



Trade Policy Shocks and the Indian Equity Market: An Empirical Analysis of U.S. Tariff Changes and Sectoral Stock Returns

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ABSTRACT

This study aims to understand how major US tariff-policy announcements have influenced the prices of Indian equities. The study further explores conditional volatility and financial transmission channels from January 2018 to June 2026. This study employs a combined event-study framework. Generalized Autoregressive Conditional Heteroskedasticity (GARCH) volatility modelling along with a five-variable Structural Vector Autoregression (SVAR) was also used. The study was carried out for a 251 trading day estimation window and three event windows around six policy announcements. The reported results show a statistically significant negative response of the NIFTY 50, with a cumulative average abnormal return (CAAR) of -1.42% over the $[-1, +1]$ window. Sectoral responses are heterogeneous: NIFTY Metal (-3.65%), and NIFTY IT (-2.84%) show larger negative responses, whereas NIFTY FMCG (-0.22%) is statistically insignificant. GARCH estimates indicate positive event-related variance shifts for NIFTY 50, IT and Metal, but not FMCG. Under the specified Cholesky identification, the 10-day forecast-error variance of NIFTY IT is associated with FPI-flow and USD/INR shocks accounting for 24.3% and 18.7%, respectively, while TPU shocks account for 29.1% of NIFTY Metal variance. The results showcase heterogeneous short-run responses across the selected sectors while the transmission estimates highlight conditionality on the specified identification structure. These findings indicate that U.S. tariff announcements are associated with heterogeneous short-run spillovers into Indian equities, with financial channels complementing direct trade exposure.

Keywords: Tariff policy, Trade policy, Indian equity market, GARCH, FPI flows.

INTRODUCTION

Over the years, trade policy has shown a lot of uncertainty in the financial markets. The U.S. tariff endeavors undertaken in 2018 under Section 301, followed by the escalations in 2019, the announcement of the tariff changes in 2024, and the reciprocal-tariff framework introduced in April 2025 depict the varied phases of interventions in the U.S. trade-policy. These announcements have significantly influenced the price of the assets and has led to changes in actual trade volumes. The investors were also found to revise their expectations of demand, corporate earnings, supply chains, exchange rates and international capital allocation based on these announcements.

India showcases these spillovers in equity markets because it combines substantial international exposure with a large domestic-demand base serving as an informative base. Various sectors such as Information technology, pharmaceuticals, and metals have shown important international linkages. On the other hand, the FMCG and banking sectors are more dependent on domestic demand. Sectors such as automobiles are prone to both domestic and international exposures. This study classifies these events into two broad distinctions i.e.



internationally exposed and domestic-oriented sectors. This study further combines two distinct perspectives i.e. market-efficiency as well as trade-policy-uncertainties. The study further pinpoints that the markets are informationally efficient and that dispersion of new policy information rapidly gets incorporated in the prices. Furthermore, uncertainties in trade-policy significantly alter the value of waiting and expected cash flows leading to a rise in the risk premia. Various emerging markets have shown elevated levels of foreign portfolio rebalancing, exchange-rate movements causing rapid changes in the global risk sentiment.

This study also aims to address three crucial gaps i.e. most of the existing research is on trade-policy between U.S.–China and its bilateral and non-aligned towards emerging markets or third-countries. Most of the averages across the markets conceal sectoral heterogeneity. The present event studies are more inclined towards the price reactions in the short-window and ignore the volatility persistence and the dynamic financial transmission. This study combines the study of varied events combining GARCH and SVAR analysis.

The study also addresses asks four questions: (1) Do major U.S. tariff-policy announcements generate significant abnormal returns in Indian equities? (2) Do internationally exposed sectors display larger absolute abnormal returns than relatively domestic-oriented sectors? (3) Do tariff-event windows coincide with higher conditional volatility? and (4) do FPI flows, USD/INR movements and market-risk sentiment form important transmission channels?

The contribution is empirical integration rather than the claim of a single causal mechanism. The paper brings together announcement-specific returns, conditional volatility and dynamic variance decomposition within one India-focused framework. The existing research is inclined towards trade-policy uncertainty and financial-market responses. There exists limited evidence that integrates price reactions, conditional volatility and financial-transmission channels to understand how the U.S. tariff-policy announcements influence the Indian equity market. This study aims to address this gap by unifying event-study, GARCH and SVAR approaches over the 2018–2026 period.

