# TRADE PREDICTION ON CURRENCY FUTURES

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*Abstract*
*Trading in derivatives markets improve the overall market depth, reduce volatility and enhance market efficiency. The main objective of this paper is to determine when to buy and sell currencies in the futures market. The study uses Commodity Channel Index (CCI) for determining when to buy and sell USD in Futures Market. The futures prices of US Dollars for all trading day starting from 2008 to 10th March 2012 are used for analysis. The data pertaining to MCX-SX alone is collected from www.mcx-sx.com and is used for study. CCI is a versatile momentum oscillator that can be used to identify overbought/oversold levels or trend reversals. The results indicate that CCI serves as a versatile indicator producing a wide array of buy and sell signals.*

*Key Words: For-Ex, U.S. Dollar, Typical Price, SMATP, Commodity Channel Index.*

## Introduction

Globalization & Integration of financial markets augmented the progressive increase of cross border flow of capital which in turn transformed the dynamics of Indian financial markets. The foreign exchange market was started by the Indian Government when banks were allowed to trade foreign exchange among themselves in late 1970's. India moved away to the Liberalized Exchange Rate Management System (LERMS) in 1992. It made Indian foreign exchange system a market determined system and is distinct in terms of liquidity, products and turnover. Commodity Channel Index (CCI) is a versatile momentum oscillator that can be used to identify overbought/oversold levels or trend reversals. The indicator becomes overbought or oversold when it reaches a relative extreme. That extreme depends on the characteristics of the underlying security and the historical range for CCI. Volatile securities are likely to require greater extremes than docile securities. Trend changes can be identified when CCI crosses a specific threshold between zero and 100. CCI measures the difference between a security's price change and its average price change. High positive readings indicate that prices are well above their average, which is a show of strength. Low negative readings indicate that prices are well below their average, which is a show of weakness. The purpose of the present study is to determine when to buy and sell currencies in the futures market with the help of Commodity Channel Index.

## Future Trading of Currencies

The steady rise in India's foreign trade along with liberalization in foreign exchange regime has led to large inflow of foreign currency into the system in the form of FDI & FII investments. With increased volatility and high fluctuation in exchange rate it became undesirable not only for policymakers for economic stability but also for exporters & importers for price discovery and for currency account balances. In order to provide a liquid, transparent and vibrant market for foreign exchange rate risk management, RBI along with SEBI issued guidelines on the usage of currency derivatives in the OTC market & finally in Aug2008, Currency futures were allowed to be traded in exchanges in India.

NSE is the first exchange to start currency futures in India. This would give Indian businesses another tool for hedging their foreign exchange risk effectively and efficiently at transparent rates on an electronic trading platform.

The exchange rate futures were available only for US D vis-à-vis Indian rupee till January 2010 and have been now expanded to the Euro, Pound and Yen pairing. The introduction of currency futures markets enable the traders to transact in large volumes at much lower transaction costs relative to the cash market.

**Review of Literature**

The for-ex market is the largest financial market in the world and the introduction of currency futures helps to hedge risks resulting from volatility in for-ex market. Many of the researchers have explored the efficiency of currency futures market on various aspects.

Campbell R.Harvey Roges D. Huang (1991) while examining the volatility implications of foreign currency futures market found that volatility in foreign currency futures is likely to be increased when the trading hours coincide with the business hours of the countries whose currencies are traded and is induced by the concentration of trading by investors with private information or by public news announcements.

Abe de jong, Frans de Roon & Chris veld (1995) analysed the hedging effectiveness of currency futures using three models, The minimum-variance model of Ederington, The X-t model of Fish burn and The sharpe-ratio model of Howard & D' Antonio and found that hedges are effective only for the minimum variance model and the X-t model and is less effective for the sharpe-ratio model.

Christian Jochum & Laura Kodres (1998) analysed whether the introduction of futures on emerging market currencies destabilize the underlying currencies and found that the influence of futures contracts on the respective spot market indicated strong connections between the respective markets and futures volatility neither explained spot market volatility nor the increase in volatility after introduction of futures.

George Allayannis & James P. Weston (2001) evidenced a positive relation between firm value and the use of foreign currency derivatives and that hedging causes an increase in the value of the firm while examining the impact of foreign currency derivatives on firm value.

