

Institutional Trading Behaviour in the Indian Government Securities Market: An Empirical Analysis of Primary Dealer Net Positions

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Abstract

This study examines the weekly net buying and selling of Primary Dealers (PDs) in the Indian government securities (G-Sec) market from September 2023 to June 2026. It studies whether domestic bond yields, US Treasury yields, Brent crude prices, market turnover, and RBI net liquidity are related to PD trading. The variables are used in level or change form based on their ADF stationarity test. At the 10% significance level, PD net buying falls when the domestic 10-year G-Sec yield rises, market turnover increases, and RBI net liquidity becomes tighter. The US 10-year Treasury yield has a negative effect, but it is just above the 10% significance level. The event analysis shows that PDs buy more during weeks when auction demand is weak and the market is quiet. Heavy selling is seen when turnover and global yields are high. The main findings on domestic yield, turnover, and liquidity are in line with earlier studies, while the US yield result is weaker than some earlier Indian studies.

Keywords: *Primary Dealers; Institutional Trading Behaviour; Government Securities Market; Market Liquidity; Yield Spillover; Event-Window Analysis; India.*

Introduction

Government securities in India are mainly traded by institutions such as commercial banks, Primary Dealers (PDs), mutual funds, insurance companies, and foreign portfolio investors. These institutions respond to policy rates, global yields, currency movements, and market liquidity. However, their roles are different. PDs have a special responsibility to support government bond auctions and provide liquidity in the market. Therefore, their buying and selling can help us understand how institutions respond to changes in the market.

The Reserve Bank of India introduced the Primary Dealer system in the mid-1990s to develop the government securities market. PDs have two main roles. First, they participate in government bond auctions and help absorb new government borrowing. Second, they act as market makers by providing buying and selling quotes in the secondary market. Other investors mainly trade according to their own investment needs, while PDs also have a responsibility to support the government borrowing programme and market liquidity.

The Indian G-Sec market is important because it helps the central government raise funds. G-Sec yields also influence borrowing costs for companies and banks. Heavy PD selling may add to market pressure when yields are rising, while PD buying may support the market when demand at auctions is weak. Therefore, it is useful to understand the factors that affect PD buying and selling.

Many earlier studies on the Indian G-Sec market focus on bond yields or total market turnover. Fewer studies directly examine the weekly net buying and selling of Primary Dealers. This study focuses on

PD net flow and examines the effect of domestic and global market conditions. It also studies the weeks with very high buying and selling. Section 2 reviews earlier studies. Section 3 gives the objectives and hypotheses. Section 4 explains the data and method. Section 5 presents the results. Section 6 discusses the findings. Section 7 gives the conclusion and areas for further research.

Review of Literature

Primary Dealer and Market-Maker Behaviour

Bräuning and Stein (2024) studied the US Treasury market and found that tighter limits on Primary Dealers reduced their trading, increased bid-ask spreads, and weakened auction demand. This shows that the financial capacity of dealers can affect market trading.

Duffie (2010) explains that when financial intermediaries cannot change their capital position quickly, prices may move more than expected after demand or supply changes. This can lead dealers to follow market movements.

Adrian and Shin (2010) show that dealer leverage changes with market conditions. Changes in dealer balance sheets and financing can therefore affect risk taking in the market.

Brunnermeier and Pedersen (2009) explain that funding liquidity and market liquidity are closely related. When funding becomes difficult, dealers may reduce the liquidity they provide to the market. This supports the use of RBI net liquidity as a factor affecting PD behaviour.

Indian G-Sec Market Microstructure and Liquidity

Fleming, Saggar and Sareen (2016) studied trading in the Indian government bond market. They found that benchmark bonds, large issues, and recently issued securities are traded more actively.

Nath (2013) found that liquidity conditions are related to Indian government bond yields, both immediately and over time.

Deuskar and Johnson (2021) found that funding conditions in the Indian banking system affect liquidity in the government bond market.

Dayanandan, Chander and Rajendra Kumar (2023) found that a larger supply of government securities can improve secondary-market liquidity when the market reaches a suitable size.

Nyborg, Rydqvist and Sundaresan (2002) found that auction bidders change their bidding behaviour according to demand and risk conditions. Their study helps explain the use of the bid-cover ratio in this study.

