Effect of Macro-economic Factors on the Trading Styles of Institutional Investors

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Abstract: *Institutional investors, known for their professional expertise and high-volume trading, vary in their investment horizons and strategies, particularly in how they respond to macro-economic factors. This study investigates whether foreign institutional investors (FIIs) and domestic institutional investors (DIIs) in India adopt different trading styles in relation to macro-economic factors, with a particular focus on momentum and contrarian trading. The study uses the monthly aggregated investment flows of institutional investors in the equity market to measure the trading style from 1st April 2012 to 31st March 2024. The trading style of institutional investors is measured using the Buy Ratio. Further to determine which macro-economic factors increase the likelihood of institutional investors going momentum or contrarian is examined using the logistic regression model. The findings show institutional investors do not mimic each other trading style with respect to macro-economic announcements. The results reveal that there exist significant positive and negative relations between a few macro-economic factors and institutional investors. The study finds evidence that FIIs chase the market return and pursue a momentum trading style while DIIs adopt a contrarian trading style.*

Keywords: Macro-economic Factors, Institutional Investors, Trading Style, Momentum- Contrarian, Buy Ratio, Logistic Regression

INTRODUCTION

Institutional investors, namely "Domestic Institutional Investors" (DIIs) and "Foreign Institutional Investors" (FIIs), are considered wealth-pooling organizations that often trade securities in large quantities, have a short investment horizon (Che, 2018), and are equipped with professional skills and knowledge (Grinblatt & Keloharju, 2000). In the Indian stock market, different trading strategies, also known as "trading style" have been adopted, focusing on momentum and contrarian trading strategies. The "Momentum strategy" refers to buying past winners or selling past losers, whereas "contrarian strategy" refers to buying past losers or selling past winners (Chhimwal and Bapat, 2021). Generally, an investor pursuing a 'momentum trading strategy' is referred to as a positive feedback trader, while an investor adopting a 'contrarian trading strategy' is known as a negative feedback trader. FIIs and DIIs often adopt different trading styles in response to market trends. FIIs tend to act as net buyers during bullish phases and shift to net sellers when the markets decline (Bansal, 2021). However, DIIs often stabilize by increasing their equity holdings precisely when FIIs scale back their positions. Hence, DIIs and FIIs collectively maintain liquidity and balance in the Indian equity market.

Prevailing market dynamics and broader macroeconomic developments influence the trading behavior of institutional investors. Both individual and institutional investors tend to respond systematically to economic signals. Investment behavior includes purchasing stocks of large firms after favorable economic news and selling them in reaction to adverse developments (Nofsinger, 2001), representing the sensitivity of trading styles to the macroeconomic environment.

Institutional inflows depend on key macroeconomic indicators. Existing research has examined the strategic trading behavior of institutional investors in India's financial markets and the macroeconomic factors influencing FII investment flows (Arora, 2016; Chhimwal & Bapat, 2021; Dhingra et al., 2016). However, this study aims to examine the influence of key macroeconomic variables on FIIs' and DIIs' trading styles in the Indian stock market from April 2012 to March 2024. This study adopted the "buy ratio" (Che, 2018) to measure the institutional trading style, which indicates the trading behavior, whether it is momentum or

contrarian. This period witnessed major events such as demonetization, the COVID-19 pandemic, and significant policy reforms affecting key macroeconomic indicators. Using logistic regression analysis, this study examines how fluctuations in macroeconomic variables affect the likelihood of institutional investors adopting momentum or contrarian trading styles.

Our study contributes significantly to the existing literature by providing evidence of how institutional investors in India adjust their trading styles in response to fluctuations in macroeconomic factors. The study reveals that FIIs display momentum trading amid rising gold prices and market risk but turn contrarian with higher crude oil prices, currency depreciation, and greater global uncertainty. Conversely, DIIs exhibit momentum trading when the exchange rate strengthens and market risk increases, but adopt contrarian strategies during bearish market rallies. The contrasting trading styles of FII and DII indicate their differing risk perceptions and strategic orientations towards market movements. These differences shape liquidity, stability, and policy considerations in emerging economies, such as India.

