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Currency Alpha Revisited

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A.T.

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Introduction

In June of 2006, Rogerscasey published a research white paper entitled "Active Currency Management: Arguments, Considerations, and Performance for Institutional Investors", which detailed definitions of, and arguments for, passive and active currency management, particularly with regard to underlying international equity holdings. It also provided detailed performance metrics for a multitude of institutional currency managers. This paper serves as a continuation of that previous work and endeavors to reacquaint the institutional investor with the arguments for alpha-seeking investments in currency, while also providing a more comprehensive introduction to currency alpha strategies, which can seem esoteric relative to more traditional investments. This paper is divided into two primary sections: the first reiterates the case for currency alpha mandates, along with an examination of some related implementation issues, while the second consists of a technical appendix, created with the understanding that some readers won't be interested in such a high level of the detail that delineates major currency trading styles.

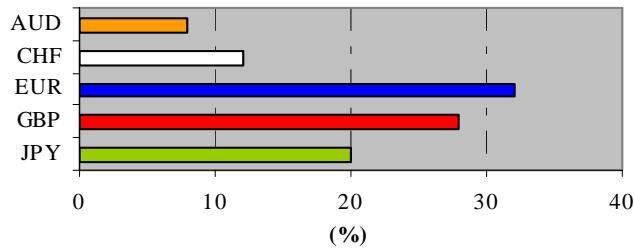
Currency Alpha, Graphically

It can be helpful to simply see currency concepts that are often taken for granted, depicted visually. Figure 1 on the next page depicts four essential steps in the traditional currency overlay process. Currency in that type of program is managed relative to underlying international assets, with some strategic hedge ratio (0%, 50%, 100%, etc.) serving as the benchmark. It has also been common for traditional overlay clients to restrict managers to those currencies already represented in the equity portfolio - in this example, an opportunity set of only five currencies - as well as from trading cross-rates. This sort of mandate usually limits the ability of the active currency manager to implement their insights, as they have typically been constrained by the number of currencies that they can trade, benchmark hedge ratios that are concerned with reducing currency risk rather than seeking alpha, and the inability to implement net short positions.

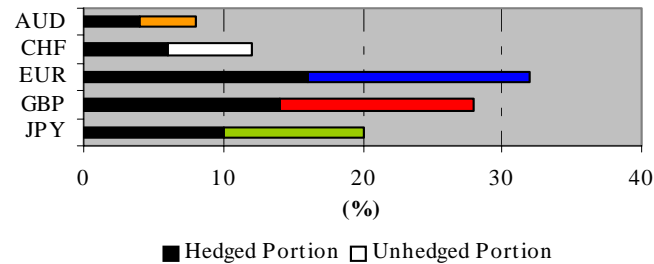
Figure 2 shows a hypothetical currency alpha portfolio. Salient characteristics of this less constrained portfolio include a much greater range of traded currencies, the absence of a benchmark that is linked to existing equity exposures, short positions in multiple currencies, and a much greater magnitude of active currency positions. Volatility in currency alpha programs is often managed to levels similar to those in traditional overlay programs, but the alpha manager is presented with a greater opportunity set with which to seek return and control risk.

Figure 1: Traditional Active Overlay Example

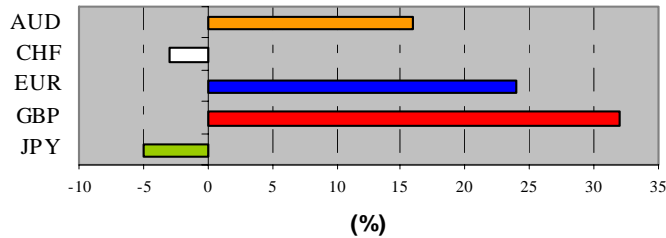
1. Underlying International Equity Portfolio Currency Exposure (only a five-currency opportunity set)



2. Establishment of Strategic Benchmark (50% of underlying positions hedged, active risk will be managed to these half-hedged positions)



3. Currency Manager's Active Views (these are formed independently of the underlying portfolio, and are based on the manager's philosophy and process)



4. Net Currency Exposure Post-Overlay (the result of implementing risk-adjusted active views on top of the underlying portfolio exposures)

