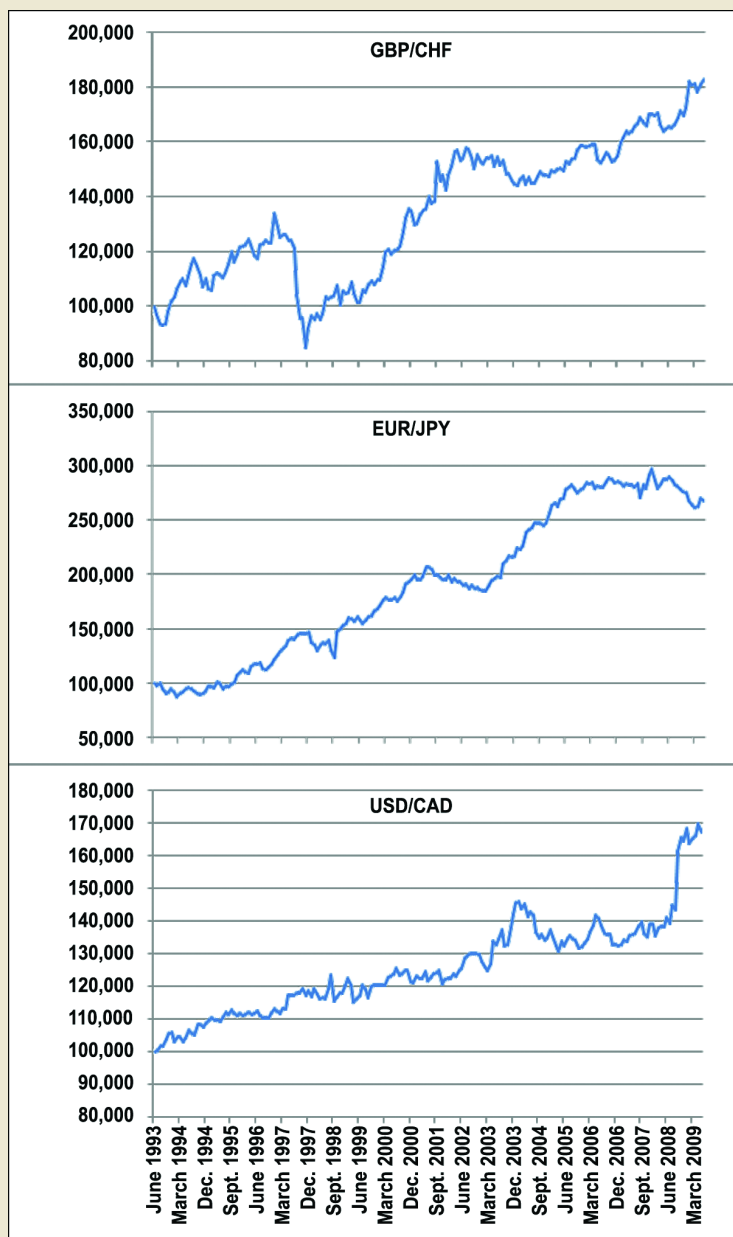


**FIGURE 5 — STRATEGY RESULTS (2003-2009)**

Results in the EUR/JPY (top), GBP/CHF (middle), and USD/CAD (bottom) were uniformly positive, although there were some significant drawdowns.



volume distribution graph from a different time period (May to July 2009) highlights the correlation between time of day, volume, and ranges, as well as how stable these relationships are over time.

Many studies have been conducted to demonstrate how volume confirms a price move, and this analysis supports that case. It also shows the biggest ranges and highest vol-

ume occur at the same time — specifically, during the London afternoon.

This information, in turn, implies several potential trading opportunities, including the fact that any breakout strategy should have a higher chance of success if trades are executed when both the volume and expected ranges are the greatest.

Testing a breakout strategy

Although [optimization](#) can play an important role in researching trading strategies, rules based on market behavior are likely to be more robust than those derived from optimization. The basic trading premise in this case is that a move to a new high or low during the London afternoon might be significant. This theory can be tested by applying a simple breakout trading strategy. All times are London time.

