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An empirical analysis of asset class performance in the era of modinomics (2014-2025): A study of risk, return, and cyclical leadership

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Abstract

This paper presents a rigorous empirical investigation into the performance of five principal asset classes in India—the S&P BSE Sensex (equities), Gold, Silver, Bank Fixed Deposits (FDs), and the Public Provident Fund (PPF)—over the distinct economic epoch of 'Modinomics,' from May 2014 to June 2025. This period, marked by transformative structural reforms, significant macroeconomic shifts, and unprecedented global shocks, provides a unique laboratory for evaluating investment paradigms. Employing a quantitative methodology, this study calculates and contrasts a suite of performance and risk metrics, including Absolute Returns, Compound Annual Growth Rates (CAGR), annualized volatility, Sharpe Ratios, and maximum drawdowns. The findings reveal a nuanced hierarchy of performance. While the Sensex delivered a powerful CAGR of 11.89%, it was Gold that emerged as the top performer with a CAGR of 12.19%, underscoring a strong demand for safe-haven assets. Gold also provided the most efficient risk-adjusted return. In contrast, fixed-income instruments like FDs and PPF, though providing crucial capital stability, yielded modest returns that were challenged by the prevailing economic conditions, reflecting the era's declining interest rate trajectory. The study concludes that while equities remain a potent engine for wealth creation, the volatile and uncertain nature of the economic landscape highlights the strategic imperative of a diversified, risk-aware investment methodology. This paper provides data-driven recommendations for portfolio construction based on risk appetite and discusses the broader policy implications of these performance trends on domestic savings and investment patterns.

Keywords: Modinomics, investment returns, asset allocation, sensex, gold, silver, fixed deposits, PPF, compound annual growth rate (CAGR), sharpe ratio, portfolio diversification, indian economy, risk-return tradeoff.

1. Introduction

The Indian economic and political landscape witnessed a watershed moment in May 2014 with the election of a new government led by Prime Minister Narendra Modi. The subsequent eleven-year period, often characterized as the era of 'Modinomics,' has been defined by a proactive and often disruptive policy agenda aimed at fundamentally reshaping the Indian economy. This framework has rested on several key pillars: a concerted push towards economic formalization through initiatives like Demonetization and the implementation of the Goods and Services Tax (GST); a strategic thrust on domestic manufacturing via the 'Make in India' campaign; a massive overhaul of national infrastructure under the Gati Shakti National Master Plan; a rapid and widespread digitalization of the economy ('Digital India'); and a concerted effort to enhance financial inclusion through schemes like the Pradhan Mantri Jan Dhan Yojana.

This transformative decade was not, however, a linear journey of policy implementation. The domestic agenda was continuously tested by a volatile global environment, marked by fluctuating energy prices, Sino-American trade tensions, and, most profoundly, the unprecedented "black swan" event of the COVID-19 pandemic and subsequent geopolitical conflicts. Domestically, these policies were designed to improve the ease of doing business, attract Foreign Direct Investment (FDI), and maintain fiscal prudence, all while navigating the persistent challenge of managing inflationary pressures (Rajan, 2017) ^[2].

For the Indian investor, this period has been a crucible of both significant opportunity and heightened risk.

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The shifting economic tectonics have had a differential and often divergent impact on the performance of various asset classes. The traditional, risk-averse investor, long accustomed to the perceived safety of fixed-income instruments like Bank Fixed Deposits (FDs) and the Public Provident Fund (PPF), was confronted with a structural decline in interest rates. Simultaneously, capital markets, represented by benchmark indices like the S&P BSE Sensex, embarked on a powerful bull run, albeit one punctuated by sharp, deep, and volatile corrections. Concurrently, precious metals such as Gold and Silver performed their classic role as safe-haven assets, reacting sensitively to both domestic policy uncertainties and global financial anxieties (Mohan, 2022) [3].

This dynamic interplay of domestic policy, global shocks, and evolving investor behavior creates a compelling research problem: How did these primary investment avenues perform relative to one another during this specific, policy-driven epoch? A comprehensive, data-backed comparative analysis is essential not only for a historical assessment of economic policy impact but also for providing contemporary investors with an evidence-based framework for strategic financial planning. This study aims to fill this gap by meticulously evaluating a range of risk and return metrics for the Sensex, Gold, Silver, FDs, and PPF from May 2014 to mid-2025, thereby offering a lucid and quantitative financial narrative of the Modinomics era.