Chang Yun Wang (2003) examined the predictability of futures trading activity base on the type of traders about the movements in foreign exchange market in five foreign currencies and found that hedgers loose to speculators in futures market and the compensation for bearing the risk is the profits earned by speculators.

Carlos Bazan (2007) in examining the profitability of currency futures trading rules, that assume the spot exchange rates can adequately be modeled, stated that the random walk hypothesis approximately describes the behavior of major dollar exchange rates and the investors using these trading strategies would enjoy cumulative gains.

Joshua V. Rosenberg & Leath G. Traub (2008) in comparing price discovery in foreign exchange futures and spot markets when spot market was less transparent and had higher volume than futures market found that transparency was more in spot market as it had dominant information share.

Aaron Tornell Chuming Yuan (2009) investigated the speculation and hedging activities in currency futures markets providing information to futures spot exchange rate movements and revealed that the peaks and troughs of net positions serve as useful predictors of spot exchange rates and other trade position measures are less correlated with futures market movements.

Dharen Kumar Pandey (2011) in his study on growth and volatility of currency futures revealed that currency futures market will develop faster and will be a good choice for all the market participants in the near future and the risk involved is also comparatively low and proved to be a good tool for hedging the risk involved in the currency of a country.

Dr.Shailesh Rastogi (2011) in examining the impact of currency futures on the spot market volatility, found that currency derivatives have significantly impacted spot market volatility of foreign exchange and made the spot foreign exchange market more dynamic and persistent in terms of volatility.

Somnath Sharma (2011) analysed the relation between volatility in the exchange rate in the spot market and trading activity in the currency futures and found that there is a two-way causality between the volatility in the spot exchange rate and the trading activity in the currency futures market.

Sarang V.K. (2012) in analyzing the growth, evolution and volatility of currency futures found that introduction of futures has reduced volatility and have led to enhancement in the quality and speed of market transactions and information.

The literature summarized above focuses on various aspects of currency futures. The current study attempts to determine when to buy and sell currencies in the futures market with the help of commodity channel index. Thus the current study is focused to fill the gap.

**Objectives of the Study**
This research paper has been aimed to study the following objectives.
1. To study the functioning of MCX-SX & Currency futures.
2. To make trade prediction in the futures market with the help of commodity channel index.

**Data & Methodology**
The futures price of US Dollars for all trading day starting from 2008 to 10'th march 2012 are used for analysis. The data pertaining to MCX-SX alone is collected form www.mcx-sx.com and used for study.

Commodity Channel Index (CCI) a technical tool is used.

CCI = (Typical Price) – (SMATP)/ (0.015)* (Mean Deviation)

Typical Price = $\dfrac{(\textbf{High + Low + Close Price})}{\textbf{3}}$

Calculate 20 peri

**Need of Currency Futures**
Every business exposed to foreign exchange risk needs to have a facility to hedge against such risk. Exchange-traded currency futures, as on MCX-SX, are a superior tool for such hedging because of greater transparency, liquidity, counterparty guarantee and accessibility.

**Participants of a Currency Futures Market**
Currency futures contract is a standardized version of a forward contract that is traded on a regulated exchange. It is an agreement to buy or sell a specified quantity of an underlying currency on a specified date in future at a specified rate (e.g., USD 1 = INR 46.00).(Note: USD is abbreviation for the US Dollar and INR for the Indian Rupee).

A host of benefits are available to a wide range of financial market participants, including hedgers (exporters, importers, corporate and Banks), investors and arbitrageurs on MCX-SX.
1. *Hedgers:* A high-liquidity platform for hedging against the effects of unfavourable fluctuations in the foreign exchange markets is available on exchange. Banks, importers, exporters and corporate houses hedge on MCX-SX.
2. *Investors:* All those interested in taking a view on appreciation (or depreciation) of exchange rate can participate in the MCX-SX currency futures.
3. *Arbitrageurs:* Arbitrageurs get the opportunity of trading in currency futures by simultaneous purchase and sale in two different markets, taking advantage of price differential between the markets.

**Risks Involved In Currency Futures Market**
Risks in currency futures pertain to movements in the currency exchange rate. A judgment on this will depend on the knowledge and understanding of the variables that affect currency rates.

## MCX Stock Exchange

MCX Stock Exchange Ltd (MCX-SX), India's new stock exchange, appositely reflects how the world's most evolved and hi-tech new-generation exchanges should look like in future. With cutting-edge technology, world-class services and cost optimization, MCX-SX has altered the face of the Indian financial markets.

