



FINANCIAL TRANSFORMATION IN POST-PANDEMIC INDIA: INSIGHTS FROM BONDS, EQUITIES, AND ECONOMIC DATA

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Abstract

The COVID-19 pandemic caused unparalleled disruptions in India's financial system, altering the interaction between capital markets and macroeconomic indicators. This paper examines how India's bond yields, equity market returns, and core economic variables evolved between the pre-pandemic (Sept 2017–Feb 2020) and post-pandemic (Jul 2020–Dec 2022) periods. Using Reserve Bank of India and NSE data, the study employs descriptive statistics, paired t-tests, correlation matrices, and multiple regression (OLS) to assess structural shifts. Results show a significant decline in government bond yields following accommodative monetary policy, while equity returns surged amid fiscal stimulus and liquidity expansion. Inflation and exchange-rate movements displayed altered relationships with financial assets in the post-COVID environment. The findings suggest that India's monetary–financial transmission mechanism has structurally changed, demanding adaptive policy frameworks and diversified investment strategies.

Keywords: Bond yields, Equity returns, Economic indicators, COVID-19, India, Monetary policy, Regression analysis.

1. Introduction

India's financial markets faced unprecedented turbulence following the COVID-19 outbreak in 2020. Before the crisis, the Indian economy exhibited moderate growth, steady inflation, and predictable financial linkages—long-term bond yields aligned closely with policy rates and inflation expectations, while equity returns reflected corporate earnings and macroeconomic sentiment. The pandemic, however, disrupted these patterns.

A sharp fall in GDP growth (–7.3 % in 2020–21), lockdown-driven contraction of industrial output, and massive policy interventions redefined the country's macro-financial relationships. The Reserve Bank of India (RBI) slashed the repo rate from 5.15 % to 4 %, infused liquidity through LTROs, and enabled fiscal expansion. Simultaneously, equity markets—after a 38 % collapse in March 2020—recorded historic rallies in 2021 due to abundant liquidity and retail participation. This paper seeks to capture these **structural shifts** in India's financial ecosystem by comparing the pre- and post-COVID periods. It explores how government bond yields, equity returns, and major macroeconomic

indicators such as inflation, IIP, FDI inflows, exchange rates, and foreign-reserve levels evolved during and after the pandemic.

2. Review of Literature

Studies globally and in India indicate that pandemics trigger volatility, liquidity shocks, and altered policy-asset relationships.

- **Beirne et al. (2020)** found synchronized declines in emerging-market equities and bond yields during COVID due to global risk aversion.
- **Rao et al. (2022)** documented strong comovements among safe-haven and risk assets, including gold and Indian government securities.
- **Dharani et al. (2021)** observed sectoral divergence in Indian stock returns, with IT and healthcare outperforming traditional industries.
- **Marisetty (2021)** highlighted evolving correlations among Indian equities, exchange rates, and commodity markets.

Earlier Indian evidence (e.g., **Akram & Das, 2019; Modi & Bhagat, 2021**) established the sensitivity of yields to short-term policy rates and inflation, but post-pandemic dynamics remain underexplored. Hence, a comparative approach for India's financial variables across the two eras provides vital insights into policy efficacy and market behavior.

3. Objectives and Hypotheses

Objectives

1. To examine the directional changes in India's bond yields, equity returns, and macro-economic indicators before and after COVID-19.
2. To identify shifts in correlations among financial and macro variables.
3. To assess whether the determinants of bond yields and equity performance structurally changed post-pandemic.
- 4.

Hypotheses

- H1: Mean bond yields significantly declined after COVID-19.
- H2: Mean equity returns significantly increased post-COVID-19.
- H3: Relationships among yields, inflation, and exchange rates differ across the two periods.

Data and Methodology

Data Sources

- **Bond yields:** 10-Year Government Security (G-Sec) and 91-Day Treasury Bill rates from the RBI.
- **Equity returns:** Monthly NSE NIFTY index returns.
- **Economic indicators:** Bank rate, CPI inflation, Index of Industrial Production (IIP), USD/INR exchange rate, Foreign Direct Investment (FDI) inflows, and foreign-exchange reserves.
- **Period Division**
- **Pre-COVID:** Sept 2017 – Feb 2020 (30 months)
- **Post-COVID:** Jul 2020 – Dec 2022 (30 months)
Intervening months (Mar–Jun 2020) omitted to avoid transitional noise.

Techniques Used

1. **Descriptive Statistics** to summarize mean, standard deviation, and distribution shape.
2. **Paired t-test** to compare pre- and post-means for each variable.
3. **Correlation Analysis** to study interdependence among yields, equity returns, and economic indicators.

OLS Regression Models

To examine the determinants of India's bond yields and equity returns, the following Ordinary Least Squares (OLS) models were estimated.

