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# A Study on Technical Analysis With Reference To International Forex

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**ABSTRACT**
The foreign exchange market (Forex, FX, or currency market) is a global decentralized market for the trading of currencies. The foreign exchange market assists international trade and investments by enabling currency conversion. Our study is to test the technical tools to analyse about the technical impact and its return in the market. For this purpose 9 cross currency pairs were taken as sample size and Jensen's Alpha, Beta, Relative Strength Index, and Buy and Hold Abnormal Return were used as technical tool for analysis and the conclusion is that its not preferred to invest in JPY pairs as the volatility and the return are not up to the mark and its preferred to invest in EURCAD as the return was high when compared to other scripts and the market was moving accordingly to its cross currency pair..

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**Keyword:** Foreign exchange, Abnormal Return and Volatility

## 1. INTRODUCTION

Technical analysis, a cornerstone of financial market research, represents a disciplined approach to forecasting price movements and trends by analyzing historical market data, primarily price and volume. This method is rooted in the belief that past trading activity can offer valuable insights into future market behavior. In the context of the international foreign exchange (forex) market, technical analysis is particularly significant, given the market's immense liquidity, continuous trading hours, and the influence of macroeconomic factors that can cause rapid and significant price shifts.

Forex markets are characterized by intricate patterns, driven by factors such as geopolitical events, central bank policies, and global trade dynamics. By focusing on these patterns and utilizing a variety of technical tools, traders and analysts attempt to discern underlying market strength, identify potential entry and exit points, and anticipate market reversals. This approach relies heavily on chart patterns, indicators, and statistical models to generate insights without direct reliance on fundamental data such as economic reports or earnings releases.

Notably, the international forex market stands apart from other financial markets due to its decentralized nature and the sheer volume of participants. The involvement of retail traders, institutional investors, and governments creates a complex, ever-evolving landscape. Amid this complexity, technical analysis serves as a common framework that transcends individual perspectives, providing a standardized lens through which traders can interpret market movements and evaluate risk. In examining the application of technical analysis within the forex market, existing research often emphasizes the importance of market efficiency, volatility dynamics, and the persistence of certain chart patterns over time. Studies published in reputable financial journals highlight the efficacy of technical indicators, including moving averages, relative strength index (RSI), and Bollinger Bands, in predicting short-term price movements. By leveraging these tools, researchers have sought to establish systematic trading strategies that minimize emotional decision-making and improve consistency in trading performance (Murphy, 1999; Pring, 2014).

Furthermore, the methodological rigor found in academic studies lends credibility to the practical application of technical analysis. Peer-reviewed research often subjects technical indicators to extensive backtesting, ensuring that any findings are statistically robust and not merely the result of chance. As a result, the academic discourse around technical analysis in the forex market continues to evolve, with ongoing efforts to refine existing methods, integrate machine learning techniques, and adapt to the increasingly algorithm-driven nature of modern trading (Lo, Mamaysky, & Wang, 2000).

The exploration of technical analysis within the international forex market thus holds considerable theoretical and practical relevance. As traders strive to navigate this highly dynamic environment, the insights gleaned from academic studies not only enhance their understanding of price behavior but also offer the potential for developing more effective, evidence-based trading strategies.

### *STATEMENT OF PROBLEM*

The international forex market is recognized as one of the most dynamic and fast-moving financial arenas, driven by a wide range of global economic, political, and institutional factors. This complexity, while offering substantial opportunities for profit, also poses significant challenges for traders and investors who need to make informed decisions quickly. Traditional approaches to analyzing forex markets often rely heavily on fundamental factors—such as interest rate differentials, inflation data, or geopolitical developments—which, while valuable, are not always sufficient for predicting short-term price movements or understanding intricate market behavior. Consequently, many market participants turn to technical analysis as a means of interpreting past market performance and identifying potential future trends.

