# Currencies And Commitments

Archimedes allegedly said, "Give me a lever long enough and a fulcrum on which to place it, and I shall move the world." Whether he was the first trader to truly understand leverage is lost to history, but given his place in the annals of mathematics and science, we can assume he would have blazed a path for later smarty-pants such as those at Long Term Capital Management and Enron who lost fortunes.

We can paraphrase Archimedes by saying, "Give me some data and enough time, and I shall design a trading system." Disagree? Consider the brief popularity of chaos theory in the 1980s and 1980s. Here was a discipline that went out of its way to say dynamic systems were regular but not predictable, and yet there was no shortage of financial modelers – charlatans may be too harsh of a term – who purported to use chaos theory for trading purposes.

Before we move onto the topic at hand, the Commodity Futures Trading Commission's weekly Commitment of Traders (COT) report, let's take one final shot at trading systems in general of the kind we took in May 2007 on professional currency traders (see "Currency Traders Should Be Humbler"). Barclay Hedge, formerly known as Barclay Group, has maintained monthly indices on the performance of systematic and discretionary traders since December 1986. The average monthly return for systematic traders has been 0.81% as opposed to 0.79% for discretionary traders. However, the monthly standard deviation of returns for the systematic traders of 4.08% dwarfs the 2.39% of discretionary traders. Restated, the two approaches to trading yield roughly the same results but trading systems are more volatile. It should be the other way around, no?

Do Trading Systems Matter?
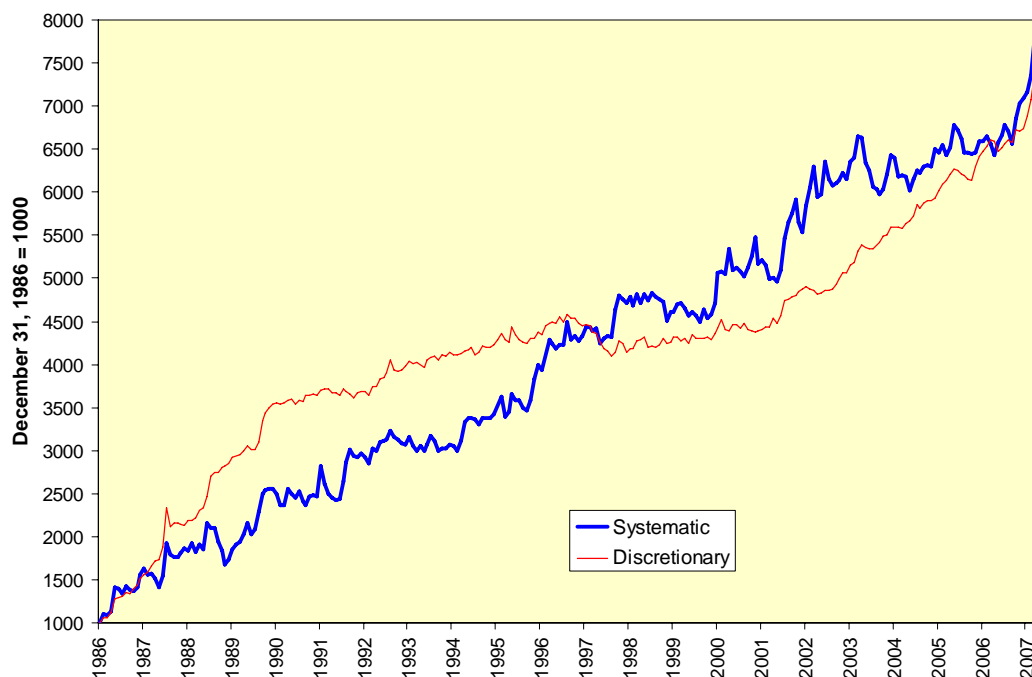
The COT Data
The weekly COT data support a minor cottage industry of those who have developed a trading system therefrom. The systems usually are based on two premises, the first being that trend-following non-commercial traders such as hedge funds and commodity trading advisors are late to the party and therefore are a good negative indicator at the extremes. The second premise, which follows from the first, is the commercial players who take the opposite side of these positions are going to be correct at the trend turning

points. COT trading systems, therefore, fall into the general category of countertrend or mean-reverting systems and celebrate the notion that your fellow speculators are a bunch of mindless dolts who should consider themselves fortunate when they put their shoes on the right feet in the morning.

Now let's consider a timing issue. The CFTC surveys clearing firms after the close of business on a Tuesday reporting period. The data are not released until approximately 2:30 PM Central Standard Time on most weeks; this may differ for weeks with holidays as, after all, this is government work. In general, traders have to wait to the next trading day to act on these reports. That used to be Monday morning; increasingly it is Sunday evening, but in a world increasingly dominated by cash market dealers and prime brokers, it could be any time.

The reports include spread positions, option positions and non-reportable positions. The levels of non-reportable positions may seem quite high for most of us; the cutoff for currency futures is 400 contracts at present. Ask yourself whether a futures commission merchant will treat a 395-contract order as "small;" this demarcation really is quite preposterous. We will focus simply on the futures-only reportable non-commercial and commercial positions below.

Another consideration is anything but minor. The COT report is confined to exchange-traded futures in the U.S. This represents but a small slice of the global derivative and cash market trading world, especially in currencies where $10 million is a small order in the interbank market. Anyone who looks at the U.S. futures-only positions of either hedgers or speculators as being representative of total global sentiment is myopic indeed.

