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Beyond the Benchmark: Magic Formula Outperformance in Indian Equity Markets

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Abstract

Most existing studies on the Magic Formula strategy have been conducted in the context of developed markets, while research in the Indian setting has remained limited and largely exploratory. The present study implements and evaluates the Magic Formula in the Indian equity market, focusing on NIFTY 100 constituents from 2007 to 2024. The Magic Formula, introduced by Joel Greenblatt, ranks firms based on earnings yield and return on capital to identify undervalued yet profitable companies. Using annual financial data and adjusted stock prices, we construct portfolios following the standard Magic Formula rules and compare their performance with the NIFTY 50 benchmark. Our findings reveal that even the unmodified version of the Magic Formula outperforms the benchmark substantially, generating approximately 1.7 times higher returns over the study period. These results are particularly notable given that the test universe consists of large, liquid, and relatively low-risk firms. The evidence suggests that extending the strategy to broader indices such as the NIFTY 250 or NIFTY 500 could yield even stronger results, underscoring the potential of systematic value-based approaches in Indian equity markets.

1 Introduction

Value investing has long been regarded as a reliable approach to equity selection, with systematic methods gaining increasing importance in both academic and practitioner circles. One of the most prominent frameworks in this space is Joel Greenblatt's Magic Formula, which combines earnings yield and return on capital to identify undervalued but profitable firms. The appeal of the Magic Formula lies in its simplicity and transparency, offering a rules-based alternative to discretionary stock picking.

Although the strategy has been widely discussed around the world, its implementation in the Indian equity market remains less explored. India presents a particularly interesting case due to its high-growth economy, evolving capital markets, and the presence of large, liquid, and relatively stable firms within indices such as the NIFTY 100. Testing the Magic Formula in this setting provides an opportunity to evaluate whether systematic value-based strategies can deliver consistent excess returns in an emerging market context.

The present study applies the Magic Formula to the NIFTY 100 constituents over the period 2007–2024. In addition to testing the original version of the strategy, we introduce two refinements aimed at improving the robustness. First, instead of relying on a single-year snapshot of financial fun-

damentals, we calculate three-year averages of key metrics. This approach ensures a more conservative company selection process by focusing on firms with consistently strong fundamentals rather than those benefiting from a favorable year. Second, rather than adopting a strict annual rebalancing schedule, we implement a staggered quarterly entry and exit approach. This modification distributes portfolio adjustments throughout the year, thus reducing the influence of short-term market conditions on long-term performance.

Our findings suggest that even the unmodified Magic Formula delivers substantial outperformance relative to the NIFTY 50 benchmark, generating approximately 1.8 times higher returns over the study horizon. The refined approach, by smoothing financial data and diversifying timing, further strengthens the consistency of the results. These outcomes highlight the potential of simple yet disciplined quantitative frameworks in Indian markets and open avenues for extending the analysis to broader universes such as the NIFTY 250 or NIFTY 500.

2 Related Literature

The Magic Formula belongs to a broader literature on factor investing. Classic studies such as Fama and French (1992) document the value premium, while Novy-Marx (2013) emphasize profitability as

a distinct driver of expected returns. Greenblatt’s contribution lies in demonstrating that a simple heuristic, based on classification rather than regression or optimization, can produce robust returns in practice.

Studies in developed markets (e.g. Gray and Carlisle (2013), Walkshae (2015)) confirm the efficacy of the formula, although performance is sensitive to portfolio size, frequency of rebalancing, and transaction costs. Research on emerging markets remains limited, which motivates our present work.

3 Data

The study relies on three primary data sources. Fundamental information was obtained from Trendlyne, while historical stock prices were collected from Yahoo Finance. To identify past and evolving membership of the NIFTY 100 index, we used data from the Center for Monitoring Indian Economy (CMIE). The sample period spans from 2007 to 2024, covering multiple phases of the Indian equity market, including growth cycles, downturns, and recovery periods.