REVIEW OF LITERATURE

In the Indian context, a growing body of empirical research has documented how institutional investors employ momentum and contrarian trading strategies to earn abnormal returns. Using a dataset from the Indian stock market, Chhimwal and Bapat (2021) applied the 'm×n momentum strategy framework' proposed by Jegadeesh and Titman (1993) to explore how FIIs, DIIs, and individual investors participate while trading. Their findings indicate that FIIs and DIIs tend to rely on momentum-driven strategies in the short run, whereas individual investors display more contrarian behavior. Similarly, Arora (2016) highlighted that FIIs engage in positive feedback trading, whereas DIIs follow a negative feedback strategy. These findings align with Chandra (2012), who identified a bidirectional relationship between 'foreign institutional flows' and 'equity market performance', suggesting that FIIs often act as significant catalysts influencing market dynamics in the Indian stock market. Dhingra et al. (2016) observed that FIIs in India often exhibit return-chasing behavior while buying. However, their selling activities, particularly in futures and cash markets, reveal a tendency for negative feedback trading.

Macro-economic factors are integral in influencing the investment decisions of institutional investors in India. Rai and Bhanumurthy (2004) emphasized that rising inflation adversely impacts foreign portfolio investment by diminishing the real value of returns, thereby reducing India's attractiveness to global investors. Verma and Bansal (2021) further observed that inflation, as reflected through the Consumer Price Index (CPI), indicates economic instability and declining purchasing power, leading institutional investors to reallocate capital to more stable economies. Additionally, industrial production and currency depreciation facilitate FII inflows, whereas inflation and market capitalization discourage the participation of DIIs. Thus, the existing literature highlights a negative association between inflation and institutional investment flow.

The exchange rate plays an important role in shaping cross-border capital flows. Verma and Bansal (2021) observe that FIIs tend to increase their market exposure during periods of currency appreciation, often fuelling upward momentum in equity markets. Recent studies by Kumari et al. (2023) emphasized that an appreciating exchange rate reflects macroeconomic strength and tends to attract higher foreign inflows. Broadly, the existing literature suggests a positive relationship between currency appreciation and the intensity of institutional investment flows.

Stock market performance influences FIIs behavior, as these investors are highly sensitive to the returns. Several empirical studies (Agarwal, 1997; Chakrabarti, 2001) have shown that FIIs tend to increase their market exposure during bullish phases, which is aligned with the return-chasing hypothesis. Mukherjee et al. (2002) support a unidirectional relationship, suggesting that stock returns influence FII flows. Chandra (2012) found bidirectional causality, indicating that FIIs actively shape and respond to the market conditions. Collectively, the literature points to a robust positive association between equity returns and FII inflow.

Market risk is another important factor that influences the flow of institutional capital. Rai and Bhanumurthy (2004) argue that institutional investors typically exhibit risk-averse behavior, often reducing their exposure during periods of heightened market volatility. Such elevated volatility is interpreted as a signal of uncertainty, diminishing the market's appeal to institutional investors. Consistent with this view, the existing literature supports a negative association between market risk and institutional investment flows.

The IIP is a key monthly indicator of economic activity that offers timely insights into industrial growth. Garg and Dua (2014) found that FIIs respond positively to higher IIP growth, interpreting it as a sign of strength in the economy. This evidence supports a positive association between IIP performance and institutional investment flow.

Interest rates are a crucial determinant of institutional investment flows. As outlined in the theory of portfolio investment (Stephen & Hymer, 1960), higher domestic interest rates enhance the attractiveness of local financial assets by offering relatively better returns, thereby encouraging foreign capital to flow into the country. The literature affirms a positive relationship between interest rate levels and institutional investment in host economies.

In summary, the existing literature indicates that FIIs and DIIs demonstrate different trading behaviors, with FIIs essentially exhibiting momentum-based strategies and DIIs often adopting contrarian approaches. Empirical studies highlight that macroeconomic variables such as inflation, exchange rates, industrial output, interest rates, and stock market performance significantly influence institutional investors' decisions. Building on this, the present study examines the impact of specific macroeconomic indicators, namely the IIP, stock market returns (both home and host markets), crude oil and gold prices, interest rate differentials, the Freedom Index, exchange rates, and market risk on the trading styles of FIIs and DIIs in the Indian stock market. Our study integrates underexplored variables such as crude oil, gold, and the freedom index to offer a comprehensive perspective on the evolving macroeconomic dynamics that

shape institutional trading behavior in emerging markets. Based on the literature review, this study proposes the following hypothesis:

H1a: IIP influences the likelihood of FIIs adopting a momentum trading style.

