The Impact of the April 2025 U.S. Tariff Announcement on Country-Level ETF Returns: The Roles of Global Uncertainty and Financial Integration

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A dissertation submitted to

Auckland University of Technology

in partial fulfilment of the requirements for the degree of

Master of Business (Finance)

2026

Faculty of Business, Economics and Law

Abstract

This study investigates the global financial market impact of the April 2, 2025, United States tariff announcement using a large cross-country sample of internationally traded exchange-traded funds (ETFs). Treating the announcement as a global uncertainty shock, we employ an event-study framework combined with cross-sectional regressions to analyse abnormal returns (ARs) across countries, regions, sectors, and asset classes.

We document significant negative cumulative abnormal returns (CARs) in global markets following the announcement, alongside pronounced cross-sectional heterogeneity. ETFs from countries with lower dependence on the United States, measured by exports to the U.S. relative to GDP, experience larger and more persistent losses, while ETFs from highly U.S.-dependent economies exhibit weaker and predominantly short-lived responses. At the regional level, China, Asia, and Africa show the strongest adverse reactions over extended event windows, whereas U.S. ETFs display comparatively muted ARs.

Sectoral analysis indicates that globally integrated and cyclically sensitive industries, including materials, industrials, technology, energy, and financial services, experience the most severe and persistent valuation declines as uncertainty intensifies. Consumer-related sectors exhibit heterogeneous responses, with consumer defensive industries comparatively insulated and consumer cyclical and service-oriented sectors suffering sizable losses at longer horizons. Across asset classes, equity ETFs transition from short-run resilience to large and persistent negative ARs, while fixed-income ETFs display consistently positive abnormal performance relative to factor-model benchmarks, reflecting differences in risk exposure rather than uniformly positive raw returns.

Taken together, the evidence indicates that the 2025 tariff announcement functioned as a global macro-financial shock transmitted primarily through uncertainty and financial integration channels rather than narrow bilateral trade effects. The findings highlight the importance of economic structure, sectoral composition, and asset-class characteristics in shaping global financial market responses to major policy interventions.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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(Signature)

Acknowledgement

I would like to express my heartfelt gratitude to my family for their unwavering support, patience, and encouragement throughout my academic journey. Their understanding and constant motivation have been a continuous source of strength during the completion of this study.

I would like to express my deepest appreciation to my Primary Supervisor, Dr. Ihsan, for his invaluable guidance, insightful feedback, and continuous support. His motivation, conceptual clarity, and constructive comments greatly contributed to the development and overall quality of this research.

I am also deeply thankful to my Co-supervisor, Dr. Sara, for her insightful suggestions, methodological guidance, and support in research design and analysis.

Finally, I extend my gratitude to the entire staff of the AUT Finance Department and the AUT Postgraduate Research Programmes for their support and encouragement throughout the course of this study.

Chapter 1

Introduction

U.S. tariff announcements are sudden policy shocks that can trigger significant reactions in global financial markets. These government interventions disrupt investor expectations about trade relationships, macroeconomic risks, and capital allocation strategies across borders. Unlike firm-specific announcements, tariffs often apply at the country level, raising import costs, altering competitive dynamics, and provoking retaliation. This leads to ripple effects across global supply chains, inflation, exchange rates, and monetary policy (Amiti et al., 2019; Fajgelbaum et al., 2020).

Understanding these effects is essential for analysing how policy shocks are transmitted across global financial markets. Tariffs may depress aggregate demand, increase uncertainty, and trigger financial contagion. Countries highly exposed to U.S. trade measures face disproportionate shocks to output and employment (Caliendo & Parro, 2015), while even less exposed economies may suffer spillovers due to reduced global demand or supply chain disruptions (Bems et al., 2010).

The transmission of tariff announcements to financial markets can operate through several channels. First, such announcements may increase policy uncertainty, leading investors to demand higher risk premia and to rebalance their portfolios away from risky assets (Pástor & Veronesi, 2013). Second, tariffs can affect expectations about future economic activity by altering trade flows, supply chains, and global demand, thereby influencing expected cash flows and firm valuations, which are central determinants of asset prices in standard asset pricing models (Campbell & Shiller, 1988; Fama, 1970). Third, in an integrated global financial system, changes in risk sentiment can propagate across countries through capital flows and portfolio adjustments, generating broad-based market reactions even in economies with limited direct trade exposure (Forbes & Warnock, 2012).

Taken together, these channels suggest that financial market responses to tariff announcements may reflect a combination of uncertainty, expectations, and global financial conditions rather than purely bilateral trade effects.

This study focuses on the major U.S. tariff announcement made on April 2, 2025, commonly referred to as the "Liberation Day" tariffs (The White House, 2025). The announcement occurred against a backdrop of rising geopolitical tensions, increasing concerns over trade imbalances, and growing political pressure to support domestic industries. In this context, the U.S. government introduced a broad set of tariffs targeting multiple countries and sectors, representing a significant shift toward trade protectionism.

The scope and unexpected nature of the announcement heightened uncertainty about future trade relations and global economic conditions. As a result, the event had the potential to affect not only directly targeted economies but also global financial markets through changes in investor expectations and risk perceptions.

To capture these effects, the study analyses the returns of country-level ETFs using an event-study framework. ETFs provide a particularly suitable setting for this analysis because, unlike stock indices, they are actively traded financial instruments that incorporate investors' forward-looking expectations in real time. As such, ETF prices reflect both anticipated changes in economic fundamentals and shifts in perceived risk, allowing for a direct assessment of how policy shocks are priced in financial markets. By examining ETFs across countries, regions, sectors, and asset classes, the study provides a comprehensive view of cross-sectional heterogeneity in market responses.

The empirical strategy combines an event-study approach with cross-sectional regression analysis. ARs are estimated using the Fama–French five-factor model to control for systematic risk, and CARs are analysed over multiple event windows to capture both immediate and persistent effects. The cross-sectional analysis further investigates how responses vary with countries' trade dependence on the United States, as well as differences in sectoral composition and asset-class characteristics.

This study makes three main contributions. First, this study extends the event-study literature by applying it to a global macro-financial context, where ETFs serve as forward-looking instruments that capture real-time market responses to policy shocks. First, this study extends the event-study literature by applying it to a global macro-financial context, where ETFs serve as forward-looking instruments that capture real-time market responses to policy shocks. Second, it contributes to the literature on trade policy and uncertainty by distinguishing between transmission through bilateral trade exposure and transmission through global financial and uncertainty channels. In particular, the results show that countries with lower dependence on U.S. trade often experience larger and more persistent valuation declines, suggesting that financial integration and exposure to global risk premia play a central role in shaping market responses. Third, the study documents substantial heterogeneity across regions, sectors, and asset classes, highlighting that the effects of policy uncertainty are not uniform but depend on structural characteristics of markets and industries.

The findings indicate that the April 2025 tariff announcement was primarily priced by financial markets as a global macro-financial uncertainty shock rather than a narrow trade policy intervention. While event-day ARs are heterogeneous, CARs become broadly negative over subsequent trading days, with stronger effects observed in equity markets, globally integrated sectors, and financially open economies. These results underscore the importance of expectations, risk premia, and financial linkages in transmitting policy shocks across borders.

This dissertation is organized as follows. Chapter 2 provides a comprehensive review of the related literature. Chapter 3 describes the data sources, variable construction, and sample characteristics. Chapter 4 outlines the empirical methodology employed in the analysis. Chapter 5 presents the main empirical results. Chapter 6 reports a series of robustness checks to assess the stability of the findings. Finally, Chapter 7 concludes the dissertation and discusses the main implications of the results.

Chapter 2

Literature review

This chapter reviews the literature relevant to the financial market effects of policy shocks, with a particular focus on trade policy announcements. To provide a coherent analytical framework, the review begins with asset pricing models that explain how financial markets respond to new information. It then incorporates insights from the literature on policy uncertainty and trade policy to examine how such shocks may be transmitted to asset prices. Finally, the review discusses recent empirical evidence on the financial market impact of tariff announcements and identifies the key research gaps addressed in this study.

2.1 Asset Pricing Framework and Event Study Methodology

Asset pricing models provide the theoretical foundation for analysing how financial markets respond to new information. In standard frameworks, expected returns are determined by exposure to systematic risk factors, while deviations from expected returns reflect the arrival of new information (Fama & French, 1993, 2015). This implies that, in an efficient market, asset prices adjust rapidly to incorporate news, and any AR observed around a specific event can be interpreted as the market's response to that information.

Event-study methodology builds on this insight by measuring ARs around well-defined events, allowing researchers to isolate the impact of new information on asset prices (Kothari & Warner, 2007; MacKinlay, 1997). In this framework, ARs are defined as the difference between realized returns and model-implied expected returns, typically estimated using asset pricing models. By examining the time pattern of ARs, event studies provide a powerful tool for identifying both immediate and short-term effects of policy shocks on financial markets.

A key implication of this approach is that the magnitude and persistence of ARs depend on how new information affects expectations about future cash flows and risk premia. In particular, macroeconomic and policy-related news may influence asset prices not only through direct effects on economic fundamentals but also through changes in perceived risk and investor sentiment. This framework provides a natural basis for analysing how large-scale policy announcements, such as trade interventions, are priced in financial markets.

2.2 Policy Uncertainty and Asset Prices

A growing body of literature highlights the central role of policy uncertainty in shaping financial market dynamics. Bekaert et al. (2009) distinguish between time-varying uncertainty and changes in risk aversion, showing that uncertainty plays a fundamental role in driving asset return volatility. Building on this insight, Pástor and Veronesi (2013) develop a general equilibrium framework in which political uncertainty commands a priced risk premium, increases return volatility, and strengthens correlations across assets, particularly during periods of weak economic conditions.

Beyond its impact on financial markets, policy uncertainty also affects real economic activity through expectations. Handley and Limão (2017) show that uncertainty about future trade policy discourages firms from making irreversible investment decisions, such as entering export markets or upgrading technology. Similarly, Pierce and Schott (2016) document that reductions in trade policy uncertainty can significantly alter labour market outcomes by intensifying import competition. Complementary evidence from Caldara et al. (2020) indicates that increases in trade policy uncertainty reduce business investment, even in the absence of immediate changes in tariff rates.

Taken together, these findings suggest that policy-related uncertainty can influence asset prices through its effects on expectations and risk premia. As a result, policy announcements may generate significant financial market responses even when their direct economic effects are limited or delayed.

2.3 Trade Policy and Economic Effects

A large body of literature examines the economic effects of trade policy, particularly the impact of tariffs on prices, production, and welfare. In theory, tariffs raise the prices of imported goods in the domestic market, thereby enhancing the competitiveness of domestic industries, protecting declining sectors, and generating fiscal revenue. However, empirical evidence suggests that the realised effects of tariffs often diverge from these theoretical predictions. Studies such as Amiti et al. (2019);

Khandelwal (2020); (Waugh, 2019) show that tariff-induced costs are largely borne by domestic consumers rather than foreign exporters, leading to reduced real welfare and offsetting the intended benefits of protectionist policies.

Trade policy interventions can also influence firms' production decisions and resource allocation by distorting incentives and altering competitive dynamics. More broadly, tariffs may affect economic activity through their impact on trade flows, global demand, and supply chain linkages, potentially generating spillover effects across countries. In general equilibrium frameworks, countries with greater exposure to trade shocks tend to experience larger adjustments in output and employment (Caliendo & Parro, 2015), while even less exposed economies may be affected indirectly through global demand and production linkages (Bems et al., 2010).

However, this literature focuses primarily on real economic outcomes and provides limited insight into how financial markets respond to trade policy shocks. In particular, it does not fully explain how such shocks are reflected in asset prices through changes in expectations and risk premia.

2.4 Global Financial Transmission

The international transmission of policy shocks is further shaped by global financial conditions and cross-border linkages. In addition to real economic connections such as global value chains, financial channels play a central role in propagating shocks across countries. In particular, capital flows, portfolio rebalancing, and shifts in global risk sentiment can transmit policy shocks rapidly across markets, even in the absence of strong bilateral trade exposure.

From a structural perspective, global production networks amplify the effects of trade policy disruptions. Antràs (2020) emphasizes that modern trade is increasingly organized through global value chains characterized by relationship-specific investments, implying that shocks can propagate well beyond directly affected sectors or countries. Similarly, Gawande et al. (2015) show that deeper integration into global value chains increases the potential for economy-wide spillovers.

Beyond production linkages, financial market dynamics provide an additional and often more immediate transmission channel. Forbes and Warnock (2012) show that extreme movements in international capital flows are largely driven by global risk factors rather than domestic fundamentals.

This implies that increases in global uncertainty can trigger synchronized cross-border capital reallocations and widespread asset price adjustments.

Taken together, these findings suggest that policy shocks may generate broad-based movements in global financial markets, driven not only by trade exposure but also by changes in global risk premia and investor expectations.

2.5 Tariff Announcements and Financial Markets

Recent empirical studies have begun to examine the financial market impact of trade policy announcements, particularly in the context of large-scale tariff interventions. The resurgence of protectionism in recent years has provided new evidence on how such shocks affect global financial markets. Using data from multiple countries, Kaczmarek et al. (2025) document significant declines in global equity markets following the April 2025 U.S. tariff announcement, with stronger effects observed in countries with greater economic vulnerabilities.

Complementary evidence from Pisera et al. (2025) shows that the same announcement generated substantial negative ARs among European firms, particularly in trade-dependent sectors and among smaller firms with limited diversification. These findings highlight the importance of sectoral exposure and firm characteristics in shaping market responses to policy shocks.

Despite these advances, existing studies largely rely on aggregate stock indices or firm-level data, which may obscure the role of financial market structure and cross-country heterogeneity in shaping asset price responses. In particular, relatively little attention has been paid to how globally traded financial instruments, such as ETFs, reflect investor expectations and transmit policy shocks across countries.

2.6 Research Gap and Hypotheses Development

Despite the growing body of literature, several important gaps remain. First, the trade policy literature and the asset pricing literature are often studied separately, with limited integration between real economic effects and financial market responses. Second, existing empirical studies predominantly rely on stock indices or firm-level data, which may not fully capture cross-country financial transmission mechanisms. Third, there is limited evidence on how policy uncertainty interacts with financial integration to shape heterogeneous market responses across countries, sectors, and asset classes.

This study addresses these gaps by examining how a major trade policy announcement is transmitted across global financial markets using country-level ETFs. By focusing on globally traded financial instruments, the analysis provides a more direct measure of investor expectations and market responses. In addition, the study distinguishes between transmission through bilateral trade exposure and transmission through global uncertainty and financial channels, offering new insights into the mechanisms underlying asset price reactions to policy shocks.

Motivated by these insights, this study develops the following testable hypotheses:

H1: Increases in policy uncertainty are associated with significant ARs responses in international ETFs, with the magnitude of the response increasing over longer event windows.

H2: The ARs response of ETFs to policy uncertainty differs across asset classes, with equity ETFs exhibiting negative responses and fixed-income ETFs displaying positive sensitivities consistent with safe-haven behaviour.

