



A Study on Currency Derivatives at ICICI Bank

Rajulapati Subramanyam, Dr. K. Pushpa Latha Professor

Department of MBA, Malla Reddy Engineering College, Hyderabad.

Abstract – The present study focused on analysing currency derivatives with specific reference to selected currency pairs, examining their trading behaviour, open interest dynamics, and market depth. The research aimed to evaluate how different indicators such as volume, price movement, and order book structure influence trading decisions and risk-return characteristics. By analysing market data for a specified expiry period, the study provided insights into the functioning of currency derivatives and the factors affecting their performance. The findings revealed that liquidity and market participation play a significant role in determining the efficiency of currency derivative contracts. Highly traded contracts exhibited stable price behaviour and offered better trading opportunities, while low-liquidity contracts were associated with higher risks and inefficiencies. The analysis of open interest further highlighted its importance in understanding market sentiment, indicating whether positions were being accumulated or liquidated. Additionally, the study emphasized the relevance of order book analysis in identifying short-term trading signals. The study concluded that a comprehensive analytical approach combining multiple indicators is essential for effective decision-making in currency derivatives trading. It also highlighted the need for investors to focus on liquidity, market trends, and risk management while engaging in derivative markets. The research contributes to the existing body of knowledge by providing practical insights and a structured analytical framework for understanding currency derivatives, thereby aiding both academic research and real-world trading applications.

Keywords - Currency Derivatives, Foreign Exchange (Forex), Currency Futures, Currency Options, Exchange Rate, Hedging, Speculation, Risk Management, USDINR, EURINR, GBPINR, JPYINR, Option Chain, Open Interest (OI), Change in Open Interest, Trading Volume, Market Liquidity.

I. INTRODUCTION

The study of currency derivatives had occupied a pivotal place in contemporary financial management because it had addressed one of the most persistent concerns confronting market participants, namely the uncertainty arising from exchange rate fluctuations. In an increasingly interconnected global economy, the movement of one currency against another had influenced trade settlements, cross-border investments, foreign borrowing, and import-export decisions in ways that were often immediate and substantial. Currency derivatives had therefore evolved as indispensable instruments through which financial exposure had been measured, transferred, and moderated with greater precision than had been possible through conventional financial practices alone.

The significance of this field had been amplified by the fact that exchange rates had rarely moved in isolation; rather, they had reflected the combined effect of macroeconomic conditions, capital flows, interest rate expectations, inflation differentials, geopolitical tensions, and market sentiment. This complexity had made currency markets highly sensitive and at times sharply volatile, thereby compelling both institutional and individual participants to seek instruments that could offer risk protection as well as strategic opportunity. Currency derivatives had consequently assumed a dual character, functioning simultaneously as protective mechanisms and as speculative vehicles within modern capital markets.

The increasing depth and sophistication of derivative markets had further elevated the importance of this theme. As financial markets had progressed from relatively simple exchange transactions to highly structured and

information-intensive trading environments, the analytical study of derivative contracts had become essential for understanding not merely market behavior, but also the strategic logic of investor decision-making. Currency derivatives had stood at the intersection of finance, economics, and market psychology, thereby making them especially relevant for academic inquiry in management and financial studies.

II. CURRENCY DERIVATIVES

Currency derivatives had been financial contracts whose value had derived from the movement of exchange rates between two currencies, and they had been designed to enable market participants to manage the uncertainty associated with foreign exchange fluctuations. These instruments had been especially important in environments where currencies had exhibited persistent volatility, because they had allowed traders and institutions to hedge against unfavorable movements while also creating opportunities to profit from anticipated shifts. Their relevance had rested on the fact that even minor changes in exchange rates had often produced meaningful consequences for trade, investment, financing, and treasury operations.

The structure of currency derivatives had included several major forms, such as forwards, futures, options, and swaps, each of which had served different risk-management purposes. Forward contracts had generally provided customized protection through private agreements, whereas futures had offered standardized and exchange-traded exposure with greater transparency and liquidity. Options had granted the right but not the obligation to transact, thereby introducing asymmetry in payoff, while



swaps had enabled the exchange of currency-related cash flows over time. This diversity had made currency derivatives adaptable to different financial objectives and risk appetites.