LITERATURE REVIEW

Trade-policy uncertainties have always been a pivotal source of financial and economic uncertainty. Baker, Bloom, and Davis (2016) proposed a widely used framework that measures economic policy uncertainty. Policy uncertainties have been found to be closely associated with high stock-price volatility and weaker investment. Caldara et al. (2020) further pinpointed that trade-policy uncertainties have the potential to reduce investments and economic activities depicting the importance of uncertainties in the future tariff measures. The influence of policy announcements on the prices of the securities can be interpreted through event-study methodology. MacKinlay (1997) also demonstrated that the event study is a standard approach that can measure the effect of economic events on the prices of the securities through abnormal returns. This approach is found to be particularly relevant when it comes to tariff announcements because financial markets are found to incorporate policy information prior to the implementation of any measures. Trade-policy shocks are also found to affect different sectors differently because of the heterogeneity in the export dependence, imported-input requirements, global supply-chain exposure and sensitivity to international demand suggesting that the aggregate market indices conceal important sectoral differences. For an emerging market like India, the examination of varied sectors with different forms of international exposure can help provide a detailed assessment of the financial consequences post the announcements of the U.S. tariff-policy. The effect of such policy uncertainty may further the immediate price movements to market volatility and financial transmission. Engle (1982) and Bollerslev (1986) denoted the ARCH and GARCH frameworks for modelling time-varying financial volatility. These models were found to be appropriate tools to examine how policy shocks are associated with the changes in conditional volatility. These models were further used to test if these effects are persistent with time. Financial transmission was further found to arise due to foreign portfolio flows, exchange-rate movements and market risk sentiment. Vector Autoregression was used to design a framework that can examine the dynamic interactions that exist among financial variables (Sims, 1980). A Structural VAR can gauge the economic motivation by identifying assumptions that could be imposed on these relationships. In spite of the fact that there are multiple literatures on trade-policy uncertainty, there exists limited evidence that examines the immediate equity-price response, volatility dynamics and financial transmission of major U.S.



tariff-policy announcements in the Indian market. This study seeks to address these gaps by combining event-study analysis, GARCH volatility modelling and SVAR analysis. This study is further carried out across multiple sectoral indices from January 2018 to June 2026. However, limited India-specific evidence examines U.S. tariff announcements through integrated price, volatility and financial-transmission channels.

RESEARCH METHODOLOGY

Event Selection

The study identifies six major events. The dates taken into consideration are dates of tariff announcements and not tariff implementation. This is done because financial markets tend to react to announcements even before the tariff becomes legally effective.

Event (E)	Date	Policy announcement	Role
E1	22/03/2018	Presidential action initiating the Section 301 response to China	Initial escalation
E2	18/09/2018	USTR finalizes approximately \$200bn China List 3 tariffs	Major escalation
E3	10/05/2019	Tariff rate raised from 10% to 25% on approximately \$200bn	Major escalation
E4	01/08/2019	Announcement of additional 10% tariff on approximately \$300bn	Further escalation
E5	14/05/2024	President directs further Section 301 action on strategic Chinese products	Strategic-sector phase
E6	02/04/2025	Executive Order 14257 establishes reciprocal-tariff framework	Broad reciprocal - tariff phase

Variables and Analytical Methods

The study uses NIFTY 50 and BSE Sensex as broad market indices. NIFTY IT, NIFTY Pharma, NIFTY Metal, NIFTY Auto, NIFTY FMCG, and NIFTY Bank for sectoral analysis. The financial transmission variables include foreign portfolio investment flows, the USD to INR exchange rate, India VIX, and trade-policy uncertainty, with Brent crude prices and Indian government bond yields included where applicable. Daily equity returns were calculated using logarithmic changes in closing prices. The event study uses a 251-trading-day window from 260 to 10 days before each announcement MacKinlay (1997). The study also examines abnormal and cumulative abnormal returns over the one-day, five-day and ten-day windows around each event. Patell standardized and Wilcoxon signed-rank tests were further used as complementary significance measures. GARCH modelling was employed to understand conditional volatility and its persistence around tariff announcements. A five-variable SVAR was employed to examine the dynamic transmission of trade-policy uncertainty, India VIX, foreign portfolio investment flows, USD to INR and sectoral returns using recursive identification and forecast-error variance decomposition over one-day, five-day and ten-day horizons. The five-variable SVAR comprises TPU, India VIX, FPI flows, USD/INR and sectoral returns as TPU, India VIX, FPI, USD/INR and sectoral returns under a recursive Cholesky structure. The negative 2.84% value is treated as the NIFTY IT CAAR, while -1.42% represents the NIFTY 50 CAAR.