H3: The sensitivity of ETF ARs to policy uncertainty varies systematically with countries' dependence on trade with the United States.

H4: The ARs responses of ETFs to policy uncertainty varies systematically across geographic regions and industry sectors.

Chapter 3

Data

We collected data on 3,095 distinct ETFs from Morningstar, representing investments in 35 countries (Appendix 2) and the global uncertainty index (Baker et al., 2025), for the period from January 1, 2024 to June 30, 2025. We classify the 35 countries into five geographical regions: the Americas, Oceania, Asia, Europe, and Africa. In addition, we treat China and the United States as a distinct group of major economies given their outsized influence on global financial markets (Appendix 3).

Countries are categorized based on their trade exposure to the United States, measured as the ratio of U.S. imports from each country to that country's GDP in 2024 (Kaczmarek et al., 2025), using data from the UN Comtrade Database (2025) and World Bank Group (2025a). Countries with above-median exposure are classified as 'high-dependence, while those below the median (including the United States itself) are classified as "low-dependence. The United States falls into the low-exposure group because its large, domestically driven economy is less dependent on exports compared with smaller open economies (Appendix 4). This median-based classification provides a balanced and data-driven measure of trade exposure, avoiding arbitrary cutoffs and ensuring comparability across countries with diverse economic scales.

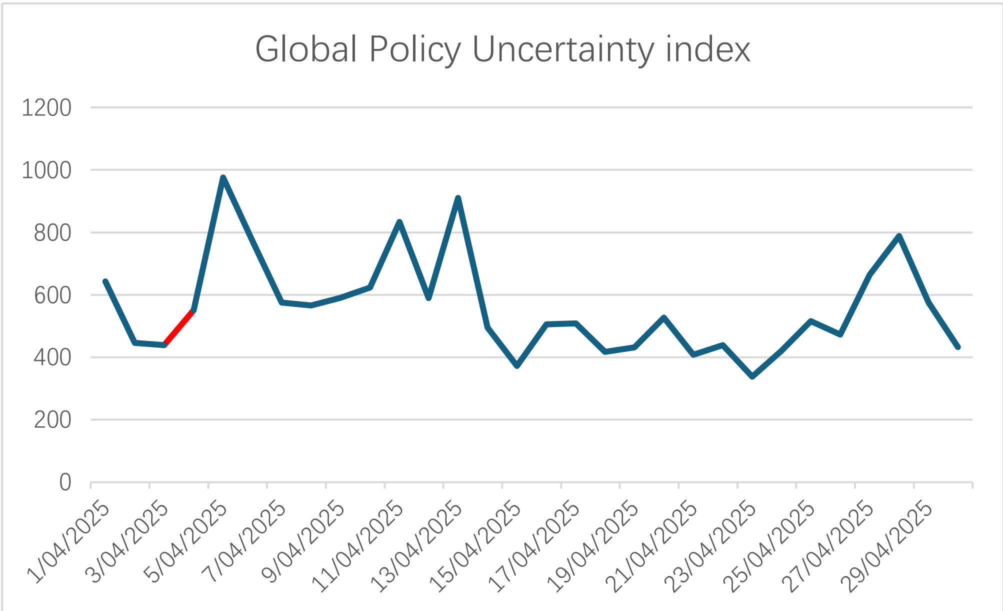
In addition to country-level classifications, we group ETFs along two further dimensions. First, following Morningstar's industry taxonomy, ETFs are assigned to 12 industry categories. Leveraged and inverse leveraged ETFs are extracted and treated as a distinct category labelled "Trading", while funds that do not fit into standard industry classifications are grouped under "Others" (Appendix 5). Second, based on Morningstar's asset-class definitions, ETFs are categorized into three broad types: Equity, Fixed Income, and Miscellaneous (Appendix 6). These additional classifications allow us to capture cross-industry and cross-asset heterogeneity in market responses and provide a consistent framework for comparative analysis.

Our primary measure of policy uncertainty is the daily Policy Uncertainty index (Baker et al., 2025) constructed using newspaper-based measures of policy-related uncertainty.

Figure 1 plots the EPU index around the event date and shows a pronounced increase following the announcement, supporting the interpretation of the event as a policy uncertainty shock.

Daily expected returns are estimated using the Fama–French five-factor model, including MKT - RF, SMB, HML, RMW, and CMA factors. Factor returns are obtained from the Kenneth R. French Data Library (Fama & French, 2025) and matched to ETF returns at the daily frequency.

Figure 1 (Baker et al., 2025)



To account for cross-country macroeconomic conditions, we include annual country-level controls for consumer price inflation (CPI), GDP growth, and unemployment for 2024, collected from the World Bank Group (2025a, 2025b, 2025c), Taiwan (2025a, 2025b, 2025c). Because these variables reflect slow-moving fundamentals, they enter the cross-sectional regressions as time-invariant characteristics.

Chapter 4

Methodology

We employ a standard event-study framework to examine global equity market reactions to President Donald Trump's tariff announcement on April 2, 2025. We define April 3, 2025 the first full trading day after the announcement as the event day (t = 0) (Reuters, 2025) and construct an event window around it to capture the short-term market impact of this single event.

To isolate the market response attributable to the tariff shock, we first compute ARs, defined as the difference between the actual ETF returns and their predicted 'normal' returns during the event window. To improve the accuracy of normal return estimation and reduce potential model misspecification, we employ the Fama and French (2015) five-factor model. Compared with the market model, the three-factor model, or the Carhart four-factor model, the five-factor specification incorporates two additional sources of systematic risk profitability (RMW) and investment (CMA) providing a more comprehensive characterization of expected returns. Given our large and heterogeneous sample of 3,095 ETFs spanning multiple countries, industries, and asset classes, the five-factor model offers a more robust estimation of normal returns.

4.1 Expected return model and estimation event windows

To estimate normal returns, we fit the Fama-French five-factor model using daily data from January 1, 2024, to January 1, 2025, prior to the event window:

$$R_{i,t} - R_{f,t} = \alpha_i^{FF5} + \beta_i^{MKT}\left(R_{MKT,t} - R_{f,t}\right) + \beta_i^{SMB}SMB_t + \beta_i^{HML}HML_t + \beta_i^{RMW}RMW_t + \beta_i^{CMA}CMA_t + \varepsilon_{i,t}^{FF5} \quad (\mathbf{1})$$

Where $R_{i,t}$ denotes the return of ETF i at time t, and $R_{f,t}$ represents the risk-free rate. $R_{MKT,t} - R_{f,t}$ is the excess return on the market portfolio. SMB_t (small minus big) captures the size effect, measured as the return differential between small-cap and large-cap stocks. HML_t (high minus low) represents the value factor, defined as the return difference between high and low book-to-market stocks.

RMW_t(robust minus weak) reflects the profitability factor, while CMA_t (conservative minus aggressive) captures the investment factor.

The coefficients β_i^{MKT}, β_i^{SMB}, β_i^{HML}, β_i^{RMW}, and β_i^{CMA} measure ETF i's exposure to the respective Fama–French five factors. The estimated $\hat{\alpha}_i$ and $\hat{\beta}_i$ are subsequently used to compute the predicted normal return in equation (2). Detailed definitions of all variables are provided in Appendix 1.

After estimating the expected return from the five-factor model (1), we computed the AR for each ETF during the event window. The AR is defined as the difference between the actual return and the model-implied normal return:

$$\hat{R}_{i,t} = R_{f,t} + \alpha_i^{FF5} + \hat{\beta}_i^{MKT}(R_{MKT,t} - R_{f,t}) + \hat{\beta}_i^{SMB}SMB_t + \hat{\beta}_i^{HML}HML_t + \hat{\beta}_i^{RMW}RMW_t + \hat{\beta}_i^{CMA}CMA_t \quad (2)$$

$$AR_{i,t} = R_{i,t} - \hat{R}_{i,t} \quad (3)$$

4.2 Average abnormal return and cumulative abnormal return

Our event window spans four trading days, from Day 0 to Day 3, allowing us to capture the immediate market reaction following the tariff announcement. We begin by examining the event-day $AR(0)$, and then compute CARs and AARs over nested short-horizon windows $[0,1], [0,2], [0,3]$ to evaluate how markets incorporated the shock over subsequent trading days.

To assess whether the news was partially anticipated or whether price adjustments continued beyond the initial trading day, we also computed symmetric windows around the event day, including $CAR[-1,1], CAR[-3,3], AAR[-1,1]$, and $AAR[-3,3]$. These alternative horizons allow us to distinguish between immediate, short-run, and potentially anticipatory market responses.

$$AAR_{i,[a,b]} = \frac{1}{N}\sum_{a}^{b} AR_{i,t}\ ,\quad CAR_{i,[a,b]} = \sum_{a}^{b} AR_{i,t} \quad (4)$$

4.3 Cross-sectional regression

We run the following cross-sectional regression to examine how ETF characteristics relate to CAR:

$$CAR_i[a,b] = \beta_1 \sum_a^b \Delta EPU_{\ i} + \ \beta_2 \ln(NetAsset_i) + \beta_3 \ln(Volume_i) + \gamma X_c + \ \varepsilon_i \qquad (5)$$

We estimate this model separately for different ETF groups, including high/low dependence countries, geographical regions, asset classes, and industry sectors. In extended specifications, we also include fixed effects for investment area, domicile, asset class, and sector to absorb group-specific heterogeneity, as well as a vector of country-level control variables ($\mathbf{X_c}$) including inflation, unemployment and GDP growth rate in 2024 (Appendix 1).

Chapter 5

Result

This section presents the empirical results of the study. We begin by briefly describing the sample composition to provide context for the subsequent analysis. The sample comprises 3,095 ETFs spanning 35 countries and covering a wide range of industry sectors and asset classes. This broad cross-sectional coverage ensures substantial heterogeneity in fund characteristics, geographic exposure, and sectoral composition, which is essential for examining how policy uncertainty affects ETF-level ARs.

5.1 Descriptive Statistics

Table 1 presents descriptive statistics for the key variables used in the event-study framework and the subsequent cross-sectional regressions. The summary statistics reveal substantial variation in ETF characteristics, trading activity, returns, and exposure to global uncertainty. In particular, ΔEPU, which captures day-to-day changes in the Policy Uncertainty Index, exhibits non-trivial dispersion, providing meaningful variation for identifying cross-sectional differences in CARs.

Trading volume and net assets display pronounced right-skewness, reflecting substantial heterogeneity in ETF liquidity and size. While a subset of ETFs is extremely liquid and large, a large proportion consists of smaller and less frequently traded funds, underscoring the importance of controlling for size and liquidity in the cross-sectional analysis. ARs have a mean close to zero, consistent with the properties of model-adjusted returns in an event-study setting but exhibit considerable dispersion across ETFs.

Overall, the descriptive statistics confirm that the sample provides a suitable empirical setting for examining how ETF characteristics and global uncertainty shocks jointly shape ARs responses in the subsequent regression analysis.

Table 1: Descriptive statistics							
Variable	**Mean**	**SD**	**Min**	**p25**	**Median**	**p75**	**Max**
Volume	81807760	1.44E+09	0	51576.57	535110.4	3944300	6.77E+10
Net assets	1.92E+09	1.62E+10	52739.01	15263085	80810152	4.64E+08	5.27E+11
AR	0.0089	0.0209	-0.2558	-0.0008	0.0074	0.0198	0.1670
Ret	-0.0114	0.0374	-0.3781	-0.0211	-0.0076	0.0009	0.4482
Ret_USA	-0.0285	0.0586	-0.3781	-0.0557	-0.0368	0.0016	0.4482
ΔEPU	0.0473	0. 2390	-0.3659	-0.0157	0.0143	0.2264	0.4105

Note: This table reports descriptive statistics for all variables used in the empirical analysis. The sample consists of 3,095 ETFs across 35 countries. Volume denotes daily trading volume, and Net assets represent total net assets under management. ARs refers to daily ARs estimated from the Fama–French five-factor model. Ret_USA is the daily return on the U.S. equity market benchmark. ΔEPU measures changes in policy uncertainty.

All return variables are expressed in decimal form. The reported statistics include the mean, standard deviation (SD), minimum, 25th percentile (p25), median, 75th percentile (p75), and maximum. ETF-level characteristics are obtained from Morningstar, while the policy uncertainty index is sourced from Baker et al. (2025)

5.2 Event-Study Results

This section examines market reactions to the April 2 tariff announcement using an event-study framework across regions, asset classes, trade-dependence groups, and industry sectors. While event-day ARs are mixed and sometimes mechanically positive due to factor-model adjustments, CARs become broadly negative over subsequent days. The effects are strongest in equities, globally integrated markets, and trade-exposed industries, highlighting economically significant and heterogeneous responses to policy-induced uncertainty.5.2.1Event-day and Event-window ARs

Table 2 reports event-day and short-window ARs across regions. Several patterns emerge. First, regional reactions in the shortest window CAR[0,1] are heterogeneous rather than uniformly negative. Asia, China, and the Americas display positive CARs over this initial window, while Europe, Oceania, Africa, and the United States present negative responses. However, beginning with CAR[0,2], the pattern becomes broad-based: all regions record significantly negative CARs over the [0,2] and [0,3] windows, indicating a widespread and persistent adjustment following the April 2 tariff announcement. China, Africa, and Asia exhibit the largest declines, while the Americas and the United States experience comparatively smaller losses. This dynamic pattern is consistent with the literature on policy-induced uncertainty shocks, which emphasizes that market reactions may be heterogeneous on impact but become broadly negative as uncertainty is gradually incorporated into risk premia over subsequent trading days (Pástor & Veronesi, 2013).

A noteworthy feature of the results is that the United States records a positive $AR(0)$, despite the raw return on event day being negative (Wisnefski, 2025). This pattern does not imply that U.S. markets were unaffected by the tariff shock. Instead, it reflects the mechanics on the Fama-French five-factor model used to estimate expected returns. Because the announcement occurred on a day when the global market factor (MKT-RF) fell sharply, ETFs with higher market betas were assigned substantially negative expected returns. Consequently, although the actual U.S. return was negative, it was less negative than the model-implied benchmark, resulting in a small positive AR. This effect is mechanical rather than economic: it highlights how differences in factor exposures, especially market beta, drive part of the cross-geography region heterogeneity in ARs. Similar mechanical patterns in event-day ARs have been documented in the presence of large systematic shocks, where factor-based models absorb much of the contemporaneous price movement into expected returns rather than abnormal performance. As emphasized in the event-study literature, ARs depend critically on the choice of expected return model. When systematic shocks are large, factor-model expected returns absorb much of the contemporaneous movement in asset prices, leaving weak or counterintuitive ARs (Fama & French, 2015; Kothari & Warner, 2007; MacKinlay, 1997). This implies that event-day ARs should not be mechanically interpreted as economic effects when risk factors dominate contemporaneous returns.

When extended to cumulative windows, the negative impact becomes more widespread. $\text{CAR}[0,3]$ is significantly negative for nearly all regions, showing that markets continued to adjust over subsequent trading days. The strong negative CARs In China and Europe, the persistent reassessment of trade and growth prospects suggests, whereas the milder reaction in the Americas and the U.S. indicates comparatively lower perceived exposures or better market resilience. Symmetric windows, such as $\text{CAR}[-1,1]$ and $\text{CAR}[-3,3]$, confirm that there is little evidence of substantial anticipatory trading before the announcement; most of the adjustment occurs after the event.

