

# QUANTITATIVE INVESTMENT

## What is Quantitative Investment

**Quantitative Investment** is an investment strategy that uses mathematical models, statistical techniques, and computer algorithms to make trading decisions. Instead of relying on human judgment or traditional analysis like reading news or company reports, quantitative investors build automated systems that analyze large sets of data—such as price movements, financial metrics, and economic indicators—to identify patterns and predict future market behavior.

This strategy is often used by hedge funds, trading firms, and institutional investors because it allows for fast, data-driven decisions with reduced emotional bias.

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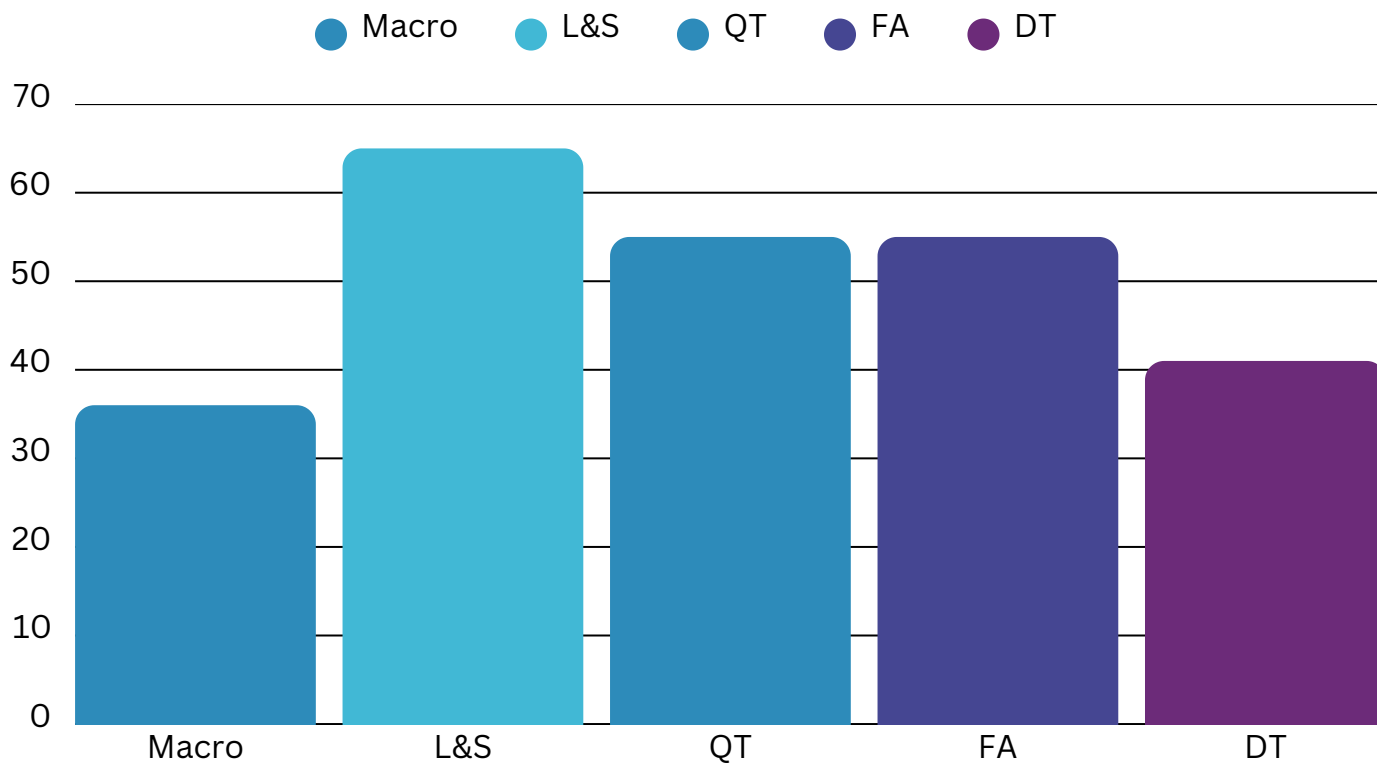
## Things you should know before investing