Finally, there is a philosophic consideration. If most speculative traders are trend-followers, they are following a visible manifestation – price – of an underlying economic value. Value must move first; price then must chase value and then trend-followers must chase price. If most COT trading systems are countertrending in nature, they must wait until well after speculative positions reach what they hope is an extreme before they can act. That is allowing a great deal of price movement to slip by before trading.

The Trend Oscillator
As price is continual in the currency futures markets and the COT report is weekly, we need a smoothed representation of price trend. That is derived from the Adaptive Moving Average (MA), where N is the number of days between 4 and 29 that minimizes the function

$$\frac{1}{N} * \sum_{i=1}^{N} \frac{N}{Vol^2} * |(P - MA)| * |\Delta MA|$$

where Vol is the N-day high/low/close volatility, defined as

$$\sum_{i=1}^{N} \left[\frac{\left[.5 * \left(\ln\left(\frac{\max(H, C_{t-1})}{\min(L, C_{t-1})}\right) \right)^2 - .39 * \left(\ln\left(\frac{C}{C_{t-1}}\right) \right)^2 \right] * 260}{N} \right]^{1/2}$$

where H, L, and C are high, low, and close, respectively. Once the MA is calculated, the trend is defined as the volatility-adjusted oscillator around this central tendency. In the construction of the index, the trend's "zero point" occurs when the price and the Adaptive Moving Average are equal.

$$Trend \equiv \frac{\left(\frac{(P - MA)}{Vol} \right)}{P}$$

Positions And Trends
This trend oscillator is used in the charts below. The base lag is four days, the period between the normal closure of the COT data on Tuesday through the following Monday, subject to all the caveats discussed above.

The weekly COT reports began in 1993 and will be used for the Canadian dollar, British pound, Japanese yen and Swiss franc. The study for the euro begins of necessity in 1999. Four charts are shown for each of

the five currencies. One is a line and column chart depicting the net non-commercial and commercial futures-only positions in blue and red lines and the trend oscillator in green columns. The next three are color-coded bubble charts mapping the trend oscillator against the net commercial and non-commercial positions.

Positive trend oscillators are displayed as blue bubbles; negative oscillators as reddish bubbles. The size of the bubble, positive or negative, corresponds to the magnitude of the oscillator. Three lags are shown, the base four-day lag noted above, a nine-day lag corresponding to the trend oscillator one week later and a two-day lead.

What should we expect to see? If speculators are in fact chasing price, we should see a preponderance of blue bubbles at the large positive net positions for non-commercial traders and a preponderance of red bubbles at the large negative net positions for non-commercial traders. If the concept of an imbalanced speculative position has any validity, we should see an opposite pattern at a nine-day lag. Large net positive non-commercial positions in these charts should be accompanied by red bubbles and large net negative non-commercial positions should be accompanied by blue bubbles; such a pattern means imbalanced positions lead to trend reversals.
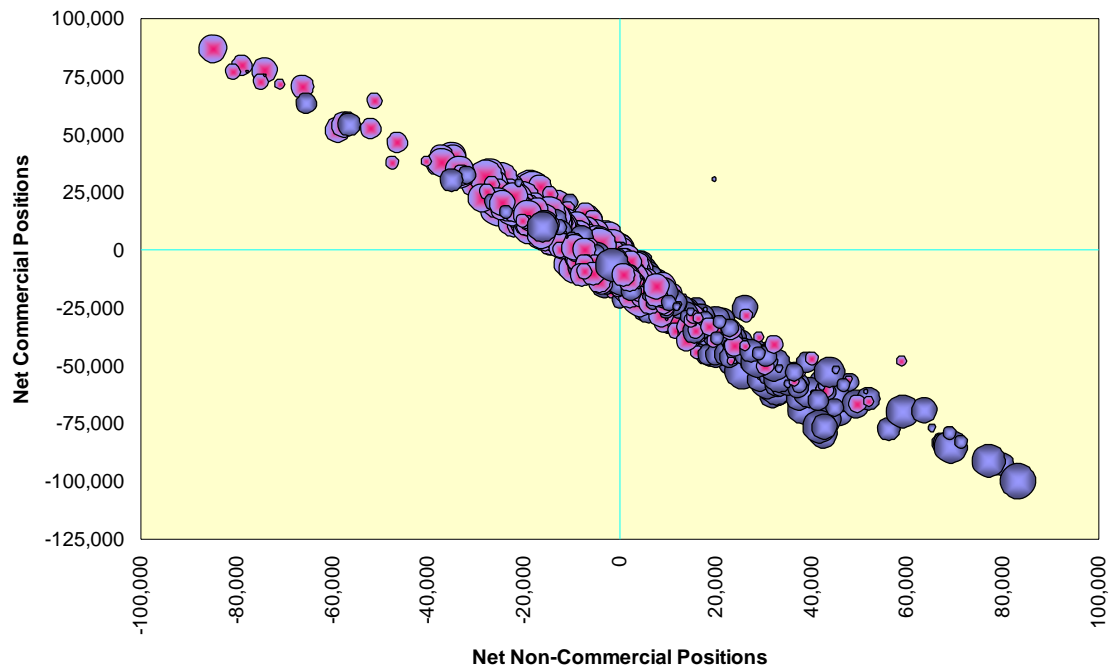
Canadian Dollar
Two major developments stood out for the Canadian dollar in 2007 and early 2008. The first was a very negative non-commercial position at the beginning of the year that reversed to a very positive imbalance by the end of 2007 before yet another reversal occurred. The net non-commercial positions appear to lag the trend oscillator, which suggests that speculators were following, not leading, price.
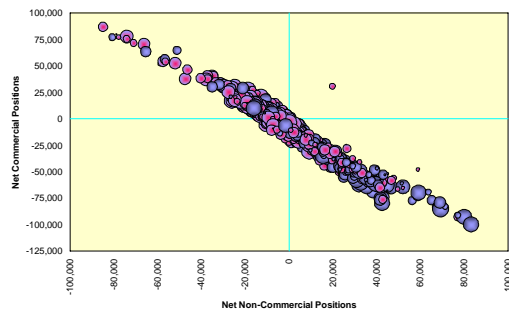
Canadian Dollar Trend And Net COT Positions
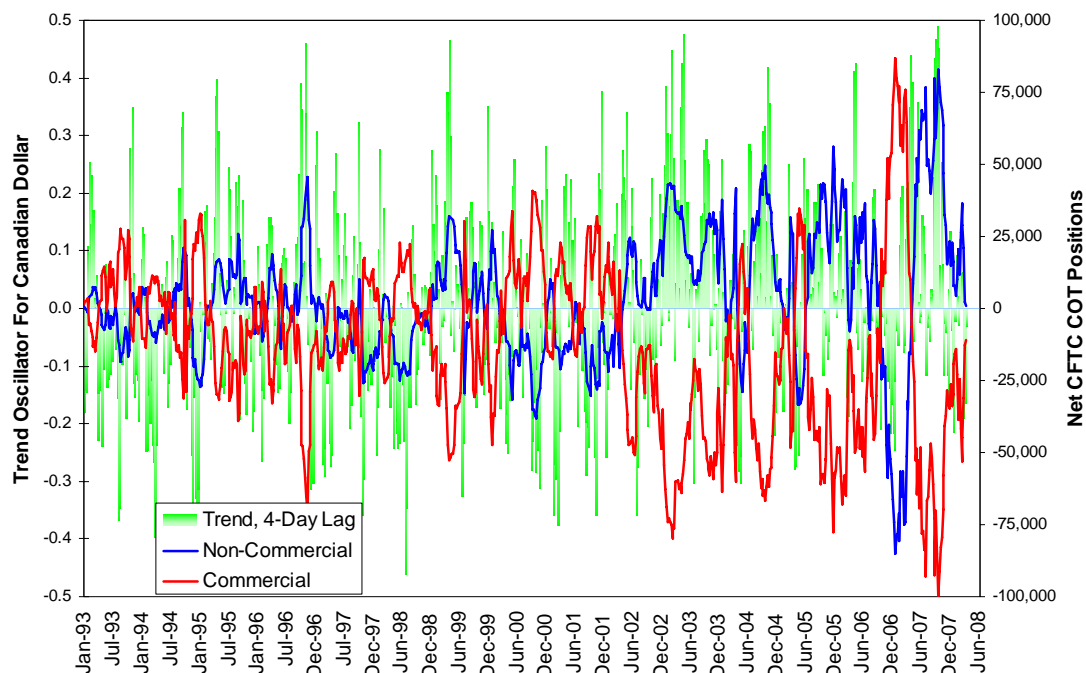
That hypothesis is confirmed by the bubble chart with the two-day lead. The net non-commercial position reported on a Tuesday really is nothing more than the trend on the preceding Friday.

