Adrian Lee & Partners
ACTIVE ASSET AND CURRENCY MANAGEMENT

The Case for Active Currency Management

Outline of Presentation

- This Presentation is structured as follows:
- Section 1. We examine whether the currency market displays the conditions of an efficient market from a theoretical standpoint.
- Section 2. We examine the academic literature on exchange rates and active currency management.
- Section 3. We examine ALP's proprietary research on the return to active currency management.
- Section 4. We examine some of the investment management industry evidence on active currency management.
- Section 5. Conclusions.

Preliminary Issues

- There are many different types of active currency management, ranging from dynamic hedging (tightly constrained) to currency hedge funds (few constraints). We do not focus on any one type of currency management specifically, but instead focus on the performance of currency management in more general and conceptual terms. We examine the academic literature and the evidence from ALP's own research and track record, as well as research on the performance of other currency managers.

- To assess performance we examine excess returns and information ratios. The appropriate benchmark for an active currency program is a zero benchmark as a currency program can be established with zero capital. Any return is 'on top' of return to underlying assets.

Section 1: Is the currency market efficient?

- The most commonly cited theoretical conditions of an efficient market are as follows:
  - Common Objectives: All market participants share a common goal of profit maximisation. This is not the case in currency markets. Central banks and governments intervene in currency markets in pursuit of macroeconomic policy goals. Large corporations buy and sell currency as needed for operations, with no intention to profit from currency trading.
  - Numerous Small Buyers and Sellers: Large and dominant buyers/sellers such as central banks and large financial institutions are often observed in currency markets. Central banks are not 'price takers' in these markets.
  - Common Information Sets and Common Understanding: Exchange rate determination is a complex general equilibrium phenomenon that is not well understood by the majority of participants in the market. This complicates the process of incorporating new information into prices and may hamper the efficiency of the currency market overall.
  - Lack of Barriers to Entry: Active currency management is not a 'natural' activity for most investment managers in contrast to conventional asset classes. This lack of familiarity and understanding acts as a barrier to entry and keeps many potential participants out of currency markets.
- Hence, it seems reasonable to conclude that the currency market may not be efficient.

- There is vast literature on exchange rates generally. Several elements of this literature are relevant for the issue at hand.
  - 1. Macroeconomic Models and Exchange Rate Forecasting
  - 2. Currency Market Inefficiencies
  - 3. The Performance of Currency Managers
- We examine each in turn.

Section 2: (1) Macroeconomic Models and Exchange Rate Forecasting

- The seminal early paper in this research area was published in 1983 titled "Empirical Exchange Rate Models of the Seventies – Do they fit out of sample?" [1]. This study examined the forecasting accuracy of the principal macroeconomic exchange rate models that existed at the time. The paper concluded that no model performed better than a random walk out of sample.
- One of the most widely cited papers in recent years was a follow on to this earlier work, titled "Empirical Exchange Rate Models of the Nineties – Are any Fit to Survive?" [2]. The conclusions of that research were somewhat less clear-cut, though in general the models studied displayed poor forecasting ability.
- However, the purpose of this research agenda has traditionally been to study the principal academic theories of exchange rate determination, not to test market efficiency or to assess whether particular investment strategies could yield excess returns.

- This research has focused on the identification and testing of specific inefficiencies in currency markets (often referred to as 'factors'). Three key inefficiencies/factors have been identified in the literature. These are (1) Forward Rate Bias (2) Short Term Autocorrelation and (3) Longer Term Mean Reversion (better known as (1) Carry, (2) Trend Following and (3) Value).
- The research indicates that these inefficiencies have been persistent and significant.
- Forward Rate Bias: It is possible to generate excess returns by going long currencies with higher interest rates, and short those with lower interest rates. There is a significant body of evidence that shows the persistence of this inefficiency. The paper "Trading the Forward Rate Puzzle" [3] provides a good recent overview of this evidence.
- Trend Following: A large body of research has identified autocorrelation in currency returns on shorter run horizons. That is, positive currency returns are more likely to be followed by positive than negative returns, and vice versa. Investment strategies based on this inefficiency have consistently been shown to yield excess returns. In "Do Momentum Based Strategies Still Work in Foreign Currency Markets?" [4] the authors conclude that momentum/trend following strategies remain effective in currency markets, particularly in emerging markets.
- Value: Over longer horizons, on the order of several years, research indicates that it is mean reversion towards fair value (fair value is usually defined using a variant of PPP) that dominates. In the article "The PPP Debate" [5] the authors survey the relevant literature and conclude that exchange rates tend to revert towards fair value over medium to longer term horizons.