The investment universe is restricted to the constituents of the NIFTY 100 index, representing large, liquid, and relatively low-risk firms. To avoid survivorship bias, the index composition was refreshed at each rebalancing point using CMIE data to reflect the prevailing NIFTY 100 constituents, rather than retrospectively applying the current composition. All price series were adjusted for corporate actions, such as dividends, stock splits, and bonus issues, to ensure accurate return computation.

In line with the Magic Formula framework, banking and financial firms were excluded from the analysis. These companies operate under different regulatory and accounting structures, making their financial ratios less comparable to those of non-financial firms. The resulting data set provides a consistent and representative cross section of the Indian equity market, forming a solid basis for evaluating systematic value strategies.

4 Methodology

This study evaluates the performance of the Magic Formula strategy in the Indian equity market using a structured backtesting framework applied to NIFTY 100 stocks from 2007 to 2024.

4.1 Investment Universe

The universe of stocks comprises constituents of the NIFTY 100 index between 2007 and 2024. Historical membership data was obtained from the Center for Monitoring Indian Economy (CMIE), ensuring that

index composition was updated at each rebalancing point. This approach eliminates survivorship bias, since only firms that were part of the index at a given time were considered. In line with common practice in quantitative value strategies, banking and financial sector firms were excluded due to their distinct balance sheet structures and non-comparability of accounting ratios.

4.2 Ranking Metrics

Two financial metrics were used to rank companies:

Earnings Yield (EY)

In this study, the earnings yield is calculated as the ratio of profit before exceptional and extraordinary items and tax (PBT) to enterprise value (EV):

$$EY = \frac{\text{PBT (pre-exceptional, pre-extraordinary)}}{\text{Enterprise Value}} \quad (1)$$

This formulation deviates from Greenblatt’s original definition of EBIT / EV by incorporating interest expenses, penalizing highly leveraged firms, and producing a more conservative profitability screen.

Return on Capital Employed (ROCE)

Return on Capital Employed (ROCE) was taken directly from Trendlyne data as a measure of operating efficiency.

Aggregate Ranking

Each firm was assigned an EY rank and an ROCE rank. The aggregate Magic Formula rank was defined as:

$$MF \text{ Rank} = Rank(EY) + Rank(ROCE) \quad (2)$$

Firms with PE ≤ 5 were excluded to avoid distressed or anomalous valuations, while ROCE ≤ 40 firms were filtered to ensure only consistently efficient businesses were considered. Each year, the top 12 firms with the lowest MF Rank were selected for portfolio inclusion.

4.3 Portfolio Construction

At each rebalancing date, the existing portfolio was liquidated and replaced with a new portfolio of the top-ranked firms. An equal cash allocation was applied across the selected stocks, with purchases executed at adjusted June prices from Yahoo Finance. Shares were bought in integer quantities, and any uninvested residual cash was retained in the portfolio.

4.4 Refinements to the Vanilla Magic Formula

In addition to testing the unmodified Magic Formula, two refinements were introduced:

1. **Conservative selection through averaging:** Instead of relying on a single-year financial snapshot, three-year averages of EY and ROCE were used. This ensures that selected companies exhibit consistently strong fundamentals, reducing the risk of one-time accounting effects or cyclical peaks.
2. **Staggered rebalancing:** Rather than executing all trades once a year, the positions were entered and exited quarterly. This distributed rebalancing throughout the year, lowering sensitivity to prevailing market conditions at any single point in time.

4.5 Benchmarking and Performance Evaluation

The backtest began with an initial capital of INR 10 lakh, with the portfolio value tracked annually in lakhs of rupees. For comparison, the performance of the Magic Formula portfolios was evaluated directly against the values of the NIFTY 50 index, using adjusted June prices over the same period. Performance was evaluated in terms of cumulative wealth generation and relative outperformance of the Magic Formula portfolios (both vanilla and refined) against the benchmark.