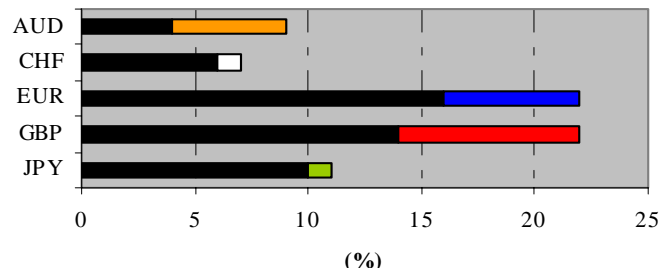
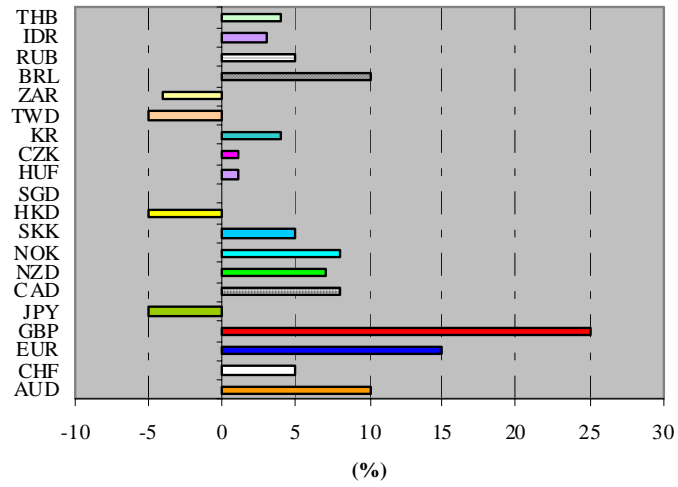


Figure 2: Currency Alpha Example

1. Currency Manager's Active Views
Implemented without Significant Constraints



Currency Alpha, Conceptually

The investor needs to understand that risk-reducing and alpha-seeking activities in currency, as in traditional asset classes, should be conceptually separated. The reduction of risk in overlay parlance has to do with minimizing volatility and negative drawdowns, stemming from currency movements and hedges vis-à-vis existing international portfolios.

The pursuit of currency alpha, on the other hand, is active investment activity that should not be constrained with consideration of an underlying portfolio. Alpha-seeking in currency attempts to exploit perceived inefficiencies in this market, and is typically viewed as an absolute return strategy that should be benchmarked against a cash rate. This is because currency alpha programs usually require partial capital funding and then employ leverage to achieve desired volatility targets, and because currency managers don't recognize currency beta in the same way that we speak of beta in the long-only equity space. Currency alpha programs are intended to be largely unconstrained alpha generators that operate within clients' risk-preference guidelines.

A brief mention of the concept of beta, or systematic and undiversifiable risk, in currency: it does not exist in currency as it does in long-only equity. Arguments and evidence do exist, however, stating that positive expected long-term return can be expected from going long higher interest rate denominations and short lower interest rate currencies (the "carry trade")² and from going long emerging markets currencies³. These arguments refer to the harvesting of what *may* be a systematic risk premium that, unlike a true beta, can be immunized. So, while there may be positive expected return associated with certain currency strategies because of risk premia or some other explanation, there does not seem to be a systematic risk that *cannot be diversified* that also brings with it positive expected return in the way of an equity index fund.

² There is no doubt that, contradictory to basic economic theory, the carry trade has been consistently profitable over a long time horizon. Explanations for this phenomenon have traditionally tended to focus on the existence of risk premia, but have also included a range of other hypotheses; see Craig Burnside, Martin Eichenbaum, Isaac Kleshchelski, and Sergio Rebelo's "The Returns to Currency Speculation" for one discussion of the carry trade and explanations surrounding its existence.

³ Del Vecchio and Mastromarini of JPMorgan Asset Management, for example, find evidence that a robust risk premium for emerging currencies existed during the period March 1997 to February 2006.

The Investment Case for Currency Alpha

The previous research paper on active currency management, citing evidence that a significant sample of institutional currency managers, acting upon both overlay and pure alpha mandates, had provided robust Information/Sharpe Ratios, as well as portfolio diversification benefits via uncorrelated alpha sources, concluded that active currency management should be strongly considered for investment. While Rogerscasey maintains this argument, it is worthwhile to reexamine the case for investing in currency alpha strategies.

In this section we will utilize the Parker FX Index, which tracks the equally weighted performance of a large group of global currency managers⁴, to analyze the performance and diversification benefits generated by currency alpha programs. Beginning with Figure 3 and "hit ratio" (percentage of monthly returns that are greater than zero), minimum/maximum monthly return metrics, and annualized returns over various horizons, we see that the non-risk-adjusted Parker FX Index has generated a monthly hit ratio of just under 54% and a since-inception return of over 13%. *These are not conceptually apples-to-apples comparisons as the Parker FX Indices entail equally weighted active manager composites, and these managers are investing in a space where it is typically maintained that there is no expected return from holding a given "asset"* (in this case, a given currency, which is just an exposure). The passive indices are all market capitalization-weighted equity indexes that have a significantly positive expected return over time (i.e., the classic equity risk premium demanded above the risk-free rate). In other words, the positive net-of-interest returns from currency are viewed as pure alpha, while the passive indices represent beta. It is therefore interesting to see, with regard to the hypothesis of zero expected return, that the Parker FX Index has generated a higher annualized return since inception than either MSCI EAFE or the S&P 500. While the inception dates of these various indices are widely divergent, and the Parker FX Index has under-performed the other indices during the past 15-year period, what we see is that currency managers (as represented by the Parker FX Index, and consistent with what our previous paper concluded) in recent years have provided investors with a rich source of alpha.