MCX-SX started live operations on October 7, 2008 by launching monthly contracts in the USDINR currency pair under the regulatory framework of Securities and Exchange Board of India (SEBI), and Reserve Bank of India (RBI). Consequently, the stock exchange expanded its currency derivatives offerings to Euro-Indian Rupee (EURINR), Pound Sterling-Indian Rupee (GBPINR) and Japanese Yen-Indian Rupee (JPYINR).  MCX-SX currently has more than 700 members and trading terminals in more than 500 cities and towns across India. MCX-SX enables importers, exporters, investors, corporations and banks to hedge their currency risks with greater transparency and safety. It helps in the Development of markets through Information, Innovation, Education and Research." MCX-SX is the first stock exchange in India to launch pioneering market development initiatives and join hands with India's reputed industry & trade bodies and educational institutions to conduct awareness and financial literacy programmes for financial literacy and financial inclusion.

Presently, all futures contracts on MCX-SX are cash settled. There are no physical contracts.
- All trade on MCX-SX takes place on its nationwide electronic trading platform all participants on the MCX-SX trading platform have to participate only through trading members of the Exchange.
- MCX-SX stands in as the counterparty for each transaction; so participants need not worry about default.
- All contracts that remain open at expiry are settled in Indian rupees in cash at the reference rate specified by RBI.

## Highlights

- Total Turnover - Rs. 43,571.98 crore*
- Total number of contracts traded - 8,876,100*
- Recorded highest turnover - Rs. 1593.04 crore on Jan 22, 2009
- Highest number of contracts traded - 324,885 on Jan 22, 2009
- Average Daily Volume - 158,501 contracts*
- Average Daily Turnover - Rs. 778.07 crore*

## Participants in MCX-SX

Any resident Indian or company including Banks and financial institutions can participate in the futures market. However, at present, Foreign Institutional Investors (FIIs) and Non-Resident Indians (NRIs) are not permitted to participate in currency futures market.

## Global Exchanges that Provide Trading in Currency Futures

Internationally, exchanges such as Chicago Mercantile Exchange (CME), Johannesburg Stock Exchange, Euronext liffe, BM & FBOVESPA and Tokyo Financial Exchange provide trading in currency futures.

**The Minimum Trading Unit (i.e. contract size) and tenure of the USDINR,** futures contract is USD 1,000, EURINR future contract is EURO 1,000, GBPINR future contract is GBP 1,000 and JPYINR future contract is YEN 1, 00, 000. The contracts shall have a maximum maturity of twelve months. All monthly maturities from 1 to 12 months are available. Trading in currency futures is on all working days from Monday to Friday and is between 9.00 am to 5.00 pm.

## Trade Prediction vis-à-vis CCI

Commodity Channel Index was designed to identify cyclical trends in a security. Traders and investors use CCI to identify price extremes, price reversals and trend strength. Presently the CCI has grown to be used and applied to

indices, stocks as well as other securities such as currencies. CCI is a versatile indicator capable of producing a wide array of buy and sell signals.

When CCI moves back above -100 a buy signal may be given.
When CCI moves back below +100 a sell signal may be given.