The pricing and valuation of currency derivatives had depended upon a range of factors including the spot exchange rate, interest rate differentials, time to maturity, volatility, and expectations regarding future economic conditions. Because these variables had interacted in complex ways, derivative valuation had required careful quantitative interpretation and market awareness. This analytical complexity had made currency derivatives highly suitable for empirical study, as their behavior had often mirrored shifts in broader market sentiment and macroeconomic developments.

Currency derivatives had also contributed to market efficiency by enabling price discovery and facilitating the redistribution of risk among participants with differing expectations and exposures. Hedgers, speculators, and arbitrageurs had each entered the market with distinct intentions, and the interaction among these groups had supported liquidity as well as informational efficiency. In this manner, currency derivatives had not only supported private financial objectives but had also strengthened the functional depth of the foreign exchange market itself.

III. LITERATURE REVIEW

Chen (2026) empirically demonstrated the structural complexities inherent in derivative trading networks through the application of a spectral modeling framework designed for risk identification. The study employed advanced network analytics to reveal latent interdependencies and systemic vulnerabilities within trading ecosystems, thereby offering a refined lens for interpreting contagion effects and financial instability. Notably, the findings underscored the efficacy of spectral techniques in isolating high-risk nodes, which held significant implications for portfolio risk governance and strategic financial management. The research contributed to the theoretical advancement of network-based finance while aligning with contemporary project risk assessment paradigms in technologically driven financial markets.

Popovska (2025) investigated the application of fractal-based robotic trading strategies utilizing detrended fluctuation analysis and fractional derivatives within the energy market context. The study adopted a computationally intensive approach to model market irregularities and long-memory processes, thereby enhancing predictive accuracy in automated trading systems. Intriguingly, the findings revealed that fractal dynamics significantly improved algorithmic decision-making under volatile conditions, reinforcing the strategic value of non-linear modeling techniques. The research held considerable relevance for algorithmic trading frameworks and sustainable energy finance, particularly in

optimizing decision processes within complex and uncertain derivative markets.

Matsumoto (2025) advanced the discourse on financial instruments by developing a novel trading framework for local solar power hedging through principal component derivatives. The study utilized dimensionality reduction techniques to streamline risk exposure associated with renewable energy price fluctuations, thereby enabling more efficient hedging strategies. The results demonstrated that principal component derivatives enhanced market participation and reduced volatility risks, particularly in decentralized energy systems. This investigation provided a crucial intersection between financial innovation and green energy project management, underscoring the strategic importance of derivative instruments in facilitating sustainable infrastructure investments.

Priem (2025) critically examined the evolving regulatory landscape of energy derivatives trading, with particular emphasis on the European Distributed Ledger Technology (DLT) Pilot Regime. The study adopted a policy-oriented analytical framework to assess regulatory adequacy in addressing emerging technological disruptions within financial markets. The findings suggested that existing regulatory provisions were insufficient in accommodating decentralized trading infrastructures, thereby necessitating significant policy revisions. This research contributed to the broader discourse on financial governance and digital transformation, offering valuable insights into the regulatory challenges associated with integrating blockchain technologies into derivative trading ecosystems.

Silveira (2024) developed a blockchain-based platform for trading weather derivatives, thereby addressing transparency and efficiency challenges in climate-linked financial instruments. The study utilized distributed ledger technology to facilitate secure and decentralized transactions, enhancing trust among market participants. The findings demonstrated that blockchain integration reduced transaction costs and improved data integrity, thereby promoting wider adoption of weather derivatives. This investigation held significant implications for green finance and risk mitigation strategies, particularly in agricultural and renewable energy sectors where climate variability posed substantial operational challenges.

Wei (2023) examined robust consumption and portfolio choice strategies in the presence of derivatives trading, employing an optimization-based analytical framework. The study incorporated uncertainty and risk preferences into portfolio selection models, thereby enhancing decision-making under volatile market conditions. The findings demonstrated that derivative instruments significantly improved portfolio resilience and consumption smoothing. This research contributed to modern portfolio theory by integrating derivatives into consumption-investment decisions, offering valuable



insights for financial planning and wealth management strategies.

Wang (2023) proposed a collaborative framework for integrated energy systems that incorporated direct trading of multiple energy derivatives. The study employed system-level modeling to enhance coordination among market participants, thereby improving efficiency and resource utilization. The findings suggested that integrated trading mechanisms facilitated better price discovery and risk sharing. This research contributed to the intersection of energy economics and financial engineering, offering strategic insights for managing large-scale energy projects within dynamic market environments.