Model A: Determinants of 10-Year Government Security (G-Sec) Yield

$$Y_t = \beta_0 + \beta_1(INF_t) + \beta_2(BR_t) + \beta_3(FDI_t) + \beta_4(EXR_t) + \beta_5(IIP_t) + \varepsilon_t$$

Where:

Y_t = 10-Year G-Sec Yield (%)

INF_t = Inflation rate (CPI)

BR_t = Bank Rate or Policy Rate

FDI_t = Foreign Direct Investment inflows

EXR_t = Exchange Rate (USD/INR)

IIP_t = Index of Industrial Production

ε_t = Random error term

Model B: Determinants of NIFTY Returns

$$R_t = \alpha_0 + \alpha_1(GDPG_t) + \alpha_2(INF_t) + \alpha_3(EXR_t) + \alpha_4(FDI_t) + \alpha_5(GOLD_t) + u_t$$

Where:

R_t = NIFTY Index Returns (%)

$GDPG_t$ = GDP Growth Rate

INF_t = Inflation rate

EXR_t = Exchange Rate (USD/INR)

FDI_t = Foreign Direct Investment inflows

$GOLD_t$ = Gold Price (proxy for safe-haven asset) u_t = Random error term

Diagnostic Tests for Model Robustness

To ensure reliability of estimates, the following diagnostics were conducted:

- VIF (Variance Inflation Factor): To test for multicollinearity among explanatory variables.
- DW (Durbin–Watson Test): To detect autocorrelation in residuals.
- BP (Breusch–Pagan Test): To check for heteroscedasticity.
- ARCH (Autoregressive Conditional Heteroscedasticity): To identify volatility clustering in residuals.

All models were tested for statistical robustness and satisfied the required econometric assumptions.

Tools

Data were analyzed using **Excel** and **SPSS 26**, consistent with standard econometric procedures.

5. Empirical Analysis

5.1 Descriptive Patterns

<i>Indicator</i>	<i>Pre-COVID Mean</i>	<i>Post-COVID Mean</i>	<i>Direction of Shift</i>
10-Year G-Sec Yield	7.29%	6.49%	↓ (−0.8 pp)
91-Day T-Bill Yield	6.13%	3.73%	↓ (−2.4 pp)
CPI Inflation	4.09%	6.03%	↑ (+1.9 pp)
Bank Rate	6.19%	4.42%	↓ (−1.8 pp)
NIFTY Returns (Index)	8.75%	20.84%	↑ (+12 pp)
IIP Growth	2.99%	10.71%	↑ (+7.7 pp)
FDI Inflows	18.2 bn	25.3 bn	↑
Forex Reserves	US\$ 9.8 trn eqv	13.7	↑

Bond yields fell sharply due to monetary easing, while equities and industrial production rose amid liquidity recovery. Inflation and exchange rates exhibited moderate upward pressure.

<i>Variable</i>	<i>t-Statistic</i>	<i>Sig. (p)</i>	<i>Interpretation</i>
10Y G-Sec	−4.18	0.001	Significant drop
91-Day TB	−9.16	0	Highly significant decline
Bank Rate	−10.81	0	Strong policy shift
Inflation	689.00%	0.002	Significant rise
NIFTY Returns	301.00%	0.009	Significant increase

5

2 Paired t-Test Results

Thus, all primary financial indicators registered statistically meaningful changes between the two periods.

5.3 Correlation Insights

Pre-COVID:

- Bond yields correlated positively with bank rate ($r \approx 0.81$) and negatively with inflation (-0.38).
- Gold and exchange rate acted as safe-haven hedges (strong negative r).

Post-COVID:

- Inflation turned positively related to yields ($r \approx 0.41$) — reflecting new inflation-expectation dynamics.
- Equity returns negatively correlated with inflation (-0.61) and currency depreciation (-0.83), suggesting sensitivity to macro instability.
- Foreign reserves showed an inverse relationship with yields (-0.93), highlighting their role in maintaining liquidity.

5.4 Regression Analysis

Model A: 10-Year G-Sec Yields (Post-COVID)

- Foreign Reserves: $\beta = -0.044$ (* $p < 0.01$) – rising reserves lower yields.
 - Exchange Rate: $\beta = +0.086$ ($p < 0.10$) – currency depreciation raises yields.
 - IIP: $\beta = +0.003$ ($p < 0.10$) – industrial rebound pressures yields upward.
- Adj. $R^2 = 0.88$; $F = 27.8$ ($p < 0.01$).

Model B: NIFTY Returns (Post-COVID)

- Inflation: negative (-0.47 , $p < 0.05$).
 - FDI: positive ($+0.29$, $p < 0.01$).
 - Exchange Rate: negative (-0.35 , $p < 0.05$).
- Adj. $R^2 = 0.82$.

These regressions confirm that India's financial variables realigned post-pandemic, with external sector factors (FX reserves, FDI, exchange rate) gaining importance relative to traditional policy rates.

6. Discussion**1. Monetary Policy Transmission Shift:**

RBI's liquidity injections anchored bond yields despite rising inflation. The negative reserve–yield linkage underscores enhanced external-buffer confidence.

2. Equity-Market Resilience:

Equities exhibited faster recovery driven by domestic liquidity, foreign inflows, and digital-economy optimism—showing decoupling from short-term macro stress.

3. Inflation Dynamics:

Unlike pre-COVID conditions, inflation post-2020 coexisted with low yields, reflecting a “liquidity trap”-like situation and credibility in RBI's policy communication.

4. Investment & Policy Implications:

Investors should recalibrate asset-allocation strategies recognising lower yield environments and heightened equity volatility. Policymakers need coordinated fiscal-monetary actions to maintain growth without overstimulating inflation.

7. Conclusion

The comparative evidence reveals a **fundamental realignment of India's financial architecture** post-COVID-19. Long-term yields compressed under accommodative policy; equities rebounded amid liquidity surges; and inflation-exchange-rate linkages shifted. Regression diagnostics confirm that macro variables influencing yields and returns changed in magnitude and direction, pointing to a **structural break in financial-economic relationships**.

Future research can extend this framework through **ARIMA or VAR models**, incorporating 2023–25 data to test persistence of these shifts and their implications for India's journey toward a sustainable, resilient financial system.

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