Overall, the regional evidence reported in Table 2 provides strong support for Hypothesis 1. policy uncertainty generates statistically significant ARs responses across regions, and these effects become more pronounced as the event window widens. In addition, the substantial cross-regional heterogeneity documented in the magnitude of CARs are consistent with Hypothesis 4, which emphasizes variation in responses across geographic regions

Table 2: Regional ARs Models on Event Day and Event Windows

	all regions	Asia	China	Americas	USA	Oceania	Europe	Africa
AR(0)	0.8707***	1.3505***	0.5006***	3.2850***	0.1815*	2.3421***	1.9025***	-0.4719**
AAR[0,1]	0.5636***	1.7372***	0.7530***	0.4587***	-0.2545***	-1.0819***	-0.7570***	-2.5502***
AAR[0,2]	-1.4259***	-1.1419***	-2.5570***	-0.1672	-0.5781***	-1.5666***	-1.5011***	-2.3155***
AAR[0,3]	-0.9005***	-0.6928***	-1.6073***	-0.2445**	-0.4888***	-0.8568***	-0.7170***	-0.9354***
CAR [0,1]	1.1271***	3.4745***	1.5061***	0.9175***	-0.5089***	-2.1638***	-1.5141***	-5.1004***
CAR [0,2]	-4.2777***	-3.4256***	-7.6709***	-0.5017	-1.7342***	-4.6997***	-4.5034***	-6.9464***
CAR [0,3]	-3.6020***	-2.7713***	-6.4294***	-0.9780**	-1.9553***	-3.4271***	-2.8680***	-3.7415***
CAR [-1,1]	1.0105***	3.2065***	1.4591***	1.0828***	-0.5217***	-1.6872***	-1.4991***	-7.9607***
CAR [-3,3]	-4.4025***	-4.8466***	-7.1365***	-0.1957	-1.7711***	-3.6106***	-3.1868***	-5.8833***
Number ETFs	3095	910	908	83	853	52	252	37

Note: This table presents daily ARs, AARs, and CARs for each event window across regions. Expected returns are estimated using the Fama-French five-factor model (MKT, SMB, HML, RMW, CMA) based on the pre-event estimation window. ARs are computed as the difference between realized returns and model-predicted returns. Significance is indicated by *, **, and *** for the 10%, 5%, and 1% levels, respectively.

5.2.2 Abnormal Returns by Asset Class and Dependence

Table 3 reports event-day and short-window ARs across asset classes and trade-dependence groups. Several patterns emerge. First, both equity and fixed-income ETFs record positive and statistically significant $AR(0)$ values, with fixed income showing the strongest event-day response. As discussed above, these positive ARs do not reflect a beneficial impact of the tariff announcement; rather, they stem from the factor-model construction of expected returns, which absorbs a substantial portion of the event-day price movement into systematic risk components. In contrast, miscellaneous ETFs exhibit weak and insignificant responses, suggesting limited exposure to the channels through which tariff shocks are transmitted.

Second, CARs become strongly negative for all asset classes as the window lengthens, indicating that the market gradually incorporated the adverse implications of the tariff announcement over subsequent days. Equity ETFs show the most pronounced cumulative losses, consistent with their higher sensitivity to global risk premium and macroeconomic expectations. Fixed-income ETFs also experience sizeable declines by the end of the [0,3] window, reflecting a reassessment of growth prospects and risk conditions following the policy announcement. Miscellaneous ETFs again display milder and more heterogeneous reactions.

Third, the comparison between high- and low-dependence groups reveals striking asymmetry. While high-dependence countries display strong positive $AR(0)$ responses, their cumulative losses over longer windows are substantially smaller than those of the low-dependence group. This pattern does not imply that low-dependence economies are more exposed to U.S. trade flows. Instead, it reflects differences in market structure and global integration. The low-dependence group includes major advanced economies, such as the United States, the euro area, China, and Japan whose deep financial systems, high foreign participation, and stronger sensitivity to global risk premia make them more responsive to increases in global uncertainty. As a result, tariff-induced expectations of weaker global demand and heightened policy risk generate larger valuation adjustments in these markets. In contrast, high-dependence countries, many of which are smaller or regionally concentrated economies, exhibit more muted cumulative responses despite their initial positive ARs. This asymmetry highlights that the tariff shock operated primarily through global financial channels rather than through bilateral trade exposure alone.

Overall, the asset-class and dependence-based evidence reported in Table 3 provides strong support for Hypotheses 2, while offering suggestive evidence relevant to Hypothesis 3. The results highlight pronounced heterogeneity across asset classes and horizons and point to differences in cross-country responses that motivate the subsequent cross-sectional analysis.

Table 3: Event-Study ARs by Asset Class and Dependence Group

	Equity	Fixed Income	Miscellaneous	HighDep	LowDep
AR(0)	0.8998***	1.0611***	0.4143	1.6578***	0.5258***
AAR[0,1]	0.6881***	0.3519***	-0.0320	1.4081***	0.1935***
AAR[0,2]	-1.7746***	-1.7746***	-1.7746***	-0.9789***	-1.6218***
AAR[0,3]	-1.0724***	-0.2033***	-0.6124***	-0.4346***	-1.1046***
CAR[0,1]	1.3761***	0.7037***	-0.0640	2.8163***	0.3870***
CAR[0,2]	-5.3237***	-0.5671***	-1.8233**	-2.9367***	-4.8654***
CAR[0,3]	-4.2896***	-0.8133***	-2.4497***	-1.7384***	-4.4186***
CAR[-3,3]	-5.4220***	-0.2764***	-2.6833***	-3.7685***	-4.6804***
Number ETFs	2327	437	331	943	2152

Note: This table presents ARs, AARs, and CARs for Equity, Fixed Income, Miscellaneous asset classes, as well as for High-dependence and Low-dependence groups. Expected returns are estimated using the Fama-French five-factor model over the pre-event estimation window, and all values are reported in percentage terms. ARs are computed as the realized return minus the model-predicted expected return. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5.2.3 Abnormal Returns by Sector

Table 4 reports event-day and short-window ARs for 13 industry sectors. Several important sectoral patterns emerge. First, most sectors display statistically significant positive ARs on the event day. The strongest $\mathrm{AR}(0)$ responses appear in ENE (2.44%), IND (1.66%), HLT (1.29%), RLE (1.24%), and UTIL (0.90%). These sectors typically have higher sensitivity to macroeconomic risk factors, which contributes to larger deviations between realized returns and model-predicted benchmarks. As noted earlier, the exceptionally negative market factor on the announcement day results in unusually low expected returns, and this inflates $\mathrm{AR}(0)$ for sectors with higher market betas.

Second, CARs turn negative once the window lengthens, indicating a broad reassessment of the economic implications of the tariff announcement. Heavy industrial and trade-linked sectors, including IND, COC, and BMA, experience the most substantial cumulative losses. Their $\mathrm{CAR}[0,3]$ values range from about -5.0% to -6.4%, This pattern is consistent with heightened concerns about global demand conditions and trade-related exposures commonly emphasized in the international trade literature (Levchenko et al., 2010). By contrast, Consumer Defensive exhibits a comparatively mild decline, reflecting its lower sensitivity to cyclical fluctuations.

Third, sectors with significant global revenue exposure or high sensitivity to changes in risk premium, such as TEC, COS, FIS, and RLE, show pronounced negative cumulative returns even though their $\mathrm{AR}(0)$ values are positive. This pattern parallels the results observed for the low-dependence group in Table 3 and is consistent with evidence from the uncertainty literature indicating that increases in uncertainty are associated with stronger valuation adjustments in more globally exposed and financially integrated segments of the market (Baker et al., 2016; Bloom, 2009).

Finally, the symmetric windows, $\mathrm{CAR}[-1,1]$ and $\mathrm{CAR}[-3,3]$, provide little evidence of anticipatory trading, but they confirm that price adjustments persist after the announcement. The sectors with the largest longer-window declines include IND, COC, and ENE. Each of these sectors is closely connected to global trade activity or commodity markets. Taken together, the sectoral evidence suggests that the tariff announcement is transmitted through broad macro-financial channels, with the most pronounced effects appearing in globally integrated and cyclically sensitive industries.

Overall, the sector-level results reported in Table 4 provide strong support for supporting Hypothesis 4 by documenting substantial heterogeneity in ETF ARs responses across industries. ARs responses to policy uncertainty become increasingly pronounced as the event window widens, while the magnitude and persistence of these effects vary markedly across sectors. In addition, the presence of statistically significant CARs across a broad range of industries is consistent with Hypothesis 1, indicating that trade-related uncertainty generates economically meaningful valuation effects at the sector level.

Table 4: Event-Study ARs by Sector

	AR(0)	AAR[0,1]	AAR[0,2]	AAR[0,3]	CAR[0,1]	CAR[0,2]	CAR[0,3]	CAR[-3,3]	ETF_Count
BMA	0.4222***	-0.1614	-2.2827***	-1.2594***	-0.3228	-6.8482***	-5.0376***	-6.3459***	84
BD	1.0611***	0.3519***	-0.1890***	-0.2033***	0.7037***	-0.5671***	-0.0813***	-0.2764***	437
COS	2.0698***	3.0179***	-1.0318***	-0.5207**	6.0358***	-3.0954***	-2.0829**	-3.9274***	53
COC	0.2434**	0.8891***	-2.7964***	-1.8994***	1.7782***	-8.3893***	-7.5975***	-8.8915***	149
COD	2.8051***	1.5344***	-0.1522	0.4955***	3.0689***	-0.4566	1.9821***	1.4678**	62
ENE	-2.4356***	-3.0162***	-3.1545***	-2.4618***	-6.0323***	-9.4635***	-9.8471***	-9.8148***	33
FIS	0.7057***	0.0235	-1.8421***	-1.0986***	0.0469	-5.5263***	-4.3946***	-5.0569***	478
HLT	1.2905***	0.8193***	-1.9368***	-1.0390***	1.6386***	-5.8105***	-4.1562***	-4.2211***	151
IND	1.0659***	0.7481***	-2.1338***	-0.9371***	1.4962***	-6.4015***	-3.7482***	-5.8256***	376
OTS	0.5816***	0.0143	-0.8567***	-1.5047***	0.0285	-2.5702***	-6.0187***	-6.7445***	107
RLE	2.1488***	0.9084***	-1.0038***	-0.4989***	1.8167***	-3.0115***	-1.9957***	-2.8992***	56
TEC	0.9043***	1.1642***	-1.5879***	-1.0410***	2.3284***	-4.7636***	-4.1638***	-5.5006***	746
TDG	0.4143	-0.0320	-0.6078**	-0.6124***	-0.0640	-1.8233**	-2.4497***	-2.6833***	331
UTIL	0.9007***	-0.3273**	-1.4076***	-0.8964***	-0.6546**	-4.2227***	-3.5855***	-2.6722***	32

Note: This table presents ARs, AARs, and CARs for each sector. Expected returns are estimated using the Fama–French five-factor model over the pre-event estimation period, and ARs are computed as the difference between realized and model-predicted values. All return figures are reported in percentages. Statistical significance is indicated by *, **, and *** corresponding to the 10%, 5%, and 1% levels, respectively. Sector abbreviations are defined in Appendix 7.

5.3 Cross-Sectional Analysis of CARs

This section extends the event-study evidence by investigating the cross-sectional determinants of ETFs' ARs in response to policy uncertainty. Using regression-based specifications across alternative event windows, we examine how sensitivity to uncertainty varies with countries' U.S. trade dependence, investment focus, domicile, region, sector, and asset class. Across all classifications, a consistent pattern emerges negative and persistent responses are concentrated among equity, cyclically sensitive, and financially integrated markets, while fixed income and defensive segments exhibit weaker or even positive abnormal performance.

Overall, the results indicate that global uncertainty is transmitted primarily through financial risk-premium channels rather than bilateral trade exposure alone, generating systematic and economically meaningful heterogeneity across ETFs.

5.3.1 Dependency by Investment Area and Domicile

Table 5 presents cross-sectional regression results examining how ETFs' CARs respond to changes in policy uncertainty across different event windows. The analysis is conducted separately for ETFs from countries with high and low dependence on the U.S. market and is further disaggregated by Investment Area and Domicile classifications. Dependence is defined as exports to the United States relative to GDP, as detailed in Appendix 3.

At the country level, the sensitivity of CARs to global uncertainty differs sharply between high- and low-dependence groups and varies systematically with the event window. In the shortest window, CAR[0,1], HighDep ETFs exhibit a positive and statistically significant coefficient on ΔEPU (0.145), whereas LowDep ETFs display a significant negative response (-0.071). This divergence indicates that the immediate cross-sectional reaction to uncertainty shocks is asymmetric across dependence groups. Importantly, this short-run pattern does not persist. Beginning with CAR[0,2], the coefficient on ΔEPU for LowDep ETFs becomes increasingly negative and statistically significant (-0.116 in CAR[0,3] and -0.102 in CAR[-3,3]), while the corresponding estimates for HighDep ETFs are small in magnitude and statistically insignificant. This evidence suggests that increases in global uncertainty generate more pronounced and persistent valuation losses among low-dependence economies over longer horizons.

This temporal pattern is consistent with the view that policy-induced uncertainty affects asset prices primarily through adjustments in risk premia rather than through immediate cash-flow news (Pástor & Veronesi, 2013).

When ETFs are grouped by Investment Area, the negative association between CARs and global uncertainty is again more pronounced for LowDep ETFs groups. In CAR[0,1], LowDep–InvestmentArea ETFs display a large and statistically insignificant negative coefficient on ΔEPU (-2.117), whereas the HighDep–InvestmentArea coefficient is close to zero and insignificant. Although the estimated sensitivities weaken in magnitude in subsequent windows, the pattern remains economically meaningful: across CAR[0,2], CAR[0,3], and CAR[-3,3], LowDep–InvestmentArea ETFs continue to exhibit negative responses to uncertainty shocks, while HighDep–InvestmentArea ETFs show little systematic sensitivity. This result indicates that, conditional on investment focus, exposure to global uncertainty is concentrated among low-dependence economies.

A similar asymmetry emerges under the Domicile classification. LowDep–Domicile ETFs exhibit consistently negative coefficients on ΔEPU, with statistically significant effects in CAR[0,2], CAR[0,3], and CAR[-3,3]. In contrast, HighDep–Domicile ETFs display coefficients that are small and statistically indistinguishable from zero across all windows. These findings suggest that domicile-based exposure to global uncertainty shocks is largely driven by low-dependence economies, particularly over medium and longer event windows. The stronger and more persistent responses observed for low-dependence ETFs groups are consistent with the global financial cycle literature, which emphasizes that financially integrated and economically large countries exhibit stronger asset-price responses to global risk and uncertainty shocks, regardless of bilateral trade exposure (Miranda-Agrippino & Rey, 2020; Rey, 2015).