However, the application of technical analysis in the forex market is not without its own set of challenges. One key issue is the sheer volume and diversity of available technical indicators, each with its unique characteristics, strengths, and limitations. Traders may struggle to determine which indicators are most effective for specific currency pairs or market conditions. Additionally, while some indicators may work well under certain circumstances, they can fail when market conditions change, leading to inconsistent performance and increased risk exposure.

Another dimension of the problem is the inherent volatility and liquidity of the forex market. Prices can shift rapidly within minutes or even seconds, influenced by events ranging from central bank announcements to unexpected geopolitical developments. This rapid pace means that traditional models often cannot keep up, leaving traders with insufficient time to react and adapt their strategies. In such an environment, determining the reliability and predictive power of technical tools becomes increasingly difficult. Market participants may find themselves unable to consistently identify profitable opportunities, resulting in missed gains, unexpected losses, or both.

Moreover, the lack of a systematic approach to integrating technical analysis into trading strategies can further compound these challenges. Many traders rely on intuition or anecdotal evidence rather than robust empirical research, which can lead to suboptimal decision-making. Without a comprehensive, evidence-based understanding of how technical analysis performs in various market conditions, participants risk relying on methodologies that may not be repeatable or scalable. This raises questions about how to effectively manage risk and return, how to assess the compound annual growth rate (CAGR) of currency pairs, and how to ensure that trading strategies remain resilient over time.

In summary, the core problem centers on the difficulty of applying technical analysis consistently and effectively in the fast-paced and complex environment of the international forex market. This encompasses challenges in choosing the right indicators, adapting to market volatility, managing risk, and ensuring that strategies remain viable in the face of changing conditions. Addressing these issues requires a careful examination of the strengths and limitations of technical analysis tools, as well as the development of a systematic approach that can provide traders with actionable insights, reduced uncertainty, and a clearer path toward sustained profitability.

### OBJECTIVES OF THE STUDY

To find out the profit and loss occurred with the market based on the market strength.

To find out the risk and return involved with the currency pair taken for the study.

To find out the compound annual growth rate of the currency pairs.

To suggest about the profit and loss involved with the currency pairs.

### SCOPE OF THE STUDY

The study focuses on analyzing the efficacy of technical analysis tools and techniques specifically within the context of the international forex market.

It examines the performance of selected currency pairs over time, providing insights into risk management, return profiles, and market trends.

The research aims to establish a comprehensive understanding of how technical indicators can inform trading strategies, enhance decision-making, and improve profit consistency.

By highlighting the role of technical analysis, the study contributes to the broader academic discourse on trading methodologies and their application in volatile and highly liquid financial markets.

### NEED OF THE STUDY

The study is about analyzing the technical factors of Forex market in different GMT'S. The need of the study is to know about the price variations in different timings of the market when there is day shift process accordingly.

## 2. RESEARCH METHODOLOGY

Research design

The type of research design is undertaken in analytical design since the pricing movements of Forex markets are analyzed.

Sample design

For the purpose of this study the daily prices of currency market are included from Global currency trading and their price movements are computed and studied. We will be analyzing the following prices

**Pairs taken for the study are as follows**

| | |
|---|---|
| Pairs with Japanese Yen | **USDJPY, EURJPY, NZDJPY, GBPJPY, CHFJPY, CADJPY** |
| Pairs With Euro | **EURUSD, EURCAD** |
| Pairs with Great Britain pound | **GBPUSD** |

Time duration of the study : The samples for every pairs taken for the study are taken from 31/4/2023 to 31/3/2024.

Sources of data

Secondary source: International currency prices from MT4 platform , Dollar charts from Windsor brokers, Fundamental data from www.forexfactory.com

Tools used for analysis

RSI, Beta, Jensen's alpha and BHAR.

## 3. LIMITATIONS OF THE STUDY

The sampling time taken for the study is limited to one year.

The number of pairs taken for the study is limited to 9 pairs.

There may be a bias in the secondary data collection.