⁴ The Parker FX Index was developed by Parker Global Strategies of Stamford, CT. The risk-adjusted (as opposed to Reported) Parker FX Index, which entails both systematic and discretionary sub-indices, is scaled to a 5% annual volatility level (net of fees and interest income). The index, as of the publication date of this paper, included 66 different currency programs managed by 45 different firms in the United States, Canada, and Europe. Of these 66 programs, 46 were systematic and 20 were discretionary. The Parker FX Index is proprietary to Parker Global Strategies, and performance data was obtained through paid subscription. Definitional note: "discretionary" refers to currency programs where the manager has a wide range of freedom in implementing their own views (whether largely subjective, informed by various external sources, or both), whereas "systematic" refers to rules-based, model-driven implementation. Both will be explored at greater length in the technical appendix.

Figure 3: Parker FX Index Performance Versus Selected Passive Indices Through August, 2007*

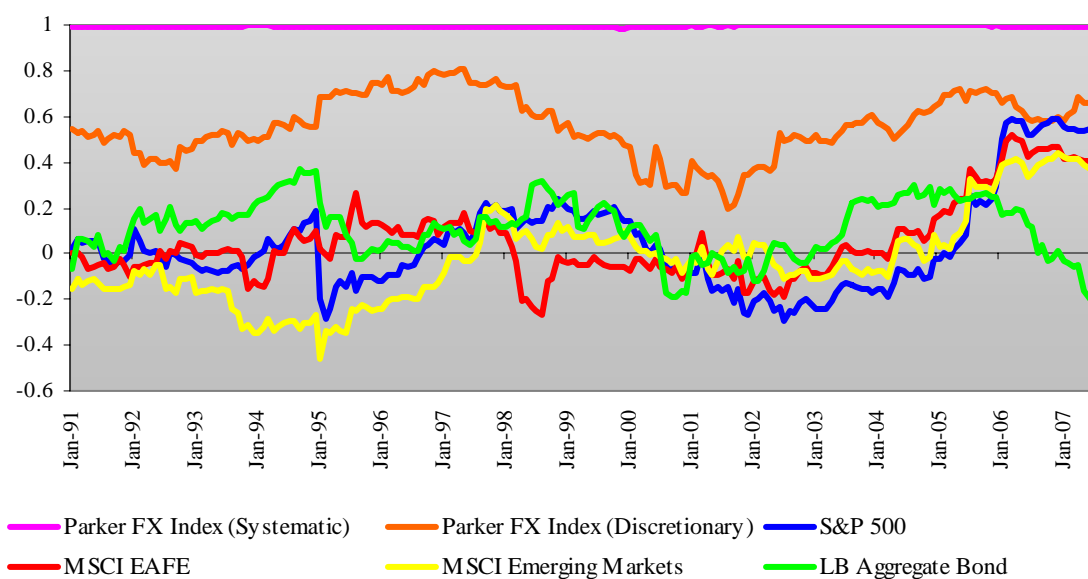
	Hit Ratio	Minimum Return	Maximum Return	1-Year	2-Year
Parker FX Index	53.8%	-12.3%	16.0%	3.0%	1.8%
Parker FX Discretionary	66.2%	-6.0%	11.7%	3.0%	3.2%
Parker FX Systematic	53.5%	-14.4%	17.4%	3.0%	1.2%
MSCI EAFE Index	62.2%	-14.4%	17.9%	19.2%	22.0%
MSCI Emerging Markets	64.8%	-28.9%	19.0%	44.0%	37.4%
S&P 500	63.4%	-37.7%	88.8%	15.1%	12.0%
	3-Year	5-Year	10-Year	15-Year	Since Inception
Parker FX Index	2.9%	2.3%	3.9%	5.5%	13.2%
Parker FX Discretionary	3.1%	3.0%	3.5%	5.8%	10.7%
Parker FX Systematic	2.8%	2.1%	4.0%	5.4%	13.5%
MSCI EAFE Index	22.7%	20.0%	8.4%	9.2%	11.6%
MSCI Emerging Markets	39.0%	33.2%	11.1%	11.7%	15.8%
S&P 500	12.2%	12.0%	6.8%	10.9%	10.4%

*Based on monthly returns data from the respective inception dates of the included indices:
Parker FX Indices - 1986, MSCI EAFE - 1970, MSCI Emerging Markets - 1988, and S&P 500 - 1926
Please note again that the Parker FX returns are **net of fees and interest generated from cash**,
while the passive equity indices depict **gross returns**.

It is important that we not just conclude the investment case for currency with evidence of alpha, but also examine risk-adjusted returns and portfolio diversification benefits. Indeed, with regard to risk-adjusted returns, it is important to confirm that a small amount of alpha is being generated efficiently, i.e., without a high level of risk (which would be reflected over time in a reasonable Sharpe Ratio). Taking a look then at the Parker FX Index (risk-adjusted), which is scaled to a level of 5% volatility, we see that risk-adjusted returns since the 1986 inception date have been 3.3% per annum, which yields a robust Sharpe Ratio of greater than 0.6. However, the Sharpe Ratio for the risk-adjusted index has been negative during the past five years through August of 2007. This is consistent with what we have been hearing from a number of currency managers - though certainly not all - who have been having a difficult time in the carry-driven convergence environment of recent years. This is a situation that should undoubtedly be monitored carefully, but not one that we believe is evidence of a secular change.