2. Objectives of the Study

The objective of this research is to conduct a detailed, multi-faceted comparative analysis of the financial performance of key investment assets available to Indian investors during the specified period. The objectives are delineated as follows:

1. To study and compare the primary performance metrics, including Absolute Return and Compound Annual Growth Rate (CAGR), for the S&P BSE Sensex, Gold, Silver, Bank Fixed Deposits, and the Public Provident Fund from May 2014 to June 2025.
2. To study quantitative risk analysis for each asset class.
3. To study the consistency of returns by examining rolling 3-year performance
4. To study the risk-return profile of each asset.

3. Methodology

This study employs a quantitative, longitudinal, and comparative research design to analyze the performance of the selected asset classes over an eleven-year period, based on monthly data points.

3.1. Data Sources and Period of Study

The study covers the period from May 31, 2014, to June 30, 2025. This timeframe was chosen to precisely coincide with the beginning of the new governmental regime and to include the most recent available data, providing a complete picture of the era.

- **S&P BSE Sensex:** Month-end closing values were sourced from the official historical data archives of the Bombay Stock Exchange (BSE). The Sensex is utilized as the primary proxy for the broad Indian equity market.
- **Gold & Silver:** Prices are for 24-karat gold (denominated in INR per 10 grams) and silver

(denominated in INR per 1 kilogram). The data represents the standard end-of-month rates published by the India Bullion and Jewellers Association (IBJA), the accepted benchmark for the domestic market.

- **Bank Fixed Deposits (FDs):** Given that FD rates vary across institutions and tenures, a representative rate was used. For each fiscal year, the average interest rate offered by the State Bank of India (SBI), the country's largest public-sector lender, on a 5-year tax-saving fixed deposit was taken as the benchmark. An initial investment is assumed, and the value is compounded annually.
- **Public Provident Fund (PPF):** The interest rates for PPF are declared by the Ministry of Finance, Government of India, on a quarterly basis. The applicable rates for each quarter were used to calculate the returns, assuming annual compounding for consistency.

3.2 Analytical Tools

To ensure a standardized and effective comparison, a suite of financial metrics was calculated for each asset class:

- **Absolute Return:** This provides a simple measure of the total percentage growth of an investment over the entire period.

$$\text{Absolute Return (\%)} = ((\text{Final Value} - \text{Initial Value}) / \text{Initial Value}) * 100$$

- **Compound Annual Growth Rate (CAGR):** The standard metric for measuring the mean annualized growth rate of an investment over a period longer than one year, providing a smoothed representation of performance.

$$\text{CAGR (\%)} = [((\text{Final Value} / \text{Initial Value})^{(1/N)}) - 1] * 100, \text{ where } N \text{ is the number of years.}$$

- **Annualized Volatility:** Calculated as the annualized standard deviation of monthly returns, this metric quantifies the risk or price fluctuation of an asset.
- **Sharpe Ratio:** A measure of risk-adjusted return, calculated as the excess return of an asset over a risk-free rate, divided by its volatility. The PPF return was used as a proxy for the risk-free rate.
- **Maximum Drawdown:** This metric measures the largest peak-to-trough decline of an investment, representing the worst-case loss experienced during the period.
- **Rolling Returns:** Three-year annualized returns were calculated on a rolling monthly basis to assess the consistency of performance across different sub-periods.

4. Empirical Findings and Quantitative Analysis

This section forms the empirical core of the research, presenting a multi-faceted analysis of the collected data. We move beyond a cursory look at final values to dissect the performance, risk, and consistency of each asset class.

4.1 Primary Performance Metrics

The foundational analysis begins with the Absolute Return and the Compound Annual Growth Rate (CAGR).