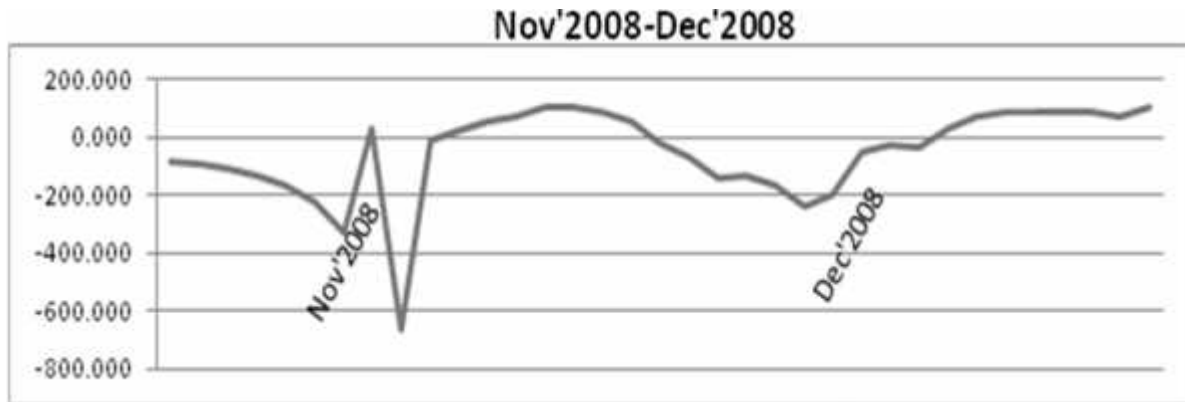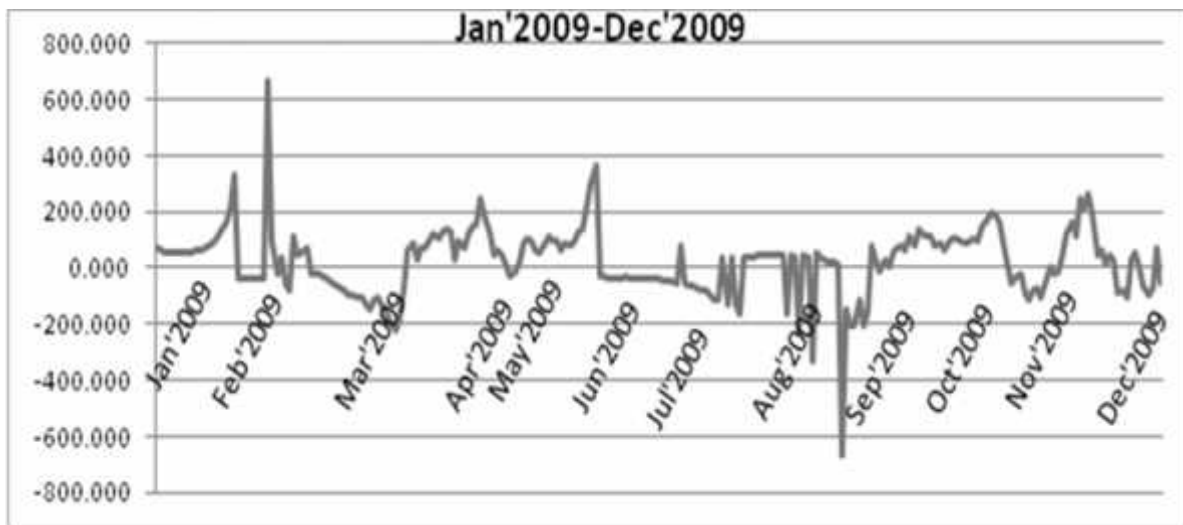**Chart-1: CCI Trend of U.S.Dollar for the year 2008**



**CHART-2: CCI Trend of U.S.Dollar for the year 2009**



The above graph indicates the CCI trend of U.S.Dollar for the month of November and December during the year 2008.

When the CCI moves above +100, a currency is considered to be entering into a strong uptrend and a buy signal is given. The position should be closed when the CCI moves back below +100.

When the CCI moves below-100, the security is considered to be in a strong downtrend and a sell signal is given. The position should be closed when the CCI moves back above -100.Points below and above the -100 and +100 thresholds reveal more clearly when the currency pair may be over bought or oversold.

From the graph it is inferred that the level of CCI is below-100 in the month of November and in the beginning of December 2008. Large negative values (below-100) indicates that the prices are unusually low and hence oversold. The CCI point is above +100 stating that U.S. dollar is over bought in the end of December 2008. This

indicates that the prices are unusually more compared to average price. A shorter CCI will be more volatile with a smaller percentage of values between +100 and -100.