Finally, it is certainly worth taking another look at the diversification benefits that currency alpha strategies can bring at the total plan level. Figure 4 demonstrates that over time, and again using the Parker FX Index as the proxy for diversified currency alpha management, currency can provide diversification benefits for the portfolio, as evidenced by generally low to negative correlations with other major asset class indices. Furthermore, looking at the pink line that represents the Parker FX Index Systematic style sub-index, we see a very high correlation (nearly 1.0) with the broad index, but a much lower correlation with the Parker FX Index Discretionary (in orange) style sub-index; this indicates the

Figure 4: Rolling 3-Year Correlations with the Parker FX Index



importance of diversifying currency alpha programs across systematic and discretionary traders.

It also cannot be ignored that the correlation with other indices has crept up substantially in recent years, which has been a trend across a number of asset classes. Generally speaking, following the bust of the growth-oriented tech market in the United States in the early 2000s, globalization phenomena (e.g. trade agreements, low-cost outsourcing, retrenchment of capital controls, etc.) and relatively low interest rates in the major developed markets took hold such that liquidity in global asset markets generally increased substantially. With sustained low interest rates continuing to help fuel liquidity and demand (e.g. the boom in commodities prices and global real estate), low-cost outsourcing (e.g. Chinese manufacture denominated in cheap yuan) helping to contain global inflation, and a high degree of political and monetary stability, amongst other trends, the demand for traditionally risky assets (e.g. emerging markets equity, small-cap equity, emerging markets debt, etc.) increased significantly. What we have thus seen in recent years is a rare sort of global convergence environment where volatility has generally been extremely low while global asset prices have been robust. We can extrapolate from the information that we have that a number of empirical models weren't quite ready to exploit this sort of environment, which has been characterized by a strong appreciation of commodity-based currencies (e.g. New Zealand dollar, Canadian dollar, Australian dollar), an historically weak United States dollar, a fairly flat-line Japanese yen, an unusually stable monetary environment in the emerging markets, and the overall success of the carry trade in such a low volatility environment. However, unless the world has arrived at some sort of steady-state utopia, which seems highly unlikely, volatility should pick up again, and some managers that have under-performed in recent years should be able to exploit traditional sources of alpha once more.

Some Implementation Issues

One of the most important aspects to understand about currency alpha strategies is that they are usually implemented as leveraged strategies. This means that, rather than committing a full capital investment to the currency program, an investor with a separate account will, through the currency manager, obtain credit at a range of large counterparty banks where the currency manager will be trading via forward and options contracts. In the case of a manager who also utilizes futures contracts, accounts would be established under the governing rules of the given exchange(s). So, for example, an institutional plan that wants to commit a notional amount of \$500 million to a particular currency alpha manager may be required to fund, say, \$80 million, and then the remaining \$420 million of desired exposure could be obtained through the levered trading instruments, thus resulting in a leverage ratio of 5.25. What this utilization of leverage also means is that the investor must be prepared to deal with related cash flows, both positive and negative, stemming from contract settlement dates. Currency managers typically implement their trades using quarterly settlement dates, so the investor must be ready to accept cash or cover negative performance four times per annum. The magnitude of these cash flows, of course, will be a function of the degree of leverage and the volatility of the mandate. Due to the utilization of leverage and frequent cash flows associated with currency alpha programs, the investor should have an efficient plan in place with which to deal with the related liquidity pool.

Not all currency vehicles utilize leverage, however. A number of currency managers have established funds, geared towards clients with smaller assets, that require full funding, but at a low level of minimum investment. These currency funds are typically run at a fairly high level of volatility, often 10-20%, but sometimes much greater. To get a quick feel for the currency alpha fund marketplace, a brief survey was conducted with 13 different institutional currency managers. Out of these, ten currently offered a pooled vehicle, and one was getting ready to launch a commingled fund. The account minimums ranged from no account minimum to \$10 million, with the average being just under \$3 million. The target volatilities of these funds ranged from 10% to 40% annualized, with the average being 19%. Fees for currency alpha mandates are frequently hedge fund-like in that they entail an asset-based fee plus a performance fee (e.g., 2.0% base fee plus 20% of carried interest), although some are much lower; currency fees are also often a function of account size, risk target, and servicing requirements. These funds are usually incorporated offshore in Ireland, the Caymans, or Luxembourg, or in the United States through a Delaware-based vehicle. This brief survey did not include hedge funds or funds-of-funds, of which a number, both pure currency and multi-strategy, exist that can be used to utilize currency alpha strategies. A number of managers also stated that, with sufficient client demand, they would be willing to create a 1940 Act mutual fund to house their currency alpha strategy.

