

FXMONITOR

How Risky is Active Currency Management? Part I

By Dori Levanoni

Active investing in currencies has often been described as "risky". Quotes abound from so-called market pundits, such as, "I lost half a million in the time it took to walk down to Burger King for lunch!" and "Nowhere else have I lost so much money so fast as in the currency markets!"

However, is active currency management truly riskier than other forms of active management? This two-part FX monitor will attempt to put the risks of active currency management into context (along with other forms of active management). In this first part, we will dig a bit deeper into what is "risk". In the second part, we will apply that to active currency management to see how "risky" active currency management really is.

What is Risk?

If we were to ask one hundred professional investors to define "risk", it is quite likely we would get one hundred answers with a few common themes along with definitions that have absolutely no resemblance to each other. In other words, "risk" is not well defined.

To make that point further, let us ask an apparently simple question.

"Which Portfolio is Riskier?"

- Overweight Equities and Underweight Bonds, or
- Underweight Equities and Overweight Bonds?

To answer that question, let's look at some common measures of "risk".

Is it "Tracking Error"?

One of the most common measures of "risk" (at least for active management programs) is tracking error (TE). Tracking error is the standard deviation of the excess returns (i.e. above the benchmark or risk-free rate) of the active program. Assuming we looked only at the returns generated by the two portfolios above, how do they compare?¹

It may come as a surprise to you, but the tracking error of the above two portfolios are identical! Since one

portfolio is simply the opposite of the other, the returns of one are simply the opposite sign of the other. Since standard deviations are independent of a simple multiplication by a constant (such as negative one, in this case), the measured tracking errors are identical.

So, by a tracking error measure, the two portfolios have the same "risk".

What about the "Tails"?

Suppose we use a different definition of risk? How about "Tail Risk" (i.e. the risk of an unexpectedly large negative "event")? Is that a measure we should look at?

Using that definition, the "Overweight Equities and Underweight Bonds" portfolio is riskier. Why? In short, "October 1987". The -21.5% S&P500 return in that month as compared to the strong US T-bond returns (US T-bond yields fell 76bp that month) was much larger than "expected".²

Thus, by a "tail risk" measure, the overweight equity/underweight bond portfolio has about twice the "risk" of the underweight equity/overweight bond portfolio.

Don't "Drawdowns" Matter?

What about using a third definition of "risk"? Another measure commonly used is "maximum drawdown", which is the largest negative peak-to-trough return for each portfolio. While the poor equity performance from December 1999 through February 2003 might make one think that the overweight equity/underweight bond portfolio is "riskier", in fact it is the underweight equity/overweight bond portfolio that is "riskier", largely due to the average out performance of equities over bonds.

In fact, the bond underperformance (relative to equities) from November 1974 through December 1999 is 25% worse than the equity underperformance from December 1999 through February 2003.

Therefore, by a "maximum drawdown" measure, the underweight equity/overweight bond portfolio is about 25% "riskier" than the overweight equity/underweight bond portfolio.

That's Not "Normal"!

Lets do a quick recap of the conclusions drawn by the various risk measures above:

Equities "riskier":	1
Bonds "riskier":	1
No difference in "risk":	1

How can the same portfolios have three completely different views of their risk?

The problem is that the returns generated by those two portfolios aren't "Normal", in the mathematical sense. Here is another way of saying that (again, using a bit of jargon): the returns are "not i.i.d."³ The returns are "not normal" because they have "fat tails", they are "skewed", and there is serial correlation (i.e. momentum) in the returns.

If the returns were "Normal", the drawdown and tail measures would agree, and the only difference in risk measures would be if the average return of equities were above that of bonds (or vice-versa). If the average returns were the same, then the three risk measures would agree!⁴

The Dynamic Duo

Finally, we would like to point out the connection⁵ between the underlying market's returns (in the example above we used the S&P500 and the US T-bond) and the returns from active management.

In the example we just studied, we compared two static portfolios. In other words, one portfolio was *always* overweight equities, and the other was *always* underweight equities. Not really much of an "active" program, is it? Because they hold static allocations, the returns from the active program have very similar characteristics to the underlying markets.

In other words, the lack of "normality" of the returns of the two portfolios is a direct reflection of the lack of "normality" of the underlying markets (i.e. the S&P500 and the US T-bond).

Active management, however, is about a *dynamic* process. We should not expect that an active program would always hold the same portfolio of exposures – otherwise it would not be "active", would it? Therefore, we might expect an active program will sometimes hold the first portfolio (overweight equities) and at other times hold the second portfolio (underweight equities).

As an example of how a dynamic process might change

the risk measures, we built an "active" management process that chooses randomly each month whether to hold the overweight equity or underweight equity portfolio. That's about as dynamic as one can get!

The measured tracking error is still the same, but the tail risk measure is "normal", and the worst drawdown is about two-thirds the size of the overweight equity portfolio (which had the lowest drawdown risk of the two portfolios).