5 Results

5.1 Vanilla Magic Formula Performance

The baseline Magic Formula portfolio, implemented on NIFTY 100 stocks with annual rebalancing, substantially outperformed the NIFTY 50 benchmark over the sample period. Starting with an initial capital of INR 10 lakh in 2007, the strategy grew to INR 73.17 lakh by 2023, compared to INR 43.07 lakh for the NIFTY 50. This corresponds to approximately 1.8 times the cumulative wealth of the benchmark.

However, a closer look at year-on-year (YoY) returns reveals that the strategy did not outperform consistently. Table 1 presents the annual values and excess returns relative to the benchmark. For example, in 2008 the Magic Formula fell by -9.5% while the NIFTY 50 rose by $+11.8\%$, producing an excess return of -21.3 percentage points. Similarly, in 2019 and 2021 the benchmark significantly outpaced the Magic Formula. Despite such periods of underperformance, the strategy generated strong gains in years

such as 2010 ($+46.7\%$ vs. $+11.8\%$ for NIFTY), 2012 ($+12.1\%$ vs. -12.6%) and 2020 ($+3.0\%$ vs. -18.5%). These surges more than compensated for the weak years, leading to strong long-term outperformance.

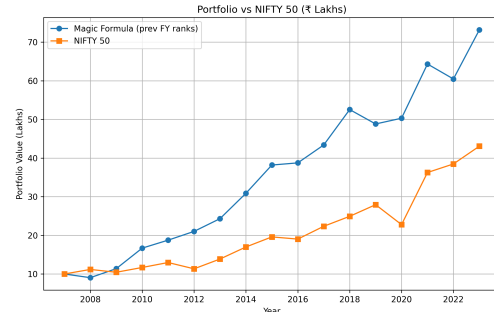


Figure 1: Portfolio value of Vanilla Magic Formula vs. NIFTY 50 (2007–2023).

These results illustrate that while the Magic Formula can lag the benchmark for extended periods, its long-term edge comes from capturing large positive swings in select years, which accumulate into substantial outperformance.

5.2 Conservative Selection: Three-Year Averaging

The first refinement averaged fundamentals (earnings yield and ROCE) over the preceding three years to ensure more conservative company selection. This adjustment reduced the final portfolio value to INR 56.08 lakhs, compared with INR 43.07 lakhs for the NIFTY 50. Although still delivering outperformance, the excess gain was smaller than in the vanilla case. This suggests that the averaging filter, prioritizing consistency and stability, excluded some high-return opportunities that contributed to the stronger upside of the vanilla strategy.

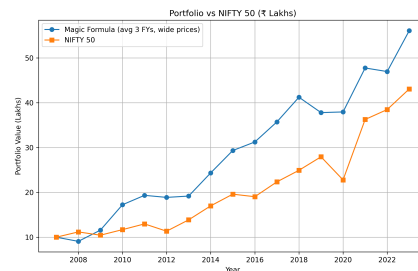


Figure 2: Portfolio value of 3-Year Averaged Magic Formula vs. NIFTY 50 (2007–2023).

Table 1: Year-on-Year Returns of Vanilla Magic Formula vs. NIFTY 50

Year	MF Value (in Lakh)	NIFTY Value (in Lakh)	MF Return (%)	NIFTY Return (%)	Excess (%)
2007	10.00	10.00	-	-	-
2008	9.05	11.18	-9.54	11.76	-21.30
2009	11.38	10.45	25.78	-6.52	+32.30
2010	16.69	11.68	46.69	11.84	+34.85
2011	18.76	12.97	12.38	10.97	+1.41
2012	21.02	11.34	12.08	-12.55	+24.64
2013	24.32	13.87	15.68	22.32	-6.65
2014	30.88	16.99	26.99	22.51	+4.49
2015	38.20	19.60	23.69	15.35	+8.34
2016	38.75	19.03	1.45	-2.90	+4.35
2017	43.39	22.34	11.96	17.40	-5.44
2018	52.55	24.92	21.12	11.54	+9.58
2019	48.83	27.93	-7.09	12.09	-19.18
2020	50.31	22.78	3.04	-18.46	+21.50
2021	64.34	36.26	27.89	59.20	-31.31
2022	60.47	38.47	-6.02	6.11	-12.12
2023	73.17	43.07	21.01	11.94	+9.07