## 4. LITERATURE REVIEW

Benton E.Gup (1973) explains the relationship between stock market indicators and stock prices. Short interest ratio, odd lot ratio and mutual fund cash ratio are three indicators that he has used in the article. The index of standard and poor has been taken for the analysis. Multiple regression tests are also used to test the relationship between the chosen indicators and stock prices. The study was conducted for a period of fifteen years from 1955-1970. It has identified that stock market indicators have some predictive ability.

S.Vasantha (2017) attempted to apply technical analysis on five selective stocks of the Information technology sector such as Tata Consultancy Services (TCS), Hindustan Computers Limited Technologies (HCL), Infosys, Wipro and Polaris, which would help the investors to identify the current trends and risks associated with the scrip at par with the market. This study is only based on secondary data which had been collected from NSE website, journals and magazines. The technical indicators have been analyzed by using twelve months share prices of the companies, which was for the period of January - December 2011. The various techniques such as Relative Strength Index, Bollinger Bands, Moving Average Convergence Divergence and Simple Moving Average were used to take a decision on whether to buy or sell the stocks of the IT sector.

Research gap

While numerous studies have explored the use of technical analysis in various financial markets, there remains a noticeable void in research that directly addresses the interplay between technical tools and the resulting risk, profit, and loss dynamics within the international forex market. Existing literature often focuses on the general predictive capabilities of technical indicators or their application in equities and commodities, yet there is limited insight into how these tools specifically influence traders' financial outcomes in the uniquely volatile and highly leveraged forex environment.

Moreover, while some studies highlight the performance of individual indicators or discuss broader market trends, they frequently neglect to quantify or compare the levels of risk and reward associated with their usage. The lack of a comprehensive framework that links technical analysis methodologies to measurable financial impacts—such as drawdowns,

profit-to-loss ratios, and risk-adjusted returns—leaves a critical gap in understanding how these tools can be effectively employed to manage exposure and maximize returns in forex trading.

In addition, there is an evident need for research that incorporates a rigorous assessment of technical analysis strategies in light of both market conditions and currency pair characteristics. Without this focus, it remains challenging to ascertain whether certain technical approaches are more or less effective under specific circumstances, such as periods of high volatility or low liquidity. Addressing this gap would provide a clearer understanding of when and how traders can rely on technical analysis to mitigate risks, avoid substantial losses, and improve profitability.

Ultimately, the research gap lies in the absence of a detailed, systematic investigation that explicitly connects technical analysis tools to the practical outcomes of risk management and profit generation in the forex market. This lack of focused academic inquiry highlights the need for a study that not only examines the theoretical validity of technical analysis but also provides tangible, evidence-based guidance for traders operating in a complex and fast-moving financial environment.

## ANALYSIS AND INTERPRETATION

### USDJPY

The first buy was initiated at 97.12$ at 30 level and the target got achieved at 90.59$. The total profit occurred out of the trade was -693 pips. The second short was initiated at 91.89$ and the target got achieved at 90.72$ and the total profit out of the trade was 117 pips. The third trade was initiated as long at 91.04$ and the target was at 92.28$ and the total profit was at 124 pips. The conclusion is that out of all trades the USDJPY occurred a loss due to a huge loss in a single trade and its not preferred to invest in this pair based on RSI.

### CHFJPY

The first buy was initiated at 115.26$ at 30 level and the target got achieved at 115.83$. The total profit occurred out of the trade was 57 pips. The second short was initiated at 117.64$ and the target got achieved at 114.27$ and the total profit out of the trade was 337 pips. The third trade was initiated as long at 112.44$ and the target was at 116.21$ and the total profit was at 377pips. The fourth short was initiated at 116.45$ and the target got achieved at 109.12$ and the total profit out of the trade was 733 pips. The fifth trade was initiated as long at 106.94$ and the target was at 108.09$ and the total profit was at 115pips.The conclusion is that out of all trades the CHFJPY occurred a profit with all the trades initiated and not preferred to invest in this pair based on RSI.