Wang (2021) analyzed equilibrium investment strategies for defined contribution pension plans incorporating derivatives trading. The study utilized mathematical optimization models to balance risk and return over long-term investment horizons. The findings demonstrated that derivatives enhanced portfolio efficiency and retirement outcomes. This research contributed to pension fund management literature, highlighting the strategic role of derivatives in long-term financial planning.

Need for the Study

The need for the study had emerged from the growing importance of currency derivatives in a financial environment characterized by volatility, uncertainty, and rapid transmission of information. Market participants had increasingly depended upon derivative instruments to manage foreign exchange risk and to formulate trading decisions, yet the interpretation of option chain variables and market indicators had required empirical clarity. The study had therefore been necessary to provide a systematic assessment of currency derivative behavior and to support more informed trading and investment judgments.

Scope of the Study

The scope of the study had been confined to the analysis of selected currency derivatives over a specified period, with attention directed toward major currency pairs and their option-related market indicators. The investigation had focused on option chain data, open interest, change in open interest, strike price behavior, and the relationship between market performance and exchange rate movement. The scope had remained analytical rather than predictive, aiming to interpret historical market patterns and provide grounded insights into the functioning of currency derivative trading.

Objectives of the Study

- To analyze the option chain for currency derivatives of USDINR, EURINR, GBPINR and JPYINR.
- To know the open interest and change in open interest for each of currency option for selected expiry date.
- To compare the risk and returns for each of the currency derivatives for option trading.

- To analyze the impact of market performance on currency exchange rate.
- To give suggestions for investors and traders in currency derivatives market.

Limitations of the Study

- The study was limited to a single expiry date, which restricts the ability to generalize findings across different time periods.
- Only selected currency pairs were analysed, which may not fully represent the entire currency derivatives market.
- The analysis relied on secondary data, which may contain inherent limitations in accuracy and completeness.
- Macroeconomic factors influencing exchange rates were not quantitatively incorporated into the analysis.
- The study focused primarily on short-term market indicators and did not consider long-term investment perspectives.
- The absence of strike-wise option chain data limited the depth of options-specific analysis.

IV. RESEARCH METHODOLOGY

Research methodology had provided the systematic framework through which the study had been designed, executed, and interpreted in a scientific manner. It had established the procedures for selecting data, organizing variables, applying analytical tools, and drawing reasoned conclusions from historical market information. In the present study, methodology had been especially important because the subject matter had involved quantitative financial data whose interpretation had required precision, consistency, and structured comparison.

Primary Data

Primary data had not been directly collected for this study because the investigation had been based on historical financial records and market information already available in secondary form. Since the study had focused on archival derivative data rather than respondent-based survey information, the role of primary data had been absent in the conventional sense. This had allowed the analysis to remain firmly centered on objective market evidence.

Secondary Data

Secondary data had formed the principal basis of the study and had been drawn from journals, books, internet sources, company websites, and annual reports. These sources had provided the conceptual, contextual, and factual foundation for interpreting currency derivative behavior and understanding market conditions. The use of multiple secondary sources had strengthened the reliability of the study by enabling cross-verification of information and ensuring that the analytical discussion had rested upon established financial materials.



Formulae for evaluating currency derivatives

Change in Price = Last Price – Previous Close

Percentage Change = (Change ÷ Previous Close) × 100

Bid–Ask Spread = Best Ask Price – Best Bid Price

VWAP = $\Sigma(\text{Price} \times \text{Quantity}) \div \Sigma(\text{Quantity})$

Open Interest Change % = (Change in OI ÷ Previous OI) × 100

V. DATA ANALYSIS & INTERPRETATION

1. USDINR Currency Futures Contract (Expiry: 28-Apr-2026)

Table 1: Price and Trading Summary

Metric	Value
Open	92.8500
High	93.1700
Low	92.7525
Close	92.9800
Previous Close	93.0600
Last Price	93.0600
Change (₹)	0.0800
% Change	0.0860%
Volume (Contracts)	1,54,550
Value (₹ Lakhs)	1,43,824.23

Interpretation

The USDINR contract displayed the strongest market participation among the four currencies, as reflected in the very high traded volume and traded value. The price movement was marginal, which indicates that the market was active but not extremely volatile during the session. The range between the high and low shows moderate intraday movement, suggesting a stable but tradable contract. In practical terms, the USDINR contract appears to have attracted significant interest from both hedgers and speculative traders. The small percentage change indicates limited directional aggression, yet the overall trade intensity makes this contract suitable for active monitoring and short-term trading decisions.