The graph for the year 2009 reveals that the CCI is above +100 in the months of Jan, Feb and May and indicates the investors to hold dollars for long term or opt for buying and to opt for selling in the months of March, July, Aug, Nov & Dec where the trend is below -100 points.
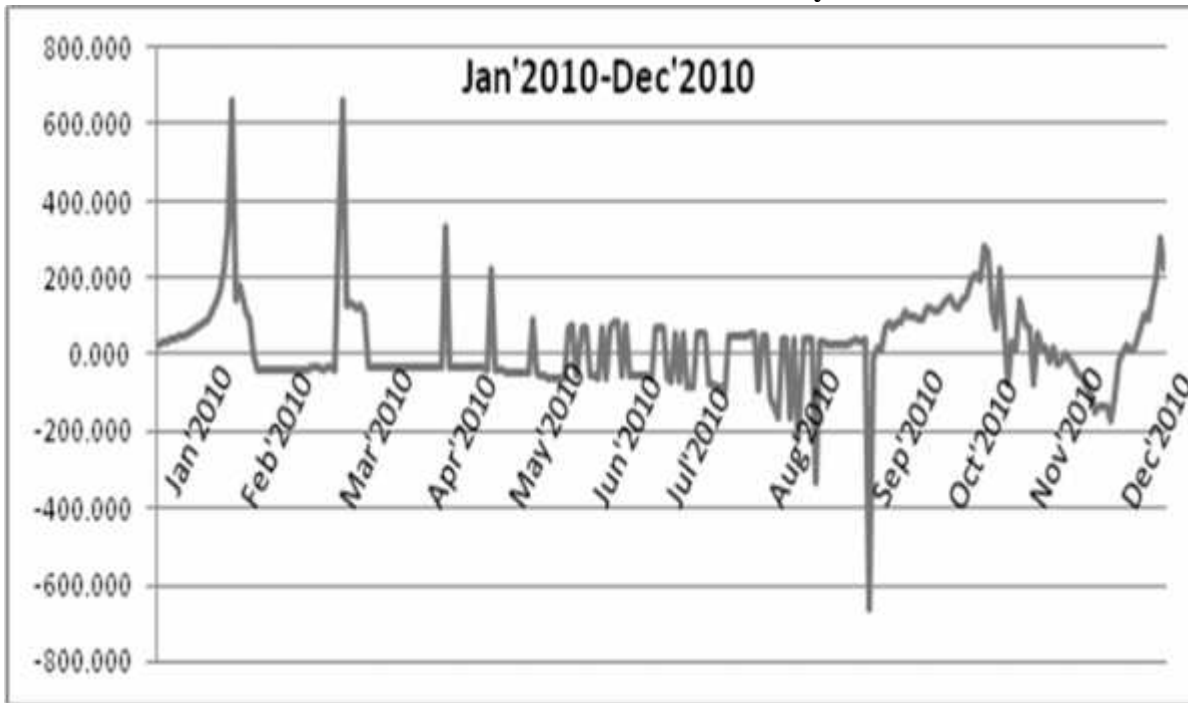
**Chart-3: CCI Trend of U.S.Dollar for the year 2010**