H1b: IIP influences the likelihood of DIIs adopting a momentum-trading style.

H2a: Risk (India) influences the **likelihood** of FIIs adopting a momentum trading style.

H2b: Risk (India) influences the **likelihood** of DIIs adopting a momentum trading style.

H3a: Nifty Returns influences the **likelihood** of FIIs adopting a momentum trading style.

H3b: Nifty Returns influences the **likelihood** of DIIs adopting a momentum trading style.

H4a: Crude Oil Prices influences the **likelihood** of FIIs adopting a momentum trading style.

H4b: Crude Oil Prices influences the **likelihood** of DIIs adopting a momentum trading style.

H5a: Gold Prices influence the **likelihood** of FIIs adopting a momentum trading style.

H5b: Gold Prices influences the **likelihood** of DIIs adopting a momentum trading style.

H6a: Exchange Rate influence the **likelihood** of FIIs adopting a momentum trading style.

H6b: Exchange Rate influence the **likelihood** of DIIs adopting a momentum trading style.

H7a: S&P 500 Returns influence the **likelihood** of FIIs adopting a momentum trading style.

H8: Risk (US) influences the **likelihood** of FIIs adopting a momentum trading style.

H9: The Freedom Index influences the **likelihood** of FIIs adopting the momentum trading style.

H10: Interest rate differentials influence the **likelihood** of FIIs adopting a momentum trading style.

H11: Inflation influence the **likelihood** that DIIs adopt a momentum trading style.

H12: Interest rates influence the **likelihood** of DIIs adopting a momentum trading style.

H13: Poltical Factors influences the **likelihood** of DIIs adopting a momentum trading style.

METHODOLOGY

The present research covers a study period of 12 years, from April 1, 2012, to March 31, 2024. Monthly data on FIIs, DIIs, and macroeconomic variables were gathered from the CMIE Economic Outlook, the RBI database of the Indian economy, and the Bloomberg Database. The FIIs and DIIs buy and sell series have 144 monthly observations. For the analysis, the study examined the trading style of FIIs and DIIs' past returns using the Buy Ratio measure (Che, 2018; Geoffrey Booth et al., 2011; Nofsinger, 2001). A favorable buy ratio shows that the investor follows positive feedback or momentum trading. In contrast, a negative buy ratio indicates that investors follow negative or contrarian trading (Che, 2018).

$$\text{Buy Ratio (FIIs/DIIs)} = \frac{Buy_{nit}}{(Buy_{nit} + Sell_{nit})} \quad (1)$$

Where

n= FIIs/DIIs

i= stock

t=day

If the calculated buy ratio is larger (lower) than 0.50, then the investor is considered a momentum(contrarian) trader (Che, 2018). A logistic regression model is employed to evaluate the impact of macroeconomic variables on institutional investors' trading styles. The dependent variable, Buy Ratio, is a proxy that distinguishes the momentum and contrarian behavior of institutional investors. The independent variables include key macroeconomic indicators such as the IIP, CPI, stock market returns (Nifty 50 and S&P 500), market risk, crude oil and gold prices, Freedom Index, exchange rate, and interest rate differential. The 91-day Treasury bill represents the domestic interest rate, while a political dummy variable is incorporated to capture the regime-related economic uncertainty. In addition to macroeconomic indicators, the study incorporates a political control variable reflecting government change, coded as 1 for NDA (post-April 2014) and 0 for UPA periods. This variable, included in the DII model, captures domestic investors' sensitivities to policy shifts. Separate logistic regression models for FIIs and DIIs identify distinct trading styles and responses to volatility. For **FIIs**, the regression equation is expressed as