By introducing that "dynamic" nature of the process, we can decouple the returns from active investing from those of the underlying markets. Thus, we can build a more "normal" active management process from completely "abnormal" markets, if we are dynamic enough!⁶

Returns and Expectations

Central Banks have been relatively inactive so far in 2005 (as compared to 2004), as only five banks have changed monetary policy so far this year. June, however, was a bit more "active", with three changes to monetary policy in the developed world. Australia and New Zealand have both raised rates 25bp once this year (in March), Norway raised rates by 25bp (in June), Sweden dropped rates by 50bp (in one big move in June), and the US has continued its "measured" rate increases, raising rates by 25bp at each of the four Fed meetings this year, including at the June meeting.

Cash yields in most markets were nearly unchanged over the month, with exceptions in Norway (up 8bp), New Zealand (up 9bp), Sweden (down 39bp), the United Kingdom (down 15bp) and the United States (up 18bp).

Bond yields were not quite so stable over the month, with the average bond yield falling by 11bp over the month, but with significant dispersion between markets. New Zealand and Swiss bond yields both rose over the month (by 3bp and 7bp, respectively), while Danish, Norwegian and Swedish yields fell more than the average (by 18bp, 20bp and 27bp, respectively).

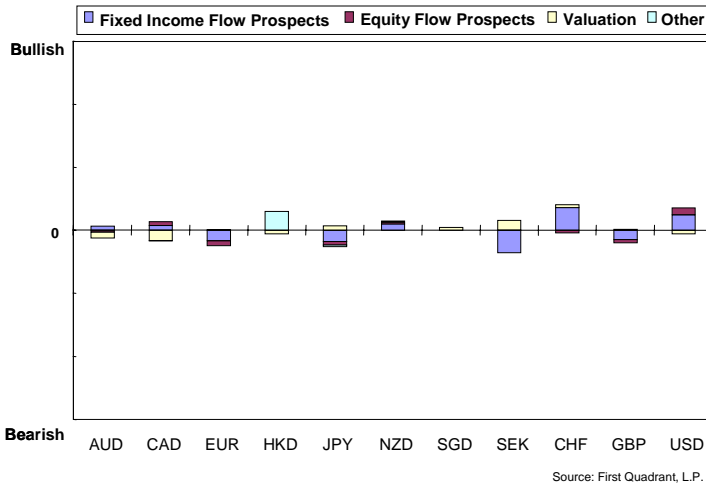
Equity market performance was much more consistent over the month, with all developed equity markets up, rising by an average of over 2%. US equities were the worst performer, rising by just over 0.10%, while Norwegian equities jumped nearly 11%, making them the best performer over the month.

Currency markets were generally quiet, with a few exceptions. The spread between the best performing currency (the Canadian Dollar) and the worst performer (the Swedish Krona) was an above average 7.7% (which is in the top

quartile of spreads over the last 10 years).

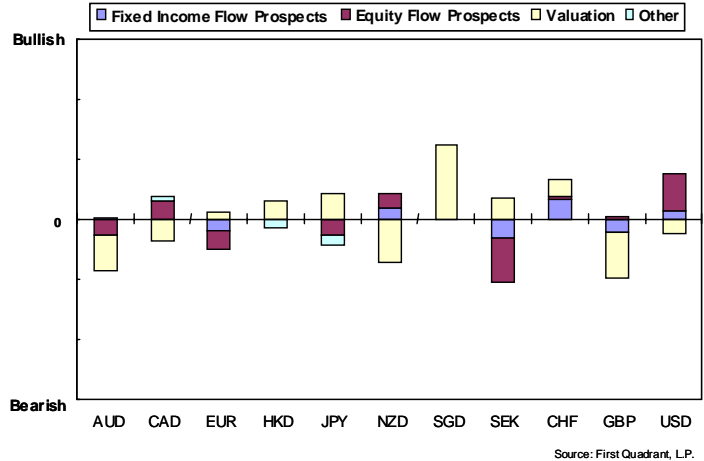
The significant relative movements in both the cash and bond markets did contribute to significant changes to our forecasts over the month, particularly in Sweden, Switzerland and the US. The second largest contributor to changes in our forecasts were due to the currency returns of the Canadian Dollar and Swedish Krona, where the valuation measure acts as a contrarian (i.e. reducing the attractiveness of the Canadian Dollar after an appreciation, etc.).

