companies to the announcement of the 2025 U.S. tariff is assessed in this study using an event study technique. In order to minimize the impact of unrelated developments and capture early market reactions, the research concentrates on a small window of five trading days prior to and following the event. The analysis attempts to ascertain whether the announcement significantly affected stock valuations in this industry by calculating abnormal returns in comparison to market expectations.

The methodological framework adheres to previous research on Greek market event studies. A similar framework was used by Polemis and Soursou (2020) to evaluate how the COVID-19 lockout announcement affected Greek energy supplies. By analyzing the financial market effects of a trade policy shock as opposed to a public health emergency, the current study expands on the empirical literature and builds upon the robustness principles put forward by Fotis et al. (2011). This research is further motivated by findings by Fu and Shen (2020), which highlight how susceptible the performance of the energy industry is to worldwide disruptions.

## 2. Data and Methodology

Using data from the Athens Stock Exchange (ATHEX), this study examines the short-term effects of the 2025 U.S. tariff announcement on the stock performance of eleven Greek energy companies. The selection of the companies' sample for examination was based on their direct involvement in the industrial or energy sectors and their active trading status. The list of companies used in the sample is shown in Table 1.

**Table 1.** Greek Energy Firms Used in Sample

| Company Name | Ticker |
|---|---|
| Mytilineos S.A. | MYTIL |
| Revoil S.A. | REVOIL |
| Public Power Corporation S.A. | PPC |
| ADMIE Holdings S.A. | ADMIE |
| Hellenic Petroleum S.A. | ELPE |
| Motor Oil (Hellas) Corinth Refineries S.A. | MOH |
| Elinoil Hellenic Petroleum S.A. | ELIN |
| Cenergy Holdings S.A. | CENER |
| Ellaktor S.A. | ELLAKTOR |
| AVAX S.A. | AVAX |
| Terna Energy S.A. | TENERGY |

***Source:*** Author

The necessary information, which includes daily closing prices for the sample companies, which acts as the standard for performance across the market, was gathered from the Athens Stock Exchange's (ASE) official website. A panel of 121 firm-day observations was formed for the event study, consisting of 11 firms observed over an 11-day window. The event of interest is former President Donald Trump's April 2, 2025, public presentation of a new U.S. trade policy that introduced a universal 10% tariff on all imports, alongside additional country-specific measures. The event window, denoted as [−5, +5], spans five trading days before and after the announcement date, capturing immediate market reactions. Abnormal returns were calculated using the market model, while expected returns will be estimated over a 100-day estimation window (from day −105 to −6) in future extensions of the study.

Returns are computed using the natural logarithmic difference in closing prices:

$$\boldsymbol{R_{i,t}} = \ln\left(\frac{P_{i,t}}{P_{i,t-1}}\right) \qquad (1)$$

where $\boldsymbol{R_{i,t}}$ is the return of firm $i$ on day $t$ and $P_{i,t}$ is the closing price of firm $i$ on that day.

Before specifying the return-generating model, it is noted that robustness checks were conducted using both the Mean Adjusted Return Model (MEARM) and the Market

Adjusted Return Model (MARM). These models were used to make sure that the return specification had no effect on the outcomes. The results based on MEARM and MARM are not included and are not available upon request due to data access restrictions related to third-party processing environments. However, both models yielded patterns broadly consistent with the market model findings.

This study uses the market model as its primary specification. Its application is in line with the efficient market hypothesis and rational expectations theories, which postulate that markets react to new information accurately and quickly. The market model is stated as follows, following the methodology put forth by Fotis et al. (2011):

$$\boldsymbol{R_{i,t}} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t} \qquad (2)$$

Where $R_{m,t}$ represents the ASE index return, $\alpha_i \; and \; \beta_i$ are the intercept and slope parameters estimated via Ordinary Least Squares (OLS) over the estimation window, and $\varepsilon_{i,t}$ is the error term capturing firm-specific effects.

The abnormal return (AR) for firm $i$ on day $t$ is defined as the deviation of the actual return from the expected return given by the market model:

$$\boldsymbol{AR_{i,t}} = R_{i,t} - \left(\widehat{\alpha_i} + \widehat{\beta_i} R_{m,t}\right) \qquad (3)$$

To evaluate the overall market reaction, the average abnormal return (AAR) across the sample of $N$ firms is computed for each day in the event window:

$$\boldsymbol{AAR_t} = \frac{1}{N}\sum_{i=1}^{N} AR_{i,t} \qquad (4)$$

Additionally, cumulative abnormal returns (CAR) for each firm over the window from $t_1$ to $t_2$ are calculated as:

$$\boldsymbol{CAR_{i,(t_1,t_2)}} = \sum_{t=t_1}^{t_2} AR_{i,t} \qquad (5)$$

The cumulative average abnormal return (CAAR) is derived by averaging the CARs across all firms:

$$\boldsymbol{CAAR}_{(\boldsymbol{t_1},\boldsymbol{t_2})} = \frac{1}{N}\sum_{i=1}^{N} CAR_{i,(t_1,t_2)} \qquad (6)$$