The behavior of control variables is broadly consistent with prior expectations. Net assets are positively associated with CARs for LowDep ETFs in longer windows, indicating that larger funds may be better able to absorb uncertainty shocks over time. Trading volume is generally insignificant across specifications, suggesting that liquidity differences do not account for the observed cross-sectional heterogeneity. The R-squared values range from approximately 0.09 to 0.65, which is consistent with meaningful explanatory power in cross-sectional asset-pricing regressions.

Taken together, the results in Table 5 demonstrate that ETFs' sensitivity to policy uncertainty varies systematically with dependence on the U.S. market and with investment structure and domicile characteristics. At the country level, low-dependence economies experience the largest and most persistent negative adjustments following increases in global uncertainty, whereas high-dependence economies exhibit, at most, short-lived responses. The patterns observed across Investment Area and Domicile classifications reinforce this conclusion, underscoring that exposure to global uncertainty is shaped by economic scale and financial integration rather than by bilateral trade dependence alone. More broadly, the heterogeneous cross-sectional responses documented here align with prior evidence that uncertainty shocks do not affect asset prices uniformly across countries and market segments (Baker et al., 2016; Bloom, 2009).

Overall, the cross-sectional evidence in Table 5 provides strong support for Hypotheses 3 and 4. The impact of policy uncertainty becomes increasingly pronounced over longer horizons and is systematically stronger for ETFs associated with low-dependence economies. This pattern is consistent with the view that financial integration, rather than bilateral trade exposure alone, plays a central role in shaping cross-country sensitivity to global uncertainty. At the same time, the presence of statistically significant uncertainty sensitivities across multiple specifications is consistent with Hypothesis 1.

Table 5 Crossing Section Analysis by High/Low dependency in different Investment Area and Domicile CAR windows

	HighDep	LowDep	HighDep - IA	LowDep - IA	HighDep - Domicile	LowDep - Domicile
CAR[0,1]						
ΔEPU	0.1450***	-0.0709***	-0.0092	-2.1170	0.0174	-0.0884***
(t)	2.584	-3.365	-0.211	-1.352	0.360	-3.344
Net Assets	-0.0033***	0.0004	-0.0001	0.0004	0.0003	0.0009**
(t)	-3.135	1.531	-0.122	1.492	0.465	2.221
Volume	0.0010**	0.0001	0.0001	0.0002	-0.0002	-0.0001
(t)	2.003	0.689	0.161	0.881	-0.721	-0.443
Prob > F	2.2905E-123	3.0915E-109				
R-squared	0.4627	0.0701	0.6507	0.0912	0.6131	0.1246
CAR[0,2]						
ΔEPU	0.0690	-0.0284	0.0109	-0.2220	0.0349	-0.1765***
(t)	1.191	-0.741	0.167	-0.095	0.575	-3.930
Net Assets	-0.0044***	0.0002	-0.0018*	0.0007**	-0.0020*	0.0012**
(t)	-3.424	0.513	-1.673	1.970	-1.702	2.134
Volume	0.0013**	-0.0011***	0.0008	-0.0004	0.0006	-0.0007
(t)	2.299	-2.790	1.466	-1.255	1.112	-1.406
Prob > F	1.4743E-114	0				
R-squared	0.2985	0.3764	0.4261	0.4851	0.4069	0.46175
CAR[0,3]						
ΔEPU	0.0407	-0.1164***	-0.0996*	-0.3232	-0.0072	-0.1628***
(t)	1.102	-3.591	-1.800	-0.153	-0.159	-4.050
Net Assets	-0.0017**	0.0009**	0.0007	0.0006	0.0006	0.0011**
(t)	-2.219	2.407	1.056	1.528	0.893	2.057

Volume	0.00005	-0.0003	-0.0004	-0.00007	-0.0003	-0.0005
(t)	0.142	-0.698	-1.150	-0.221	-0.989	-1.108
Prob > F	3.5147E-86	1.6312E-259				
R-squared	0.2476	0.3556	0.4096	0.4149	0.3672	0.4027
CAR[-3,3]						
ΔEPU	0.0197	-0.1022***	-0.1008	-0.2513	0.0517	-0.1623***
(t)	0.417	-2.924	-1.456	-0.105	0.867	-3.701
Net Assets	-0.0021**	0.0011**	-0.0002	0.0007*	-0.0007	0.0013**
(t)	-2.112	2.551	-0.175	1.852	-0.749	2.305
Volume	0.0005	-0.0004	0.0002	-0.0001	0.0004	-0.0006
(t)	0.999	-0.907	0.395	-0.259	0.774	-1.250
Prob > F	4.6276E-147	1.7373E-259				
R-squared	0.3359	0.3552	0.4330	0.4157	0.4101	0.4098
Number of obs	943	2152	943	2152	943	2152

Notes: This table reports OLS cross-sectional regressions of ETFs' CARs on changes in policy uncertainty (ΔEPU) across four event windows, CAR[0,1], CAR[0,2], CAR[0,3], and CAR[-3,3]. ARs are computed using the Fama–French five-factor model. Regressions are estimated separately for ETFs from high- and low-dependence countries and further disaggregated by Investment Area (IA) and Domicile classifications. Dependence is defined as exports to the United States relative to GDP. All specifications control for ETF characteristics, including net assets and trading volume, as well as country-level macroeconomic conditions, including inflation, unemployment, and GDP growth. Detailed definitions and country-level classifications for ETF domicile are provided in Appendix 8. Coefficient estimates for macroeconomic controls are omitted for brevity. Statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

5.3.2 Dependency by Sector and Asset Class

Table 6 deepens the cross-sectional analysis by examining whether the asymmetric transmission of global uncertainty shocks identified in Table 5 persists within more granular classifications defined by sector and asset class. The regressions follow the same event-window structure as in the previous table, allowing direct comparability across specifications. ETFs are stratified by whether their underlying countries exhibit high or low dependence on the United States, and separate estimations are conducted within each sector and asset-class grouping.

Across both sector-based and asset-class-based classifications, low-dependence ETFs exhibit negative and statistically significant sensitivities to policy uncertainty already in the shortest event window, CAR[0,1]. This immediate response indicates that the adverse valuation effects of global uncertainty shocks on low-dependence economies materialize rapidly and are not limited to gradual, longer-horizon adjustments. Moreover, these negative sensitivities persist and remain statistically significant in subsequent windows, including CAR[0,2], CAR[0,3], and CAR[-3,3], highlighting the durability of the response. The fact that the negative effects appear from the event window onward suggests that investors quickly reassess the risk outlook for low-dependence economies when global uncertainty rises.

In contrast, high-dependence ETFs display weaker and less persistent responses across both dimensions. In the sector-based regressions, the coefficients on ΔEPU for HighDep ETFs are generally small in magnitude and statistically insignificant across most event windows, indicating limited sensitivity once sectoral composition is taken into account. In the asset-class regressions, HighDep ETFs exhibit a significantly positive coefficient in CAR[0,1], consistent with a short-lived adjustment on the event day, but this effect dissipates in longer windows, where the estimated sensitivities become statistically indistinguishable from zero. Together, these patterns imply that any immediate reaction among high-dependence ETFs is transitory and does not translate into sustained valuation losses.

The persistence of the negative response among low-dependence ETFs across increasingly granular classifications provides important insight into the underlying transmission mechanism. Because the asymmetry remains even after conditioning on sectoral and asset-class composition, the results suggest that the stronger sensitivity of low-dependence economies cannot be attributed to differences in portfolio mix alone. Instead, the evidence points to broader financial channels such as exposure to global risk premia and international capital flows as the key drivers of the observed cross-sectional variation in ARs.

Control variables behave in a manner consistent with prior expectations. Net assets are positively and statistically significantly associated with CARs for low-dependence ETFs in longer event windows, indicating that larger funds within this group may be better positioned to absorb uncertainty shocks over time. Trading volume, by contrast, remains weakly related to ARs across most specifications, suggesting that liquidity differences do not play a central role in explaining the asymmetric responses documented in the table.

Overall, Table 6 demonstrates that the asymmetric transmission of policy uncertainty identified at the country level remains robust when examined at finer levels of aggregation. Low-dependence ETFs consistently experience larger and more persistent negative ARs across both sector and asset-class classifications, while high-dependence ETFs exhibit muted or short-lived responses. These findings strengthen the interpretation that differences in economic scale and financial integration rather than sector-specific or asset-class-specific trade exposure are central to shaping ETF sensitivity to global uncertainty shocks.

Taken together, the evidence in Table 6 provides strong additional support for Hypothesis 3. The persistence of asymmetric responses after conditioning on sectoral and asset-class composition is consistent with the view that financial integration and exposure to global risk premia, rather than differences in trade structure alone, play a central role in the international transmission of policy uncertainty.

Table 6 Crossing Section Analysis by High/Low dependency in Sector and AssetsClass CAR windows				
CAR[0,1]				
	Sector		AssetClass	
	HighDep	LowDep	HighDep	LowDep
ΔEPU	0.1042**	-0.0734***	0.1786***	-0.0666***
(t)	2.039	-3.649	2.830	-3.715
Net Assets	-0.0040***	0.00001	-0.0041***	0.0002
(t)	-4.383	0.051	-3.270	1.111
Volume	0.0014***	0.0003	0.0014**	0.0002
(t)	2.989	1.519	2.496	0.970
Prob > F	0	0	0	0
R-squared	0.5556	0.1271	0.47532	0.07499
CAR[0,2]				
ΔEPU	0.0237	-0.1477***	0.0288	-0.0942***
(t)	0.494	-4.367	0.537	-2.646
Net Assets	-0.0041***	0.0007*	-0.0043***	0.0002
(t)	-4.210	1.677	-3.669	0.546
Volume	0.0011**	-0.0003	0.0012**	-0.0006
(t)	2.497	-0.812	2.374	-1.637
Prob > F	0	0	0	0
R-squared	0.4464	0.4388	0.385855367	0.4031
CAR[0,3]				
ΔEPU	0.0145	-0.1484***	0.0387	-0.1651***
(t)	0.424	-4.983	1.023	-5.786
Net Assets	-0.0022***	0.0008**	-0.0022***	0.0009**
(t)	-3.222	2.079	-2.861	2.475
Volume	0.0004	0.0001	0.0003	0.0001

(t)	1.016	0.164	0.814	0.242
Prob > F	0	0	0	0
R-squared	0.3544	0.4143	0.2829	0.3732
		CAR[-3,3]		
ΔEPU	-0.0218	-0.1496***	-0.0217	-0.1593***
(t)	-0.490	-4.578	-0.490	-5.134
Net Assets	-0.0020**	0.0008**	-0.0022**	0.0009**
(t)	-2.540	2.133	-2.575	2.485
Volume	0.0004	0.00002	0.0005	0.0001
(t)	1.126	0.038	1.243	0.217
Prob > F	0	0	0	0
R-squared	0.4749	0.4196	0.4178	0.3788
Number of obs	943	2152	943	2152

Notes: This table reports OLS cross-sectional regressions of ETFs' CARs on ΔEPU across multiple event windows. Regressions are estimated separately by sector and asset class for ETFs from high- and low-dependence countries. ARs are computed using the Fama–French five-factor model. All other aspects of the regression specification, including control variables and significance conventions, follow those reported in Table 6. Coefficient estimates for macroeconomic controls are omitted for brevity.

5.3.3 Regional Effects

Table 7 examines how ETFs' CARs respond to policy uncertainty shocks across seven geographic regions: Asia, Europe, the United States, China, the Americas, Oceania, and Africa. The regressions allow for a direct comparison of regional sensitivities across four event windows and reveal substantial heterogeneity in the transmission of uncertainty shocks.

In the shortest window, CAR[0,1], regional reactions differ markedly. Asia exhibits a significantly positive ARs following increases in global uncertainty, indicating a short-run adjustment that does not translate into immediate valuation losses. China shows virtually no reaction, with a coefficient close to zero and statistically insignificant. Europe records a negative but statistically insignificant coefficient, suggesting that its immediate response is weak and indistinguishable from zero. By contrast, Oceania and Africa display sizeable and statistically significant negative ARs, pointing to rapid adverse valuation effects. The United States and the Americas exhibit small and statistically insignificant coefficients, indicating limited short-term sensitivity.

As the event window expands to CAR[0,2], the pattern shifts toward more conventional risk-driven behavior. China's coefficient becomes sharply negative and highly significant, while Africa and Oceania continue to exhibit large and statistically significant declines. Asia's response becomes statistically insignificant in this window, suggesting that its initial positive adjustment does not persist. Europe again shows a negative but insignificant response, and both the United States and the Americas continue to display weak or muted reactions.

In the longer windows, CAR[0,3] and CAR[-3,3], regional asymmetries become more pronounced. China, Africa, and Oceania consistently exhibit large and statistically significant negative coefficients, indicating persistent and cumulative valuation losses as global uncertainty intensifies. Asia also turns significantly negative in these extended windows, reflecting delayed but substantial sensitivity over longer horizons. In contrast, Europe continues to display negative yet statistically insignificant coefficients across all windows, suggesting a comparatively muted regional response. The United States remains largely unaffected, with consistently small and statistically insignificant coefficients, while the Americas again exhibit weak or mildly positive responses.

The muted response of U.S. ETFs should be interpreted with caution. As in earlier analyses, expected returns are estimated using the Fama–French five-factor model. On days when global markets decline sharply, U.S. ETFs with relatively high market betas are assigned substantially negative model-implied expected returns. Consequently, realized returns may exceed the benchmark even when absolute returns are negative, resulting in small or insignificant ARs. This mechanical feature of the factor model contributes to the apparent resilience of U.S. ETFs and dampens measured sensitivity to global uncertainty shocks.

Control variables behave in line with expectations. Net assets are generally positively associated with CARs in regions with deeper and more developed financial markets, consistent with stronger shock-absorption capacity among larger funds. Trading volume effects are weak and often statistically insignificant. The explanatory power of the regressions varies substantially across regions, reflecting differences in financial depth, openness, and exposure to global risk flows.

Overall, the results reveal clear regional asymmetries in the transmission of policy uncertainty. China, Africa, and Oceania are consistently the most vulnerable to uncertainty shocks, Asia becomes increasingly exposed as the event horizon widens, while Europe remains statistically unresponsive and the United States exhibits notable resilience. These patterns highlight the role of regional financial structure, market integration, and exposure to global risk channels in shaping cross-country sensitivity to global uncertainty.

Taken together, the regional evidence in Table 7 provides additional support for Hypothesis 1 by showing that policy uncertainty generates significant and increasingly pronounced ARs responses across regions as the event horizon widens. The substantial heterogeneity in regional sensitivities further reinforces Hypothesis 4, highlighting the importance of international spillovers and differences in regional financial integration in shaping ETF responses to global uncertainty shocks.