Change in Factor Contributions to Forecast
31-May-2005 to 30-June-2005



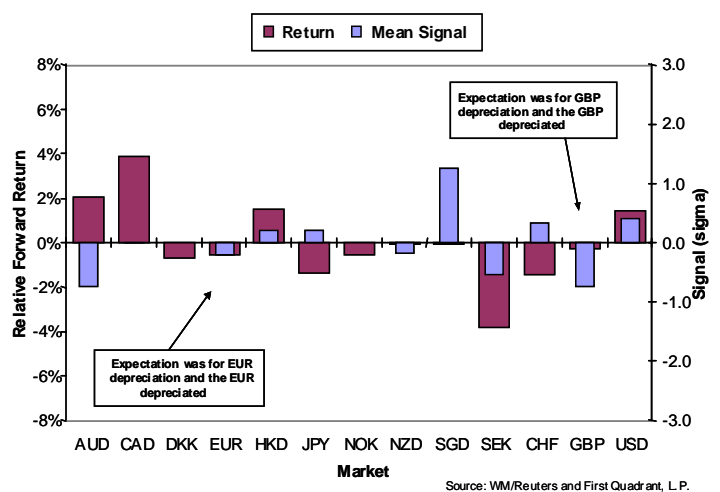
Our measure of long-term valuation (based on our proprietary measure of Purchasing Power Parity) has been the primary driver behind our Japanese Yen overweight as well as Australian Dollar and British Pound underweights, while allocations for the remaining currencies (including the US Dollar) have largely been driven by our prospective cross-border capital flow models. The prospective cross-border fixed income flow model has been particularly "active" this year, acting as the main driver behind our alternating overweight and underweight Euro and Swiss Franc allocations. The prospective cross-border equity flow model has had its largest impact in the underweight Swedish Krona allocation.

Factor Contributions to Forecast
30-June-2005

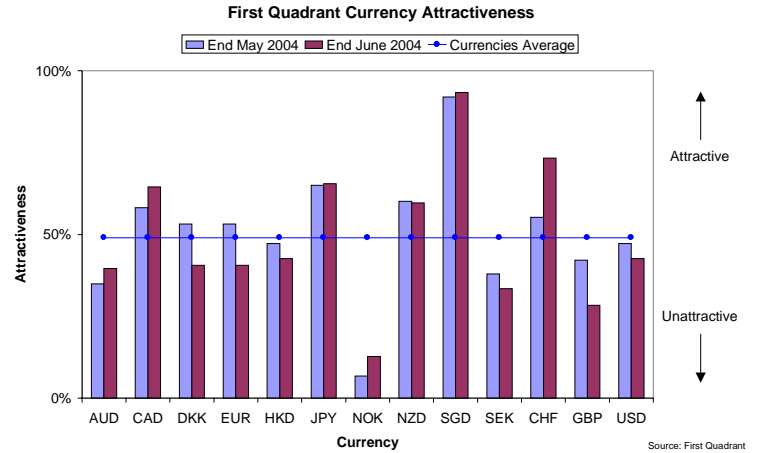


June was a close to flat month, as gains from overweight US Dollar and underweight Swedish Krona allocations were entirely offset by losses from underweight Australian and overweight Japanese Yen and Swiss Franc allocations. Our overweight Canadian Dollar and underweight British Pound allocations produced essentially no gains or losses, nor did our alternating overweight and underweight Euro and New Zealand Dollar allocations.

Currency Returns and Expectations
June 2005



We have become less bearish Australian Dollar and Norwegian Krone, more bearish Swedish Krona, British Pound and US Dollar, more bullish Canadian Dollar and Swiss Franc, and we have moved from near neutral to modestly bearish Euro. Most other forecasts are close to unchanged for the month.



(Endnotes)

- ¹ For this set of examples, we will use the same data series, which are the monthly returns of the S&P500 and US T-bond from January 1970 through July 2005 for Equities and Bonds, respectively.
- ² October 1987's return of the overweight equity/underweight bond portfolio of -27.75% is a 5.9 sigma "event", which is about twice the size one would normally "expect" for a Gaussian (i.e. bell-curve) distribution. For the underweight equity/overweight bond portfolio, January 1980 is the worst month, where the -13.5% return is a 2.8 sigma "event", which is almost exactly the "expected" size.
- ³ I.I.D. is an acronym for "Independent and Identically Distributed". If you randomly choose points from the collection of all points (i.e. the "distribution"), then each point is drawn from the same distribution, and each point is entirely unrelated to any previous or future point (other than coming from the same distribution). That is what we mean by "normal" (where the distribution comes from a "Gaussian").
- ⁴ Saying, by the way, that the risks of the two portfolios were the same!
- ⁵ Or lack thereof..
- ⁶ It is possible to do the opposite as well. Market completeness requires that it is possible to replicate the payout pattern of an option (clearly an "abnormal" return pattern even if you include both the realized and unrealized gains and losses) by dynamically trading the underlying market, much as it is possible to replicate the payout pattern of an underlying market by holding a specific options portfolio (long an ATM call and short an ATM put, for example).

Additional Disclosures - Simulated Performance Past performance is no guarantee of future results. Potential for profit is accompanied by possibility of loss.

SIMULATED PERFORMANCE: The strategy used in the simulations presented in this article does not reflect any strategy or product offered or managed by First Quadrant. The simulated performance presented differs from live performance for the following reasons: The simulations assume that the guidelines are constant through the life of the portfolio, whereas the guidelines for live portfolios may have changed over the life of each portfolio. Simulated returns do not represent actual trading and may not reflect the impact that material economic and market factors might have on the adviser's decision-making if the adviser were actually managing a client's assets.

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