### CADJPY

The first buy was initiated at 97.12$ at 30 level and the target got achieved at 90.59$. The total profit occurred out of the trade was 693 pips. The second short was initiated at 91.89$ and the target got achieved at 90.72$ and the total profit out of the trade was 117 pips. The third trade was initiated as long at 91.04$ and the target was at 92.28$ and the total profit was at 124 pips. The conclusion is that out of all trades the CADJPY occurred a loss due to a huge loss in a single trade and its not preferred to invest in this pair based on RSI.

### BHAR

### NZDJPY

| Market return | Script return | BHAR |
|---|---|---|
| 0.395 | 0.298 | 0.097 |
| -3.3 | -0.952 | -2.348 |
| -1.3 | 0.363 | -1.663 |
| -1.708 | 0.113 | -1.821 |
| 0.319 | 0.26 | 0.059 |
| -0.745 | -0.654 | -0.091 |

The average return was at 0.00 are the return is in positive and the script was more volatile after its being issued. But we cannot invest in this because the value is not more than one

### GBPUSD

| Market return | Script return | BHAR |
|---|---|---|
| -0.61 | 0.00218 | -0.61218 |
| 0.12 | -0.00422 | 0.12422 |
| -0.19 | 0.00341 | -0.19341 |
| -0.01 | 0.00585 | -0.01585 |
| 0.38 | -0.00511 | 0.38511 |
| -0.76 | 0.00859 | -0.76859 |
| -0.46 | 0.00837 | -0.46837 |
| -0.11 | 0.00664 | -0.11664 |
| -0.48 | 0.00892 | -0.48892 |
| -0.07 | -0.00259 | -0.06741 |
| -0.04 | -0.00329 | -0.03671 |

The average return was at 0.009 are the return is in positive and the script was more volatile after its being issued. But we can invest in this because the value is more than one

| | |
|---|---|
| Risk-free Rate (rf) | 7.87 |
| Beta | 0.06 |
| E(Rp) | 7.87 |
| **Alpha ratio** | **7.91** |

The above table shows the Jensen's Alpha of NZDJPY for one the beta value was at 0.06. This shows that the value is not moving accordingly to the market and when the market moves one dollar higher the script moves 0.06 cents were no volatility was found in the script. According to the alpha ratio the return out of the investment is at 7.91% per annum which is not lesser than risk free rate of return so it is preferred to invest in this script.

**GBPUSD**

| | |
|---|---|
| Risk-free Rate (rf) | 7.87 |
| Beta | -0.56 |
| E(Rp) | 7.87 |
| **Alpha ratio** | **7.90** |

The above table shows the Jensen's Alpha of GBPUSD for one the beta value was at -0.56. This shows that the value is moving negatively accordingly to the market and when the market moves one dollar higher the script moves -0.56 cents were high volatility was found in the script. According to the alpha ratio the return out of the investment is at 7.90% per annum which is not lesser than risk free rate of return so it is preferred to invest in this script. But its not preferred to invest according to Beta

**GBPJPY**

| | |
|---|---|
| Risk-free Rate (rf) | 7.87 |
| Beta | -0.01 |
| E(Rp) | 7.87 |
| **Alpha ratio** | **7.92** |

The above table shows the Jensen's Alpha of GBPJPY for one the beta value was at -0.01. This shows that the value is moving negatively accordingly to the market and when the market moves one dollar higher the script moves -0.01 cents were no volatility was found in the script. According to the alpha ratio the return out of the investment is at 7.92% per annum which is not lesser than risk free rate of return so it is preferred to invest in this script. But its not preferred to invest according to Beta.

**EURUSD**

| | |
|---|---|
| Risk-free Rate (rf) | 7.87 |
| Beta | -0.64 |
| E(Rp) | 7.87 |
| **Alpha ratio** | **7.89** |

The above table shows the Jensen's Alpha of EURUSD for one the beta value was at -0.64. This shows that the value is moving negatively accordingly to the market and when the market moves one dollar higher the script moves -0.64 cents were high volatility was found in the script. According to the alpha ratio the return out of the investment is at 7.89% per annum which is not lesser than risk free rate of return so it is preferred to invest in this script. But its not preferred to invest according to Beta.