**Canadian Dollar COT Positions And Trend: Two-Day Lead**

The positions at the four- and nine-day lags do not show any of the expected reversals from an imbalanced non-commercial position. We have to conclude COT positions are a poor leading indicator for price trends in the Canadian dollar.


Canadian Dollar COT Positions And Trend: Four-Day Lag

Canadian Dollar COT Positions And Trend: Nine-Day Lag
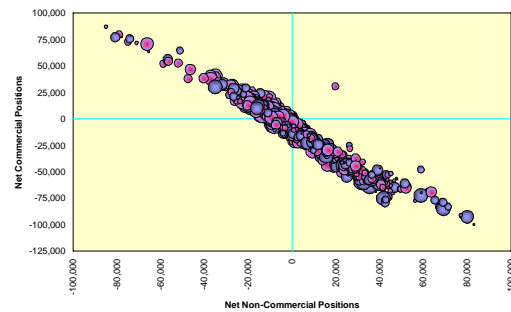
British Pound
The British pound is dominated more by its exchange rate to the euro than to the dollar. As a result, we should expect to see a very discontinuous pattern of net non-commercial positions, and we do. Visual inspection indicates net non-commercial positions follow the price oscillator.

British Pound Trend And Net COT Positions
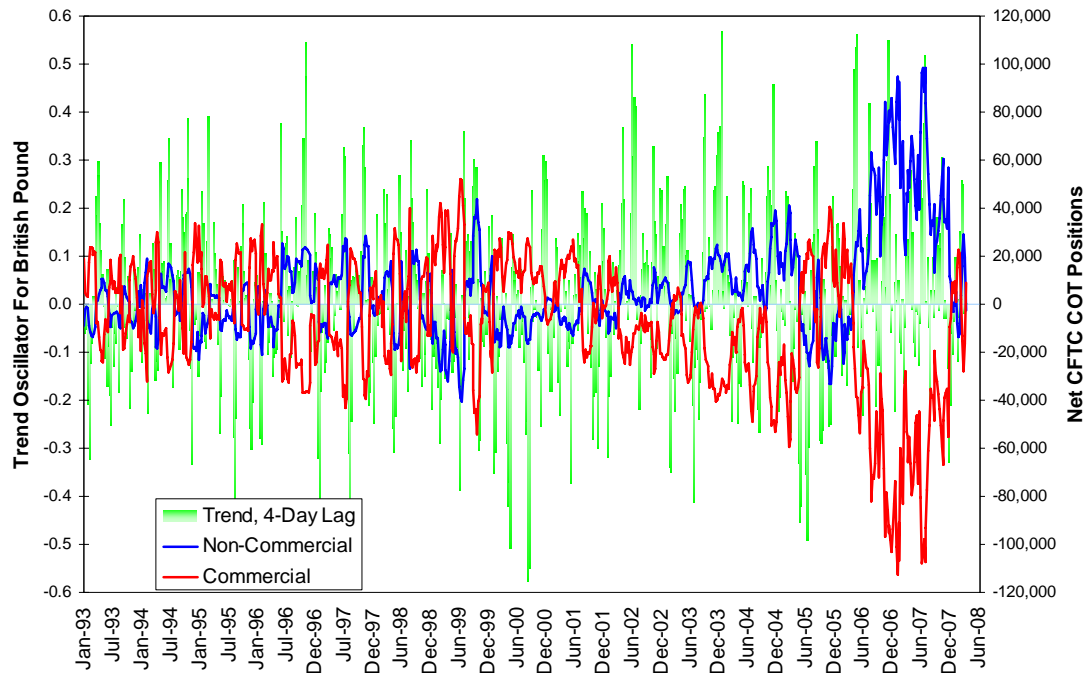