Table 7 Crossing Section Analysis by Region CAR windows

	Asia	Europe	USA	China	Americas	Oceania	Africa
CAR[0,1]							
ΔEPU	0.1781***	-0.1069	-0.0545	-0.0006	0.0487	-0.2253***	-0.2174*
(t)	4.862	-1.097	-1.282	-0.055	0.725	-5.259	-1.887
Net Assets	-0.0003	0.0015	0.0013	0.0004*	-0.0009	0.0008*	0.0028
(t)	-1.309	0.838	1.307	1.707	-0.599	1.725	0.918
Volume	0.0002	0.0004	-0.0006	0.0005***	-0.0000	0.0004	-0.0010
(t)	0.666	0.404	-1.316	4.250	-0.024	0.688	-0.731
Prob > F	0	4.38669E-06	0.038509146	0	0	0	0
R-squared	0.515552846	0.072447663	0.012217689	0.45733802	0.461692726	0.730307184	0.799698191
CAR[0,2]							
ΔEPU	0.1260***	-0.1094	-0.0799**	-0.1668***	0.0893	-0.0321	-0.2383***
(t)	2.783	-0.806	-2.277	-4.389	0.967	-0.397	-2.858
Net Assets	-0.0014***	0.0002	0.0016*	0.0001	-0.0009	0.0026**	0.0028
(t)	-2.711	0.069	1.756	0.150	-0.434	2.454	1.183
Volume	-0.0014**	-0.0002	-0.0010	-0.0002	-0.0006	0.0010	-0.0010
(t)	-2.422	-0.087	-1.566	-0.381	-0.781	0.790	-0.929
Prob > F	0	0	0	0	0	0	0
R-squared	0.297575774	0.165101641	0.083805012	0.723637001	0.246632711	0.733543287	0.920214756
CAR[0,3]							
ΔEPU	-0.0477	-0.1533	-0.0772**	-0.1987***	0.1777*	-0.0499	-0.1405**
(t)	-1.195	-1.176	-1.970	-5.461	1.900	-0.780	-2.341
Net Assets	-0.0001	0.0021	0.0014	0.0008	-0.0008	0.0015**	0.0018
(t)	-0.263	0.808	1.380	0.921	-0.375	2.017	1.211
Volume	-0.0009**	-0.0002	-0.0010	0.0006	-0.0013*	0.0007	-0.0007
(t)	-2.098	-0.138	-1.217	1.400	-1.874	0.828	-1.661

Prob > F	0	0	0	0	0	0	0
R-squared	0.388837918	0.131448573	0.086092365	0.612057824	0.397263789	0.713098856	0.910664081
CAR[-3,3]							
ΔEPU	-0.0549	-0.1609	-0.0946**	-0.2163***	0.1116	-0.0868	-0.1513***
(t)	-1.298	-1.129	-2.338	-5.583	1.566	-1.051	-2.761
Net Assets	-0.0008**	0.0020	0.0019*	0.0009	0.0012	0.0019**	0.0009
(t)	-2.243	0.728	1.788	0.913	0.686	2.068	0.635
Volume	-0.0005	-0.0004	-0.0010	0.0006	-0.0016**	0.0007	-0.0006
(t)	-1.079	-0.309	-1.238	1.261	-2.579	0.636	-1.644
Prob > F	0	0	0	0	0	0	0
R-squared	0.4258	0.1201	0.0711	0.6194	0.3693	0.6308	0.9625
Number of obs	910	252	853	908	83	52	37

Note: This table reports OLS cross-sectional regressions of ETFs' CARs on ΔEPU across geographic regions. Results are presented for four event windows. ARs are computed using the Fama–French five-factor model. All regressions include the same control variables and follow the same specification as in Table 6. Coefficient estimates for macroeconomic controls are omitted for brevity. Statistical significance follows the conventions in Table 6.

5.3.4 Sectoral Effects

Taken together, the results in Table 8 highlight pronounced and systematic sectoral heterogeneity in how policy uncertainty shocks are priced across ETF markets. Rather than generating a uniform response, uncertainty shocks induce markedly different dynamics across industries, with both the sign and persistence of ARs varying substantially with sector characteristics and event horizons.

In the shortest window, CAR[0,1], sectoral responses are mixed and frequently positive. Several sectors particularly those associated with services, real estate, bonds, and segments with lower immediate exposure to global production and trade exhibit positive and statistically significant ARs. This pattern suggests that the initial market reaction to uncertainty shocks is dominated by short-run adjustments and relative reallocations rather than by an immediate reassessment of fundamental cash-flow prospects. In this early phase, uncertainty does not translate uniformly into downside risk, and some sectors may temporarily benefit from defensive positioning or factor-model mechanics embedded in expected return benchmarks.

As the event window extends to CAR[0,2] and CAR[0,3], the sectoral impact of global uncertainty becomes both broader and more negative. Cyclically sensitive and investment-intensive sectors including basic materials, consumer cyclical industries, financial services, industrials, and technology begin to exhibit statistically significant negative ARs. These patterns indicate that, once uncertainty persists beyond the immediate event window, investors increasingly reassess the implications for future demand, investment, and profitability. The transition from mixed or positive short-run responses to widespread negative cumulative effects underscores the delayed but economically meaningful transmission of uncertainty to sector-level valuations.

In the longest window, CAR[-3,3], the dominance of negative effects becomes more pronounced. A wide range of sectors display persistent and statistically significant losses, reflecting sustained valuation adjustments as global uncertainty remains elevated. Importantly, however, this negative response is not universal. Bond-related and real-estate-related ETFs continue to exhibit positive or comparatively resilient responses, while certain service-oriented sectors remain less adversely affected. This divergence highlights that sectoral exposure to uncertainty is shaped not only by cyclical sensitivity but also by differences in asset tangibility, cash-flow stability, and perceived hedging properties during periods of heightened uncertainty.

The behaviour of control variables reinforces these interpretations. Larger sector ETFs, as measured by net assets, tend to exhibit greater resilience in some specifications, suggesting enhanced capacity to absorb uncertainty shocks. By contrast, trading volume plays a limited role in explaining sectoral differences, indicating that liquidity effects are secondary relative to fundamental and structural characteristics of the underlying industries.

Overall, Table 8 demonstrates that sector composition is a key determinant of ETFs' sensitivity to policy uncertainty. The results reveal a clear temporal pattern: initial reactions are heterogeneous and often muted or positive, but prolonged uncertainty generates significant and persistent losses in sectors that are more exposed to global demand, investment cycles, and risk premia. These findings complement the dependence-based and regional evidence presented earlier and underscore the importance of accounting for sectoral structure when assessing the transmission of global uncertainty shocks in international financial market.

These findings from Table 8 provide further support for Hypotheses 1 and 3 and offer additional insight relevant to Hypothesis 4. The absence of uniformly negative responses in the shortest window suggests that global uncertainty shocks do not immediately translate into sector-wide cash-flow losses. Instead, the increasingly negative and persistent responses observed in cyclically sensitive and investment-intensive sectors over longer horizons are consistent with adjustments in risk premia and expectations about future economic conditions. The relative resilience of bond-related and real estate-related ETFs further suggests that sectoral sensitivity to uncertainty is shaped by differences in cash-flow stability, hedging characteristics, and exposure to global risk factors rather than by contemporaneous trade disruptions alone.

Table 8 Crossing Section Analysis by Sectors CAR windows

	BMA	BD	COS	COC	COD	ENE	FIS
CAR[0,1]							
ΔEPU	0.0258	0.0883***	0.6208***	0.0821**	0.4459***	0.5603***	-0.0036
(t)	0.445	7.016	12.872	2.231	9.081	4.995	-0.184
Net Assets	0.00004	-0.0005**	-0.0007	0.0001	0.0010	-0.0095***	-0.0002
(t)	0.027	-2.509	-0.445	0.218	0.745	-4.562	-0.752
Volume	-0.0005	-0.0002*	0.0001	0.0002	0.0007	0.0051	-0.0001
(t)	-0.361	-1.683	0.154	0.944	0.963	1.598	-0.268
Prob > F	0	0	0	0	0	0	0
R-squared	0.7308	0.3634	0.9240	0.4428	0.8830	0.8489	0.3053
CAR[0,2]							
ΔEPU	-0.2617***	0.0702***	0.0471	-0.3832***	0.0790	-0.3009***	-0.2023***
(t)	-4.312	6.315	0.751	-4.012	1.298	-3.145	-6.677
Net Assets	0.0021***	-0.0006***	-0.0090***	0.0003	0.0019	0.0007	0.0008**
(t)	3.282	-2.627	-3.353	0.180	0.754	0.405	2.115
Volume	0.0030**	-0.0004***	-0.0001	-0.0012	0.0007	-0.0022	-0.000005
(t)	2.323	-3.078	-0.140	-1.119	0.578	-1.345	-0.009
Prob > F	0	0	0	0	0.0020	0	0
R-squared	0.9078	0.3615	0.8147	0.6770	0.2130	0.9549	0.7279
CAR[0,3]							
ΔEPU	-0.1068***	0.0750***	0.1460**	-0.2574***	0.2191*	0.2264	-0.1357***
(t)	-2.834	5.835	2.448	-5.033	1.775	1.181	-5.377
Net Assets	0.0004	-0.0007***	-0.0073***	0.0008	-0.00007	-0.0044	-0.0002
(t)	0.478	-3.011	-3.243	0.810	-0.017	-1.691	-0.439
Volume	0.0012	-0.0004***	0.0002	-0.0013	0.0026	-0.0013	0.0007
(t)	1.030	-3.086	0.236	-1.617	1.408	-0.586	1.555

Prob > F	0	0	0	0	0.000188802	0	0
R-squared	0.8518	0.3855	0.78175	0.7909	0.3562	0.9218	0.7127
			CAR[-3,3]				
ΔEPU	-0.2512***	0.0769***	0.0258	-0.3741***	0.0113	-0.0592	-0.1871***
(t)	-5.002	6.059	0.502	-6.231	0.091	-0.482	-7.622
Net Assets	0.0013	-0.0004	-0.0085***	0.0012	-0.0002	-0.0012	0.0004
(t)	1.547	-1.606	-4.281	1.324	-0.037	-0.569	1.082
Volume	0.0026**	-0.0005***	0.0004	-0.0013	0.0032*	-0.0023	0.0008*
(t)	2.088	-3.056	0.453	-1.595	1.749	-0.995	1.669
Prob > F	0	0	0	0	0.0097	0	0
R-squared	0.8604	0.3259	0.8459	0.8107	0.2485	0.9338	0.7356
Number of obs	84	437	53	149	62	33	478
			CAR[0,1]				
	HLT	IND	OTS	RLE	TEC	TDG	UTIL
ΔEPU	0.4478***	0.3390***	0.0339	0.3080***	0.3095***	0.0410	0.1650**
(t)	6.462	11.942	0.887	4.907	16.268	0.401	2.177
Net Assets	-0.0009	-0.0042***	0.0002	0.0002	-0.000004	0.0016	-0.0032**
(t)	-0.369	-7.302	0.581	0.215	-0.008	0.595	-2.569
Volume	-0.0008	0.0003	-0.0009**	-0.0007	0.0004	0.0008	0.0003
(t)	-0.527	1.092	-2.099	-0.938	1.525	0.631	1.144
Prob > F	0	0	0	0	0	0.0713	0
R-squared	0.7347	0.5256	0.2800	0.7284	0.5444	0.0224	0.7740
			CAR[0,2]				
ΔEPU	-0.2614**	-0.0363	-0.0773*	0.1343***	-0.3045***	-0.0297	-0.1764***
(t)	-2.479	-0.890	-1.705	3.921	-11.436	-0.223	-5.619
Net Assets	0.0023	-0.0012	-0.0009*	0.0006	0.0020**	-0.0001	0.0001
(t)	0.572	-1.188	-1.871	1.026	2.409	-0.017	0.153

Volume	-0.0033	0.0007	-0.0014*	-0.0019**	-0.0005	-0.0003	-0.0002
(t)	-0.852	1.628	-1.904	-2.663	-1.422	-0.142	-0.998
Prob > F	0	0	0	0	0	0.2079	0
R-squared	0.6705	0.7724	0.5317	0.8385	0.7230	0.0237	0.9866
CAR[0,3]							
ΔEPU	-0.0534	-0.0160	-0.16101***	0.3187***	-0.2049***	-0.0963	0.0202
(t)	-0.512	-0.473	-4.193	6.158	-6.628	-0.813	0.863
Net Assets	0.0015	0.0010	0.0008**	0.0002	0.0015**	0.0001	-0.0016***
(t)	0.407	1.273	2.339	0.271	2.030	0.037	-2.836
Volume	-0.0026	0.0000	-0.0005	-0.0015***	-0.0002	-0.0006	0.0003*
(t)	-0.750	0.010	-0.830	-2.892	-0.580	-0.268	1.868
Prob > F	0	0	0	0	0	0	0
R-squared	0.5470	0.7044	0.8002	0.8069	0.6689	0.0489	0.9847
CAR[-3,3]							
ΔEPU	-0.1023	-0.1816***	-0.2205***	0.2118***	-0.4392***	-0.0946	-0.1752**
(t)	-1.276	-4.161	-4.257	4.468	-12.274	-0.710	-2.416
Net Assets	0.0009	0.0020*	0.0004	0.00003	0.0021***	-0.0005	0.0008
(t)	0.320	1.920	1.052	0.032	2.638	-0.116	0.613
Volume	-0.0017	0.0002	-0.0009	-0.0004	-0.0005	-0.0003	0.0003
(t)	-0.686	0.395	-1.473	-0.874	-1.228	-0.105	0.858
Prob > F	0	0	0	0	0	0.0322	0
R-squared	0.6092	0.7080	0.7840	0.8313	0.7104	0.0518	0.9108
Number of obs	151	376	107	56	746	331	32

Notes: This table reports OLS cross-sectional regressions of ETFs' CARs on ΔEPU across geographic regions. Results are reported for four event windows. ARs are computed using the Fama–French five-factor model. All regressions employ the same specification and control variables as in Table 6. Coefficient estimates for country-level macroeconomic controls are omitted for brevity. Industry abbreviations appearing in the table (e.g., BMA, COS, FIS, TEC) refer to ETF industry classifications, with detailed definitions provided in Appendix 7. Statistical significance follows the conventions used in Table 6.

5.3.5 Asset Class Effects

Table 9 reports cross-sectional regressions of ETFs' CARs on changes in policy uncertainty (ΔEPU) for three major ETF asset classes (Equity, Fixed Income, and Miscellaneous) across four event windows from CAR[0,1] to CAR[- 3,3]. The results reveal clear asset-class heterogeneity both in the sign and persistence of uncertainty sensitivities.

In the shortest window, CAR[0,1], both Equity and Fixed Income ETFs exhibit positive and highly significant loadings on ΔEPU (0.108 and 0.088, respectively), whereas Miscellaneous ETFs show a small and statistically insignificant positive coefficient. The short-run evidence therefore does not indicate broad-based immediate losses following increases in global uncertainty; instead, ARs in the first window differ across asset classes and appear strongest for equity and fixed income.

As the window expands beyond the event window, the asset-class pattern diverges sharply. For Equity ETFs, the ΔEPU coefficient reverses sign and becomes significantly negative from CAR[0,2] onward (-0.071 in CAR[0,2], -0.057 in CAR[0,3], and -0.143 in CAR[-3,3]). This indicates that equity ETFs experience increasingly large and persistent abnormal losses as global uncertainty remains elevated over subsequent days.