Mohanty (2002) reviewed how debt management and market structure affect liquidity in government bond markets, including India.

Determinants of Indian Government Bond Yields

Dua and Raje (2014) found that Indian government bond yields are related in the long run to the policy rate, money supply, inflation, and foreign interest rates.

Sehgal and Singh (2025) found that short-term interest rates, economic policy uncertainty, foreign exchange reserves, global risk conditions, and oil prices affect Indian government bond yields.

Akram and Das (2019) found that short-term interest rates are an important long-run factor affecting Indian government bond yields.

Global Spillovers and Foreign Participation

Miranda-Agrippino and Rey (2021) found that a global financial cycle affects capital flows, asset prices, and risk taking. US monetary policy and global risk conditions are important parts of this cycle.

Rey (2013) explains that global financial conditions can affect domestic financial markets when capital can move across countries.

Patnaik et al. (2013) studied the rules and reasons for foreign investment in Indian government and corporate debt markets.

Peiris (2010) studied the factors affecting foreign participation in local-currency bond markets in emerging economies.

Bond Supply, Term Structure, and Trading Activity

Greenwood and Vayanos (2014) found that the supply of government debt with different maturities can affect bond yields and returns. This is relevant to how PDs absorb new government bond issues.

Vayanos and Vila (2021) explain how investors with different maturity preferences and market intermediaries such as Primary Dealers can affect bond yields.

Chordia, Huh and Subrahmanyam (2007) found that trading activity is related to liquidity and market volatility. This supports the use of market turnover in this study.

Overall, earlier studies show three important points. Dealer funding and liquidity can affect market-

making. Liquidity and turnover are related to Indian government bond yields. Domestic interest rates

and global factors can also affect Indian bond markets. However, weekly net buying and selling by

Primary Dealers has received less attention. This study addresses this area.

Objectives and Hypotheses of the Study

Objectives

- To identify the main market and economic factors that explain weekly PD net buying and selling in the G-Sec market.
- To examine whether PD net flow is more affected by domestic yields, global yields, or market turnover and liquidity.
- To study the conditions during the weeks of very high PD buying and selling.
- To compare the findings with earlier studies on bond markets.

Hypotheses

The following hypotheses are based on the earlier studies reviewed in Section 2.

- H1: PD net buying decreases when the domestic 10-year G-Sec yield increases.
- H2: PD net buying decreases when the US 10-year Treasury yield increases.
- H3: PD net buying decreases when Brent crude prices increase.
- H4: PD net buying decreases when market turnover increases.
- H5: PD net buying decreases when RBI net liquidity becomes tighter.
- H6: PD net buying increases when the bid-cover ratio at government bond auctions is weak.

Data and Methodology

Data Sources and Study Period

The study uses daily and weekly data from RBI and market statistical releases from 8 September 2023 to 26 June 2026. The data were converted to a common weekly frequency, giving 144 weekly observations. Ten rows in the source net buy and sell sheet had dates in December 2026, which are outside the study period. These rows were excluded from the analysis.

Variable Definitions

Table 1: Variable definitions and data sources.

Variable	Description	Source sheet	Role
PD Net	Weekly sum of Primary Dealers' net G-Sec purchases (Rs crore)	net buy and sell	Dependent
Δ 10Y G-Sec Yield	Week-on-week change in FBIL 10-year benchmark yield (%)	Macro Economic Indicators	Independent
UST 10Y Yield (level)	US 10-year Treasury yield (%)	UST	Independent
Δ Brent Crude	Week-on-week change in Brent close (US\$/bbl)	BRENT	Independent
ln(Turnover)	Log of weekly outright turnover, Central Govt securities (Rs crore)	TURN OVER	Independent
Δ Net Liquidity	Week-on-week change in RBI net injection(+)/absorption(-) (Rs '000 crore)	RBI Liquidity Measures	Independent
Bid-Cover Ratio	Weekly average of competitive bids received ÷ notified amount at auction	Weekly Auction Participation	Event-analysis
USD/INR, CPI Inflation, Repo Rate, 91-day T-Bill	Control/context variables	INR, CPI Data, Macro Economic Indicators	Context

Frequency Alignment and Data Treatment

PD net flow, market turnover and most market indicators were available weekly or were converted to weekly data. CPI inflation was available monthly, so the monthly value was used for the weeks in the same month. ADF tests were used to check whether each series was stable over time. PD Net, US 10-year yield and government turnover were stationary in levels, while several other variables became stationary after taking the first difference.