Table 2: Trade Information Summary

Metric	Value
Traded Volume (Contracts)	1,54,550
Traded Value (₹ Lakhs)	1,43,824.23
VWAP	92.9730
Open Interest	16,38,462
Change in OI	-57,103
% Change in OI	-3.37%

Interpretation

The decline in open interest indicates that existing positions were being closed rather than newly built during the session. When price movement is positive but open interest falls, the market usually reflects short covering or profit booking rather than strong fresh buying. The VWAP near the closing region shows that a large portion of trades

happened around the same general price band, which supports the view of a fairly efficient and liquid market. From a derivative analysis perspective, the contract shows good liquidity but weakening participation in open positions. This combination generally signals that the market may be stabilising after a move rather than beginning a strong new trend.

Table 4: Current Order Book Snapshot

Bid Qty	Bid (₹)	Ask (₹)	Ask Qty
240	93.0600	93.0825	21
453	93.0550	93.0850	3
488	93.0525	93.0875	100
337	93.0500	93.0900	100
610	93.0400	93.0925	45
Total Buy Qty	28,543	Total Sell Qty	10,238

Interpretation

The order book shows that buy interest is substantially higher than sell interest, which indicates underlying support in the market. The best bid is very close to the best ask, and this narrow spread suggests strong liquidity and lower execution cost for traders. A large buy-side depth at multiple levels generally reflects willingness of market participants to accumulate the contract around the current price zone. Since buy quantity materially exceeds sell quantity, the contract appears to have a mildly constructive bias. At the same time, the earlier decline in open interest suggests that the move may still be in a consolidation phase rather than a confirmed strong uptrend.

Trading Decision

USDINR appears suitable for active short-term trading because of its excellent liquidity, high turnover, and relatively narrow spread. The contract offers better execution quality than the less active currency contracts in the dataset. However, since open interest has declined, traders should avoid assuming a strong directional breakout without confirmation. For risk-controlled trading, a buy-on-support or hedged position may be more appropriate than an aggressive one-sided bet.

USD/INR

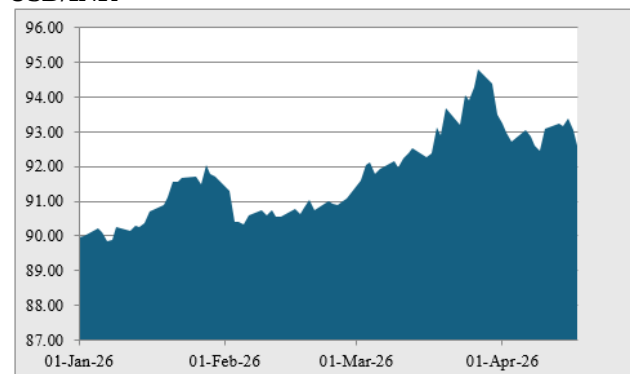


Figure 1: USD in INR

Interpretation

The USD/INR exchange rate exhibited a clear upward trend during the study period, indicating a gradual depreciation of the Indian Rupee against the US Dollar. At the beginning of the period, the exchange rate was recorded at approximately 89.97, while towards mid-April it reached levels above 92.50. The progression was not strictly linear, as there were intermittent fluctuations and short-term corrections, particularly during early February and early April. However, the overall direction remained upward, with noticeable acceleration in March where the rate crossed the 93 level and even approached 94.78 at its peak.

Empirically, the increase from approximately 89.97 to 92.60 represents a net rise of around 2.63 units over the period, reflecting a moderate but consistent growth rate. The presence of higher highs and higher lows during March further supports the existence of a bullish trend in USD/INR. This trend suggests sustained demand for the US Dollar in the foreign exchange market, possibly driven by global economic conditions or domestic currency pressures. Therefore, the USD/INR pair demonstrated a strong and relatively stable upward trajectory during the study period.