Is this opinion supported by the two-day lead bubble pattern? Yes, very strongly: Note the strong preponderance of reddish bubbles at the large net negative non-commercial positions and the strong preponderance of blue bubbles at the large net positive non-commercial positions.
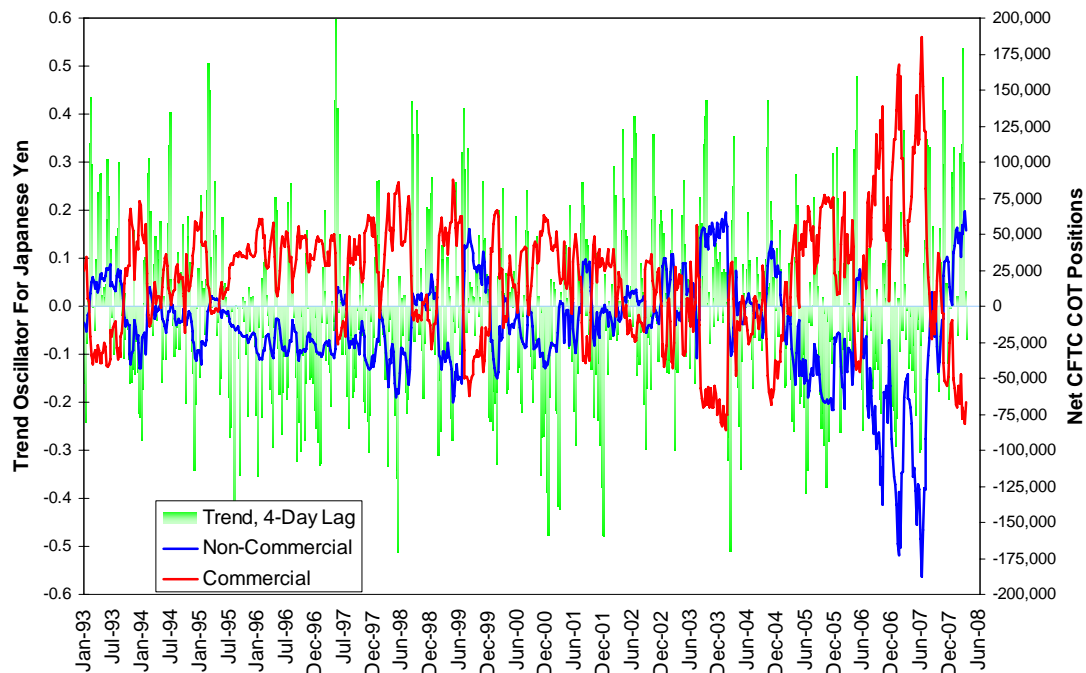
British Pound COT Positions And Trend: Two-Day Lead
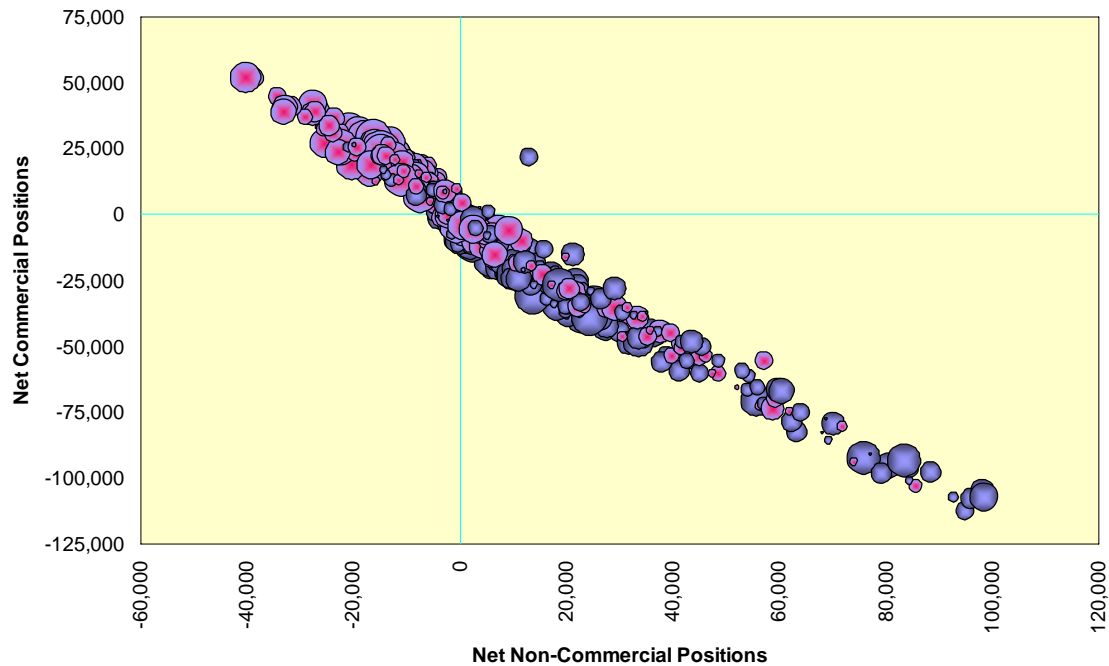
The ability of COT imbalances to precede trend reversals at the four- and especially at the nine-day lag appears to be greater than that seen for the Canadian dollar. Whether this is an artifact of cross-rate trading against the euro cannot be said for sure, but this is a more intuitively pleasing explanation than the alternative: Can we really expect even large imbalances on the order of 100,000 contracts to lead a cash market as large as the British pound?