Table 2: ADF unit-root test results. The tests show whether the variables are stationary in level form or after first differencing.

Series	ADF t-stat (level)	Stationary at 5%?	ADF t-stat (Δ)
PD Net	-4.93	Yes	-8.31
10Y G-Sec Yield	-2.18	No	-4.80
UST 10Y Yield	-3.92	Yes	-4.64
Brent Crude	-2.38	No	-4.45
USD/INR	1.62	No	-4.89
Govt Turnover	-4.14	Yes	-7.46
Net Liquidity	-2.23	No	-5.78
CPI (Combined)	-1.42	No	-3.14

Model Specification

Based on the ADF results, the following model was used:

$$PD_Net_t = \alpha + \beta_1 \Delta G_Sec10Y_t + \beta_2 UST10Y_t + \beta_3 \Delta Brent_t + \beta_4 \ln(Turnover)_t + \beta_5 \Delta NetLiquidity_t + \epsilon_t$$

The US 10-year Treasury yield is used in level form because it was stationary in levels. RBI net liquidity is used in first-difference form because it was not stationary in levels. A larger model with ten variables was also tested. The additional variables did not add useful results, so the final model uses five main variables. Newey-West standard errors with four weekly lags are used because there was some evidence of autocorrelation. Results are tested at the 10% significance level.

Empirical Results

Descriptive Statistics

Table 3: Descriptive statistics for the 144 weekly observations. The average PD Net value is negative, showing that PDs were net sellers of G-Secs during most of the study period.

Variable	Mean	Std Dev	Min	Max
PD Net (Rs crore)	-6,171	5,296	-20,176	17,454
10Y G-Sec Yield (%)	6.83	0.29	6.23	7.37
UST 10Y Yield (%)	4.28	0.23	3.66	4.88
Brent (US\$/bbl)	77.42	11.40	59.89	110.90
Govt Turnover (Rs crore)	499,894	168,869	108,752	1,007,336
Net Liquidity (Rs crore)	-110,398	115,414	-527,598	108,144
USD/INR	86.47	3.61	82.82	96.35
Bid-Cover Ratio	2.79	0.49	1.99	4.53

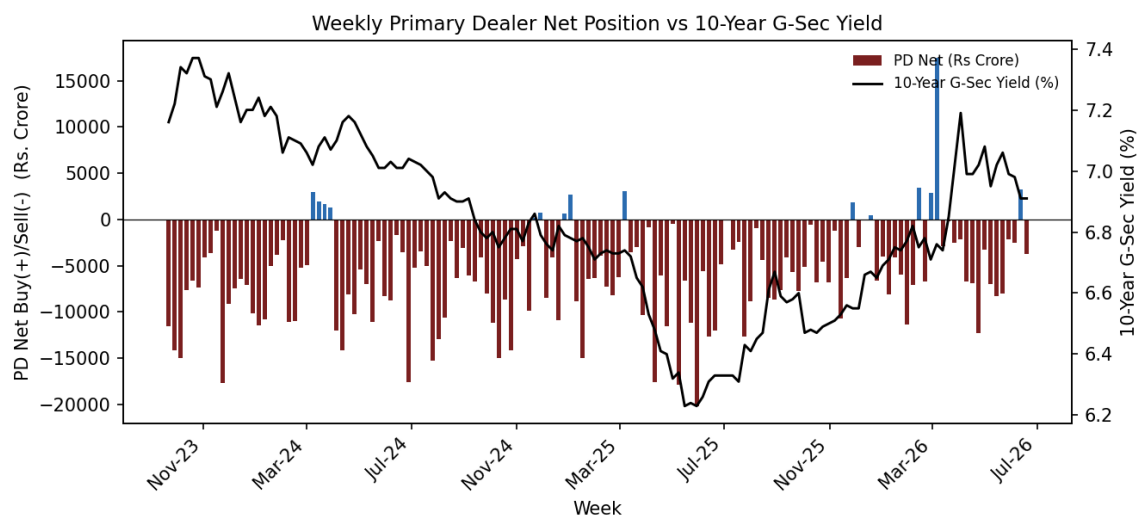


Figure 1: Weekly PD net position and the 10-year G-Sec yield.