GBP/INR

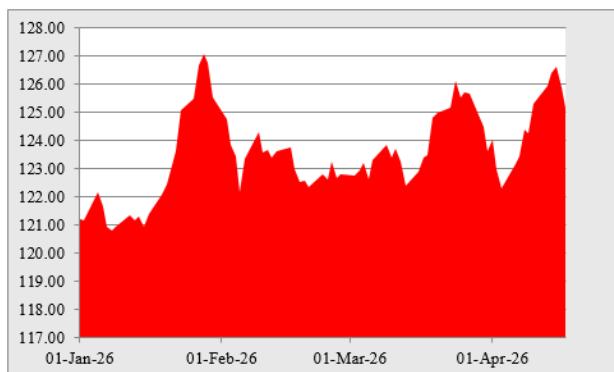


Figure 2: GBP in INR

Interpretation

The GBP/INR exchange rate displayed a moderately upward but more volatile trend compared to USD/INR. The rate started at around 121.22 in early January and reached approximately 125.17 by mid-April. The movement was characterized by significant fluctuations, particularly during late January, where the rate surged sharply beyond 126 and even approached 127 levels. This indicates that the British Pound experienced periods of strong appreciation against the Indian Rupee, followed by corrections.

Empirical observation shows that the overall increase of nearly 4 units reflects a stronger growth rate than USD/INR, but with higher variability. The fluctuations during February and March indicate that the market experienced alternating phases of bullish and corrective movements. Despite these fluctuations, the currency

maintained an overall upward bias, as evidenced by higher closing values towards the end of the period. This suggests that GBP/INR provided opportunities for both trend-following and short-term trading strategies due to its relatively higher volatility.

EUR/INR

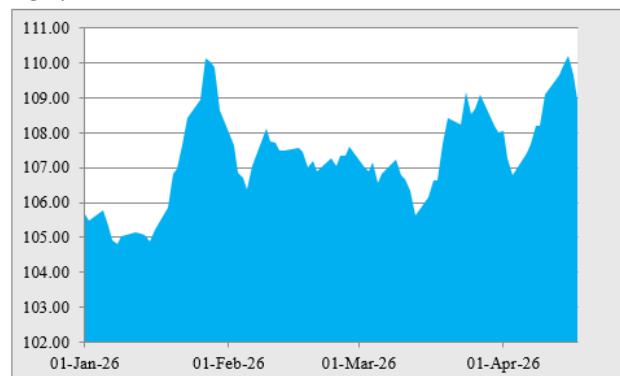


Figure 3: EUR in INR

Interpretation

The EUR/INR exchange rate exhibited a steady upward trend with moderate volatility throughout the study period. Starting from approximately 105.67 in early January, the rate increased to around 108.93 by mid-April. The growth pattern was gradual, with noticeable upward momentum during late January and again in mid-March to early April. Unlike GBP/INR, the fluctuations in EUR/INR were relatively controlled, indicating a more stable appreciation of the Euro against the Indian Rupee.

From an empirical standpoint, the increase of around 3.26 units signifies a consistent growth trajectory. The trend is supported by the occurrence of periodic upward movements interspersed with minor corrections, which did not significantly disrupt the overall direction. The exchange rate crossed the 109 level multiple times during the later stages of the period, indicating sustained strength. This behaviour suggests that EUR/INR maintained a balanced combination of stability and growth, making it relatively predictable compared to more volatile currency pairs.

Findings

- The analysis revealed that currency derivatives exhibited varying levels of market participation, with certain currency pairs attracting significantly higher trading interest compared to others.
- It was observed that highly liquid currency contracts demonstrated relatively stable price movements despite substantial trading volumes.
- The study identified that changes in open interest played a crucial role in understanding market sentiment and trader positioning.
- It was found that declining open interest in some contracts indicated the unwinding of positions rather than the creation of new market trends.



- The research highlighted that increasing open interest alongside stable or declining prices suggested cautious or speculative positioning by market participants.
- The analysis indicated that order book dynamics, particularly the imbalance between buy and sell quantities, influenced short-term price direction.
- It was observed that contracts with narrow bid-ask spreads provided better trading efficiency and reduced transaction costs for investors.
- The study found that less active currency derivatives suffered from low liquidity, making them less suitable for short-term trading strategies.
- It was identified that market performance and external economic factors indirectly influenced exchange rate movements and derivative pricing.
- The research established that volume and traded value served as key indicators of market confidence and participation.
- It was observed that currency derivatives with balanced order books reflected consolidation phases in the market.
- The study concluded that different currency pairs exhibited distinct risk-return characteristics, making selective trading strategies essential.

