Portfolio Analysis

Formula	A	B	C	D	E
Stock/Fund	**Amount Invested (₹)**	**Current Value (₹)**	**Start Date**	**No of years**	**Beta**
HDFC Flexi Cap Fund	1,00,000	1,52,000	01-01-2022	3.42	0.87
ICICI Prudential Bluechip	75,000	97,000	01-07-2023	1.93	0.85
Infosys Ltd (Stock)	50,000	59,000	01-03-2023	2.26	0.95
SBI Short Term Debt Fund	50,000	52,500	01-01-2024	1.42	1.01
Nett	2,75,000	3,60,500		2	0.92

Risk-Free Rate (Rf)	7%
Market Return (Rm)	12%
Portfolio Return (Rp)	31.09%
Sotino ratio	0.30

Ratio Analysis

	(B-A)/A*100	(A/Nett)	(A/B)^D-1	Absolute Return/D	Rf+B(Rm-Rf)	Rp-CAPM	Rp-Rf/Std Deviation	Rp-Rf/Beta	
Stock/Fund	**Absolute Return**	**weighted Average**	**CAGR**	**Projected CAGR**	**CAPM**	**Jensen Alhpa**	**Sharpe**	**Tyenor**	**Standard deviation**
HDFC Flexi Cap Fund	52.00%	0.36	3.19	15.20%	0.1135	0.20	0.19	0.28	1.24
ICICI Prudential Bluechip	29.33%	0.27	0.64	15.23%	0.1125	0.20	0.25	0.28	0.95
Infosys Ltd (Stock)	18.00%	0.18	0.45	7.96%	0.1175	0.19	0.15	0.25	1.56
SBI Short Term Debt Fund	5.00%	0.18	0.07	3.52%	0.1205	0.19	1.85	0.24	0.13
Nett	31.09%			13.77%	0.116	0.19	0.32	0.26	0.76

📊 **Portfolio Analysis Insights**

1. 📈 Absolute Return & CAGR

- **HDFC Flexi Cap:** 52% Absolute Return over ~3.4 years → **~15.2% CAGR**
- **ICICI Bluechip:** 29.3% over ~1.9 years → **~13.3% CAGR**

🧠 **Insight:** Both funds are generating solid double-digit CAGR, with HDFC Flexi Cap outperforming. The performance aligns with the market's post-COVID rally and reflects good fund manager selection.

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2. ⚖️ Beta (Risk Compared to Market)

- HDFC Flexi Cap: **0.87**
- ICICI Bluechip: **0.85**

🧠 **Insight:** Both funds are **less volatile than the market** (Beta < 1). This implies a conservative risk profile, appropriate for medium-aggressive investors. Portfolio shows **controlled risk exposure**.

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3. ✅ CAPM & Jensen's Alpha

- **CAPM Expected Return** is the theoretical return based on market risk.
- **Jensen's Alpha**:
  - HDFC: **+0.197**
  - ICICI: **+0.198**

🧠 **Insight:** Both funds have a **positive Jensen's Alpha**, meaning they've **outperformed** their expected CAPM returns. This suggests **managerial skill** and **superior stock selection** — a key trait evaluated in IB and wealth teams.

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4. 📊 Sharpe Ratio (Return vs Total Risk)

- HDFC: **0.194**
- ICICI: **0.254**

🧠 **Insight:** Sharpe Ratios > 0.2 are respectable in equity markets. ICICI fund is offering **better returns per unit of risk**. This can guide asset rebalancing.

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5. 📉 Treynor Ratio (Return vs Market Risk)

- HDFC: **0.277**
- ICICI: **0.283**

🧠 **Insight:** Both funds are giving consistent **excess returns per unit of market risk (Beta)**. Treynor Ratio further confirms that risk-adjusted performance is strong.

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6. 🔄 Standard Deviation

- HDFC: **1.24**
- ICICI: **0.95**

🧠 **Insight:** HDFC shows slightly higher volatility. Still acceptable in an equity-heavy portfolio, but **watch for short-term fluctuations**. This could be fine-tuned if the investor is nearing a financial goal.

📜 **Conclusion – Professional Takeaways**

Observation	**Interpretation**
Both funds have outperformed CAPM	Alpha generation is **positive** and credible
Sharpe & Treynor Ratios are consistent	**Efficient risk-reward balance**
Betas < 1	**Lower volatility**, suits moderate-risk profile
Well-diversified core equity mutual fund mix	Ideal for **long-term wealth creation**

Definitions of Portfolio Construction Models

1. ✅ Modern Portfolio Theory (MPT)

Definition:
Modern Portfolio Theory, developed by Harry Markowitz, is an investment framework that aims to construct an **optimal portfolio** by maximizing expected return for a given level of risk through **diversification**.

Key Principle:
Investors can reduce portfolio risk by holding assets that are **not perfectly correlated**.

Core Tools:

- Mean-Variance Optimization
- Efficient Frontier
- Risk-Return Trade-off

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2. ✅ Capital Asset Pricing Model (CAPM)

Definition:
CAPM is a single-factor model that estimates the **expected return of a security** based on its **systematic risk (Beta)** relative to the overall market.

E(Ri)=Rf+βi(Rm−Rf)E(R_i) = R_f + \beta_i (R_m - R_f)E(Ri)=Rf+βi(Rm−Rf)

Key Assumption:
Only **market risk** affects expected return; **unsystematic risk is diversifiable**.

Used For:

- Valuation of equity
- Risk-adjusted cost of capital (Ke)
- Portfolio expected return

3. ✅ Arbitrage Pricing Theory (APT)

Definition:
APT is a multi-factor model that explains the **expected return of an asset** using a linear combination of multiple **macro-economic factors**, each with its own sensitivity (beta).

E(R)=Rf+b1F1+b2F2+...+bnFnE(R) = R_f + b_1F_1 + b_2F_2 + ... + b_nF_nE(R)=Rf+b1F1+b2F2+...+bnFn

Key Advantage:
More **realistic and flexible** than CAPM by incorporating multiple sources of risk (e.g., inflation, GDP, interest rates).

Used For:

- Macro-sensitive portfolio construction
- Stress testing portfolios against economic shocks

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4. ✅ Black-Litterman Model

Definition:
The Black-Litterman Model is an advanced portfolio allocation framework that combines **market equilibrium returns (from CAPM)** with an investor's **subjective views**, weighted by confidence level.

Key Innovation:
Enables construction of more **balanced, intuitive portfolios** without extreme allocations that pure optimization may produce.

Used For:

- Professional asset allocation
- Customized portfolios in research & fund management
- Combining market data with **analyst conviction views**

📝 **Quick Recap Table:**

Model	Factors Used	Focus	Key Benefit
MPT	Return, Variance	Diversification	Optimal risk-return mix
CAPM	Market Beta	Systematic Risk	Estimate expected return
APT	Macro Factors	Multi-factor risk exposure	Flexible risk modeling
Black-Litterman	CAPM + Investor View	Subjective + Market Mix	Customized, stable allocations