By contrast, Fixed Income ETFs continue to display significantly positive sensitivities to ΔEPU in every window, including CAR[0,2], CAR[0,3], and CAR[- 3,3] (approximately 0.07-0.08 throughout). This suggests that, relative to the factor-model benchmark, fixed-income ETFs outperform in periods of rising global uncertainty not only on impact but also over longer horizons. Importantly, this finding reflects abnormal performance relative to model-implied expected returns rather than necessarily indicating positive raw returns.

Miscellaneous ETFs exhibit weaker and statistically insignificant responses across all windows. While the estimated coefficients turn negative from CAR[0,2] onward and become more negative as the horizon widens, none of these effects are statistically distinguishable from zero, indicating that uncertainty sensitivities for this group are imprecisely estimated and less systematic than for equities and fixed income.

Control variables play a secondary but informative role. For Equity ETFs, net assets are significantly negative in CAR[0,1] but become significantly positive in the longest window, CAR[-3,3], suggesting that larger equity funds may exhibit greater resilience over longer horizons. For Fixed Income ETFs, net assets are significantly negative in CAR[0,1] and CAR[0,3], while trading volume is significantly negative from CAR[0,2] onward, indicating a systematic association between higher trading activity and lower abnormal performance within the fixed-income class during extended windows. For Miscellaneous ETFs, the coefficients on net assets and volume are generally small and statistically insignificant.

Overall, Table 9 documents substantial heterogeneity in how policy uncertainty affects ETF ARs across asset classes. Equity ETFs transition from positive short-run abnormal performance to large and persistent negative exposure as the horizon widens. Fixed-income ETFs, in contrast, exhibit consistently positive abnormal sensitivities to uncertainty across all windows, consistent with their role as hedging or safe-haven assets, while miscellaneous ETFs show weaker and statistically insignificant responses throughout.

Taken together, the asset-class evidence in Table 9 provides further support for Hypotheses 1 and 3 and offers additional confirmation of Hypothesis 2. The contrasting responses of equity and fixed-income ETFs indicate that policy uncertainty affects asset prices primarily through changes in risk premia and portfolio rebalancing rather than through immediate cash-flow shocks, with fixed-income assets serving a stabilizing or hedging role during periods of elevated uncertainty.

Table 9 Crossing Section Analysis by Asset class CAR windows			
CAR[0,1]			
	Equity	Fixed Income	Miscellaneous
ΔEPU	0.1080***	0.0883***	0.0410
(t)	9.780	7.016	0.401
Net Assets	-0.0007***	-0.0005**	0.0016
(t)	-3.415	-2.509	0.595
Volume	-0.0001	-0.0002*	0.0008
(t)	-0.982	-1.683	0.631
Prob > F	0	0	0.0713
R-squared	0.2562	0.3634	0.0224
CAR[0,2]			
ΔEPU	-0.0714***	0.0702***	-0.0297
(t)	-3.853	6.315	-0.223
Net Assets	-0.0002	-0.0006***	-0.0001
(t)	-0.579	-2.627	-0.017
Volume	-0.0004	-0.0004***	-0.0003
(t)	-1.391	-3.078	-0.142
Prob > F	0	0	0.2079
R-squared	0.5939	0.3615	0.0237
CAR[0,3]			
ΔEPU	-0.0570***	0.0749***	-0.0963
Net Assets	-4.305	5.835	-0.813
(t)	0.000493*	-0.000695***	0.000131
(t)	1.724	-3.011	0.037
Volume	0.0002	-0.0004***	-0.0006
(t)	0.691	-3.086	-0.268
Prob > F	0	0	0.0354
R-squared	0.5637	0.3855	0.0489
CAR[-3,3]			
ΔEPU	-0.1426***	0.0769***	-0.0946
(t)	-10.149	6.059	-0.710
Net Assets	0.0008***	-0.0004	-0.0005
(t)	3.133	-1.606	-0.116
Volume	0.0004*	-0.0005***	-0.0003
(t)	1.702	-3.056	-0.105
Prob > F	0	0	0.0322
R-squared	0.6044	0.3259	0.0518
Number of obs	2327	437	331

Note: This table reports OLS cross-sectional regressions of ETFs' CARs on ΔEPU across three ETF asset classes, Equity, Fixed Income, and Miscellaneous, and four event windows. ARs are computed using the Fama–French five-factor model. All regressions follow the same specification and include the same set of control variables as in Table 6. Coefficient estimates for macroeconomic controls are omitted for brevity. Statistical significance follows the conventions in Table 6.

Taken together, the empirical evidence presented in Tables 2 through 9 provides comprehensive support for the proposed hypotheses. The event-study and cross-sectional analyses consistently show that increases in policy uncertainty generate statistically significant ARs responses in international ETFs, supporting Hypothesis 1.

The results further reveal substantial heterogeneity in ETF responses across asset classes, with equity ETFs exhibiting persistent negative sensitivities over longer horizons and fixed-income ETFs displaying consistently positive abnormal responses consistent with a hedging or stabilizing role, thereby supporting Hypothesis 2. In addition, the dependence-based cross-sectional evidence indicates that ETF sensitivity to global uncertainty varies systematically with countries' exposure to the United States market, offering strong support for Hypothesis 4 and highlighting the role of international financial channels beyond simple trade exposure.

Finally, the regional and sectoral analyses document pronounced heterogeneity across geographic regions and industry sectors, providing direct support for Hypothesis 4. Taken together, these findings underscore that the transmission of policy uncertainty to ETF markets operates through dynamic and heterogeneous channels shaped by time horizons, asset-class characteristics, and cross-country economic and financial structures.

Chapter 6

Robust Checks

This section examines the robustness of the baseline findings by implementing alternative specifications and sample restrictions. The objective is to assess whether the documented cross-sectional patterns are sensitive to the asset-pricing benchmark or to the inclusion of leveraged ETFs.

6.1 Alternative Asset-Pricing Model

In the baseline analysis, ARs are computed using the Fama–French five-factor model. To evaluate whether the results are driven by factor-model specification, we re-estimate all event-study and cross-sectional regressions using a market model as an alternative benchmark. Under this specification, ARs are defined as deviations from returns predicted solely by the market factor.

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The results remain qualitatively unchanged. Across dependence groups, regions, sectors, and asset classes, increases in policy uncertainty continue to be associated with significantly negative CARs over medium and longer event windows. In particular, ETFs from low-dependence economies exhibit larger and more persistent losses relative to those from high-dependence economies. Similarly, region-level results continue to show pronounced negative responses in China, Asia, and Africa, while U.S. ETFs remain comparatively insulated. Sectoral and asset-class patterns also persist, with equity ETFs and globally integrated sectors displaying the strongest sensitivity to uncertainty shocks.

6.2 Exclusion of Leveraged ETFs

A second robustness check addresses the potential influence of leveraged and inverse ETFs. These products mechanically amplify daily returns and may introduce nonlinear dynamics that differ from those of conventional ETFs. To ensure that the baseline findings are not driven by such instruments, we exclude leveraged ETFs, including products with explicit leverage multipliers and inverse exposure, and re-estimate all regressions on the restricted sample.

The exclusion of leveraged ETFs does not alter the core results. The negative relationship between global uncertainty shocks and CARs remains strongest among low-dependence economies, globally integrated regions, and equity-based ETFs. The temporal pattern observed in the baseline analysis also persists, with relatively muted responses in the shortest event window and increasingly negative effects as the window lengthens. These findings indicate that the documented effects reflect broad market pricing of uncertainty rather than mechanical leverage-induced volatility.

6.3 Summary of Robustness Evidence

Taken together, the robustness checks provide strong support for the baseline conclusions. The asymmetric transmission of global uncertainty shocks across dependence groups, regions, sectors, and asset classes is not sensitive to the choice of asset-pricing model and is not driven by leveraged ETF products. The persistence of these patterns across alternative specifications strengthens the interpretation that the April 2, 2025, tariff announcement operated as a global macro-financial shock transmitted primarily through uncertainty and financial integration channels.

Chapter 7

Conclusion

This study examines the global financial market impact of the April 2, 2025 United States tariff announcement using a large cross-country sample of internationally traded ETFs. Treating the announcement as a global uncertainty shock, the analysis documents substantial heterogeneity in ARs responses across countries, regions, sectors, and asset classes. The results show that trade policy announcements can generate sizable and persistent financial market effects even in the absence of immediate changes in realized trade flows.

At the country level, the evidence indicates that economies with lower dependence on the United States experience the largest and most persistent negative CARs following the announcement. These economies tend to be larger and more financially integrated, making their asset prices particularly sensitive to shifts in global risk premia. In contrast, countries with higher dependence on U.S. trade exhibit weaker and often statistically insignificant responses. This pattern suggests that exposure to global uncertainty shocks is shaped more by economic scale and financial integration than by bilateral trade dependence alone.

Regional and sectoral analyses reinforce this interpretation. Regions such as China, Asia, and Africa display stronger and more persistent negative ARs as the event window widens, while Europe and the United States exhibit comparatively muted responses. At the sector level, investment- and trade-intensive industries, including materials, industrials, technology, and financial services, experience the most pronounced and persistent losses. By contrast, consumer-oriented, service-related, and bond-linked sectors show greater resilience, consistent with more stable cash-flow profiles and defensive characteristics.

Asset-class evidence further highlights the role of structural features in shaping market responses. Equity ETFs transition from short-run resilience to large and persistent negative ARs as uncertainty persists, whereas fixed-income ETFs exhibit consistently positive abnormal sensitivities relative to factor-model benchmarks. These patterns reflect differences in risk exposure and portfolio rebalancing behavior rather than uniformly positive raw returns.

Taken together, these findings contribute to the literature on trade policy uncertainty and international asset pricing by providing a unified cross-sectional assessment of how a major policy shock propagates through global financial markets. The evidence shows that the financial-market impact of trade policy announcements arises less from contemporaneous changes in trade costs and more from shifts in expectations, risk premia, and global uncertainty.

Policy Implications

The findings of this study carry several implications for policymakers and market participants. First, the results indicate that large-scale trade policy announcements can generate significant global financial spillovers even before concrete trade flows are affected. The 2025 tariff announcement primarily operated through uncertainty channels rather than immediate bilateral trade effects, suggesting that policy communication itself can be a major source of global financial volatility. Policymakers should therefore recognize that the design, timing, and framing of trade policy announcements may have far-reaching consequences for international financial markets.

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Third, the asset-class evidence suggests that equity markets are particularly vulnerable to sustained uncertainty, whereas fixed-income instruments display different sensitivities relative to standard risk-factor benchmarks. For investors and regulators, this underscores the importance of monitoring cross-asset transmission mechanisms during periods of heightened policy uncertainty. Stress testing and macroprudential frameworks may benefit from explicitly incorporating uncertainty-driven shocks that propagate through financial channels rather than through traditional macroeconomic linkages alone.

Overall, the results emphasize that trade policy is not only a tool of commercial regulation but also a source of global financial risk. Incorporating financial-market considerations into trade policy design may help reduce unintended spillovers and enhance the stability of the international financial system.

Limitations and Directions for Future Research

This study is subject to several limitations that point to promising avenues for future research. First, while the event-study framework is well suited to isolating short- to medium-term market reactions, it does not capture longer-run real economic adjustments following the tariff announcement. Future work could examine whether the documented ARs patterns translate into persistent changes in investment, production, or employment at the firm or sector level.

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Third, the analysis relies on ETFs as internationally traded financial instruments. While ETFs provide a transparent and diversified measure of market expectations, they may mask heterogeneity at the firm level, particularly in sectors with uneven exposure to global value chains or policy risk. Future research could combine ETF-based analysis with firm-level data to explore how uncertainty shocks propagate within industries and across multinational supply networks.

Finally, this study focuses on a single, large policy event. Although the richness of the cross-sectional evidence allows for strong inferences about transmission mechanisms, future research could investigate whether similar patterns emerge across different types of policy shocks, such as monetary policy surprises, geopolitical events, or climate-related policy announcements. Such extensions would help establish the broader external validity of the findings and deepen our understanding of how global uncertainty affects international financial markets.

8. Appendix

Appendix 1.	
Variable definition	
Variable	**Definition**
	Fama/French 5 Factors
$R_{MKT,t}$	Total market portfolio return
$R_{f,t}$	Risk free assets return
SMB_t	The average return on small-cap stocks minus the average return on large-cap stocks
RMW	The average return on robust high operating profitability stocks minus weak low operating profitability stocks.
HML_t	The average return on high book-to-market value stocks minus the average return on low book-to-market growth stocks.
CMA_t	The average return on conservative low asset growth firms minus aggressive firms.
$CAR_{[a,\ b]}$	Cumulative daily return over event window $[a, b]$, where $a \in \{-3, -1\}$, $b \in \{0,1,2,3\}$
	ETF Characteristics and Control Variables
HighDep	High dependence on U.S. Market
LowDep	Low dependence on U.S. Market
EPU	Global Economic Policy Uncertainty Index
CPI	2024 Inflation for each country
Unemployment	2024 Unemployment for each country
GDP_Growth	The growth rate for each country in 2024
Net Assets	Total Net Assets of ETFs
Volume	Daily Trading Volume of ETFs
	Fixed effects
InvestmentArea	The area of the ETFs investing
Domicile	The country where an ETFs is legally registered.
AssetsClass	The assets group of ETFs
Sectors	The Sectors group of ETFs
Region	The region group for each country

Notes: This table reports definitions of all variables used in the empirical analysis. The Fama–French five factors include the market factor (MKT), size factor (SMB), value factor (HML), profitability factor (RMW), and investment factor (CMA). $CAR_i[a, b]$ denotes the CAR of ETF i over the event window $[a, b]$, where and $a \in$ {-3,-1,0} $b \in$ {0,1,2,3}

HighDep (LowDep) is an indicator variable equal to one if an ETF is classified as having high (low) dependence on the U.S. market, and zero otherwise. EPU denotes the Global Economic Policy Uncertainty Index. CPI, Unemployment, and GDP Growth represent country-level macroeconomic variables in 2024.

Net Assets and Volume measure ETF size and daily trading activity, respectively. Fixed effects are included for investment area, domicile, asset class, sector, and region.

Appendix 2. Investment Area of ETFs

1.Australia	10.Austria	19.Belgium	28.Brazil
2.Canada	11.Chile	20.China	29.Colombia
3.Denmark	12.France	21.Germany	30.Greece
4.Hong Kong	13.India	22.Indonesia	31.Italy
5.Japan	14.South Korea	23.Malaysia	32.Mexico
6.Netherlands	15.New Zealand	24.Norway	33.Peru
7.Poland	16.Singapore	25.South Africa	34.Sweden
8.Switzerland	17.Taiwan	26.Thailand	35.Turkey
9.United Kingdom	18.United States	27.Vietnam	

Notes: This appendix reports the investment areas used to classify ETFs according to their primary investment exposure. These classifications are used to construct investment-area fixed effects and subgroup analyses.

