

Volatility Indicators

Volatility Indicators and Their Long Term Behavior

R. Poster

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This report shows that several technical indicators have nearly the same behavior as the standard volatility indicator over long time periods. The indicators are derived from the one hour EURUSD chart and averaged over a month period for the period from 2004 to 2020.

The following technical indicators are examined:

- Volatility (average of Close price -Open price)
- Bollinger Band Spread (Upper – Lower curve for period 20 and $\sigma=2$)
- Simple Moving Average (SMA) Slope
- Average True Range (ATR)
- Standard Deviation

As shown by Figures 1-5, these indicators all have very similar behavior over the 16.5 year period and they have definite time dependent behavior. We conclude that these indicators all reflect market volatility. In addition we also examine a trend indicator, the Average Directional Movement Index (ADX). This indicator is shown in Figure 6 and does not behave as the volatility indicators in Figures 1-5. The ADX indicator does not have any identifiable, long term, time dependent behavior.

Figure 1 shows the monthly volatility from the EURUSDH1 chart. The peak near month 60 reflects the economic collapse beginning in the fall of 2008.

Volatility vs Time

EURUSD H1 2004 - 2020

Volatility Period 500

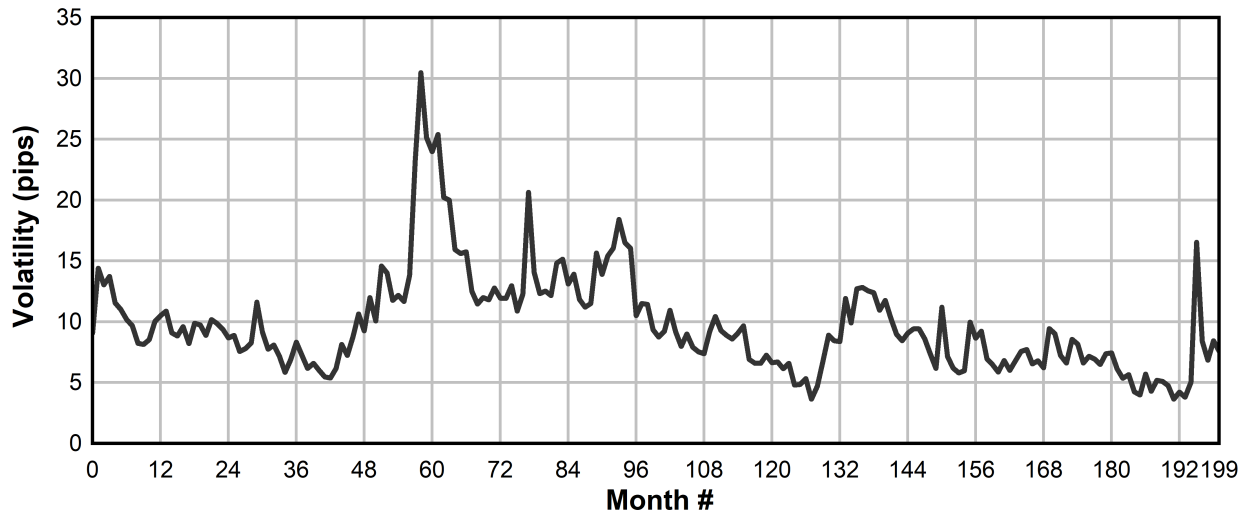


FIGURE 1: Volatility vs Month