Section 2: (3) Performance of Currency Managers

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ACTIVE ASSET AND CURRENCY MANAGEMENT

- Up until several years ago, the literature on the performance of active currency managers was fairly limited. However, in recent years, as databases of manager performance have built up, research has moved in this direction. A recent much cited paper in the area, “Do Professional Currency Managers Beat the Benchmark?” [6], concluded that data on 34 individual currency managers (Barclays Currency Traders Index) showed that the managers earned excess returns averaging 25bp per month over the 1990 to 2006 period.

- Adrian Lee & Partners’ (ALP) research and track record provides further evidence in support of active currency management.
- ALP research has identified a range of factors that yield attractive (high and relatively stable) information ratios, both individually (i.e. each factor on its own) and particularly when combined (i.e. all factors combined into and investment process) when backtested on data covering the last 15 or so years.
- Several of the factors in the ALP process correspond to sophisticated versions of the structural inefficiencies identified in the literature (Carry, Trend and Value).
- Furthermore, ALP research has identified a number of additional factors with attractive and persistent positive information ratios, further reinforcing the conclusion that active currency management can add value.
- Hence, ALP research indicates that currency markets are not efficient.
- The factors in the ALP process are set out on the next page (the definitions of the factors have been simplified somewhat where appropriate).

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Carry Related Factors:

- Nominal short term yield – Long high yielding currencies versus low yielding currencies.
- Negative slope – Long currencies with positive slope (higher short term than long term rates).
- Real long-term bond yield – Long currencies with high real (inflation adjusted) long-term bond yields versus lower yielding currencies.

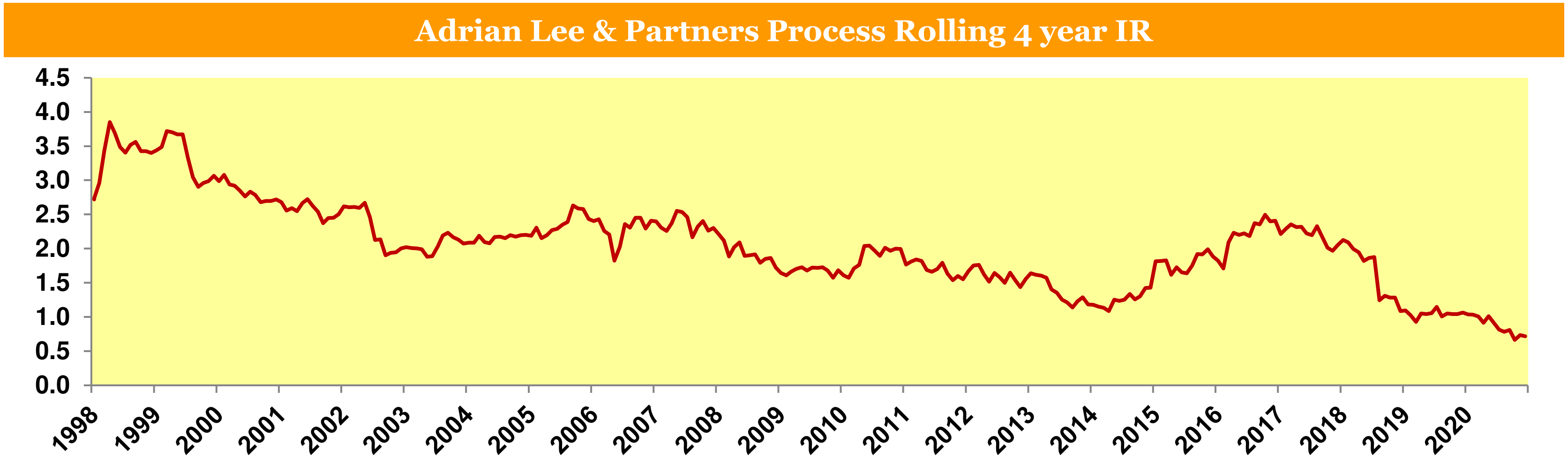
Value Related Factors:

- Long term valuation (PPP) – Long currencies that are measured as undervalued on our proprietary measure of long term equilibrium fair value versus currencies measured as overvalued.
- Trade balance – Long currencies with an improving trend in their trade balance versus currencies with a deteriorating trend.
- Terms of Trade – Long currencies with an improving trend in their terms of trade (ratio of export prices to import prices) versus currencies with a deteriorating trend.
- Commodity prices – Long commodity exporting currencies when commodity prices are rising, and vice versa.

Trend Related Factors:

- Technicals (trend following) – Long currencies that are trending up, and short currencies that are trending down. Trends are measures using moving average crossover rules.
- Risk aversion – ALP proprietary models measure the level of risk sentiment in global markets, and buys ‘risk seeking’ currencies (i.e. emerging market currencies and currencies with higher interest rates) vs ‘safe haven’ currencies (i.e. US Dollar, Japanese Yen, Euro, Swiss Franc) when sentiment is positive, and sells risk seeking currencies when risk sentiment is negative.

- ALP's research has examined the performance of each of these factors across a broad set of currencies (32 in all, covering developed and emerging markets) and over a significant period of time (from the early 1990's on). Each factor is seen to work (positive information ratio) across the majority of currencies and over the majority of time periods. The process as a whole has a high and stable information ratio across all currencies and all relevant time periods.
- This persistence over time, and consistency across a large set of currencies, further strengthens the conclusion that active currency management, when implemented efficiently, can produce significant and attractive information ratios.
- The chart below shows the 4 year rolling information ratio of the ALP process.



- Over the past 20 or so years there have been a number of studies undertaken to assess the performance of active currency managers. The majority of these studies have been undertaken by professional investment consultants. This research has concluded that professional currency managers have outperformed appropriate benchmarks and have delivered attractive information ratios. The studies include:
  - Currency Performance Analytics (1997) [7]: 14 currency managers over the period from 1989 to 1997. Excess returns across the managers, and over time, had averaged 1.9% per annum. This corresponded to an information ratio of 0.54.
  - Frank Russell (2001) [8]: 6 year period from 1995 to 2001. 24 currency overlay managers. Average excess return of 1.47% per annum
  - Russell Mellon (2004) [8]: Update of 2001 study, extending period of study to 2004. 20 managers. Information ratios of between 0.25 and 0.50 depending on base currency.
- In addition, there are a number of other sources of information on currency managers. These sources are outlined below. Again, each source indicates that active currency managers have delivered excess returns versus appropriate benchmarks:
  - BNY Mellon [9]: 10 major currency overlay managers. 5 year period to end 2009. Median return of 56bp per annum.
  - Barclays Currency Traders Index [10]: 114 currency managers. Equally weighted composite. Information ratio of 0.92 over 2000 to 2009 period.

- The currency market is not an efficient market.

- The academic literature identifies several persistent structural inefficiencies in currency markets which lead to excess returns for currency managers. Furthermore, the academic literature indicates that currency managers have outperformed appropriate benchmarks over time.

- ALP research evidence (ALP process has a high and stable information ratio when backtested across 32 currencies and over 25 years) and ALP performance further indicates that the currency market is not efficient and that active currency management yields excess returns and attractive information ratios.

- Evidence from the investment management industry (multiple sources and studies) shows currency managers globally have a solid track record of active currency management over the past 25 years at least.

Bibliography

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