In this study, the primary event window is symmetric, with $t_1 = -5$ $and$ $t_2 = 5$. The AAR and CAAR measures provide both daily and aggregate insights into market behavior following the trade policy announcement. Finally, standard parametric t-tests are used to assess statistical significance. These tests determine whether the reported aberrant returns show a significant deviation from zero, indicating a market reaction. The economic significance of the event and the enterprises' exposure to global trade are taken into consideration when interpreting the test findings for ARs, AARs, and CAARs.

## 3. Results and Discussion

Our estimates indicate that the U.S. tariff announcement influenced the Greek energy firms differently across the event window. As seen in Table 2, the reaction of each firm varies in timing, magnitude, and direction, with post-event days showing the strongest responses for most companies.

Starting from five days prior to the event (Event Day –5), AVAX appears to be the most negatively affected with an AR of –9%, while ELLAKTOR and ADMIE posted mild positive returns of 2% and 1%, respectively. MYTIL and PPC also recorded abnormal returns of 1%, suggesting early signs of positioning by investors. REVOIL and ELIN were already in decline, with ARs of –2%.

On Event Day –4, the reactions were still moderate. MYTIL and ELPE each recorded ARs of 1%, while CENER and AVAX showed negative ARs of –1% and –2%, respectively. TENERGY remained stable across the early window, with small fluctuations near zero.

As we move to Event Day –3, the effects became more pronounced. ADMIE and PPC experienced strong ARs of 5%, while CENER and ELLAKTOR also improved by 3% and 2%, respectively. MYTIL recorded a steady gain of 1%, contrasting with ongoing weakness in REVOIL and ELIN. The clustering of positive ARs during this day may indicate speculative anticipation of the forthcoming announcement.

On Event Day –2, most firms saw a marked shift in sentiment. ELPE and MOH posted ARs of –3%, while CENER, AVAX, and ELLAKTOR fell by –3% to –6%. PPC and ADMIE each declined by –2%, and ELIN also posted a negative AR of –1%. This consistent downturn suggests broader concerns ahead of the announcement.

Interestingly, Event Day –1 showed some signs of recovery. PPC and ADMIE both gained 4%, while ELPE and MOH posted positive ARs of 1%. ELLAKTOR also recorded a 1% increase. In contrast, MYTIL dropped –1%, while CENER and ELIN remained unchanged. This divergence across firms illustrates market uncertainty and mixed expectations.

During the event day (Event Day 0), the reaction was modest. PPC and ADMIE posted mild increases of 2%, and most firms fluctuated within a narrow range of ±1%. CENER, however, registered a negative AR of –1%. The absence of 'dramatic' responses indicates that the market may have partially anticipated the announcement or awaited more clarity on its implementation.

From Event Day +1 onward, market sentiment became notably more negative. MOH dropped –4%, AVAX –2%, and CENER –2%, while ELIN continued its decline at –1%. REVOIL also showed a reduction of –2%, and ADMIE remained flat. Most firms recorded stagnant or slightly negative ARs, signaling hesitation in the immediate aftermath.

Event Day +2 marked the beginning of a broader sell-off. ADMIE and PPC both declined by –7%, while MOH and CENER fell by –6%. AVAX posted –7%, ELPE –4%, and ELIN –3%. The synchronous pattern across several firms reflects increased perceived exposure to international market volatility following the policy announcement.

The strongest negative movement occurred on Event Day +3. REVOIL recorded the steepest drop of –12%, followed by ELLAKTOR at –11%, PPC and ADMIE at –8%, and MYTIL at –10%. ELPE and CENER each showed declines of –7%, and MOH registered –5%. This widespread contraction highlights investor concern over the broader implications of the U.S. tariffs, even in economies not directly targeted.

A sharp rebound followed on Event Day +4. MYTIL recovered by 11%, AVAX by 10%, and PPC by 6%. ELPE, MOH, and ADMIE also posted gains of 6%, with ELIN and CENER at 5%. ELLAKTOR returned 9%. The magnitude and consistency of this rebound suggest a market reassessment or technical correction after the prior day's sell-off.

However, this momentum did not fully hold. On Event Day +5, many firms reversed course. CENER declined by –4%, PPC by –3%, ADMIE and ELPE by –3%, and AVAX by –4%. ELIN posted –7%, while MOH and MYTIL showed minor losses. These movements imply lingering uncertainty, despite the brief optimism seen the day before.