**EURJPY**

| | |
|---|---|
| Risk-free Rate (rf) | 7.87 |
| Beta | -0.02 |
| E(Rp) | 7.87 |
| **Alpha ratio** | **7.91** |

The above table shows the Jensen's Alpha of EURCAD for one the beta value was at 0.50. This shows that the value is moving positively accordingly to the market and when the market moves one dollar higher the script moves 0.56 cents were high volatility was found in the script. According to the alpha ratio the return out of the investment is at 7.92% per annum which is not lesser than risk free rate of return so it is preferred to invest in this script. It's also preferred to invest according to Beta.

**FINDINGS**

In NZDJPY for one year from the date of issue of the script. The average return was at 0.00 are the return is in positive and the script was more volatile after its being issued. But we cannot invest in this because the value is not more than one.

In GPUSD for one year from the date of issue of the script. The average return was at 0.009 are the return is in positive and the script was more volatile after its being issued. But we can invest in this because the value is more than one.

GBPJPY one year from the date of issue of the script. The average return was at 0.048 are the return is in positive and the script was more volatile after its being issued. But we can invest in this because the value is more than one.

In EURUSD for one year from the date of issue of the script. The average return was at EURSUD are the return is in positive and the script was more volatile after its being issued. But we can invest in this because the value is more than one.

In EURJPY for one year from the date of issue of the script. The average return was at 0.02 are the return is in positive. But we can invest in this because the value is more than one.

In EURCAD for one year from the date of issue of the script. The average return was at 0.00 are the return is in normal and the script was not moving accordingly. Its not preferred to invest in this because the value is more than one.

In EURAUD for one year from the date of issue of the script. The average return was at 0.00 are the return is in normal and the script was not moving accordingly. Its not preferred to invest in this because the value is more than one.

## SUGGESTIONS

Based on BHAR it shows that its not preferred to invest in JPY counters as the volatility of the pairs were low and the in some cross pairs they were moving negatively accordingly to the market. So its preferred to invest in positive buy and hold abnormal return and we can avoid trading in other Paris which gives loss.

Based on RSI its not preferred to invest in USDCAD as the loss was too high ad its preferred to invest in USDCHF were it gave a reasonable profit for the investment.

Based on Beta value the jpy currency pairs were trading negatively according to USDJPY as the cross currency changes accordingly and its not preferred to invest based on USDJPY and other pairs gave a reasonable movement with mixed volatility and it preferred to invest in EURCAD as the pair is moving based on its cross pair comparison.

Based on Alpha ratio its not preferred to invest in jpy counters as it was giving return less than the risk free rate of return and its preferred to invest in other scripts as the give higher yield than the risk free rate of return.

## CONCLUSION

Based on the analysis and findings, it becomes evident that trading in JPY pairs may not be the optimal choice for investors, primarily due to the combination of heightened volatility and relatively lower returns. The unpredictable price fluctuations associated with JPY pairs make them less attractive for those seeking stable and consistent growth. This volatility not only increases the potential risk but also complicates the application of technical strategies aimed at minimizing losses or maximizing gains. Consequently, the risk-return ratio for JPY pairs does not appear to be favorable.

In contrast, EURCAD emerges as a more promising option. The data suggests that EURCAD consistently offers higher returns compared to other currency pairs examined. This is coupled with a market environment that moves in a more predictable and orderly manner, aligning well with its cross currency pair dynamics. Such a favorable performance profile makes EURCAD a more attractive investment, especially for traders seeking to capitalize on cross-currency relationships and achieve more consistent returns.

Ultimately, the findings support the conclusion that investors and traders should exercise caution when considering JPY pairs due to their unfavorable volatility-return trade-off. Instead, directing resources towards EURCAD, with its superior return and more stable market behavior, may lead to more favorable outcomes in terms of profitability and strategic market positioning.

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