British Pound COT Positions And Trend: Four-Day Lag

British Pound COT Positions And Trend: Nine-Day Lag
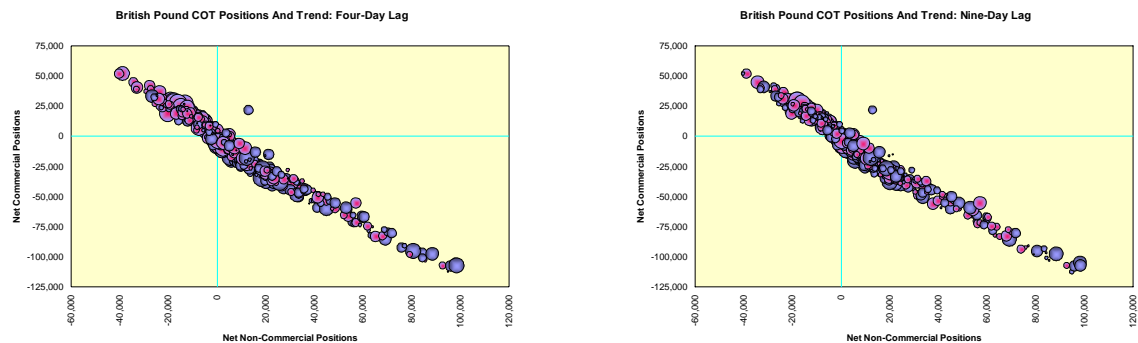
Japanese Yen

The yen has spent much of its recent history being buffeted by the carry trade (see "Looking At The Carry Trade," June 2007). Each wave of the credit crunch in 2007 led to a burst of short-covering in the yen and net non-commercial positions once again followed the movements in the yen's trend.

**Japanese Yen Trend And Net COT Positions**

This is confirmed quite strongly by the two-day lead bubble chart, especially at the large net negative non-commercial position values. Positions reflected price very closely.