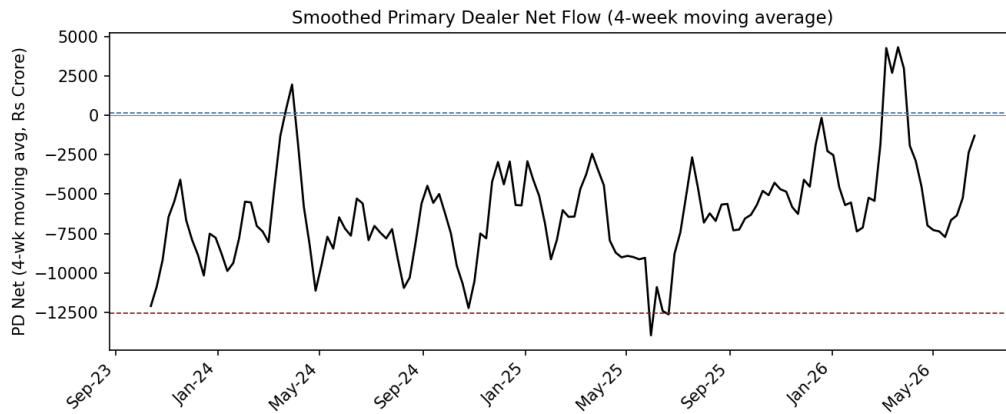


Figure 2: Four-week moving average of PD net flow. The dashed lines show the levels used to identify heavy-selling and heavy-buying weeks.

Correlation with PD Net

Table 4: Pairwise correlations (N = 143, first-differenced series where applicable).

Variable	Correlation with PD Net
ln(Turnover)	-0.250
Δ UST 10Y Yield	-0.229
Net Liquidity	-0.229
Δ 10Y G-Sec Yield	-0.143
Δ 91-day T-Bill	0.124
Bid-Cover Ratio	0.112
Δ Brent	0.109
Δ CPI Inflation	-0.075
Δ USD/INR	0.048
Δ Repo Rate	0.031

Regression Results

Table 5: OLS regression of PD Net on macro-financial variables. N = 143. $R^2 = 0.151$, Adjusted $R^2 = 0.120$, $F(5,137) = 4.86$ ($p < 0.001$), Durbin-Watson = 1.48. Significance evaluated at the 10% level as agreed for this study.

Variable	Coefficient	HAC(4) SE	t (HAC)	p (HAC)	Sig. at 10%?
Constant	61,608.01	22,011.93	2.80	0.006	Yes
Δ 10Y G-Sec Yield	-20,355.94	8,036.67	-2.53	0.012	Yes
UST 10Y Yield (level)	-3,233.67	2,003.16	-1.61	0.109	No
Δ Brent Crude	224.69	228.87	0.98	0.328	No
ln(Turnover)	-4,128.84	1,455.16	-2.84	0.005	Yes
Δ Net Liquidity ('000 cr)	-7.81	4.48	-1.74	0.084	Yes

At the 10% level, three variables are significant: the change in the domestic 10-year G-Sec yield, market turnover, and the change in RBI net liquidity. The US 10-year yield has the expected negative sign, but its p-value of 0.109 is slightly above the 10% level. Brent crude is not significant.

Sensitivity Check: Alternative Differencing Treatment

An alternative model was also tested by taking the first difference of the US 10-year yield and keeping RBI net liquidity in level form. This was done as a sensitivity check.

Table 6: Alternative-differencing specification (sensitivity check). $N = 143$. $R^2 = 0.239$, Adjusted $R^2 = 0.211$, $F(5,137) = 8.58$ ($p < 0.001$), Durbin-Watson = 1.57.

