Sector-Level Return Dynamics and Event Sensitivity: A Case of Qatar Stock Exchange (2014-2025)

Moses Ogbonnaya, OKORIE.

MSc. Investment and Finance (Cohort 2)

Liverpool John Moores University | Oryx University

okoriemoses@icloud.com | +974 3996 7134

Scan to Access Excel, Stata Files, & Full Dissertation

Abstract

This study investigates sector-level return behaviour in the Qatar Stock Exchange (QSE) over the period 2014-2025, a timeframe characterised by repeated macroeconomic, geopolitical, and systemic shocks. Using daily sectoral index data, the analysis integrates weak-form market efficiency diagnostics with a multi-event event-study framework to examine how shocks are transmitted, absorbed, and corrected within the equity market.

The empirical design combines autocorrelation, runs, and variance-ratio tests with event-based abnormal return estimation across multiple event windows, allowing routine return dynamics to be distinguished from genuine shock-induced effects. The results reveal pronounced heterogeneity in abnormal return magnitude, adjustment speed, and persistence, indicating that market responses are neither uniform nor instantaneous. Periods of heightened uncertainty are associated with temporary return predictability, suggesting time-varying departures from weak-form efficiency.

To strengthen causal inference, placebo (non-event) windows are employed, confirming that observed abnormal returns are attributable to identified shocks rather than underlying volatility patterns or structural noise. Overall, the findings demonstrate that aggregate market indices obscure important internal dynamics and that sector-level analysis provides materially richer insight into market resilience, information assimilation, and risk concentration. These results carry direct implications for financial stability monitoring, portfolio allocation, and capital market development in Qatar.

1 Introduction

Understanding how emerging equity markets respond to systemic shocks requires moving beyond aggregate indicators to examine how information is processed within the market.

- Emerging and frontier markets are characterised by structural frictions, concentrated ownership, and episodic liquidity constraints, which amplify the impact of external shocks and make sector-level differences especially informative (Ahmed, 2012; Caporale, Ali & Spagnolo, 2015).
- In such settings, aggregate market indices conceal heterogeneity in return dynamics, volatility, and adjustment speed, limiting the explanatory power of market-wide analysis (Alnatour, 2025; Amaglobeli et al., 2024).
- The relevance of sectoral analysis is particularly pronounced in the Gulf Cooperation Council (GCC), where economies are actively diversifying away from hydrocarbons.
- Qatar provides a compelling case under the Qatar National Vision 2030, with reforms that have reshaped the QSE into a leading frontier market with a well-defined sectoral structure (OBG, 2025).
- Qatar's diversification trajectory has coincided with repeated macroeconomic and geopolitical shocks, including the oil price collapse, diplomatic blockade, COVID-19 pandemic, and large-scale investment cycles, each affecting sectors unevenly (Nusair & Al-Khasawneh, 2018; Kapar & Buigut, 2020; PwC, 2023).
- These uneven responses raise questions about how efficiently information is incorporated into prices. While the Efficient Market Hypothesis assumes rapid adjustment, evidence from emerging markets suggests delayed and adaptive price discovery during periods of uncertainty (Fama, 1970; Neaime, 2016).

Despite this, empirical evidence on sector-level efficiency and multi-shock responses in the QSE remains limited, as most studies rely on aggregate indices (Almujamed, 2018; Alqahtani, Bouri & Vo, 2020).

Despite this, sector-level evidence on efficiency and multi-shock responses in the Qatar Stock Exchange remains limited, as most studies rely on aggregate indices (Charfeddine & Barkat, 2020a).

2 Methodology

This study adopts a structured empirical design to examine sector-level return behaviour and market efficiency in the QSE, distinguishing routine price dynamics from genuine event-driven effects.

1. Baseline Return Behaviour and Event Identification
2. Weak-form Efficiency: Autocorrelation Runs Tests, Variance-ratio
3. Event-study analysis and Placebo

Population Structure

Parameter 1 – Sectoral Indices

- Banking & Financial (QBNK)
- Consumer Goods (QCON)
- Industrials (QIND)
- Insurance (QINS)
- Real Estate (QREA)
- Telecomms (QTLC)
- Transportation (QTRN)

Serves as the reference market portfolio for abnormal return estimation.

Parameter 2 – Market Benchmark

- Qatar Exchange All Share Index (QEAS).

Serves as the reference market portfolio for abnormal return estimation.