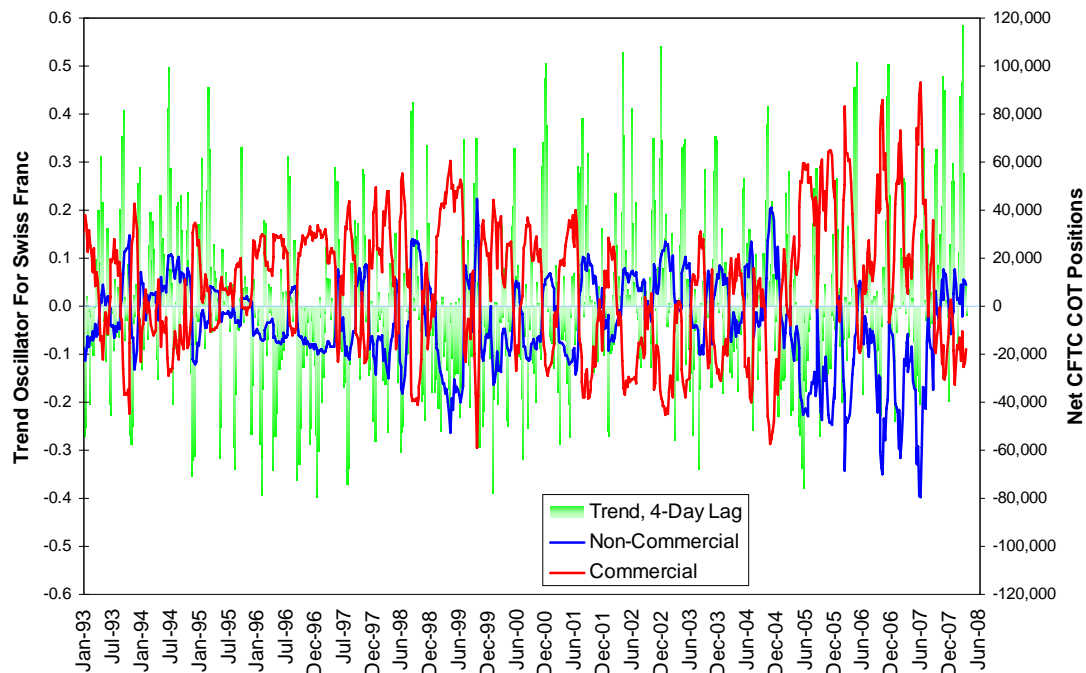## Japanese Yen COT Positions And Trend: Two-Day Lead
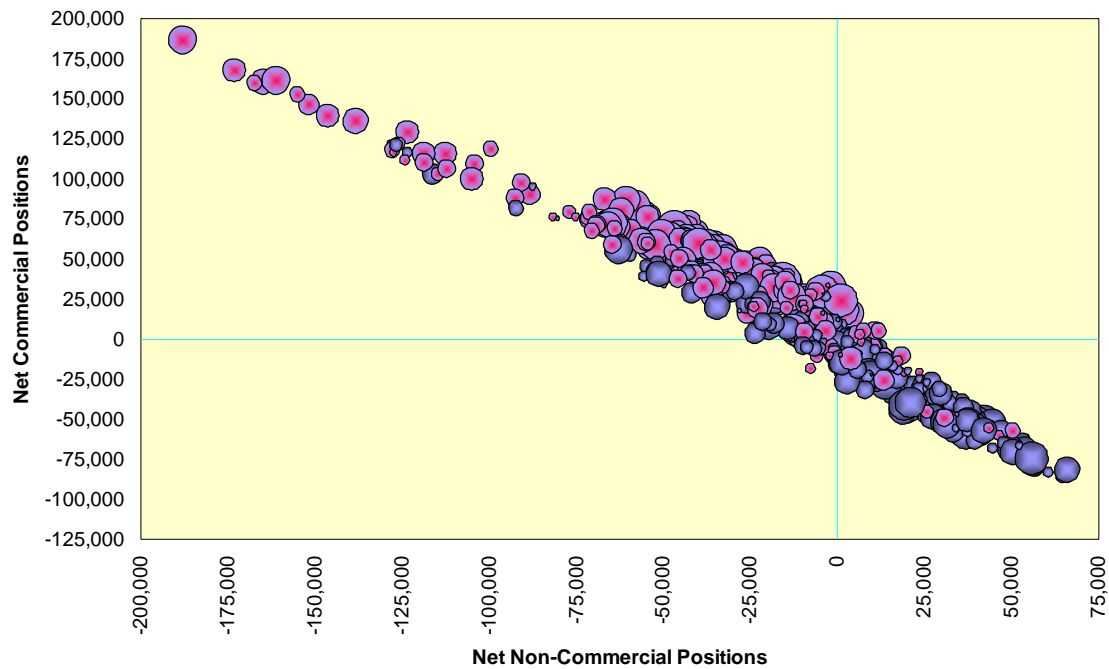
Those who wish to trade a COT-based countertrend system might wish to emphasize the yen. Both the four- and the nine-day lag charts indicate a significant number of trend reversals arising from net imbalanced non-commercial positions. This is consistent with the observed dominance of hedge fund carry trades being reversed in a herd-like manner.
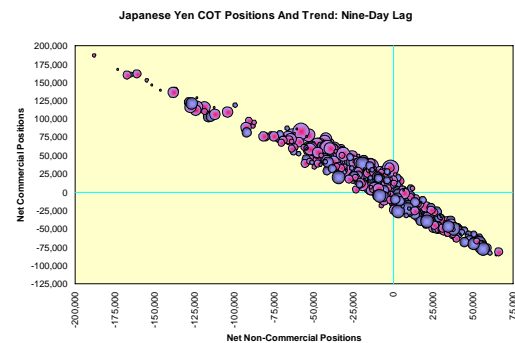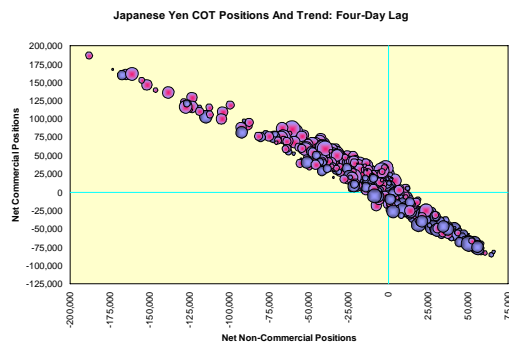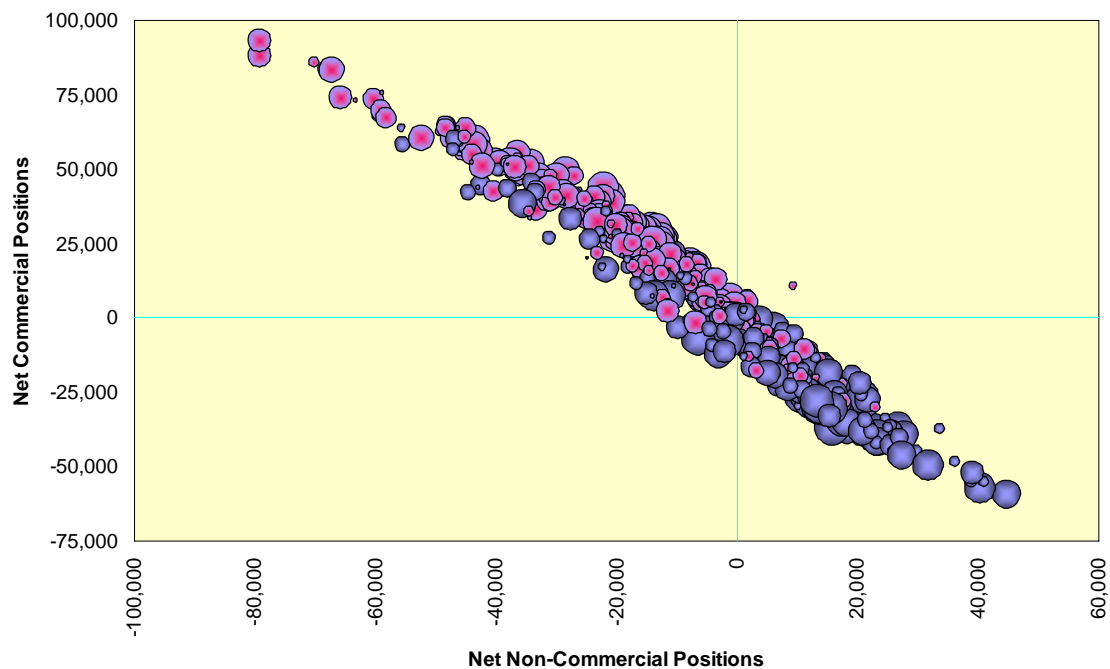