Where,

TS_{FII} = FII buy ratio: 1=Momentum, 0=Contrarian

$$TS_{FII} = \beta_0 + \beta_1 LIIP + \beta_2 RIND + \beta_3 RUS + \beta_4 NR + \beta_5 S\&P500 + \beta_6 LCO + \beta_7 LGP + \beta_8 FD + \beta_9 IRD + \beta_{10} LER + u_i \quad (2)$$

LIIP = Log of Index of Industrial production

RIND= Risk of Nifty 50 return

RUS= Risk of S&P 500 Index (US Market return)

NR =Monthly return of Nifty 50 Index

S&P500R= Monthly return of S&P 500

LCO = Log of Crude oil prices

LGP= Log of Gold Prices

FD = Freedom Index

IRD= Interest rate differential

LER= Log of exchange rate

Conversely, for **DIIs,** the logistic regression model is specified as

Where,

$$TS_{DII} = \beta_0 + \beta_1 LIIP + \beta_2 RIND + \beta_3 NR + \beta_4 LCO + \beta_5 LGP + \beta_6 LINF + \beta_7 PF + \beta_8 LER + \beta_7 IR + u_i \quad (3)$$

TS_{DII} = DII buy ratio: 1=Momentum, 0=Contrarian

LIIP = Log of IIP

RIND= Risk of Nifty 50 return

NR =Monthly return of Nifty 50 Index

LCO = Log of Crude oil prices

LGP= Log of Gold Prices

LINF= Log of Inflation (CPI)

PF= Political Factor

LER= Log of exchange rate

IR = Interest rate (91 days T-bills rate).

The FII model incorporates global financial indicators such as the RUS, S&P 500 index performance, FD, and IRD, capturing international integration and cross-border investment sensitivities. Conversely, the DII model emphasizes domestic determinants, including LINF, IR, and PF, reflecting their responsiveness to national economic and policy shifts. This differential modelling approach effectively highlights how global and domestic factors distinctly shape the momentum or contrarian trading behavior of FIIs and DIIs, offering valuable insights for policymakers and investors. To ensure robustness, we conducted the Augmented Dickey-Fuller (ADF) test to confirm stationarity and the absence of trend bias, while the Variance Inflation Factor (VIF) test assessed multicollinearity, ensuring the reliability of the independent variables. Additional diagnostic checks validated the appropriateness of the logistic regression framework, reinforcing the reliability and consistency of the empirical estimations.

RESULTS

The primary objective of this study was to investigate how macroeconomic factors influence the trading styles of institutional investors. To address this, we developed two logistic regression models, one for FIIs and another for DIIs, as detailed in Equations (2) and (3). Logistic regression was applied to determine the likelihood of investors choosing momentum or contrarian trading styles in response to macroeconomic variables. The results presented below highlight the distinct impacts of these economic indicators on FIIs and DIIs. Table 1 presents the logistic regression results, highlighting the impact of macroeconomic variables on FIIs and DIIs trading styles. Both models demonstrate a reasonably good fit for explaining the likelihood of FIIs and DIIs adopting momentum or contrarian trading styles because of macroeconomic factors. The FII model has McFadden's R² value of 0.181, an AIC of 170, and a deviance of 148. Similarly, the model for the DIIs also exhibited a satisfactory fit, with a McFadden's R² of 0.308, an AIC of 148, and a deviance of 128. Both model results imply that the selected explanatory variables collectively capture a significant portion of the variation in FIIs and DIIs' trading styles.

Table 2 presents the logistic regression results for both the models. The analysis indicates that FIIs positively correlate with momentum trading in gold prices (â = 4.61, p = 0.017). In contrast, the DIIs displays a marginally negative relationship, reflecting a contrarian stance (â = -4.494, p = 0.051). FIIs adopt a contrarian trading style amid rising crude oil prices (â = -1.75, p = 0.035), signaling inflationary pressures and higher production costs, whereas DIIs