Bollinger Band Spread vs Time

EURUSD H1 2004 - 2020

BB Period 20

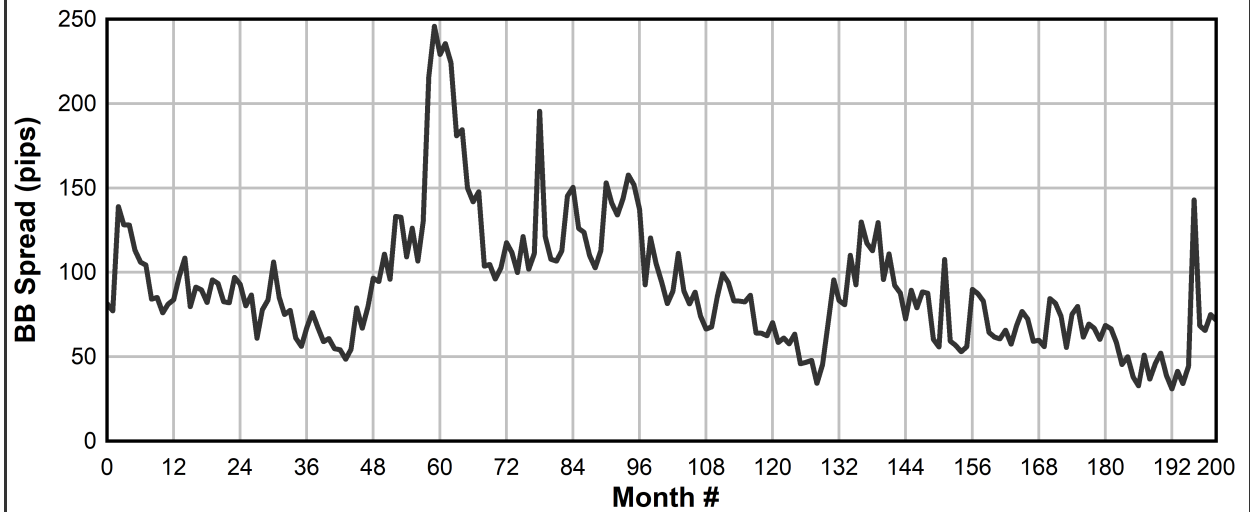


FIGURE 2: Bollinger Band Spread vs Month

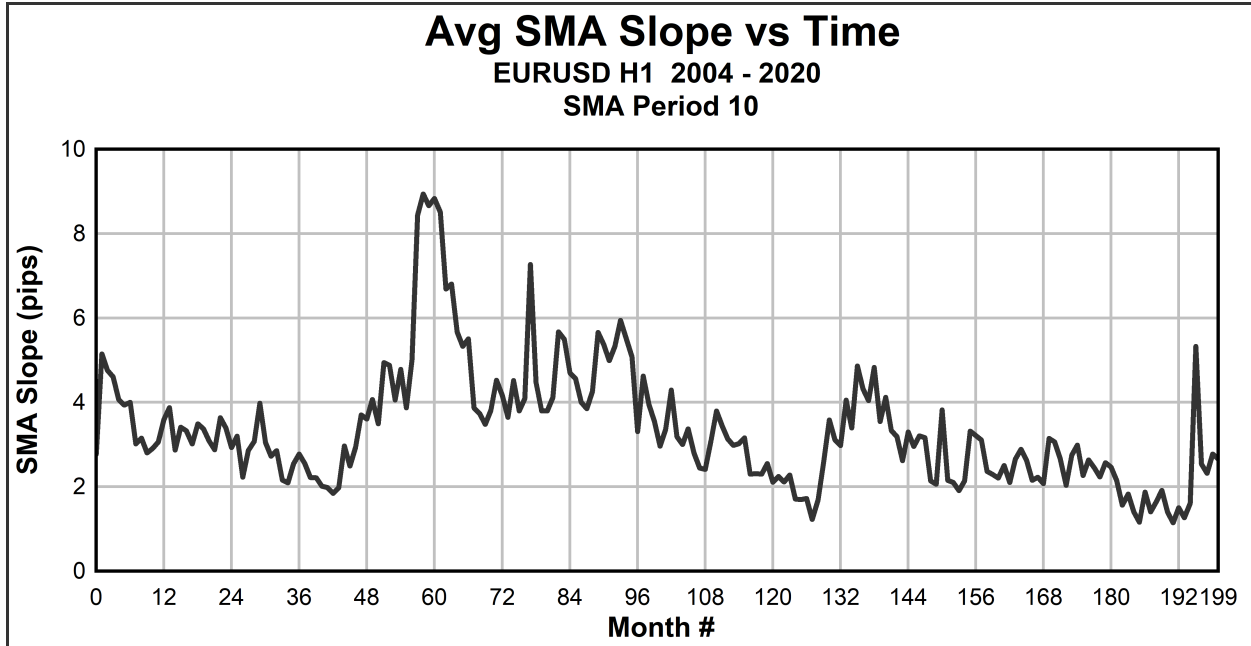


FIGURE 3: SMA Slope Vs Month

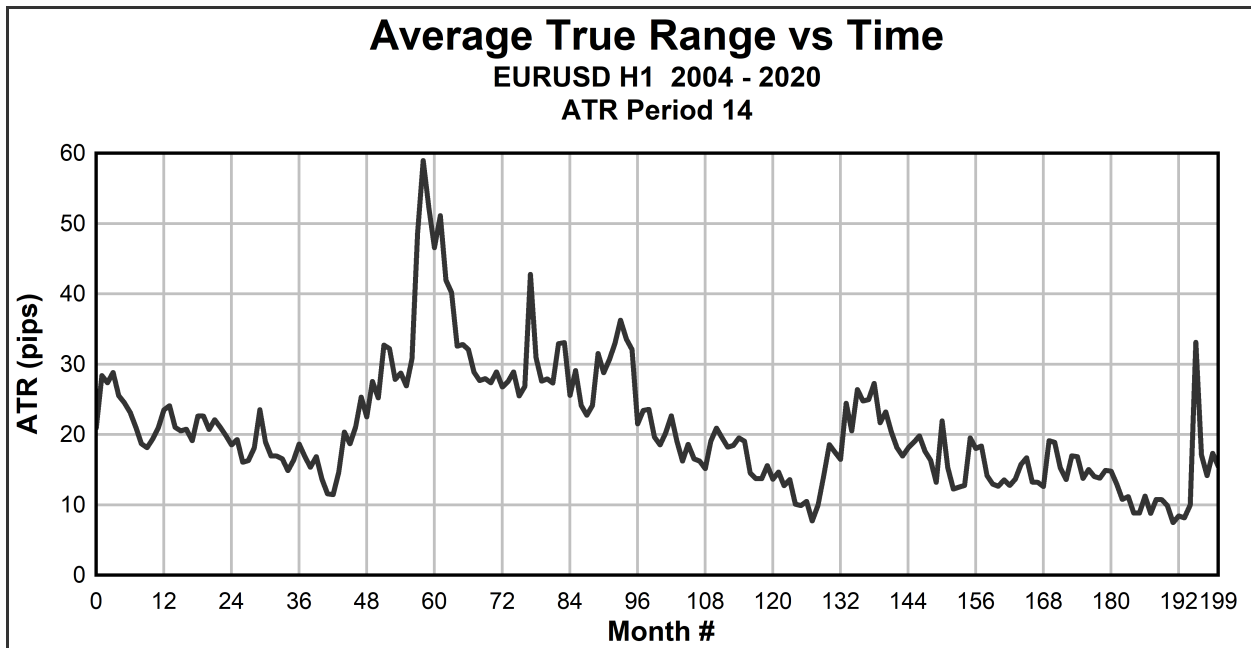


FIGURE 4: Average True Range vs Month

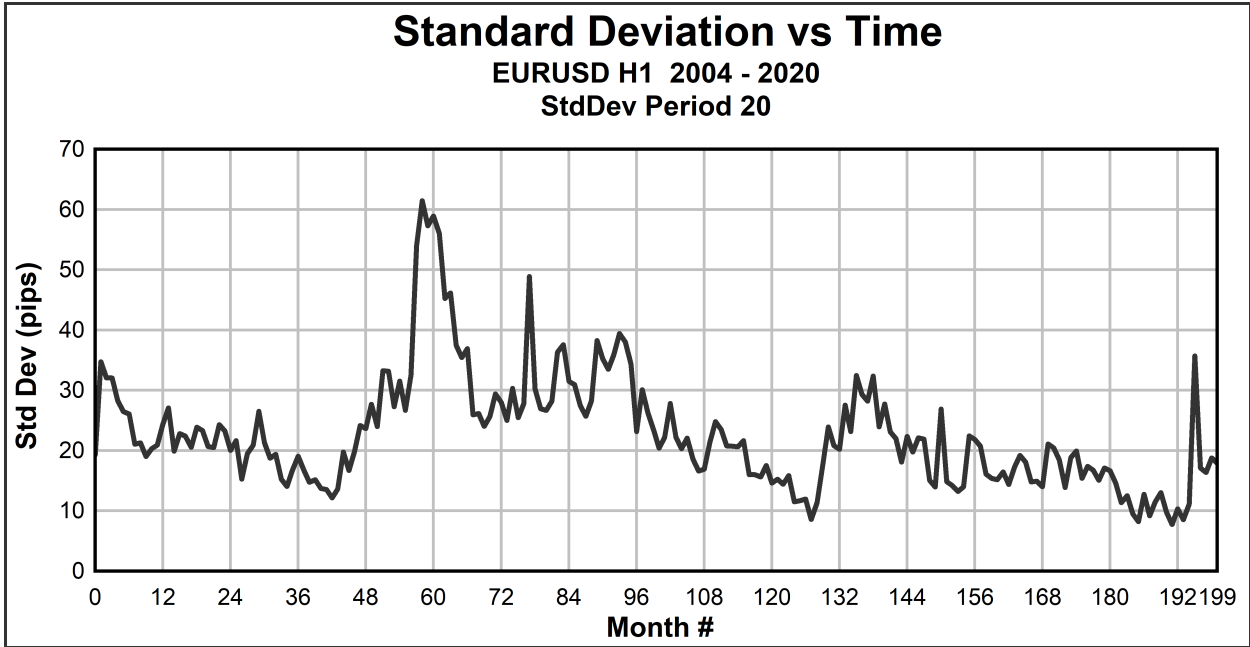


FIGURE 5: Standard Deviation vs Month

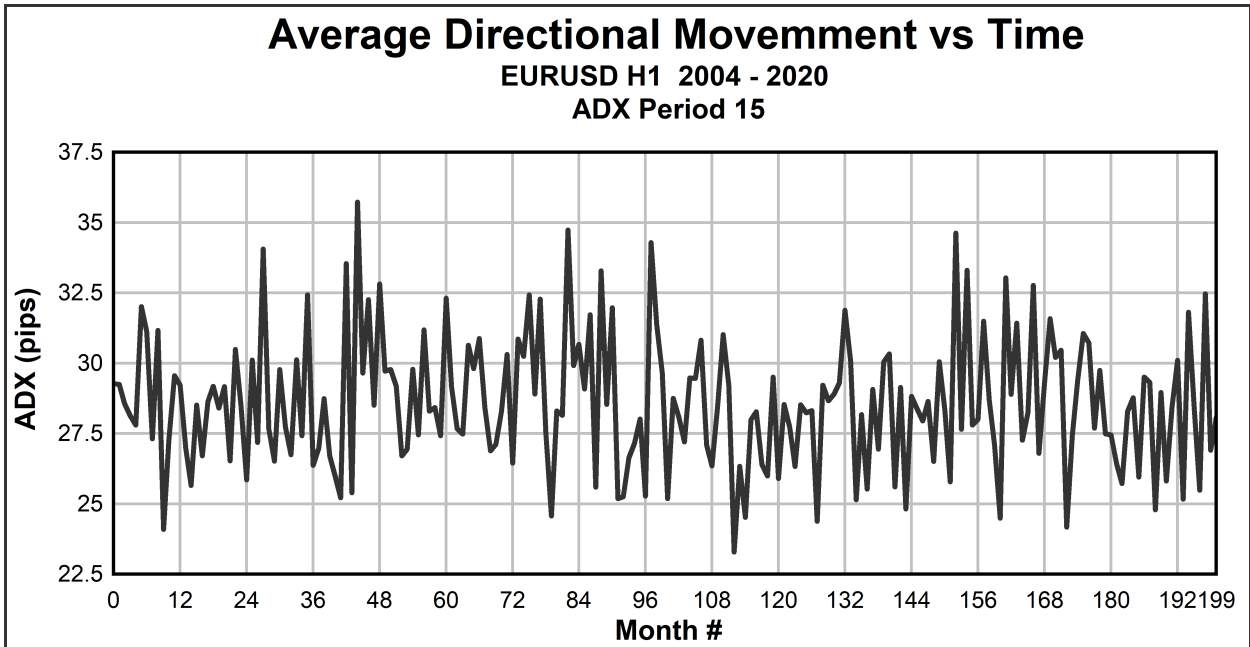


FIGURE 6: Average Directional Movement Index vs Month