Parameter 3 – Event Windows

±15 trading days Event window
120 days Estimation window

- 2016 Oil Price collapse
- 2017 GCC Blockade
- 2020 COVID-19 pandemic
- 2022 FIFA World Cup
- 2022 Russia-Ukraine War
- 2025 Iran missile strike

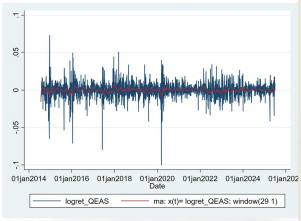
Used to isolate event-driven price behaviour.

Objectives

The Study Evaluates Sectoral Returns to Assess:

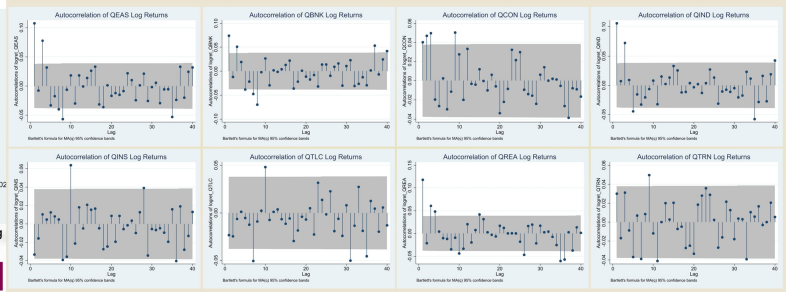
- Cyclical Patterns.
- Weak-form Market Efficiency Overtime.
- Event-driven Abnormal Returns around Major Macroeconomic Shocks.
- Event-driven Reactions Robustness Checks using Placebo window.

4 Results

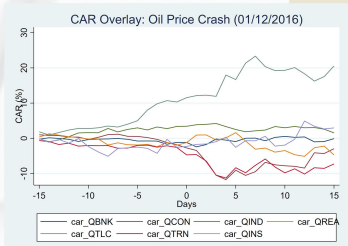


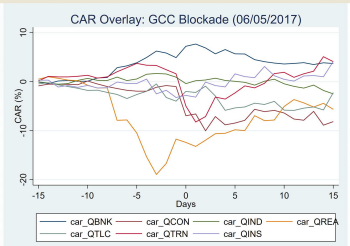
QE All Share Index Return Cycles and Rolling Means to establish Market Turning Points

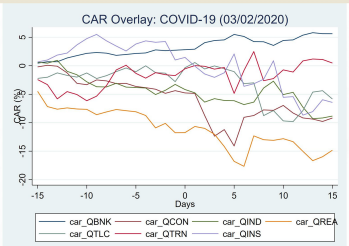
Ljung–Box Plots for Autocorrelation

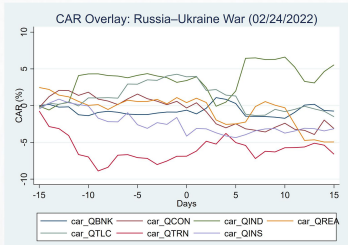


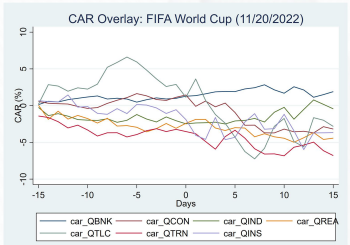
Event-Study CARs Plots

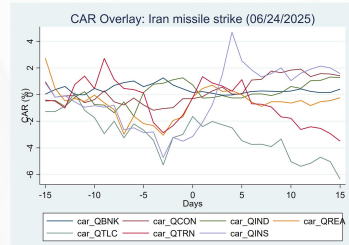




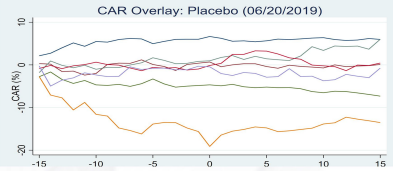








Parameter	Weak-Form Efficiency (ACF & Runs)	Variance-Ratio Behaviour	Event-Study Response Pattern	Overall Interpretation
Banking	Rejected	Strong mean reversion	Gradual CAR build-up; stabilising during policy-supported shocks	Delayed adjustment corrected over time; policy-anchored stabiliser
Industrials	Rejected	Strong mean reversion	Large initial CARs; exposure to global demand shocks	Cyclical and shock-sensitive with corrective dynamics
Real Estate	Rejected	Strong mean reversion	Deep and persistent CARs during systemic events	Most liquidity- and funding-sensitive sector
Transportation	Rejected (episodic)	Mean reversion	Sharp CARs during trade and mobility disruptions	Event-driven inefficiency rather than persistent
Insurance	Rejected (momentum-type)	Mean reversion	Selective CARs during geopolitical and risk events	Acts as conditional hedge with delayed correction
Telecommunications	Not rejected	Weakest mean reversion	Limited and short-lived CARs	Closest to weak-form efficiency
Consumer Goods	Mostly not rejected	Mean reversion	Moderate CARs during consumption shocks	Relatively efficient with episodic deviations
Market Index (QEAS)	Rejected	Strong mean reversion	CARs concentrated in systemic shocks	Aggregate masks sector-level dynamics