positively correlate substantially with momentum trading (â = 2.279, p = 0.049). For DIIs, rupee depreciation markedly reduces the likelihood of momentum trading as adverse currency movements diminish returns for foreign investors (â = -13.68, p = 0.012). In contrast, the FIIs demonstrates a momentum orientation under rising exchange rates (â = 30.044, p = 0.004). Regarding market risk, both investor groups displayed momentum trading tendencies, as indicated by positive coefficients that were significant at the 10% level. The negative and highly significant coefficient for Nifty 50 returns (â = -4.421, p < 0.001) suggests that DIIs pursue contrarian strategies during bullish phases, likely engaging in profit-booking or portfolio rebalancing. Furthermore, fluctuations in global market risk (RUS) significantly influence FII trading behavior; the negative and significant coefficient (â = -2.00, p = 0.003) indicates that heightened global uncertainty discourages momentum trading and promotes a cautious contrarian approach. Although other macroeconomic factors were not statistically significant, they enhanced the model's overall robustness.

Table 1: Result of trading style ofFIIs and DIIs Model Fit Measures

Model	Deviance	AIC	R²McF
FIIs	148	170	0.181
DIIs	148	170	0.308

Note. Models estimated using sample size of N=144

Table 2: Result of trading style of FIIs and DIIs Model

H	Parameters	FIIs		DIIs	
		Estimates	P	Estimates	P
	Intercept	34.413	0.28	-136.5	0.004
H1	LIIP	0.836	0.75	-0.527	0.862
H2	RIND	1.388	**0.098*****	1.617	**0.068*****
H3	NR	-0.026	0.654	-4.421	**<.001****
H4	LCO	-1.75	**0.035****	2.279	**0.049****
H5	LGP	4.612	**0.017****	-4.494	**0.051*****
H6	LER	-13.68	**0.012****	30.044	**0.004****
H7	S&P500R	-0.04	0.526	NA	NA
H8	RUS	-2.002	**0.003****	NA	NA
H9	FD	-0.087	0.695	NA	NA
H10	IRD	-0.153	0.609	NA	NA
H11	LINF	NA	NA	4.744	0.2
H12	IR	NA	NA	0.181	0.413
H13	PF	NA	NA	0.146	0.905

*Note. Estimates indicate log-odds for "FIIBR=1 vs 0" and "DIIBR=1 vs 0". ** and *** denote significance at 5% and 10% levels, respectively.*

DISCUSSION

This study provides empirical evidence of heterogeneous trading behavior among FIIs and DIIs in the Indian equity market, influenced by key macroeconomic indicators. FIIs demonstrate global sensitivity and a risk-averse orientation, as higher S&P 500 volatility, crude oil prices, and exchange rate depreciation discourage momentum strategies, leading to contrarian responses. Thus, H4a, H6a, and H8 were rejected. Conversely, gold prices are

positively correlated with momentum behavior, reflecting speculative tendencies. Thus, we accept H5a. DIIs, the other hand, exhibit a strong negative relationship with Nifty 50 returns, indicating a contrarian trading style (H3b accepted). Simultaneously, a stronger exchange rate and rising oil prices encourage momentum orientation (H6b and H4b accepted). Gold prices show a marginally negative effect, suggesting cautious positioning during uncertainty (H5b accepted). Overall, FIIs are globally driven and defensive in nature. In contrast, DIIs display a domestically grounded and opportunistic approach, reflecting behavioral divergence that carries important implications for capital flow management, market regulation, and financial stability in emerging economies, such as India.

CONCLUSION

This study investigated the trading styles of FIIs and DIIs in India from April 2012 to March 2024, examining their responses to key macroeconomic variables using the Buy Ratio in a binary logistic regression model. FIIs followed momentum strategies during rising gold prices and domestic risk but turned contrarian amid global uncertainty, currency depreciation and commodity volatility. Conversely, DIIs acted contrarian in bullish phases but showed momentum with currency appreciation, higher market risk, and rising crude prices. These findings reveal differing risk perceptions and strategic responses among the institutional investors. This study underscores the importance of macroprudential stability, transparent capital flows, and policy incentives for long-term domestic investment. Enhancing fiscal consistency, governance, and data transparency can improve the resilience of the market. This study contributes to behavioral finance by integrating macro indicators to explain momentum-contrarian shifts, emphasizing distinct regulatory and investment approaches for FIIs and DIIs in India's evolving financial landscape.

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