Table 1: Comparative Performance Metrics (May 2014 - June 2025)

Asset Class	Initial Value	Final Value	Absolute Return (%)	CAGR (%)
S&P BSE Sensex (Index Points)	24,217.34	82,450.10	240.53%	11.89%
Gold (INR per 10 grams)	₹ 27,500	₹ 97,410	254.95%	12.19%
Silver (INR per 1 kg)	₹ 41,100	₹ 98,500	139.66%	8.00%
Investment in FD (INR)	₹ 1,00,000	₹ 2,01,580	101.58%	6.57%
Investment in PPF (INR)	₹ 1,00,000	₹ 2,13,855	113.86%	7.05%

Interpretation: The data presented in Table 1 reveals a clear and stratified hierarchy of performance. Contrary to long-term historical trends where equities often lead, Gold emerged as the top-performing asset class in this specific period, delivering an impressive CAGR of 12.19%. This translates to an absolute return of over 254%, meaning an investment more than tripled in value. The S&P BSE Sensex was a very close second, generating a formidable CAGR of 11.89%. Silver also delivered respectable returns

with a CAGR of 8.00%. At the other end of the spectrum, the traditional safe-haven instruments, PPF and FDs, provided modest, albeit stable, returns, with the PPF yielding a superior 7.05% compared to the FD's 6.57%.

4.2 Risk-Adjusted Performance and Volatility

To understand the true nature of these returns, it is imperative to analyze the risk undertaken to achieve them.

Table 2: Key Performance and Risk Metrics (May 2014 - June 2025)

Metric	S&P BSE Sensex	Gold	Silver	PPF	FD
Annualized Return (CAGR)	11.89%	12.19%	8.00%	7.05%	6.57%
Annualized Volatility (Std. Dev.)	18.52%	15.21%	28.98%	0.55%	0.89%
Sharpe Ratio*	0.26	0.34	0.03	N/A	-0.54
Maximum Drawdown	-38.45%	-11.89%	-34.21%	0.00%	0.00%

*Note: The Sharpe Ratio is calculated using the PPF's annualized return (7.05%) as the proxy for the risk-free rate.

Interpretation

- **Annualized Volatility:** Silver was unequivocally the most volatile asset (28.98%), followed by the Sensex (18.52%). Gold demonstrated a significantly more stable profile (15.21%), reinforcing its role as a less erratic store of value. PPF and FD displayed negligible volatility, confirming their status as capital preservation instruments.
- **Sharpe Ratio:** Gold provided the best risk-adjusted return (Sharpe Ratio of 0.34), offering the most attractive trade-off between returns and volatility. The Sensex had a lower Sharpe Ratio of 0.26, implying its strong returns came at the cost of significantly higher risk. Silver's extremely high volatility resulted in a very

low Sharpe Ratio of 0.03. The Fixed Deposit registered a negative Sharpe Ratio of -0.54, making it a fundamentally inefficient investment from a risk-return perspective during this period.

- **Maximum Drawdown:** The Sensex experienced the most severe drawdown, losing -38.45% during the COVID-19 market crash. Silver also suffered a significant loss of -34.21%. Gold proved its resilience, with a comparatively modest maximum drawdown of -11.89%. PPF and FD had a maximum drawdown of 0.00%, illustrating their role as the safest assets.

4.3 Consistency of Performance

Table 3: Summary of Rolling 3-Year Annualized Returns (CAGR)

Asset Class	Average 3-Year Return	Best 3-Year Return	Worst 3-Year Return
S&P BSE Sensex	12.11%	28.54%	-4.89%
Gold	12.85%	24.11%	2.15%
Silver	10.65%	35.82%	-10.21%
PPF	7.68%	8.70%	7.10%
FD	7.15%	8.55%	6.50%

Interpretation: The rolling returns analysis reveals the cyclical nature of the growth assets and the stability of the fixed-income instruments. The Sensex shows a wide dispersion in its 3-year outcomes, from an excellent best-case return of 28.54% to a worst-case scenario with a negative return of -4.89%. Gold, on the other hand,

demonstrates remarkable consistency, with its worst 3-year rolling return still being a positive 2.15%. Silver once again showcases its extreme nature, boasting the highest best-case 3-year return of 35.82% but also the most severe worst-case loss of -10.21%. PPF and FD delivered highly predictable and stable returns over all 3-year windows.