5.3 Staggered Quarterly Rebalancing

The second refinement spreads portfolio entries and exits across quarterly intervals instead of executing all trades annually. This staggered approach produced a final portfolio value of 107.05 lakhs, far above the benchmark value of INR 40.46 lakhs over the same horizon. The improvement reflects the reduced dependence on specific rebalancing dates, which dampens the effect of adverse market timing. By smoothing portfolio adjustments over the year, the staggered approach captured market recoveries more effectively and avoided concentrated exposure to unfavorable entry points.

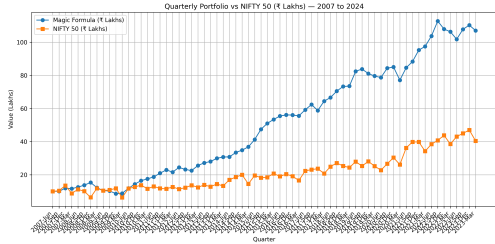


Figure 3: Portfolio value of Staggered Quarterly Magic Formula vs. NIFTY 50 (2007–2023).

6 Summary of Findings

Empirical analysis demonstrates that the Magic Formula, even in its unmodified form, is capable of generating substantial long-term outperformance relative to the NIFTY 50. Starting from an initial investment of INR 10 lakh in 2007, the vanilla strategy compounded to INR 73.17 lakhs by 2023, compared to 43.07 lakhs for the benchmark. The

three-year averaging refinement delivered a more conservative trajectory, ending at INR 56.08 lakhs, while the staggered quarterly rebalancing achieved the strongest result with INR 107.05 lakhs. These results highlight both the strengths and the trade-offs of systematic value-based strategies: While the vanilla approach captures higher upside, averaging smooths risk at the cost of reduced returns and staggering demonstrates the importance of mitigating market timing effects.

7 Discussion

A key observation is that the Magic Formula does not perform uniformly. There are multiple years, such as 2008, 2019, and 2021, in which the NIFTY 50 significantly outperformed the strategy. However, the magic formula’s edge lies in its ability to capture exceptionally strong relative gains in recovery phases, such as 2010, 2012, and 2020. These years more than offset the weaker periods, resulting in strong cumulative outperformance.

The three-year averaging adjustment illustrates the trade-off between stability and performance. By favoring firms with consistently strong fundamentals, the approach reduces exposure to volatile or one-off opportunities, but also excludes certain high-return stocks. In contrast, the quarterly staggering refinement underscores how portfolio implementation details, specifically the timing of rebalancing, can dramatically influence outcomes. Distributing trades over the year effectively reduced sensitivity to single rebalancing dates and allowed the portfolio to capture recoveries more effectively.

8 Scope for Further Research References

Several avenues exist for extending this work. First, the strategy could be applied to broader and more diverse stock universes such as the NIFTY 250 or NIFTY 500, where the inclusion of mid- and small-cap firms may magnify returns. Second, integrating the Magic Formula with technical indicators or market timing tools could further refine entry and exit decisions. Finally, combining the Magic Formula with other value-based approaches, such as Piotroski's F-score, quality screens or factor-based models, may yield more comprehensive frameworks for systematic investment in emerging markets. Such extensions would help evaluate the robustness of the strategy and its adaptability to different market segments and conditions.

9 Conclusion

The study provides robust evidence that the Magic Formula is applicable and effective in the Indian equity market, even when restricted to the relatively conservative universe of NIFTY 100. Both the vanilla and modified versions substantially outperformed the benchmark over a 17-year period, reinforcing the potential of simple rules-based value strategies. At the same time, the variability in annual performance and the sensitivity to implementation choices highlight the importance of careful interpretation and disciplined execution.

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