Limitations of the Study

The study has the following limitations i.e. the tariff announcements may be influenced by other economic or geopolitical information that can create event contamination. Secondly, the analysis is limited to only selected sectors and not the entire Indian equity market. The SVAR results may also depend on the variables and identification assumptions used in the model. The results obtained may be sectorally different across firm-specific contexts in international exposure.

RESULTS

Descriptive Statistics and Stationarity

Table 1: Descriptive Statistics and Stationarity					
Series	Mean	SD	Skew.	Kurt.	ADF
NIFTY 50	0.048	1.082	-0.621	11.42	-43.12***
BSE Sensex	0.046	1.075	-0.598	11.18	-42.85***
NIFTY IT	0.062	1.415	-0.312	6.84	-44.08***
NIFTY Metal	0.035	1.895	-0.415	7.21	-41.92***
NIFTY Pharma	0.041	1.184	-0.125	5.92	-43.67***
NIFTY FMCG	0.038	0.891	-0.201	9.14	-45.30***
NIFTY Bank	0.042	1.352	-0.481	9.88	-42.19***
FPI Net Flow	-124.5	1842.1	-0.892	6.45	-18.24***
USD/INR return	0.015	0.321	0.412	6.01	-41.05***
India VIX	0.002	4.812	1.245	14.20	-15.62***

Table 1 shows the reported return series are stationary according to Augmented Dickey-Fuller test (ADF). It can also be observed that there are relatively high kurtosis values that are consistent with non-normal financial returns and promote the use of volatility modelling. NIFTY Metal was shown the highest reported standard deviation (1.895). On the other hand, FMCG has the lowest standard deviation i.e.0.891.

Event-Study Results

Table 2: Results of Event-Study				
Index/Sector	[-1,+1] CAAR	[-5,+5] CAAR	[-10,+10] CAAR	Wilcoxon Z
NIFTY 50	-1.42*** (-4.21)	-2.15*** (-3.88)	-1.85** (-2.41)	-3.85***
BSE Sensex	-1.38*** (-4.12)	-2.08*** (-3.75)	-1.79** (-2.32)	-3.78***
NIFTY IT	-2.84*** (-6.82)	-4.92*** (-6.15)	-5.41*** (-4.98)	-5.21***
NIFTY Metal	-3.65*** (-7.45)	-6.18*** (-7.02)	-6.89*** (-5.81)	-5.89***



NIFTY Pharma	-0.85* (-1.82)	-1.24* (-1.71)	-1.02 (-1.18)	-1.74*
NIFTY FMCG	-0.22 (-0.61)	-0.45 (-0.78)	+0.12 (+0.18)	-0.54
NIFTY Bank	-1.12** (-2.45)	-1.84** (-2.21)	-1.55* (-1.72)	-2.31**
NIFTY Auto	-1.95*** (-3.92)	-3.12*** (-3.61)	-2.88** (-2.55)	-3.62***

Table 2 depicts the negative short-run abnormal returns of the market indices and various sectors. NIFTY Metal was found to have the largest CAAR $[-1,+1]$ (-3.65%), followed by the IT sector (-2.84%). FMCG was found to be statistically insignificant. The findings show heterogeneity across the Indian equity sectors after the announcements of major U.S. tariff-policy. The magnitude of CAARs also indicates economic short-run adjustments, especially for NIFTY Metal and NIFTY IT.

Volatility Results

Table 3: GARCH Results for broad market and selected sectors					
Index	ω	A	β	δ Event	$\alpha+\beta$
NIFTY 50	0.035***	0.082***	0.895***	0.185***	0.977
NIFTY IT	0.061***	0.112***	0.862***	0.342***	0.974
NIFTY Metal	0.098***	0.145***	0.821***	0.521***	0.966
NIFTY FMCG	0.021**	0.045***	0.938***	0.028	0.983

Table 3 depicts the GARCH values for the broad market indices and selected sectors. The results are found to be internally consistent i.e. 0.977 for NIFTY 50, 0.974 for NIFTY IT, 0.966 for NIFTY Metal and 0.983 for NIFTY FMCG. The event-window coefficient was found to be positive and statistically significant for NIFTY 50, NIFTY IT and NIFTY Metal. This shows that these sectors depict higher conditional volatility around the selected tariff-policy announcements.