Before investing in quantitative strategies, it's important to understand that this approach relies heavily on **mathematical models, algorithms, and historical data analysis** rather than traditional human judgment. While this can lead to faster and more consistent decision-making, it also means that success depends on the **quality of data, accuracy of models, and technology infrastructure**. Investors should be aware that even sophisticated models can fail if market conditions change unexpectedly or if the system overfits past trends that no longer apply. Quantitative investing often involves **high-frequency trading, backtesting, and machine learning techniques**, requiring a solid understanding of statistics and coding—or the trust in a team that does. It's also crucial to monitor for **black-box risks**, where the logic behind decisions may be too complex to fully understand. Finally, while quant strategies can reduce emotional bias, they are not immune to **technical glitches or systemic risk**, so diversification and strong risk controls remain essential.

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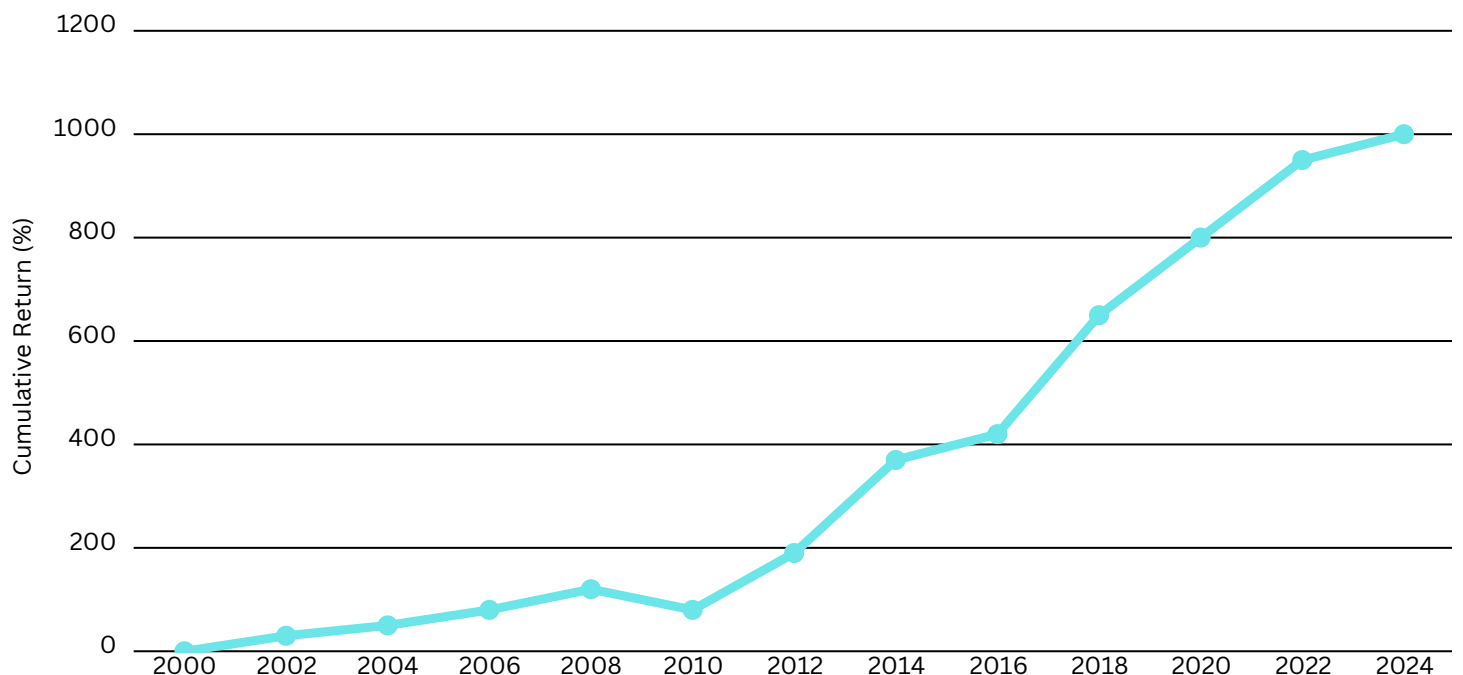
# Investment Made by Top Firms

## Hedge Funds



Funds raised: \$1,000,000,000,000

Quantitative Investment Hedge Fund AUM (2000-2025)



# Factors to Consider

Things You Should Consider Before Investing in Quantitative Investment Before allocating capital to Quantitative Investment strategies, it's crucial to understand the unique characteristics, risks, and requirements associated with this approach.