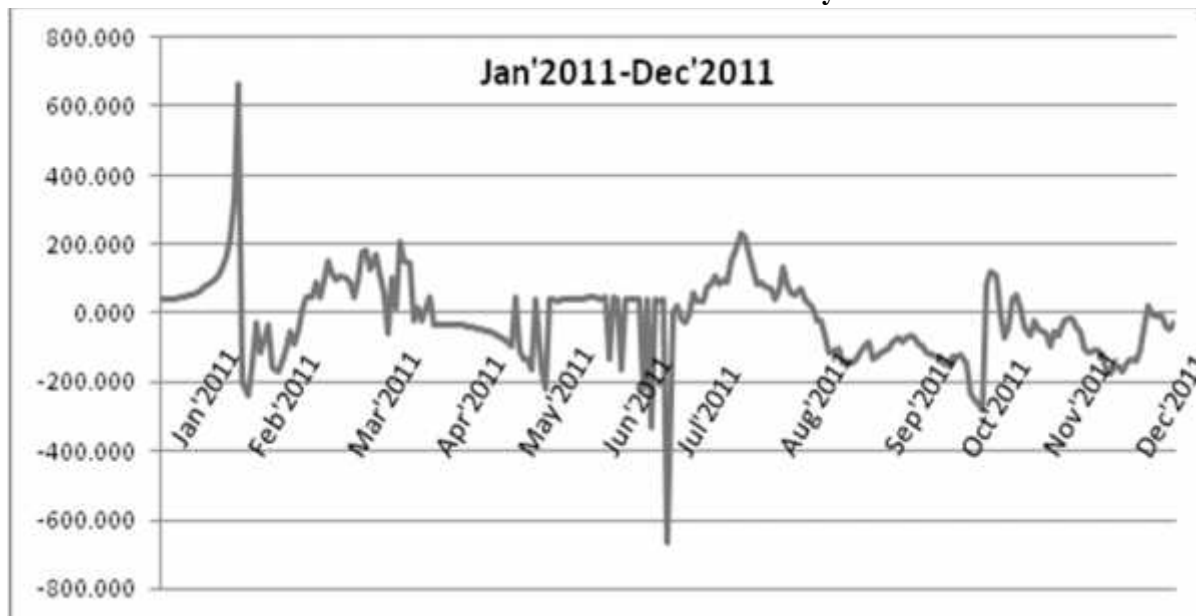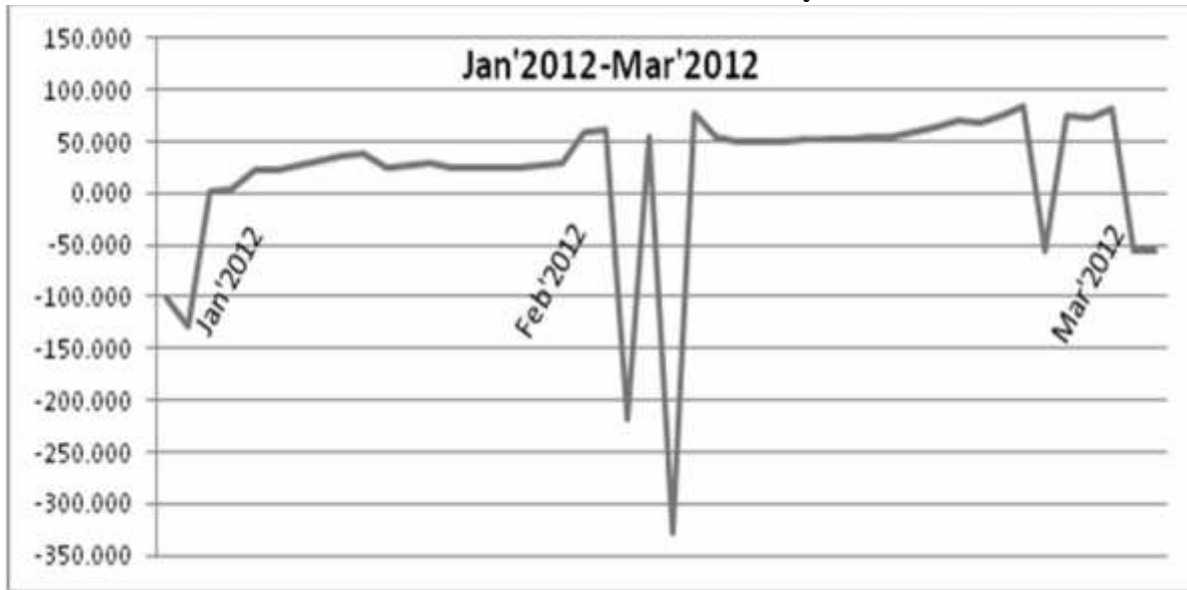**Chart-4: CCI Trend of U.S.Dollar for the year 2011**

**Chart-5: CCI Trend of U.S.Dollar for the year 2012**



The CCI trend for the year 2010 recommends the investors to hold or to buy during Jan, Feb, Mar, Nov Dec as it is above +100 and to sell in Aug, Sep and Dec where the trend is below -100.

The investors are recommended to buy in the months of Jan, Feb, Mar, Aug and Oct and to sell in the months of Feb, May, June, July, Sep during the year 2011.

The trend for the year 2012 from Jan to Mar indicates the position is below -100 and the investors are advised to sell or short hold the dollars.

**Conclusion**

The futures markets have become an important medium of price discovery in cash markets and improve market depth. The introduction of currency futures has positively impacted the foreign exchange market. The presence of currency futures in the Indian foreign market has made the market more dynamic and persistent in terms of volatility where changes last longer during post-future period. Prices in an organized derivatives market reflect the perception of market participants about the future and lead the prices of underlying to the perceived future level. Thus derivatives help in discovery of future as well as current prices. In recent times CCI indicator has gained popularity in identifying that a moving above + 100 indicates a strong uptrend with a buy signal, for US Dollars and CCI moving below _ 100 indicates a strong down trend with a signal, to sell US Dollars thereby providing traders and investors evidences to identify price reversals, price extremes and trend strength.

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