Swiss Franc

Prior to the introduction of the euro, the Deutsche mark and Swiss franc traded very closely to one another and both tended to trend for long periods of time. The Swiss franc has become a very choppy currency since then; like the yen, it is involved in a carry trade, and like the British pound, its cross-rate to the euro is more important than its exchange rate versus the dollar. The net position chart confirms this high degree of choppiness and the chasing of price trend by net non-commercial positions.

## Swiss Franc Trend And Net COT Positions

Given this discussion we should expect to see very strong position dependence in the two-day lag chart, and we do. Tuesday's COT report reflects price trends at the previous week's end.

Swiss Franc COT Positions And Trend: Two-Day Lead

The non-trending nature of the Swiss franc might be expected to produce, as in the cases of the British pound and the Japanese yen, a large number of apparent reversals at both the four- and nine-day lag

intervals. This does in fact appear to be the case, especially at the nine-day lag. The same comment made for the British pound applies here: Is this a case of a relative small number of U.S. futures positions pushing a large cash market around, or does it simply reflect the peripatetic nature of the franc itself. We suspect the latter.
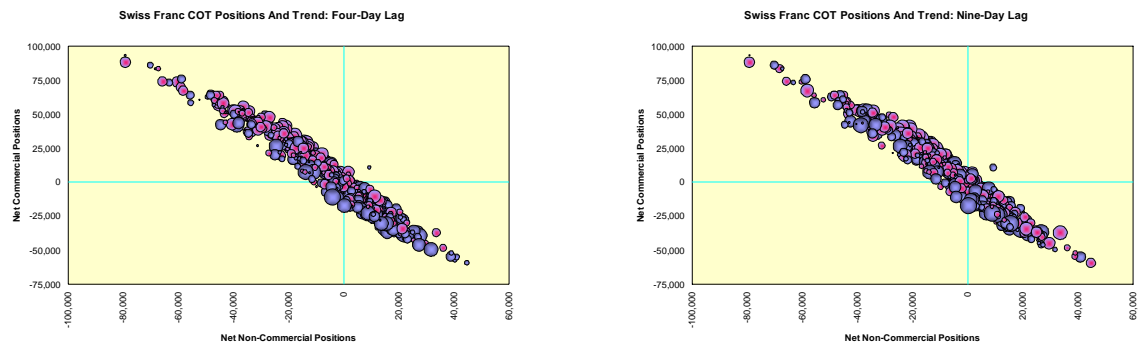

The Euro
The net non-commercial positions for the euro are interesting in their near-permanent long state after 2000; only for a short period of time in 2005 and early 2006 were non-commercial traders net short. As a result, we do not see the same trailing relationship between net non-commercial positions and price trend as we have seen for the other currencies.
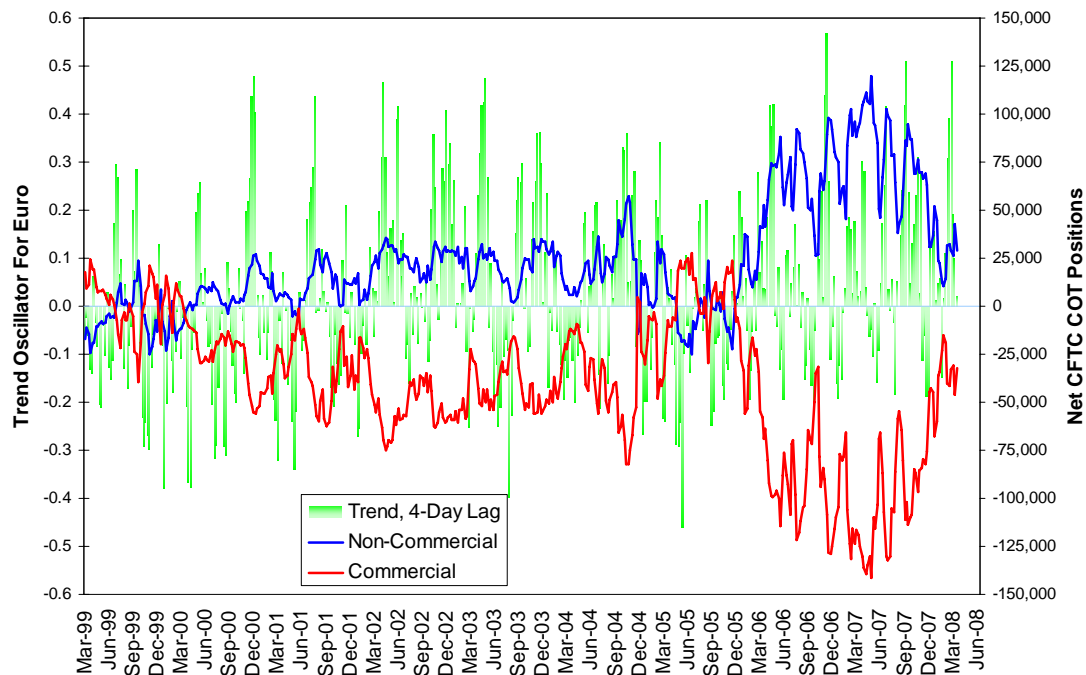