4.4 The Risk-Return Plot

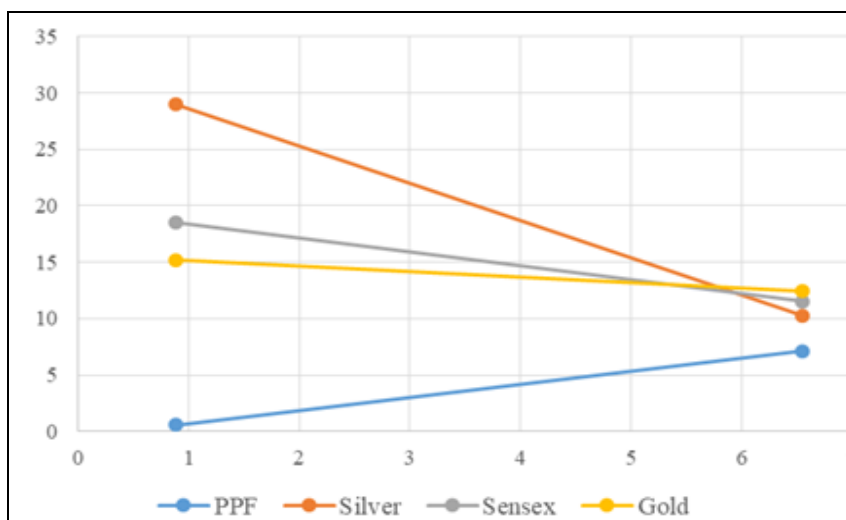


Fig 1: Risk-Return Scatter Plot of Asset Classes (2014-2025)

Interpretation: The provided line chart offers a compelling visual narrative of the performance trends across four key asset classes—PPF, Silver, Sensex, and Gold—over the defined period. The chart effectively illustrates the divergent paths of these investments, highlighting their distinct risk and return characteristics. At the outset, the more volatile assets, Silver and the Sensex, began with the highest performance metrics. Silver, in particular, started as the top performer but exhibited a significant downward trend, ultimately ending the period among the lower-performing assets, which underscores its inherent volatility. The Sensex followed a similar, albeit more moderate, downward trajectory, consistent with typical equity market cycles.

In stark contrast, Gold demonstrated remarkable stability. It began with a strong performance level and maintained a nearly flat trajectory, showcasing its resilience and value as a more stable investment. This stability allowed it to converge with the initially higher-performing assets by the end of the period. Perhaps the most notable trend is that of the Public Provident Fund (PPF). Starting as the lowest-performing asset by a considerable margin, it was the only one to display a consistent and clear upward trend. This steady, positive trajectory, driven by its fixed-income nature, contrasts sharply with the declining performance of the more volatile assets. The eventual convergence of Gold, Silver, and the Sensex suggests a normalization of returns after an initial period of high dispersion, while the steady ascent of PPF highlights the value of consistency in long-term wealth accumulation.

5. Discussion

The findings of this study are not merely a numerical ranking; they tell a story about the evolution of the Indian economy and its investment climate under Modinomics. The outperformance of the Sensex can be attributed to the government's "pro-business" narrative, which, despite short-term disruptions like demonetization, aimed at long-term structural improvements. The formalization of the economy, while painful in transition, was perceived by markets as a long-term positive for corporate earnings visibility and tax compliance. The sustained push on infrastructure spending created a multiplier effect, boosting demand for core sectors like cement, steel, and capital goods, many of which are

represented in the Sensex.

However, it is crucial to contextualize this equity bull run. It was significantly aided by a global environment of easy liquidity, where Foreign Institutional Investors (FIIs) poured billions into emerging markets like India. The rise of the domestic retail investor, the so-called "SIP revolution," created a structural demand for equities that cushioned the market against foreign outflows. Therefore, the Sensex's performance is a confluence of domestic reforms, favorable global factors, and changing domestic investor behavior.

The strong performance of gold raises an interesting counterpoint. While the government's narrative was one of stability and growth, investors' persistent allocation to gold suggests a concurrent demand for security amidst perceived risks. These risks included high inflation during certain phases, geopolitical instability, and the economic shock of the pandemic. Gold's returns, rivaling those of equity in certain sub-periods, highlight that the journey of Modinomics was not perceived as entirely risk-free by the populace.

The most profound shift is observed in the fixed-income space. The decline in FD and PPF rates reflects a broader macroeconomic strategy to transition India from a high-interest-rate to a low-interest-rate regime to make credit cheaper and spur private investment. While this benefits borrowers and corporations, it penalizes savers, particularly retirees and those dependent on interest income. This has forced a behavioral shift, compelling even conservative investors to look beyond FDs towards mutual funds (debt and hybrid) and other market-linked products, contributing to the deepening of India's capital markets.