VI. CONCLUSION

The study on currency derivatives provided a detailed analysis of market behaviour across selected currency pairs, focusing on trading activity, open interest, and order book dynamics. The results demonstrated that liquidity plays a central role in determining the attractiveness and efficiency of a currency derivative contract. Contracts with higher participation levels exhibited better price stability and offered more reliable trading opportunities, whereas less active contracts were found to be inefficient and risky for short-term trading.

In addition, the study established that open interest serves as a vital indicator of market sentiment, helping to distinguish between phases of accumulation, distribution, and liquidation. The interaction between price movement and open interest provided valuable insights into trader behaviour and market expectations. The analysis also highlighted that order book imbalances could signal potential short-term price movements, although these signals must be interpreted cautiously in low-liquidity environments.

This research emphasized that successful trading in currency derivatives requires a comprehensive understanding of multiple market indicators. By integrating price analysis with volume, open interest, and order book data, traders can enhance their decision-making process and manage risks more effectively. The study contributes to the broader understanding of derivative markets and provides a foundation for further academic and practical exploration.

Recommendations

- Investors should prioritize trading in highly liquid currency derivatives to ensure efficient execution and reduced transaction costs.
- Traders are advised to closely monitor open interest trends to identify market sentiment and potential trend reversals.
- It is recommended to use a combination of indicators such as price, volume, and order book data for more accurate analysis.
- Investors should avoid low-volume contracts due to higher risks associated with illiquidity and wide spreads.
- Risk management strategies such as stop-loss orders should be strictly implemented to minimize potential losses.
- Traders should stay informed about macroeconomic developments that influence currency exchange rates.
- It is advisable to adopt a disciplined and systematic trading approach rather than relying on speculative decisions.
- Investors should diversify their positions across different currency pairs to reduce overall risk exposure.
- Continuous monitoring of market trends and timely adjustments to trading strategies are essential for success.
- Training and awareness programs on derivative trading can enhance investor understanding and participation in the market.

REFERENCES

1. Journals

- Chen, Z.J. (2026). Derivative trading networks: a spectral model for risk identification. *Applied Network Science*, 11(1), ISSN 2364-8228, <https://doi.org/10.1007/s41109-025-00761-4>
- Popovska, E. (2025). Fractal-Based Robotic Trading Strategies Using Detrended Fluctuation Analysis and Fractional Derivatives: A Case Study in the Energy Market. *Fractal and Fractional*, 9(1), ISSN 2504-3110, <https://doi.org/10.3390/fractalfract9010005>
- Matsumoto, T. (2025). Advancing financial instruments and market trading framework for local solar power hedging with principal component derivatives. *Energy Economics*, 149, ISSN 0140-9883, <https://doi.org/10.1016/j.eneco.2025.108821>
- Priem, R. (2025). Enhancing energy derivatives trading: Assessing the need to update the European DLT Pilot Regime Regulation. *Journal of World Energy Law and Business*, 18(2), ISSN 1754-9957, <https://doi.org/10.1093/jwelb/jwaf007>

2. Books

- Brealey, R. A., Myers, S. C., & Marcus, A. J. (2023). *Fundamentals of corporate finance*. McGraw-Hill.



- Brigham, E. F., & Houston, J. F. (2019). Fundamentals of financial management. Cengage Learning.
- Burk, J. (2020). Values in the marketplace: The American stock market under federal securities law (Vol. 2). Walter de Gruyter GmbH & Co KG.
- Eun, C. S., Resnick, B. G., & Chuluun, T. (2021). International financial management. McGraw-Hill.
- Titman, S., Keown, A. J., & Martin, J. D. (2018). Financial management: Principles and applications. Pearson.
- Robert, C. H., Jennifer, L. K., & Todd, M. (2023). Analysis for financial management. McGraw-Hill Education.

3. Websites

- <https://www.nseindia.com/currency-getquote?identifier=FUTCUREURINR28-04-2026XX0.0000#inr-contracts>
- <https://in.investing.com/currencies/usd-inr>
- https://www.sebi.gov.in/curation/currency_derivatives.html
- <http://geplcapital.com/products-services/nse-currency-derivatives>