Furthermore, as the next section will describe in greater detail, the active currency space is fairly rich in stylistic terms. Therefore, like investors in traditional asset classes, an investor in currency should plan on, whenever possible, attaining a good degree of style diversification in their currency platform. This could potentially be achieved, for example, by investing in a fund-of-funds or by investing directly in several managers whose styles are

diverse across such elements as degree of discretion, fundamental versus technical alpha sources, time horizon, emerging markets exposure, and proficiency in specific currency pairs. The next section - the technical appendix - will, as an exploration of major currency trading styles, contribute substantially to this discussion of currency portfolio diversification.

Conclusion

This paper has served two primary purposes: to revisit the investment case for including currency alpha mandates in a portfolio, and to provide a reasonably extensive exploration of major currency trading styles. Rogerscasey continues to maintain, after consistently monitoring "currency as an asset class", that active currency management provides appealing traits for institutional investors. While recent years have been fairly difficult for a number of currency managers, the Sharpe Ratio for the asset class continues to be robust over a longer time horizon. This, at least intuitively, seems to be because, as discussed in the previous currency research paper, the global currency market entails exploitable inefficiencies owing to the highly segmented utility functions of the largest players (corporate treasuries, commercial banks, central banks, equity managers, etc.). In other words, some of the most important players in the currency market are not primarily trading currencies to make a profit, but to hedge risk. Currency, both managed and unmanaged, has showed without question that it can provide attractive diversification benefits at the total plan level. Finally, as explored in the technical appendix, currency managers employ a number of strategies to extract alpha from this complex asset class. In sum, we would invite the institutional investor who hasn't spent much time exploring investment in currency to strongly consider the asset class.

Technical Appendix: Currency Alpha Strategies

The aim of this section is to describe the major strategies that are currently being employed by currency managers to generate profits in the speculative foreign exchange space. These strategies can be employed regardless of the investment vehicle type, whether it is an institutional separate account or commingled fund, a hedge fund, or a hedge fund-of-funds. The value of this section for the reader is the acquisition of greater understanding, including graphical depictions, of tactics used by active managers in the currency market - a space that is growing in importance to U.S. dollar-based investors, and one that can be fairly complex and difficult to understand. This section hopes to foster the literacy, with regard to currency alpha, of the investor becoming newly acquainted with this topic.

Before delineating the specific styles, however, let us first discuss qualitatively the timeline along which active currency management in the United States evolved. The earliest currency managers germane to this conversation initially served as advisors to major corporate treasuries during the early 1980s. These advisors were granted little or no discretion with regard to active management. The corporate treasuries themselves, confronted with various changes in accounting standards and volatility in international markets, could trade long-date (one-year or more) or short-date (less than one-year) forwards (trades in the spot market were relatively unimportant) to help manage earnings volatility. With the adoption of Basel I by central banks in the late 1980s, came the elimination of the long-date forwards, and since that time currency managers have overwhelmingly implemented their views using 3- and 6-month forward contracts. Furthermore, with greater volatility on the part of the U.S. dollar, some of the more progressive corporate treasury desks and currency advisors increased the magnitude of their active currency management. Active trading styles, which had traditionally been dominated by the carry trade, slowly began to grow more robust as quantitative models and technical analysis developed. The opportunity set at this time was restricted to the major currencies, with some access to more exotic currencies such as the Singapore dollar. By the mid-1990s, the active currency space, which was typically characterized by implementation through overlays on an asset-weighted basis, had grown somewhat more competitive. This trend has continued into the currency alpha space, such that in the past decade dozens of pure alpha programs have come into being.

Discretionary Currency Trading

Overview

The most flexible currency strategy, discretionary trading encompasses many of the principal styles or risk factors, that determine currency returns. A discretionary manager has at his/her disposal all instruments, across almost all currencies. Assuming a leveraged mandate, any profit or loss can be attributed to the manager's skill, and not necessarily to a "beta", or style factor. Discretionary traders are the only ones that use currency options to make directional and volatility bets, as historical options data is still too sparse to use a systematic (rules-based, typically very quantitative) approach.