Appendix 3. State Group of countries ETFs

China	U.S.	Asia	Oceania	Europe	Africa	Americas
		Japan	Australia	United Kingdom	South Africa	Canada
		South Korea	New Zealand	France		Mexico
		Hong Kong		Germany		Brazil
		Taiwan		Italy		Chile
		Singapore		Switzerland		Columbia
		India		Netherlands		Peru
		Indonesia		Sweden		
		Thailand		Denmark		
		Malaysia		Austria		
		Vietnam		Belgium		
				Greece		
				Poland		
				Norway		
				Turkey		

Notes: This appendix reports the regional classification of countries used to group ETFs based on their primary geographic exposure. These regional groupings are employed in subgroup analyses and the construction of region fixed effects.

Appendix 4. High Dependence and Low Dependence Countries	
HighDep	**LowDep**
Austria	Australia
Belgium	Brazil
Canada	China
Chile	Denmark
Colombia	France
Germany	Greece
Japan	Hong Kong
South Korea	India
Malaysia	Indonesia
Mexico	Italy
Peru	Netherlands
Singapore	New Zealand
South Africa	Norway
Switzerland	Poland
Taiwan	Sweden
Thailand	Turkey
Vietnam	United Kingdom
	United States

Notes: Countries are classified into high- and low-dependence groups based on the ratio of each country's exports to the United States in 2024 to its GDP. Countries with values above the sample median are classified as high-dependence, while those below the median are classified as low-dependence. The United States is included in the low-dependence group as it serves as the benchmark market rather than a dependent economy.

Appendix 5. Sectors of ETFs		
Basic Materials	Bond	Communication Services
Consumer Cyclical	Consumer Defensive	Energy
Financial Services	Healthcare	Industrials
Others	Real Estate	Technology
Trading	Utilities	

Notes: ETF sector classifications follow Morningstar's industry investment classification system. The category Trading refers to leveraged ETFs, while all other categories represent broadly diversified investment ETFs based on their primary industry exposure.

Appendix 6. Asset Class of ETFs		
Equity	Fixed Income	Miscellaneous

Notes: ETFs are classified into asset classes based on their primary investment objective. Equity ETFs invest primarily in stocks, Fixed Income ETFs invest in bonds and other debt instruments, and Miscellaneous ETFs include alternative or hybrid products that do not fall into the equity or fixed income categories.

Appendix 7. Industry Classifications and Ticker Abbreviations

Industry	Short Letters of Their Tickers
Basic Materials	BMA
Bond	BD
Communication Services	COS
Consumer Cyclical	COC
Consumer Defensive	COD
Energy	ENE
Financial Services	FIS
Healthcare	HLT
Industrials	IND
Others	OTS
Real Estate	RLE
Technology	TEC
Trading	TDG
Utilities	UTIL

Notes: This appendix reports the industry classifications and their corresponding ticker abbreviations used in the empirical analysis. These abbreviations are employed to label industry groups in the regression analysis and related tables.

Appendix 8. Domicile Countries of ETFs

1.Australia	10.Indonesia	19.Norway	28.United States
2 Brazil	11.Ireland	20.Singapore	
3.Canada	12.Japan	21.South Africa	
4.Chile	13.Luxembourg	22.South Korea	
5.China	14.Malaysia	23.Sweden	
6.France	15.Mauritius	24.Switzerland	
7.Germany	16.Mexico	25.Taiwan	
8.Hong Kong	17.Netherlands	26.Thailand	
9.India	18.New Zealand	27.Turkey	

Notes: This table reports the countries in which ETFs are legally domiciled. ETF domicile is defined as the country where an ETF is registered and regulated and is used to construct domicile-based classifications and fixed effects in the empirical analysis.

Appendix 9. Robust Crossing Section Analysis by High/Low dependency in different Investment Area and Domicile CAR windows in Market model

CAR[0,1]						
			InvestmentArea		Domicile	
	HighDep	LowDep	HighDep	LowDep	HighDep	LowDep
ΔEPU	0.2160***	-0.0287*	0.0632*	-0.0251	0.0860**	-0.0294
(t)	3.754	-1.936	1.661	-0.000	1.987	-1.547
Net Assets	-0.0041***	0.0003	-0.0007	0.0001	-0.0005	0.0004*
(t)	-3.601	0.164	-1.299	0.687	-0.995	1.960
Volume	0.0010**	0.0002	-0.0000	0.0001	-0.0002	0.0001
(t)	2.121	1.009	-0.196	0.777	-0.601	0.406
Prob > F	0	0				
R-squared	0.6167	0.2324	0.7923	0.3122	0.7506	0.3620
CAR[0,2]						
ΔEPU	0.0286	0.0061	0.0048	-0.6555	-0.0122	-0.1320***
(t)	0.629	0.200	0.093	-0.399	-0.246	-4.051
Net Assets	-0.0027***	0.0003	-0.0001	0.0008***	-0.0001	0.0012***
(t)	-2.655	0.764	-0.115	3.343	-0.089	3.364
Volume	0.0004	-0.0011***	-0.0003	-0.0004**	-0.0005	-0.0004
(t)	0.945	-3.844	-0.650	-2.029	-1.097	-1.305
Prob > F	0	0				
R-squared	0.3478	0.4679	0.5494	0.6287	0.5166	0.6023
CAR[0,3]						
ΔEPU	0.0361	-0.0731***	-0.0817*	-1.7284	0.0010	-0.1137***
(t)	1.216	-3.422	-1.697	-1.494	0.026	-4.220

Net Assets	-0.0010	0.0007**	0.0015**	0.0005**	0.0010**	0.0010***
(t)	-1.605	2.422	2.298	2.332	1.976	3.110
Volume	-0.0002	-0.0002	-0.0007***	-0.0002	-0.0006**	-0.0002
(t)	-0.594	-0.926	-2.865	-0.891	-2.077	-0.868
Prob > F	0	0				
R-squared	0.2769	0.4753	0.4561	0.5438	0.4052	0.5641
			CAR[-3,3]			
ΔEPU	-0.0162	-0.0471*	-0.1240**	-1.4815	0.0149	-0.1051***
(t)	-0.418	-1.859	-2.215	-1.069	0.271	-3.449
Net Assets	-0.0005	0.0009***	0.0017*	0.0006**	0.0010	0.0011***
(t)	-0.674	2.689	1.936	2.577	1.347	3.400
Volume	-0.0002	-0.0004	-0.0008**	-0.0002	-0.0006	-0.0004
(t)	-0.557	-1.346	-2.045	-0.941	-1.305	-1.332
Prob > F	0	0				
R-squared	0.3655	0.4876	0.5191	0.5740	0.4753	0.5917
Number of obs	855	1955	855	1955	855	1955

Notes: This table reports OLS cross-sectional regressions of ETFs' CARs on ΔEPU using ARs computed from a market model. CARs are constructed over four event windows, CAR[0,1], CAR[0,2], CAR[0,3], and CAR[-3,3]. Regressions are estimated separately for ETFs from high- and low-dependence countries and further disaggregated by Investment Area and Domicile classifications. Dependence is defined as exports to the United States relative to GDP. All specifications control for ETF characteristics, including net assets and trading volume, as well as country-level macroeconomic conditions. Coefficient estimates for macroeconomic controls are omitted for brevity. All reported coefficients are rounded to four decimal places, and p-values smaller than 0.0001 are reported as 0. Statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

Appendix 10 Robust Crossing Section Analysis by High/Low dependency in Sector and AssetsClass CAR windows in Market Model

CAR[0,1]				
	Sector		**AssetClass**	
	LowDep	**LowDep**	**LowDep**	**LowDep**
ΔEPU	0.1593***	-0.0289*	0.2025***	-0.0370**
(t)	3.550	-1.763	3.633	-2.430
Net Assets	-0.0036***	-0.0004*	-0.0037***	-0.0000
(t)	-4.548	-1.846	-3.346	-0.227
Volume	0.0008**	0.0003**	0.0008*	0.0002
(t)	2.214	2.057	1.696	1.542
Prob > F	0	0	0	0
R-squared	0.7068	0.3776	0.6248	0.2411
CAR[0,2]				
ΔEPU	0.0378	-0.0930***	0.0147	-0.0466
(t)	0.921	-3.485	0.331	-1.615
Net Assets	-0.0031***	0.0005	-0.0034***	0.0001
(t)	-3.888	1.528	-3.538	0.325
Volume	0.0007**	-0.0002	0.0008*	-0.0005**
(t)	1.979	-0.711	1.885	-2.062
Prob > F	0	0	0	0
R-squared	0.5704	0.5643	0.4769	0.5110
CAR[0,3]				
ΔEPU	0.0295	-0.090***	0.0313	-0.1119***
(t)	1.099	-4.109	1.092	-5.477
Net Assets	-0.0013***	0.0004	-0.0015**	0.0006**
(t)	-2.696	1.469	-2.557	2.070

Volume	0.0001	0.0001	0.000	0.0002
(t)	0.271	0.527	0.091	0.697
Prob > F	0	0	0	0
R-squared	0.4302	0.5688	0.3275	0.5042
		CAR[-3,3]		
ΔEPU	-0.0056	-0.0821***	-0.0200	-0.0935***
(t)	-0.149	-3.256	-0.545	-3.891
Net Assets	-0.0014**	0.0006*	-0.0016**	0.0007**
(t)	-2.168	1.807	-2.339	2.325
Volume	0.0002	0.0000	0.0003	0.0001
(t)	0.662	0.060	0.806	0.387
Prob > F	0	0	3.829E-160	0
R-squared	0.5397	0.5795	0.4591	0.5219
Number of obs	855	1955	855	1955

Notes: This table reports OLS cross-sectional regressions of ETFs' CARs on ΔEPU using ARs computed from a market model. Results are presented separately for seven geographic regions (Asia, Europe, the United States, China, the Americas, Oceania, and Africa) across four event windows: CAR[0,1], CAR[0,2], CAR[0,3], and CAR[-3,3]. All regressions include controls for ETF size and trading activity, as well as country-level macroeconomic variables. Coefficient estimates for macroeconomic controls are omitted for brevity. All reported coefficients are rounded to four decimal places, and p-values smaller than 0.0001 are reported as 0. Statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

Appendix 11 Robust Crossing Section Analysis by Region CAR windows in Market Model

	Asia	Europe	USA	China	Americas	Oceania	Africa
CAR[0,1]							
ΔEPU	0.0782***	-0.0773	0.0057	0.0211**	0.1533*	-0.0821**	-0.1806*
(t)	10.085	-1.219	0.257	2.024	1.679	-2.506	-1.844
Net Assets	0.0001	0.0022*	0.0000	0.0005**	-0.0019	0.0010**	0.0033
(t)	0.351	1.734	0.041	2.007	-0.970	2.031	1.268
Volume	0.0004*	-0.0009*	-0.0002	0.0004**	-0.0006	0.0003	-0.0010
(t)	1.836	-1.742	-0.707	2.534	-1.107	0.484	-0.792
Prob > F	0	0.1354	0.8023	0	0	0.0001	0
R-squared	0.6429	0.0290	0.0014	0.6769	0.3361	0.3955	0.5886
CAR[0,2]							
ΔEPU	0.0402***	-0.1573	-0.0677***	-0.1482***	0.0746	-0.2185***	-0.1972***
(t)	3.273	-1.536	-2.848	-8.970	0.757	-3.523	-2.892
Net Assets	-0.0016***	0.0034	0.0017***	0.0002	-0.0005	0.0025**	0.0033*
(t)	-4.517	1.529	2.721	0.568	-0.201	2.352	1.720
Volume	-0.0016***	-0.0023***	-0.0010***	-0.0001	-0.0014**	0.0015	-0.0008
(t)	-3.698	-3.117	-2.617	-0.277	-2.078	0.913	-0.912
Prob > F	0	0	0	0	0.0016	0	0
R-squared	0.3725	0.3022	0.0669	0.7822	0.1100	0.5721	0.8569
CAR[0,3]							
ΔEPU	-0.0676***	-0.1029	-0.0691***	-0.1879***	0.0350	-0.1397***	-0.1023**
(t)	-5.075	-1.208	-2.840	-8.286	0.273	-2.992	-2.146
Net Assets	0.0009***	0.0027	0.0015**	0.0010*	0.0004	0.0014*	0.0022*
(t)	3.161	1.503	2.504	1.888	0.144	1.924	1.953
Volume	-0.0008*	-0.0016***	-0.0011***	0.0004	-0.0018**	0.0010	-0.0005*
(t)	-1.957	-2.736	-2.790	1.186	-2.330	0.894	-1.716

Prob > F	0	0	0	0	0.0723	0	0
R-squared	0.2306	0.1163	0.1267	0.6481	0.0808	0.5025	0.6279
CAR[-3,3]							
ΔEPU	-0.0787***	-0.1230	-0.0789***	-0.2136***	-0.0088	-0.1556***	-0.1289**
(t)	-6.132	-1.294	-2.990	-8.859	-0.069	-3.025	-2.528
Net Assets	0.0000	0.0033*	0.0020***	0.0010*	0.0019	0.0017*	0.0014
(t)	0.093	1.670	3.047	1.771	0.656	1.886	1.160
Volume	-0.0007*	-0.0024***	-0.0012***	0.0005	-0.0021***	0.0009	-0.0004
(t)	-1.759	-3.296	-2.958	1.201	-2.787	0.722	-1.486
Prob > F	0	0	0	0	0.0002	0	0
R-squared	0.4404	0.1823	0.0724	0.6770	0.1227	0.4656	0.9370
Number of obs	836	194	730	887	75	51	37

Notes: This table reports OLS cross-sectional regressions of ETFs' CARs on ΔEPU using ARs computed from a market model. The analysis is conducted separately for three major ETF asset classes (Equity, Fixed Income, and Miscellaneous) across four event windows: CAR[0,1], CAR[0,2], CAR[0,3], and CAR[-3,3]. All specifications control for ETF characteristics and country-level macroeconomic conditions. Coefficient estimates for macroeconomic controls are omitted for brevity. All reported coefficients are rounded to four decimal places, and p-values smaller than 0.0001 are reported as 0. Statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

Appendix 12 Robust Crossing Section Analysis by Sectors CAR windows in Market Model