This state of affairs distorts the two-day lead relationship as well. The net negative non-commercial positions are dominated by red bubbles, but the much more numerous net positive non-commercial positions are not as "blue" as we might expect.

Euro COT Positions And Trend: Two-Day Lead
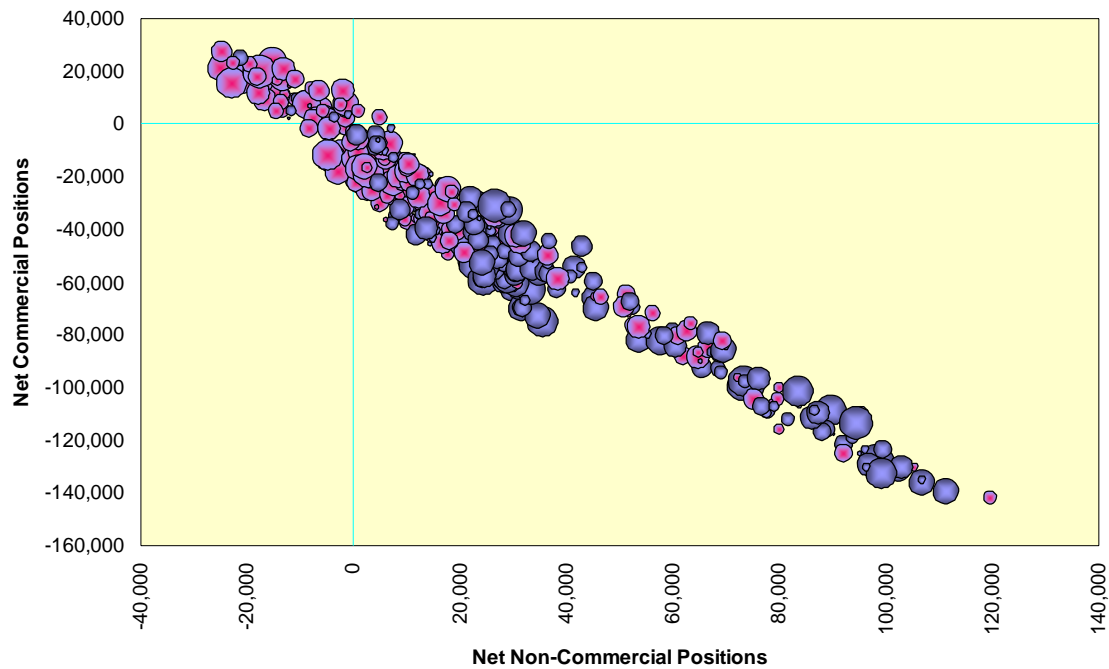
However, while the four-day lag bubble chart is inconclusive, we do see a large number of trend reversals at the nine-day lag. The near-permanent net long state of this market subjects non-commercial traders to periodic selloffs and may account for much of the poor trading performance by professional currency traders discussed in May 2007.

Euro COT Positions And Trend: Four-Day Lag

Euro COT Positions And Trend: Nine-Day Lag
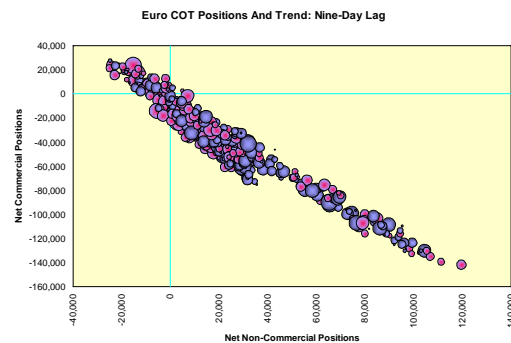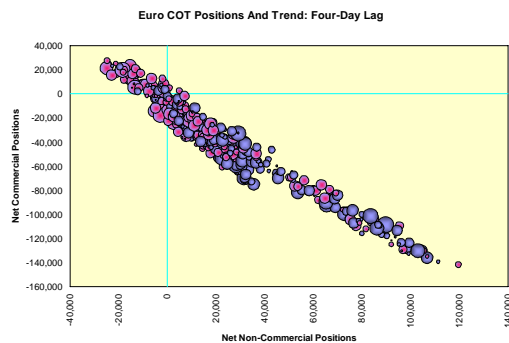
Conclusion

A trading methodology, if valid, should be robust within an asset class. What we have seen in an overview of currencies against the COT data is a collection of special cases. The highly trending Canadian dollar trades in a well-behaved manner; the British pound and Swiss franc are buffeted by their more important cross-rates against the euro, both the Swiss franc and the yen are affected by their role in carry trades, and the euro is affected by a near-permanent long bias.

This suggests any trading system based on backward-looking COT data will need to be parameterized – Archimedes would understand – and would be more reflective of the data-mining and curve-fitting skills of the systems designer than any predictive value for the COT data themselves.