Strategies

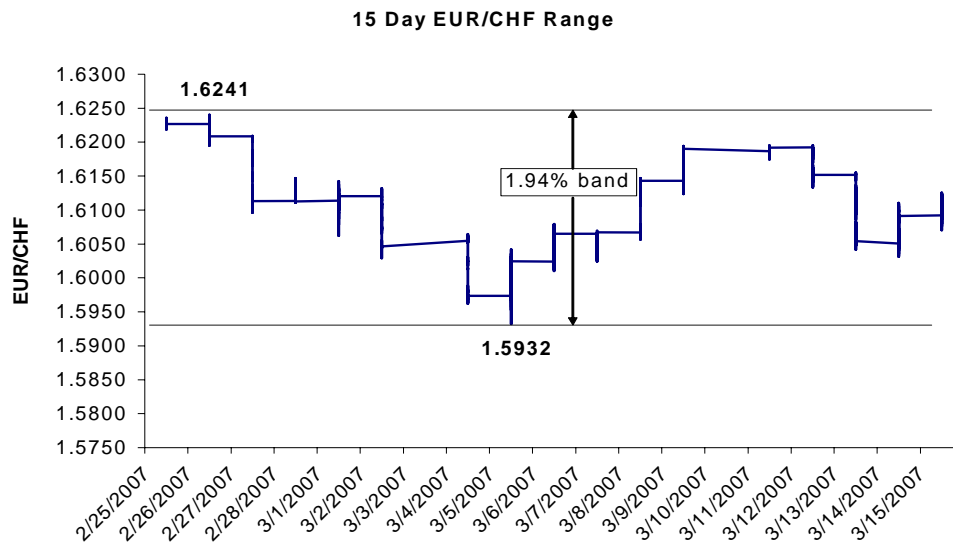
Directional Trading

Discretionary managers can sometimes profit on a large directional move in a currency that is part of a sustained trend. In contrast to systematic trend followers who are agnostic as to the reason for the trend, discretionary managers have a fundamental thesis for why a certain currency is likely to move in one direction for an extended period. The fundamental thesis is often validated with technical indicators to determine the appropriate entry and exit points. For example, if a trader is convinced that the Bank of Japan will raise rates at their next policy meeting and that markets are looking for such a move, he/she may sell USD/JPY ahead of the decision to capture the anticipated move.

Range Trading

This strategy is trading-oriented and short volatility. During periods of very low market volatility, a discretionary manager may sense that there is a set range within which a currency is likely to fluctuate over the short term. He/she is likely to confirm this assessment of the range by looking at the recent trading history, technical indicators, volatility, and market positioning. Low levels of volatility, broadly speaking, should indicate the viability of a range. He/she will then simply "buy low and sell high" the currency in question (see Figure 1).

Figure 1a: Range Trading



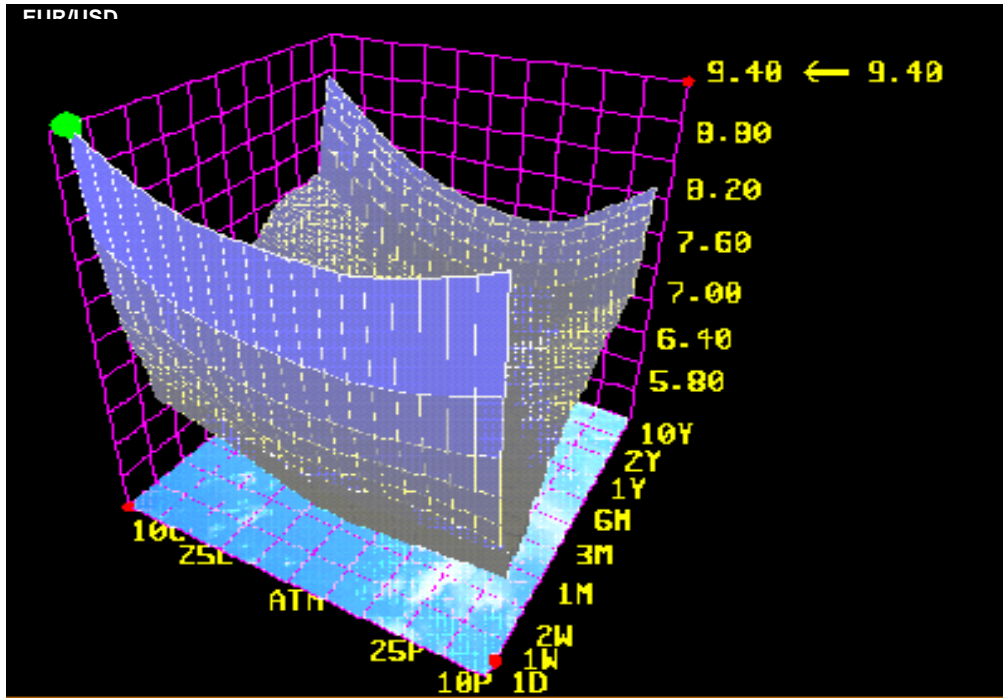
Volatility Trading

Discretionary managers are typically the only type that can exploit the inefficiencies present in the currency options market. When looking across strike prices, currency options tend to be overvalued at the tails of the distribution, leading to a volatility "smile" (see Figure 2). Some managers sell overvalued options and hedge themselves by buying undervalued options. Managers can also exploit undervalued options by going long and hedging volatility exposure.

Risk Management

Discretionary managers manage risk in many different ways. They often have a threshold of loss where they will re-evaluate their position ("soft stop-loss"), and another where they exit the trade altogether in order to preserve capital ("hard stop-loss"). They also manage leverage according to a volatility target and avoid excessive concentration in individual currencies. Sometimes, during periods of high volatility where the manager has a lack of conviction in the fundamentals and short-term tactical trading is difficult, he/she will stop trading altogether.

