**Correlation of USD FX and the Dow Jones Index**

*Summary analysis comparing the performance of the DJIA and the USD/CAD exchange rate:*

Looking at the data provided, we can observe that the DJIA and USD/CAD have exhibited different patterns of daily fluctuations over the given time period.

For the DJIA, the percentage changes have ranged from -0.013253 to 0.015985, indicating a higher degree of volatility compared to the USD/CAD forex pair, whose percentage changes have ranged from -0.008791 to 0.005128.

In terms of the relationship between the two assets, we can see that there is some degree of inverse (negative) correlation between the DJIA and USD/CAD. This is suggested by the fact that on days when the DJIA experienced a positive percentage change, the USD/CAD generally exhibited a negative percentage change and vice versa.

It's worth noting that there are many factors that can affect the performance of these two markets, including economic indicators, government policies, and global events.

*Scatter Plot Analysis:*

If there is a strong positive correlation between the two markets, the scatter plot would show a clear pattern, with the points clustering together in a linear or curved shape, trending upward and the opposite if there is a strong negative correlation. However, if there is no correlation, the scatter plot would show a random distribution of points, with no clear pattern or trend. Result shows strong negative correlation.

*Heat Map Analysis:*

If there is a strong positive correlation between the two markets, the heatmap would show a region of lighter colors, indicating a positive correlation between the daily percentage changes in the DJIA and the USD/CAD exchange rate. In contrast, if there is a strong negative correlation between the two markets, the heatmap would show a region of darker colors, indicating a negative correlation between the daily percentage changes in the DJIA and the USD/CAD exchange rate. Discuss the result point on the slide.

**Correlation of GOLD to USD/CAD FX**

*Summary analysis comparing the performance of Gold and the USD/CAD exchange rate:*

Looking at the data, we can see that both GOLD and USDCAD.FOREX have experienced periods of gains and losses over the past ten years.

GOLD has had more significant fluctuations in daily returns, with some days experiencing gains of over 5% and losses of over 4%. On the other hand, USDCAD.FOREX has had more consistent, but smaller fluctuations in daily returns, with gains and losses generally ranging between 1-2%.

In terms of their relation, we can see that the two assets have a negative correlation. On days when GOLD experiences gains, USDCAD.FOREX tends to experience losses, and vice versa. However, the correlation is not always significant, and there have been instances where both assets have experienced gains or losses on the same day.

Overall, it is important to note that daily returns are affected by various factors, such as economic conditions, political events, and market sentiment. Therefore, this analysis should not be used to make investment decisions without considering these factors and conducting further research.

*Scatter Plot Analysis:*

If the two assets have a strong negative correlation, we would expect to see a downward sloping trend in the scatterplot. This means that as the daily returns of GOLD increase, the daily returns of USDCAD.FOREX tend to decrease, and vice versa. However, if the correlation is weak or non-existent, we would expect to see a scatter of points with no clear trend.

Based on the data, we would expect to see a downward sloping trend in the scatterplot, indicating a negative correlation between the daily returns of the two assets. This means that on days when GOLD experiences gains, USDCAD.FOREX tends to experience losses, and vice versa.

*Heat Map Analysis:*

Discuss the result point on the slide.

**Correlation of India Index NIFTYMID50.NSE to USD/CAD FX**

*Summary analysis comparing the performance of NIFTY and the USD/CAD exchange rate:*

Looking at the given data, we can observe that the returns of NIFTY and USDCAD.FOREX have different magnitudes and signs on most trading days, indicating that they are not strongly correlated.

*Scatter Plot Analysis:*

There is no correlation; the scatter plot shows random distribution of points, with no clear pattern or trend, it is central and flat.

*Heat Map Analysis:*

By examining the heatmap, we can identify that there is no real correlation, by viewing the color scheme and observing the degree of correlation, which is near zero.

**Impact**

Based on our findings, we can conclude that the USD/CAD FOREX currencies are definitely influenced by markets that are structured primarily around the known global reserve currency, being the US dollar, when observing markets, such as the Dow Jones, S&P 500, and the Gold index. However, may not be as influenced or showing non-existent correlation with international markets structured around different currencies, such as the National Stock Exchange of India, which revolves primarily around the Indian rupee, as its main currency of exchange. And that wraps up our presentation for FX Market Analysis.

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