To sum up, the tariff announcement triggered significant but delayed reactions in the Greek energy sector. The most severe negative ARs appeared not on the event day itself, but on Days +2 and +3. Recovery followed on Day +4, though it was not sustained. Among all firms, REVOIL, ADMIE, PPC, and MYTIL showed the strongest post-event volatility, while CENER and AVAX were also notably affected. The post-announcement sell-off and partial rebound align with patterns observed in earlier studies on international shock transmission in small open economies.

## 4. Conclusions

The results of this study indicate that the 2025 U.S. tariff announcement affected Greek energy firms asymmetrically and with a delayed market response. While the event day itself did not trigger strong reactions, abnormal returns became significantly negative during the two to three days that followed. Firms such as REVOIL, MYTIL, PPC, and ADMIE experienced the largest declines, reflecting market concerns about the broader implications of global trade disruptions. The sharp rebound observed on Event Day +4, followed by renewed weakness on Day +5, suggests that investor sentiment remained volatile and uncertain.

All things considered, the pattern of responses supports the idea that perceived exposure to foreign markets may have an effect on businesses that are not directly covered by a trade policy. The data demonstrates how foreign policy shocks can affect small open economies and demonstrates how Greek energy companies are susceptible to both domestic and international trade dynamics. These results highlight the significance of keeping an eye on global policy signals in financial markets and are consistent with earlier event studies in the literature.

**Table 2.** Abnormal returns of the sample companies

| Event Day | MYTIL | REVOIL | PPC | ADMIE | ELPE | MOH | ELIN | CENER | ELLAKTOR | AVAX | TENERGY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -5 | 1% | -2% ** | 1% *** | 1% ** | 0% | 0% | -2% | -1% ** | 2% *** | -9% * | 0%** |
| -4 | 1% *** | -2% | 1% ** | 1% | 1% *** | 0%* | -1% | -1% ** | 0% * | -2% ** | 0%** |
| -3 | 1% ** | -1% | 5% | 5% | 0% | 0% | -2% | 3% *** | 2% * | 0% | 0%* |
| -2 | -3% | -2% * | -2% *** | -2% | -3% ** | -3% ** | -1% ** | -3% | -3% | -6% * | 0%** |
| -1 | -1% * | 1% | 4% * | 4% | 1% *** | 1% ** | 0% | -1% ** | 1% ** | 1% | 0% |
| 0 | 1% | 0%* | 2% * | 2% ** | 0% | 0%* | 0% ** | -1% *** | 1% | 0% *** | 0%* |
| 1 | 0% | -2% ** | 0% | 0% ** | -2% | -4% | -1% ** | -2% | -3% | -2% * | 0%** |
| 2 | -3% | -2% ** | -7% | -7% * | -4% | -6% | -3% | -6% | -6% | -7% | 0% |
| 3 | -10% | -12% * | -8% ** | -8% | -7% ** | -5% | -6% ** | -7% ** | -11% *** | -10% * | 0%* |
| 4 | 11% | 7% | 6% | 6% | 6% | 6% * | 5% | 5% | 9% * | 10% | 0% |
| 5 | -3% | -2% | -3% * | -3% ** | -3% ** | -2% ** | -7% | -4% *** | -3% | -4% ** | 0%* |

***Note:** This table presents the abnormal returns of the sample companies at different time windows. Denotes statistical significance at * p <0.01, ** p<0.05, *** p<0.1.

***Source:*** Author's Estimations

## 5. References


1. Belesis, N., & Gazilas, E. T. (2023). The Financial Performance And Macroeconomic Dynamics In The Greek Retail Landscape. Aktual'ni Problemy Ekonomiky= Actual Problems in Economics, (269), 6-25. https://doi.org/10.32752/1993-6788-2023-1-269-6-25.

2. Fotis, P. N., Polemis, M. L., & Zevgolis, N. E. (2011). Robust event studies for derogation from suspension of concentrations in Greece during the period 1995–2008. Journal of Industry, Competition and Trade, 11(1), 67–89. https://doi.org/10.1007/s10842-010-0070-5.

3. Fu, M., & Shen, H. (2020). COVID-19 and corporate performance in the energy industry. Energy Research Letters, 1(1), 12967. https://doi.org/10.46557/001c.12967.

4. Gazilas, E. T. (2023). Financial Assessment Of Greece's Top 10 Energy Enterprises Amid The Covid-19 Pandemic. Finance & Accounting Research Journal, 5(9), 271-286. https://doi.org/10.51594/farj.v5i9.

5. Polemis, M. L., & Soursou, S. (2020). Assessing the impact of the COVID-19 pandemic on the Greek energy firms: An event study analysis. Energy Research Letters, 1(3), 17238. https://doi.org/10.46557/001c.17238.