Volume is lowest after the New York close (10 p.m.), then it starts to steadily increase as each trading center opens the next day. The strategy looks to trade a breakout of the highest high or lowest low that is established since the New York close.

The highest volume of the day occurs between the hours of 1 p.m. and 4 p.m. and this is always likely to remain the case, as it represents the hours of the day when the three largest trading centers of Europe, London and the U.S. are all active.

Knowing volume is an important factor in confirming a trend, if a market made a new high or low during this period, then it might be significant and this theory can be tested by applying a simple trading strategy.

The rules to test are:

1. **Go long** between 1 p.m. and 4 p.m. if price trades above the highest high since the New York close (set at 10 p.m. the previous day); or,
2. **Go short** between 1 p.m. and 4 p.m. if price trades below the lowest low since the New York close.
3. **Hold the position** until a trading signal occurs in the opposite direction.

This relatively simple rule produced robust results, which were consistent when run both in and out of sample on a wide range of currency pairs, across all of the time zones. Figure 5 shows the equity curves for three currency pairs — the Euro/Japanese yen (EUR/JPY), British pound/Swiss franc (GBP/CHF), and U.S. dollar/Canadian dollar (USD/CAD) from June 1993 to June 2009, tested on 10-minute bars. In each case the initial account size and

position size were set to 100,000, and profits and losses were converted back to the base currency (Euros, pounds, and U.S. dollars). Slippage and rolls were not included, and no stop-loss was used.

In each pair, the rule was profitable over the long run, although it did produce significant drawdowns in some of the individual currency pairs, as well as long spans between new equity highs. However, when implemented across a wide range of currency pairs, the results become increasingly significant. It is also a rule that can be used to complement other trading strategies, to enhance their performance.

Also, the incorporation of position sizing and risk control rules has the potential to improve performance. Additional tests (not shown) using volatility-adjusted position-sizing and stop-loss rules extracted even more benefits from the strategy.

Currency commonality

Although individual currency pairs may have unique characteristics, there are evidently a number of common volume and range characteristics related to the time of day.

Although the foreign exchange market doesn't have a central exchange or fixed open and close times, it is still possible to determine its volume profile. This tendency is not only logical — following the volume peaks as the major centers open and close — it also mirrors the size of currency pair volatility (trading ranges) throughout the trading day.

The research also demonstrates these relationships and market behavior are stable over time and across currency pairs, making them very exploitable. 📌

For information on the author [see p. 6](#).



EVENTS

Event: TradeStation Futures Symposium

Date: Dec. 10-12

Location: Naples, Fla.

For more information: Visit

www.tradestation.com/strategy

Event: Oxford Club's 2nd Annual Caribbean Wealth Cruise

Date: Jan. 23-30

Location: Crystal Symphony, Miami to Aruba

For more information: Go to

www.moneyshow.com/events/Investment_Cruises.asp

Event: International Traders Expo

Date: Feb. 13-16

Location: Marriott Marquis Hotel, New York, N.Y.

For more information: www.tradersexpo.com

Event: 26th Annual Risk Management Conference

Date: March 7-9

Location: The Ritz-Carlton Golf Resort, Naples, Fla.

For more information: Visit www.cboe.com/rmc

Event: 35th Annual International Futures Industry Conference

Date: March 10-13

Location: Boca Raton Resort & Club, Fla.

For more information: Go to www.futuresindustry.org

Event: The 17th Forbes Cruise for Investors

Date: March 18-30

Location: Crystal Symphony, Sydney to Auckland

For more information: Go to

www.moneyshow.com/events/Investment_Cruises.asp

Event: The World MoneyShow Vancouver 2010

Date: April 6-8

Location: Hyatt Regency Vancouver

For more information: Go to

www.moneyshow.com/events/World_MoneyShows.asp

Event: FIA/FOA International Derivatives Expo

Date: June 8-9

Location: The Brewery, Chiswell Street, London

For more information: Go to www.idw.org.uk

Event: Los Angeles Traders Expo

Date: June 9-12

Location: Pasadena Convention Center, Los Angeles

For more information: Go to

www.moneyshow.com/caot/?scode=013721

Event: The Forex & Options Expo Las Vegas 2010

Date: Sept. 12-14

Location: Caesars Palace

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