Figure 2a: Volatility Trading*



*This diagram depicts the distributional asymmetries across three dimensions - price, contract term, and option type - that can be exploited by volatility traders.

Systematic Technical Trading

Overview

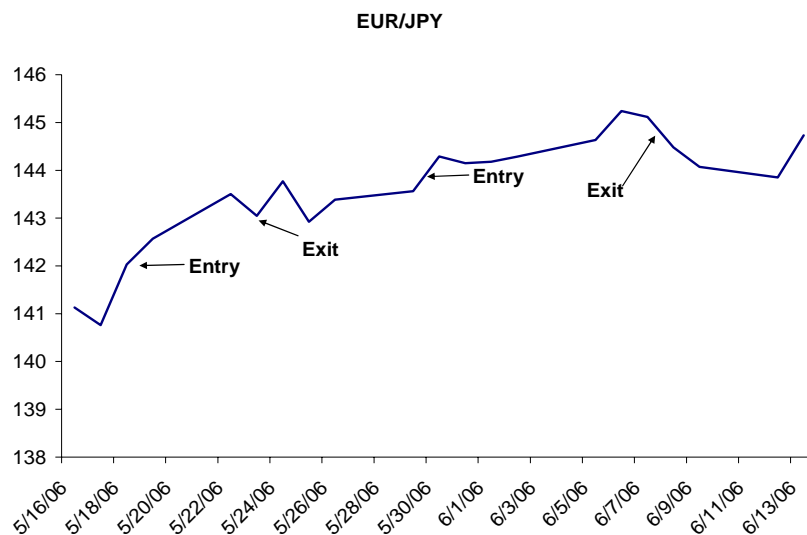
Systematic technical strategies use a rules-based model that gives buy and sell signals on individual currencies derived from price movements. The time frame for the trades ranges from less than an hour to a few weeks or more. Managers typically use little to no discretion in implementing this strategy; in other words, systematic strategies are driven almost entirely by quantitative models as opposed to individual judgment. Strategies can be long or short volatility, and are usually diversified across time frames and currencies. Typically, G-10 currencies are traded because of their lower bid/offer spreads and execution costs although, as emerging markets currencies gain popularity and their liquidity improves, more managers are trading in these markets.

Strategies

Momentum Trading

This is a trend-following strategy that takes positions in currencies that have exhibited sustained movement in one direction and that the systematic model predicts are likely to continue doing so. These strategies vary by time frame and currencies traded. For example, EUR/CHF has not been a great currency pair to trade on momentum because of the two currencies' high mutual correlation when traded with USD-based pairs. EUR/JPY, on the other hand, has been a better currency pair to trade using a momentum approach (see Figure 3). Managers often look at various moving averages to determine entry and exit points.

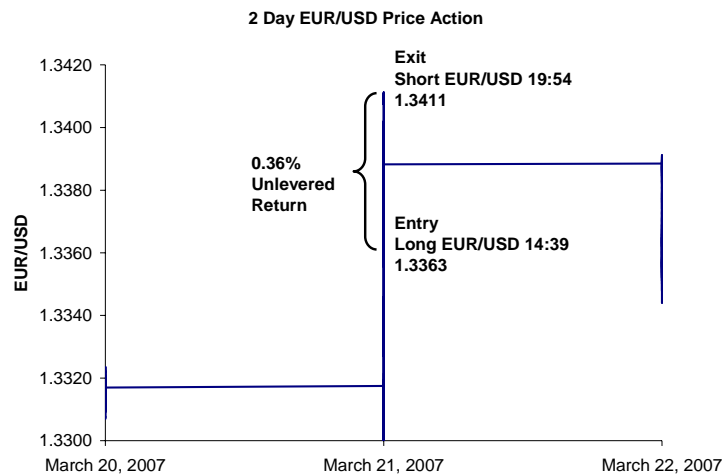
Figure 3a: Momentum Trading



Range Breakout

This strategy is long volatility and seeks to exploit the breakdown of a specific range, regardless of the direction. It works best when markets are in a period of relatively low volatility and then transition to a period of higher volatility. Managers, therefore, wait for ranges to form and volatility to settle down before putting on a position. A manager, for example, may place buy and sell limit orders a certain percentage away from the market overnight (usually based on a standard deviation band) and if the price requirements are met, he/she will ride the trend until the model signals the move is likely finished, at which point he/she will exit (see Figure 4).

Figure 4a: Range Breakout Trading



Mean Reversion

This strategy is short volatility and similar to the discretionary range trading strategy mentioned, although there is no fundamental analysis involved, and implementation is purely mechanical. A manager typically uses a moving average that may vary by currency pair and compares this to the spot price of a currency. If the spot price is higher than the moving average by a meaningful amount (determined again by the historical distribution), a sell signal is generated and vice versa. In periods of rapidly rising volatility, however, the model is often programmed not to initiate any trades, as they are likely to be unprofitable.