5 Discussion

The findings show that responses in the Qatar Stock Exchange are sector-specific rather than market-wide, with price adjustment occurring unevenly across industries rather than through instantaneous aggregate repricing. Real Estate and Insurance display slower correction and more persistent abnormal returns following major shocks, while Banking and Telecommunications adjust more rapidly, consistent with greater liquidity depth and institutional participation.

Results from the autocorrelation, runs, and variance-ratio tests reinforce this pattern. Real Estate, Insurance, and Transportation exhibit short-run return predictability during macroeconomic and geopolitical stress, indicating temporary departures from weak-form efficiency. In contrast, Banking and Telecommunications show weaker and less persistent serial dependence, suggesting faster information assimilation outside crisis periods. These findings imply that inefficiencies in the QSE are conditional and time-varying, rather than structural.

Across events, sectoral responses follow consistent behavioural patterns. Industrial and Transportation sectors experience stronger initial reactions due to exposure to global demand, supply-chain disruptions, and investment cycles. Real Estate shows sustained cumulative abnormal returns during investment-led and geopolitical episodes, reflecting leverage exposure and slower information diffusion, while Insurance remains sensitive during systemic shocks, likely due to uncertainty in risk pricing. The absence of significant abnormal returns in placebo windows confirms that these effects are event-driven rather than volatility artefacts.

Overall, the evidence supports an adaptive, sector-level view of market efficiency in the Qatar Stock Exchange, where shocks reveal delayed but corrective price adjustment rather than persistent inefficiency. Aggregate indices therefore understate risk concentration during stress periods by masking the amplifying role of Real Estate and Insurance and the stabilising influence of Banking and Telecommunications, underscoring the value of sector-level frameworks for assessing resilience in emerging equity markets.

Insights

Market efficiency in the Qatar Stock Exchange is time-varying and sector-dependent. Banking and Telecommunications act as stabilisers, while Real Estate, Insurance, and Transportation amplify and prolong shock effects during crises.

6 Conclusion

This study shows that sector-level price adjustment in the Qatar Stock Exchange is neither instantaneous nor uniform across shocks.

Short-run inefficiencies emerge during periods of stress but are temporary and corrected over time, indicating adaptive rather than persistent mispricing.

Market adjustment occurs primarily through sectoral reallocation, not broad market collapse, with sectors responding according to their economic roles.

These findings highlight the importance of sector-level analysis for understanding market efficiency, financial stability, and shock transmission in small, policy-sensitive equity markets.

References

Almujamed, H. (2018). Market efficiency and sectoral dynamics in the Qatar Stock Exchange. Applied Economics Letters.

Alnatour, R. (2025). Sectoral heterogeneity and market adjustment in frontier equity markets. Emerging Markets Review.

Alqahtani, F., Bouri, E. & Vo, X. V. (2020). Market efficiency and return predictability in GCC stock markets. International Review of Financial Analysis.

Amaglobeli, D. et al. (2024). Financial development and shock absorption in emerging economies. IMF Working Paper.

Caporale, G. M., Ali, F. & Spagnolo, N. (2015). Spillovers and sectoral dependence in emerging stock markets. Journal of Empirical Finance.

Charfeddine, L. & Barkat, K. (2020). Volatility dynamics and efficiency in the Qatar Stock Exchange. Economic Modelling.

Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. Journal of Finance.

Kapar, B. & Buigut, S. (2020). Economic blockade and financial market resilience in Qatar. Defence and Peace Economics.

Neaime, S. (2016). Financial crises and adaptive efficiency in emerging markets. Emerging Markets Review.

Nusair, S. A. & Al-Khasawneh, J. A. (2018). Oil price shocks and stock market returns in GCC countries. Energy Economics.

Oxford Business Group (OBG). (2025). The Report: Qatar 2025.

In partnership with

ORYX UNIVERSITY | LIVERPOOL JOHN MOORES UNIVERSITY | FINANCE RESEARCHER AWARD | Qatar Financial Centre | Qatar Central Bank | QDB