Variable	Coefficient	HAC(4) SE	t (HAC)	p (HAC)	Sig. at 10%?
Constant	53,735.10	17,147.70	3.13	0.002	Yes
Δ 10Y G-Sec Yield	-16,988.10	7,693.09	-2.21	0.029	Yes
Δ UST 10Y Yield	-11,831.32	4,021.39	-2.94	0.004	Yes
Δ Brent Crude	268.35	181.82	1.48	0.142	No
ln(Turnover)	-4,694.78	1,318.86	-3.56	0.001	Yes
Net Liquidity, level ('000 cr)	-13.04	4.50	-2.90	0.004	Yes

In the alternative model, the US 10-year yield becomes significant at the 5% level and the R^2 increases from 0.151 to 0.239. However, the main results for domestic G-Sec yield, turnover, and liquidity remain similar in both models.

Event Analysis: Heaviest Buying and Selling Weeks

The weeks were arranged according to PD Net. The lowest 15 weeks were treated as heavy-selling weeks, the highest 15 weeks as heavy-buying weeks, and the remaining 114 weeks as normal weeks. Welch t-tests were used to compare the extreme weeks with normal weeks.

Table 7: Average values of key variables during heavy-selling, heavy-buying, and normal weeks.

Variable	Heavy-sell mean	Heavy-buy mean	Normal mean	p (sell vs normal)	p (buy vs normal)
UST 10Y Yield (%)	4.39	4.26	4.27	0.05	0.83
Govt Turnover (Rs cr)	635,281	410,703	493,815	0.05	0.05
Bid-Cover Ratio	2.65	2.64	2.82	0.25	0.04
USD/INR	84.45	87.18	86.65	0.00	0.63
Net Liquidity (Rs cr)	-78,531	-144,499	-110,104	0.27	0.34

At the 10% level, heavy-selling weeks have higher US 10-year yields and higher market turnover. Heavy-buying weeks have a lower bid-cover ratio and lower turnover. RBI net liquidity does not show a significant difference between the extreme weeks and normal weeks.

Discussion: Inferring Participant Psychology

The main result is that PD selling increases when the domestic 10-year G-Sec yield rises and when market turnover is high. PD buying also falls when RBI net liquidity becomes tighter. This suggests that PDs reduce their positions when market conditions become more difficult.

The event analysis gives another important result. PD buying is highest when auction demand from other investors is weak and market turnover is low. This is consistent with the role of PDs in supporting government bond auctions. Thus, PD behaviour appears to reflect both market risk management and their responsibility to support auctions.

Consistency with the Existing Literature: Hypotheses Revisited

- H1 (domestic yield) — Supported. PD net buying falls when the 10-year G-Sec yield rises ($p = 0.012$).
- H2 (US yield) — Not supported in the main model. The relationship is negative, but the p-value is 0.109, which is above the 10% level.
- H3 (Brent crude) — Not supported. The p-value is 0.328 in the main model and 0.142 in the sensitivity check.
- H4 (turnover) — Supported. Market turnover has a significant negative relationship with PD net buying in both models ($p = 0.005$ and $p = 0.001$).
- H5 (RBI liquidity) — Supported. The change in RBI net liquidity has a significant negative relationship with PD net buying at the 10% level ($p = 0.084$).
- H6 (auction bid-cover) — Supported. Heavy-buying weeks have a significantly lower bid-cover ratio than normal weeks ($p = 0.04$).

The domestic G-Sec yield result is stronger than the US yield result. This is broadly in line with earlier Indian studies that show an important role for domestic interest-rate conditions.

The weaker US yield result may be because weekly PD trading data can change quickly and may contain more short-term variation. Global factors may also affect the Indian bond market through other channels, such as foreign portfolio investment. These areas can be studied further.

Conclusion and Scope for Further Research

Weekly PD net flow in the Indian G-Sec market is significantly and negatively related to a rise in the domestic 10-year G-Sec yield, higher market turnover, and tighter RBI net liquidity at the 10% level. The US 10-year Treasury yield has the expected negative direction but is not significant in the main model. Brent crude is also not significant. The event analysis shows that PDs buy more when auction demand is weak and the market is quiet, while heavy selling occurs when turnover and global yields are high. The study therefore shows that PD trading is related to both market conditions and the PD role in supporting government bond auctions. Future research can extend the analysis to other institutional groups, use a longer study period, include FPI flows, and examine the data at a daily frequency.

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