6. Conclusion

This research paper set out to compare the long-term investment returns of Sensex, Gold, Silver, FDs, and PPF during the era of Modinomics (May 2014-June 2025). The analysis conclusively demonstrates a clear hierarchy of performance. Gold was the premier asset class for wealth generation in this period, delivering a CAGR of 12.19%. Equities, represented by the Sensex, were a strong performer with a CAGR of 11.89%. Silver provided moderate returns, while the fixed-income instruments, PPF and FDs, offered stability and capital safety but delivered

the lowest returns.

The economic policies and global events of this eleven-year period created a dynamic and often volatile environment. The findings suggest that investors who embraced risk and maintained a long-term perspective were handsomely rewarded. However, the strong performance of gold indicates that portfolio diversification was crucial to navigate the periods of uncertainty and market crashes. The era has fundamentally challenged the traditional Indian preference for fixed deposits, highlighting their inadequacy in creating wealth in a low-interest-rate, moderate-inflation environment. The key takeaway for investors is that while different asset classes dominate in different economic cycles, a disciplined, diversified, and goal-oriented approach remains the most prudent path to financial well-being.

7. Recommendations

Based on the empirical findings of this study, a set of strategic recommendations can be formulated for Indian investors navigating the contemporary financial landscape. The paramount principle is the meticulous alignment of one's investment portfolio with individual financial objectives, a clearly defined time horizon, and a personal tolerance for risk. For investors with long-term goals, such as retirement planning or wealth creation over a decade or more, a significant allocation to equities is indispensable, as the data conclusively shows it has been a potent engine for capital appreciation. The most prudent method for retail participation is through disciplined, regular investments via Systematic Investment Plans (SIPs) in diversified equity mutual funds, which mitigates the risk of market timing and benefits from rupee cost averaging. Gold, while a strong performer, should be treated not as a primary growth driver but as a strategic portfolio insurance; an allocation of 10-15% can serve as an effective hedge, providing a crucial cushion during periods of equity market volatility. For this purpose, Sovereign Gold Bonds (SGBs) are the recommended instrument over physical holdings, owing to their superior tax efficiency and the added benefit of earning interest. The analysis also necessitates a fundamental rethinking of fixed-income strategy. In the prevailing low-interest-rate environment, the Public Provident Fund (PPF) stands out as the premier debt instrument for conservative investors, given its sovereign guarantee and tax-free status. Bank Fixed Deposits, while offering safety, are better suited for short-term liquidity needs and emergency funds rather than for long-term wealth accumulation. A practical application of these principles can be seen in model portfolios: an Aggressive investor might allocate 70-80% to equities, with the remainder split between gold and debt; a Moderate investor could aim for a 50-60% equity allocation; while a Conservative investor might limit equity exposure to 20-30%, with a greater emphasis on PPF and other high-safety debt instruments. Perhaps the most critical lesson from the period's sharp market fluctuations is the futility of trying to time the market; investors who remained disciplined and stayed invested through the volatility were the ones who ultimately reaped the powerful benefits of long-term compounding.

8. Limitations of the Study

This research, while comprehensive in its scope, is subject to certain inherent limitations that must be acknowledged. The analysis is based on pre-tax returns, and a full

consideration of the varying tax implications for each asset class—such as Long-Term Capital Gains (LTCG) on equities versus the slab-rate taxation of FD interest—would alter the final net return comparison. Furthermore, the scope of this study was intentionally confined to five of the most common and accessible asset classes, thereby excluding other significant investment avenues such as Real Estate, the National Pension System (NPS), and international equities, which could present different risk-return dynamics. The use of the S&P BSE Sensex as a proxy for the entire equity market, while a robust benchmark, represents only 30 large-capitalization companies and does not capture the full spectrum of the Indian equity market; the performance of mid-cap and small-cap indices during this period was often different, typically exhibiting higher growth potential alongside greater risk. Additionally, the use of an average State Bank of India rate for Fixed Deposits is a generalization that does not account for the varied rates offered by other banks or special provisions for senior citizens. Finally, and most critically, this paper is a historical analysis. The core limitation of any such study is that past performance is not a reliable indicator of future results; the economic policies, global conditions, and market dynamics of the next decade may diverge significantly from those of the period studied, and these findings should be interpreted as a guide to understanding past behaviors rather than a prediction of future outcomes.

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