Risk Management

Risk is typically managed using hard stop-losses that are implemented systematically. Notional exposure (leverage) is based on following a specific volatility target that takes into account the recent market volatility regime. Multiple pairs are utilized to avoid excess concentration risk.

Systematic Fundamental Trading

Overview

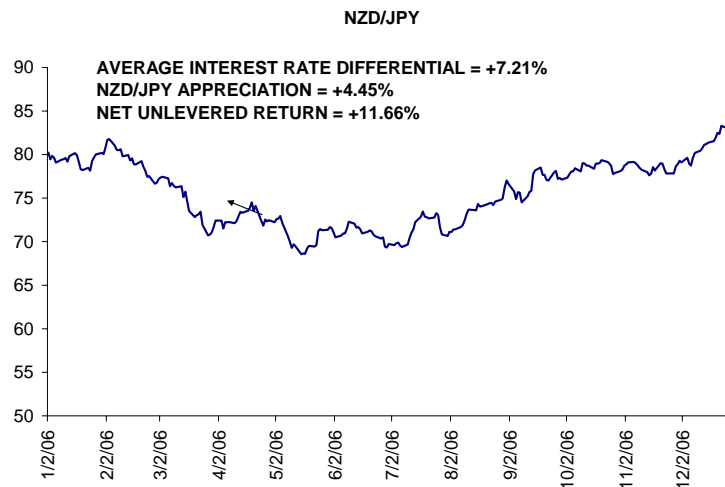
Systematic fundamental strategies use a rules-based model that gives buy and sell signals on individual currencies derived from fundamental risk factors. The time frame for the trades ranges from a week to several months. Strategies can be long or short volatility and are typically well-diversified across currencies. Both emerging markets and developed markets currencies are traded because low portfolio turnover can accommodate the higher transaction costs associated with emerging markets.

Strategies

Carry Trade

This strategy involves being long currencies exhibiting high sovereign interest rates and short currencies exhibiting low sovereign interest rates. The goal is to capture the interest rate spread between low and high-yielding currencies (see Figure 5). The volatility of the currency pair is often taken into consideration and the position size is adjusted accordingly.

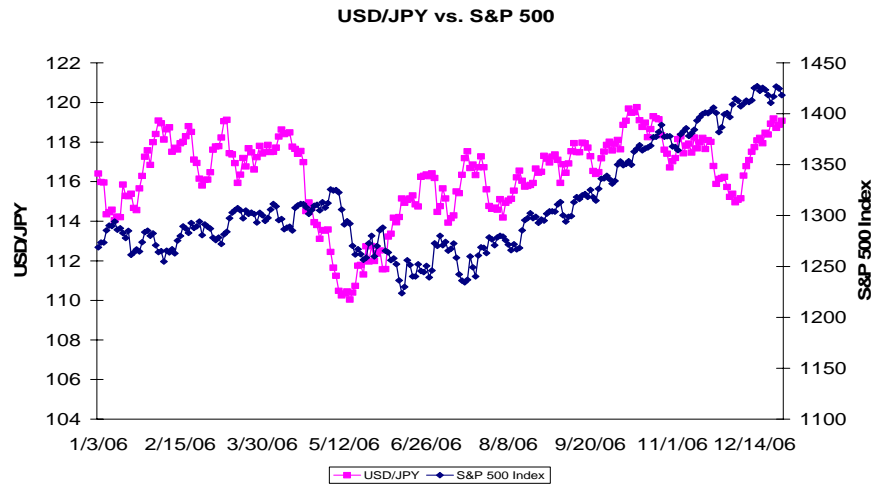
Figure 5a: Carry Trade



Asset Valuations

As world equity and fixed income asset prices move, managers in those strategies rebalance their portfolios and subsequently readjust currency hedges, thereby causing fluctuations in currency values. Since there is a lag effect between movement in broader equity and fixed income markets and the currency markets, there is time to “get ahead” of the anticipated effect on individual currencies (see Figure 6).

Figure 6a: Asset Valuation and Currencies



Central Bank Policy

Based upon inflationary and other economic data, the anticipated reaction of the central bank, and the central bank’s credibility in fighting inflation, a manager may go long currencies where an interest rate increase is likely and short a currency where an interest rate decrease appears likely.

Purchasing Power Parity (PPP)

This is perhaps the longest-term factor in that it calculates the domestic price of a basket of goods across countries and then compares the prices of that basket between countries to their exchange rates. Strong deviations can imply over or undervalued currencies and the manager can take a mean reversion oriented bet towards a convergence. It can take months to years for such a bet to pay off. Factors such as current account balance can also be used to help indicate which currencies look expensive or cheap relative to those of their international economic partners.

Risk Management

Risk is typically managed using portfolio-level drawdown controls, implemented systematically. Notional exposure (leverage) is based on following a specific volatility target that takes into account the recent market volatility regime. Multiple pairs are utilized to avoid excess concentration risk.

Citations

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