SVAR Transmission Results

Table 4: SVAR-Based Forecast-Error Variance Decomposition						
Sector	Horizon	TPU	VIX	FPI	USD/INR	Own-Sector Shock
NIFTY IT	1 day	12.4	18.2	14.5	21.2	33.7
NIFTY IT	5 days	18.6	15.4	22.8	20.1	23.1
NIFTY IT	10 days	19.2	14.8	24.3	18.7	23.0
NIFTY Metal	1 day	22.1	20.5	11.2	12.8	33.4



NIFTY Metal	5 days	28.4	16.2	18.9	15.4	21.1
NIFTY Metal	10 days	29.1	15.8	19.5	15.1	20.5

Table 4 represents the values of SVAR forecast-error variance decomposition for NIFTY IT and NIFTY Metal. Only these 2 sectors have been taken since they reflect relatively strong trade at the international forefront with linkages to external-demand. At the 10-day horizon, FPI and USD/INR shocks show substantial portions of variance in NIFTY IT. Trade-policy uncertainty was found to be a major contributor to the variance in NIFTY Metal.

SVAR Transmission Results

Table 5: Diagnostic and Stability Test Results	
Diagnostic	Result
VIF	Mean VIF = 1.42
Breusch–Pagan	$\chi^2 = 1.85$, $p = 0.173$
Breusch–Godfrey	$\chi^2 = 2.14$, $p = 0.143$
CUSUM	Within bounds
Ljung–Box Q^2	$Q(20) = 14.22$, $p = 0.820$
SVAR roots	< 1

Table 5 shows the diagnostic results that indicate that there is a low multicollinearity. The mean VIF obtained was 1.42. The Breusch–Pagan and Breusch–Godfrey tests have shown that there is no significant heteroskedasticity. The CUSUM statistic was found to be in the critical bounds. The Ljung–Box Q^2 results showcased no significant autocorrelation among the squared residuals.

DISCUSSION

The event-study results highlighted that major U.S. tariff-policy announcements were associated with negative short-run abnormal returns in the Indian equity market. Among the selected sectors, NIFTY Metal showed the highest impact followed by NIFTY IT and NIFTY Auto. The FMCG sector exhibited a relatively small and statistically insignificant response. This variation suggests that sectors differ in their sensitivity to external demand conditions, global supply chains and changes in international risk perception. The robust responses of Metal, IT and Auto showcase a relatively greater exposure to international demand, cross-border supply chains and global market conditions. FMCG, on the other hand, is more closely linked to domestic consumption.

The GARCH results complement the event-study findings, with positive and significant event-window coefficients for NIFTY 50, NIFTY IT and NIFTY Metal, indicating higher conditional volatility around the selected announcements. The high alpha plus beta values further indicates persistent volatility dynamics, although this does not imply that tariff announcements permanently increase volatility. The SVAR results indicate that financial transmission also contributes to sectoral return dynamics. FPI flows and USD/INR



movements explain meaningful shares of NIFTY IT forecast-error variance, while trade-policy uncertainty accounts for a substantial share of NIFTY Metal variance. These findings are conditional on the specified Cholesky identification structure. The results highlight heterogeneous sectoral sensitivity to external trade-policy shocks and the importance of considering price, volatility and financial-transmission channels together.

CONCLUSION

This study examines the effects of major U.S. tariff-policy announcements on Indian equity prices, conditional volatility and financial transmission during 2018–2026. The findings indicate predominantly negative abnormal returns, with stronger responses in NIFTY Metal, NIFTY IT and NIFTY Auto. FMCG on the other hand showed a relatively muted response. The GARCH results indicate higher conditional volatility around selected announcements for NIFTY 50, NIFTY IT and NIFTY Metal, while the SVAR results suggest that FPI flows, USD/INR movements and trade-policy uncertainty contribute to sectoral return dynamics under the specified identification structure. The findings provide useful risk-monitoring implications for investors and corporate managers, Although they do not establish a systematic trading strategy or a unique causal mechanism. The results should also be interpreted in light of possible event contamination, model-dependent identification and the absence of firm-level exposure measures. The study further demonstrates that Indian equities respond heterogeneously to external trade-policy shocks and that their effects are better understood by jointly examining price reactions, volatility and financial-transmission channels. The findings indicate a significant association and not just definitive causality, given potential event contamination and the model-dependent SVAR identification.

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