## ✓ **Data-Driven Decision Making**

Quant strategies rely on statistical models and large datasets, reducing emotional bias and allowing investment decisions to be based purely on logic and evidence.



## **Consistency and Discipline**

Once developed, quantitative models follow strict rules, ensuring a consistent approach to trading and reducing the impact of human error or impulsive behavior.

## ✓ **Backtesting Capability**

Quantitative models can be tested on historical data to evaluate performance, refine strategies, and minimize risk before deploying capital in real markets.



## **Speed and Scalability**

Algorithms can process and react to information much faster than humans, making it easier to handle large volumes of trades or data across global markets.

## ✓ **Diversification Through Factor Exposure**

Quant strategies often blend multiple uncorrelated signals (like momentum, value, or volatility), helping to diversify portfolios and reduce overall risk.



## **Model Overfitting**

Quantitative models can be too closely tailored to historical data, which may not reflect future market conditions—leading to poor real-time performance.



## **Lack of Transparency**

Many quantitative strategies operate as "black boxes," making it difficult for investors to understand how decisions are made or risks are being managed.



## **Heavy Dependence on Data and Technology**




The accuracy of quant models depends on reliable, high-quality data and advanced computing infrastructure. Any technical failure or data error can disrupt performance.

# Step-by-Step Breakdown

- **Initial Capital** ₹1,00,000
- **Strategy** Quantitative Investment Strategy using momentum and volatility factors
- **Timeframe** 12 months (Jan 2024 – Jan 2025)
- **Final Return** ₹1,12,000 (12% ROI)

## ✓ 1. Model Development & Market Signal Analysis by Ackerman Group

In January 2024, the Ackerman Group’s quant research team deployed a factor-based model. The algorithm screened a universe of Nifty 100 stocks based on:

-  Momentum signals: Stocks with strong price trends over the past 6 months
-  Low volatility: Stocks with stable price behavior and low standard deviation
-  The model rebalanced monthly, allocating capital dynamically across the top-scoring stocks.

## ✓ 2. Investment Allocation (Sample Output from Model)

Stock	Amount Invested	Signal Triggered
AlphaTech Solutions Ltd	₹50,000	High momentum, consistent earnings
NovaPharm Ltd	₹30,000	Low volatility, strong fundamentals
AxisMid ETF	₹20,000	Diversified quant ETF selected by model

## Performance After 12 Months (Jan 2025)

Investment	Return %	Final Value
AlphaTech Solutions Ltd	+16%	₹58,000
NovaPharm Ltd	+12%	₹33,600
AxisMid ETF	+10%	₹22,000

- **Profit Made:** ₹12,000
- **Return on Investment (ROI):** +12%

# Conclusion

## 🙏 Thank You for Visiting

Thank you for taking the time to visit this page and explore the fundamentals of **Quantitative Investment**. We hope it provided you with valuable insights into how data-driven strategies, algorithms, and statistical models can enhance decision-making and improve investment outcomes.

At **Ackerman Group**, we believe that informed investing is the foundation of long-term success. Whether you're a seasoned investor or just beginning your financial journey, understanding quantitative strategies can empower you to eliminate emotional bias, identify patterns, and build a diversified, adaptive, and performance-oriented portfolio.

✉️ **If you have questions or are considering applying Quantitative to your investments, feel free to contact us.** Our team is here to guide you with research-driven insights and practical solutions tailored to your goals.

**Invest wisely. Stay informed. Grow globally.**



Example given on Page 4:-Is merely an illustrative example and has not been tested or applied in real markets. It is shared solely to help you understand the concept using simplified logic and easy calculations.