CAR[0,1]							
	BMA	BD	COS	COC	COD	ENE	FIS
ΔEPU	0.0276	0.0834***	0.5784***	0.1201***	0.4298***	0.7549***	0.0225
(t)	0.438	6.946	13.826	2.706	5.714	5.960	1.035
Net Assets	0.0001	-0.0001	0.0021*	0.0004	-0.0001	-0.0122***	-0.0006**
(t)	0.074	-0.611	1.700	0.503	-0.037	-5.469	-1.996
Volume	-0.0003	-0.0002**	-0.0002	0.0004	0.0008	0.0062*	0.0000
(t)	-0.218	-2.130	-0.355	1.117	0.785	1.798	0.100
Prob > F	0	0	0	0	0	0	0
R-squared	0.6346	0.6492	0.9464	0.7118	0.8239	0.8728	0.2318
CAR[0,2]							
ΔEPU	-0.2589***	0.0679***	-0.0241	-0.3404***	0.0438	-0.1009	-0.1746***
(t)	-3.829	6.648	-0.451	-4.408	0.523	-0.983	-6.287
Net Assets	0.0023***	-0.0002	-0.0051**	0.0008	0.0010	-0.0023	0.0005
(t)	3.165	-0.851	-2.475	0.695	0.328	-1.185	1.258
Volume	0.0032**	-0.0005***	-0.0005	-0.0010	0.0007	-0.0010	0.0002
(t)	2.215	-3.991	-0.629	-1.196	0.480	-0.434	0.509
Prob > F	0	0	0	0	0.1891	0	0
R-squared	0.8395	0.2785	0.8242	0.6542	0.1368	0.9452	0.7033
CAR[0,3]							
ΔEPU	-0.1017**	0.0747***	0.0604	-0.2006***	0.1732	0.4155**	-0.1000***
(t)	-2.310	6.546	1.253	-5.517	1.160	2.406	-4.411
Net Assets	0.0004	-0.0004*	-0.0028*	0.0013**	-0.0006	-0.0071**	-0.0007*
(t)	0.484	-1.779	-1.842	1.997	-0.133	-2.587	-1.906
Volume	0.0015	-0.0005***	-0.0002	-0.0011**	0.0025	-0.0001	0.0009**
(t)	1.090	-4.097	-0.390	-2.081	1.237	-0.036	2.448

Prob > F	0	0	0	0	0.0003	0	0
R-squared	0.7712	0.2604	0.8150	0.7507	0.36104	0.9133	0.6966
CAR[-3,3]							
ΔEPU	-0.2377***	0.0752***	-0.0532	-0.3335***	0.0127	-0.2377***	0.0752***
(t)	-4.496	6.436	-1.179	-5.924	0.090	-4.496	6.436
Net Assets	0.0012	-0.0001	-0.0048***	0.0016*	-0.0005	0.0012	-0.0001
(t)	1.422	-0.613	-3.230	1.927	-0.102	1.422	-0.613
Volume	0.0031**	-0.0005***	0.0001	-0.0012*	0.0030	0.0031**	-0.0005***
(t)	2.259	-3.664	0.136	-1.759	1.521	2.259	-3.664
Prob > F	0	0	0	0	0.0034	0	0
R-squared	0.8150	0.3730	0.8702	0.7699	0.2825	0.8150	0.3730
Number of obs	84	419	53	149	62	84	419
CAR[0,1]							
	HLT	IND	OTS	RLE	TEC	TDG	UTIL
ΔEPU	0.3756***	0.3310***	0.0456	0.2927***	0.3076***	0.4841*	0.2188*
(t)	6.466	11.966	1.220	4.904	16.865	1.821	1.881
Net Assets	-0.0020	-0.0045***	-0.0001	0.0003	-0.0002	-0.0000	-0.0046**
(t)	-1.064	-7.673	-0.267	0.571	-0.410	-0.003	-2.455
Volume	-0.0000	0.0005	-0.0010**	-0.0003	0.0004*	-0.0005	0.0006
(t)	-0.021	1.426	-2.371	-0.448	1.679	-0.141	1.350
Prob > F	0	0	0	0	0	0	0
R-squared	0.7927	0.5701	0.2503	0.7559	0.5786	0.30118	0.7694
CAR[0,2]							
ΔEPU	-0.3377***	-0.0491	-0.0611	0.1192***	-0.3321***	0.4516	-0.1369***
(t)	-3.768	-1.246	-1.319	3.080	-12.351	1.411	-4.490
Net Assets	0.0012	-0.0012	-0.0011**	0.0008	0.0021**	-0.0045	-0.0013
(t)	0.358	-1.282	-2.551	0.888	2.412	-0.623	-1.703

Volume	-0.0025	0.0009*	-0.0015**	-0.0014*	-0.0005	-0.0033	0.0001
(t)	-0.814	1.814	-2.316	-1.989	-1.415	-0.817	0.503
Prob > F	0	0	0	0	0	0.8315	0
R-squared	0.6619	0.7046	0.4859	0.7489	0.6643	0.1219	0.9827
CAR[0,3]							
ΔEPU	-0.1049	-0.0202	-0.1432***	0.3057***	-0.2202***	0.5414*	0.0575
(t)	-1.203	-0.622	-3.790	5.647	-7.187	1.921	1.257
Net Assets	0.0006	0.0009	0.0005	0.0002	0.0015**	-0.0075	-0.0028***
(t)	0.185	1.107	1.630	0.210	2.088	-1.348	-3.172
Volume	-0.0019	0.0005	-0.0006	-0.0011*	-0.0002	-0.0048	0.0007***
(t)	-0.700	0.120	-1.143	-1.789	-0.685	-1.432	2.878
Prob > F	0	0	0	0	0	0.0798	0
R-squared	0.5435	0.6705	0.7633	0.7758	0.6499	0.2540	0.9693
CAR[-3,3]							
ΔEPU	0.0811	-0.1436***	-0.1104	-0.1622***	-0.2043***	0.2005***	-0.4419***
(t)	0.676	-6.059	-1.585	-3.703	-3.955	3.866	-12.219
Net Assets	-0.0034	-0.0002	0.0002	0.0017	0.0002	-0.0002	0.0022***
(t)	-1.473	-0.467	0.095	1.600	0.720	-0.153	2.722
Volume	-0.0012	0.0011**	-0.0013	0.0003	-0.0010	0.0000	-0.0005
(t)	-0.458	2.450	-0.637	0.627	-1.583	0.038	-1.297
Prob > F	0	0	0	0	0	0	0
R-squared	0.9247	0.7149	0.5906	0.6661	0.7485	0.7867	0.68696
Number of obs	33	478	151	376	107	56	746

Notes: This table reports OLS cross-sectional regressions of ETFs' CARs on ΔEPU,with ARs estimated from a market model. Regressions are conducted separately by industry sector across four event windows: CAR[0,1], CAR[0,2], CAR[0,3], and CAR[-3,3]. All specifications include controls for ETF size, trading volume, and country-level macroeconomic variables. Macroeconomic coefficients are omitted for brevity. All reported coefficients are rounded to four decimal places, and p-values smaller than 0.0001 are reported as 0. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Appendix 13 Robust Crossing Section Analysis by Asset class CAR windows in Market Model

	Equity	Fixed Income	Miscellaneous
CAR[0,1]			
ΔEPU	0.1142***	0.0834***	0.4841*
(t)	10.190	6.946	1.821
Net Assets	-0.0009***	-0.0001	-0.0000
(t)	-4.379	-0.611	-0.003
Volume	-0.0000	-0.0002**	-0.0005
(t)	-0.156	-2.130	-0.141
Prob > F	0	0	0
R-squared	0.31481136	0.649236217	0.301178322
CAR[0,2]			
ΔEPU	-0.0649***	0.0679***	0.4516
(t)	-3.858	6.648	1.411
Net Assets	-0.0003	-0.0002	-0.0044
(t)	-0.905	-0.851	-0.623
Volume	-0.0002	-0.0005***	-0.0033
(t)	-0.967	-3.991	-0.817
Prob > F	0	0	0.8315
R-squared	0.5333	0.2785	0.1219
CAR[0,3]			
ΔEPU	-0.0402***	0.0747***	0.5414*

Net Assets	-3.413	6.546	1.921
(t)	0.0003	-0.0004*	-0.0075
(t)	1.017	-1.779	-1.348
Volume	0.0003	-0.0005***	-0.0048
(t)	1.323	-4.097	-1.432
Prob > F	0	0	0.0798
R-squared	0.5185	0.2604	0.2540
	CAR[-3,3]		
ΔEPU	-0.1161***	0.0752***	0.4768
(t)	-8.384	6.436	1.337
Net Assets	0.0006**	-0.0001	-0.0093
(t)	2.356	-0.613	-1.287
Volume	0.0005**	-0.0005***	-0.0049
(t)	2.296	-3.664	-1.243
Prob > F	0	0	0.0715
R-squared	0.5574	0.3730	0.2281
Number of obs	2327	419	64

Notes: This table reports OLS cross-sectional regressions of ETFs' CARs on ΔEPU using ARs computed from a market model. The analysis combines sectoral and asset-class classifications to examine whether sector-level sensitivity to global uncertainty varies across asset classes. Results are reported for four event windows: CAR[0,1], CAR[0,2], CAR[0,3], and CAR[-3,3]. All regressions include controls for ETF characteristics and country-level macroeconomic conditions. Coefficient estimates for macroeconomic controls are omitted for brevity. All reported coefficients are rounded to four decimal places, and p-values smaller than 0.0001 are reported as 0. Statistical significance is indicated by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

9. Reference

(Taiwan), N. S. R. o. C. (2025a). *CPI Change Rate*. https://eng.stat.gov.tw/Point.aspx?sid=t.2&n=4201&sms=11713

(Taiwan), N. S. R. o. C. (2025b). *Economic Growth Rate*. https://eng.stat.gov.tw/Point.aspx?sid=t.1&n=4200&sms=11713

(Taiwan), N. S. R. o. C. (2025c). *Unemployment Rate*. https://eng.stat.gov.tw/Point.aspx?sid=t.3&n=4202&sms=11713

Amiti, M., Redding, S. J., & Weinstein, D. E. (2019). The impact of the 2018 tariffs on prices and welfare. *Journal of Economic Perspectives*, *33*(4), 187-210.

Antràs, P. (2020). Conceptual aspects of global value chains. *The World Bank Economic Review*, *34*(3), 551-574.

Baker, S. R., Bloom, N., & Davis, S. J. (2016). Measuring economic policy uncertainty. *The Quarterly Journal of Economics*, *131*(4), 1593-1636.

Baker, S. R., Bloom, N., & Davis, S. J. (2025). *Daily EPU Index* https://www.policyuncertainty.com/us_monthly.html

Bekaert, G., Engstrom, E., & Xing, Y. (2009). Risk, uncertainty, and asset prices. *Journal of Financial Economics*, *91*(1), 59-82.

Bems, R., Johnson, R. C., & Yi, K.-M. (2010). Demand spillovers and the collapse of trade in the global recession. *IMF Economic review*, *58*(2), 295-326.

Bloom, N. (2009). The impact of uncertainty shocks. *econometrica*, *77*(3), 623-685.

Caldara, D., Iacoviello, M., Molligo, P., Prestipino, A., & Raffo, A. (2020). The economic effects of trade policy uncertainty. *Journal of Monetary Economics*, *109*, 38-59.

Caliendo, L., & Parro, F. (2015). Estimates of the Trade and Welfare Effects of NAFTA. *The Review of Economic Studies*, *82*(1), 1-44.

Campbell, J. Y., & Shiller, R. J. (1988). The dividend-price ratio and expectations of future dividends and discount factors. *The review of financial studies*, *1*(3), 195-228.

Database, U. C. (2025). *Trade Data*. https://comtradeplus.un.org/TradeFlow?Frequency=M&Flows=X&CommodityCodes=TOTA

L&Partners=all&Reporters=all&period=Recent&AggregateBy=none&BreakdownMode=plus

Fajgelbaum, P. D., Goldberg, P. K., Kennedy, P. J., & Khandelwal, A. K. (2020). The return to protectionism. *The Quarterly Journal of Economics*, *135*(1), 1-55.

Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The journal of Finance*, *25*(2), 383-417.

Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, *33*(1), 3-56.

Fama, E. F., & French, K. R. (2015). A five-factor asset pricing model. *Journal of Financial Economics*, *116*(1), 1-22.

Fama, E. F., & French, K. R. (2025). *Fama/French 5 Factors [Daily]*. https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library_202412_archive.html

Forbes, K. J., & Warnock, F. E. (2012). Capital flow waves: Surges, stops, flight, and retrenchment. *Journal of International Economics*, *88*(2), 235-251.

Gawande, K., Hoekman, B., & Cui, Y. (2015). Global supply chains and trade policy responses to the 2008 crisis. *The World Bank Economic Review*, *29*(1), 102-128.

Group, W. B. (2025a). *GDP (current US$)*. https://data.worldbank.org/indicator/NY.GDP.MKTP.CD

Group, W. B. (2025b). *GDP growth (annual %)*. https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG

Group, W. B. (2025c). *Inflation, consumer prices (annual %)*. https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG

Group, W. B. (2025d). *Unemployment, total (% of total labor force) (modeled ILO estimate)*. https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS

Handley, K., & Limão, N. (2017). Policy uncertainty, trade, and welfare: Theory and evidence for China and the United States. *American Economic Review*, *107*(9), 2731-2783.

House, T. W. (2025). *Regulating imports with a reciprocal tariff to rectify trade practices that contribute to large and persistent annual United States goods trade deficits*. https://www.whitehouse.gov/presidential-actions/2025/04/regulating-imports-with-a-reciprocal-tariff-to-rectify-trade-practices-that-contribute-to-large-and-persistent-annual-united-states-goods-trade-deficits/

Kaczmarek, T., Demir, E., Rouatbi, W., & Zaremba, A. (2025). Tariffs announcement as a global stress test: Early stock market reactions to US protectionism. *Finance Research Letters*, 108080.

Khandelwal, A. K. (2020). THE RETURN TO PROTECTIONISM PABLO D. FAJGELBAUM PINELOPI K. GOLDBERG PATRICK J. KENNEDY. *The Quarterly Journal of Economics*, *1*, 55.

Kothari, S. P., & Warner, J. B. (2007). Econometrics of event studies. In *Handbook of empirical corporate finance* (pp. 3-36). Elsevier.

Levchenko, A. A., Lewis, L. T., & Tesar, L. L. (2010). *The collapse of international trade during the 2008-2009 crisis: In search of the smoking gun*.

MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of economic literature*, *35*(1), 13-39.

Miranda-Agrippino, S., & Rey, H. (2020). US monetary policy and the global financial cycle. *The Review of Economic Studies*, *87*(6), 2754-2776.

Pástor, Ľ., & Veronesi, P. (2013). Political uncertainty and risk premia. *Journal of Financial Economics*, *110*(3), 520-545.

Pierce, J. R., & Schott, P. K. (2016). The surprisingly swift decline of US manufacturing employment. *American Economic Review*, *106*(7), 1632-1662.

Pisera, S., Paltrinieri, A., Galletta, S., & Pichler, F. (2025). Trump's tariffs: Unpacking the EU's market reaction. *Economics Letters*, 112380.

Reuters. (2025). *Trump unveils global reciprocal tariffs*. https://www.reuters.com/world/us/trump-unveils-global-reciprocal-tariffs-2025-04-02/

Rey, H. (2015). *Dilemma not trilemma: the global financial cycle and monetary policy independence*.

Waugh, M. E. (2019). *The consumption response to trade shocks: Evidence from the US-China trade war*.

Wisnefski, S. (2025). *Markets News, April 3, 2025: Trump Tariffs Spark Worst Day for Major Stock Indexes Since 2020; Dow Loses Almost 1,700 Points, S&P Drops Nearly 5%.* https://www.investopedia.com/dow-jones-today-04032025-11708250