The currency carry trade in detail

The currency carry trade is a strategy whereby an investor borrows in a currency offering a low interest rate and uses the money raised to buy a second currency that pays a higher interest rate. The strategy aims to profit from the difference between the rates and is closely linked to the following financial models:

Covered Interest Parity

The pricing of foreign currency forward contracts is determined by Covered Interest Parity (CIP). This is based on the premise that interest rates denominated in different currencies are the same once investors 'cover' themselves against currency changes. CIP states that foreign currency forward prices are derived from the spot prices discounted by the excess of the foreign interest rate over the base interest rate, as shown in Exhibit 1.

For example, a Japanese investor could buy £1 today by borrowing ¥200. In one year, with interest, that £1 asset would have grown to £1.055 and the debt to ¥201. Thus the one year forward rate today must be 201/1.055 = 190.52. Deviations from this price would create genuine arbitrage opportunities and hence such violations are not observed.

Uncovered Interest Parity

Uncovered Interest Parity (UIP) states further that the forward rate given by CIP is the best predictor of the future spot rate. In other words, the spot rate is expected, on average, to depreciate in line with the interest rate differentials. UIP is derived from relative Purchasing Power Parity (PPP) and the International Fisher Relation (IFR) stating that interest rate differentials reflect inflation expectation differentials. However, because PPP and the IFR are simply economic theories postulated to hold in the long run, UIP is also just an economic theory. Unlike CIP, there is no market arbitrage mechanism to enforce UIP.

Empirical studies have tested whether UIP appears to hold, and have consistently concluded that it does not. These studies have shown that the current spot price is a better predictor of future spot prices than the forward price. In fact, developed world currencies actually appear to move in the opposite direction to that predicted by UIP, implying that investors in higher yielding currencies not only earn the higher yield, but experience capital appreciation too. These findings give rise to the strategy of funding positions in high yielding currencies by borrowing in low yielding currencies – the carry strategy.

Testing the carry strategy

We tested the carry strategy over a time period of 33 years, from 1975 to 2008, using a universe of the G10 and largest EUR legacy currencies, as demonstrated in Exhibit 2.

For additional information, please contact your JPMorgan representative.

Nicholas Handley, CFA
Vice President
Currency Research

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The strategy invested equally in the three currencies with the highest yields, funded by borrowings drawn equally from the three currencies with the lowest yields, allocating 100% of the capital to the strategy. The cumulative abnormal returns (excess of cash) are shown in Exhibit 3. The average excess return was 6.83% per year and appears to have been earned quite evenly over the 33 year period.

Comparison with equity and fixed income
We also constructed a funded version of the carry strategy by adding in a cash return, allowing a meaningful comparison to be made with equity and fixed income investments. We compared the value of $1 invested in carry in 1975 to $1 invested in US equities and $1 invested in US fixed income. This is shown in Exhibit 4. The initial $1 investment grew to $15.25 in fixed income, $51.74 in equities and $84.16 in funded carry.

As we can see, funded carry has more than held its own with equities in terms of returns, whilst experiencing volatility levels somewhere between those of equity and fixed income. The consistency of the returns from the carry strategy is borne out in the infrequency and shallow nature of the drawdowns, particularly when viewed in the context of the equity declines of 1987 (29%) and 2000-2003 (46%). In fact, there were eight periods when equities experienced double digit drawdowns. In contrast, the 24% loss in the aftermath of the ERM debacle in 1992-1995 and the 16% loss in 1986 following the Plaza Accord interventions were the only two such drawdowns for the carry strategy. Neither of these periods corresponded with underperformance in either equities or fixed income.

Historically low correlation
In the case of the carry strategy, the average correlation...
The inclusion of carry clearly offers access to a much-improved risk/return tradeoff.

Adding a carry strategy to an equity/fixed income portfolio

Our historical simulation provides us with average return, risk and correlation statistics for equities, fixed income and currency carry. These statistics can be combined to create an efficient frontier showing the risk/return tradeoff for optimal portfolios across the risk spectrum. Exhibit 7 displays a chart containing two such frontiers – the lower one being the frontier formed from a fixed income/equity portfolio, and the upper one being from a fixed income/equity/carry portfolio.

The three-asset portfolio, invested in fixed income/equity/carry, dominates the two-asset version, outperforming by around 3.5% per year for an equivalent risk level. However, it does tend to invest imprudently heavily in carry; it holds significant amounts of fixed income for more risk averse investors but never allocates much capital to equities. In other words, it appears to include carry in the portfolio mainly at the expense of equity. Nevertheless, the inclusion of carry clearly offers access to a much-improved risk/return tradeoff.

A more robust approach that does not rely upon the vagaries of optimization is to construct an equally weighted basket of the three investments. The performance statistics of each investment, as well as the equally weighted fixed income/equity and fixed income/equity/carry portfolios, are shown in Exhibit 8.

The statistics show that the three-asset mix is a considerable improvement on the two-asset mix, and has displayed equity-like returns whilst only exposing investors...
to fixed income-like risk levels. In fact, the three-asset mix is the only investment to have avoided double digit drawdowns and underperformances of greater than a year over the entire historical simulation.

The carry strategy’s place in a diversified portfolio
Traditionally, a diversified portfolio has included equities and fixed income, with excess returns being derived from equity, liquidity, credit, and term premia. However, the currency carry trade is utilized far less often and the drivers of the returns are still being actively debated amongst academics. Despite this, the strategy has consistently displayed strong returns, and low historical correlations with the two traditional asset classes, whilst experiencing relatively shallow drawdowns and a risk level somewhere between that of equities and fixed income. These characteristics — plus the fact that currency markets are amongst the world’s most liquid derivatives markets, allowing easy scaling of the carry strategy to the required risk level — make a compelling case for including an allocation to currency carry in a diversified portfolio.

Exhibit 7: Efficient frontier without/with carry

Exhibit 8: Full investment statistics

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