Attachment 4

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THE CASE FOR ACTIVE CURRENCY MANAGEMENT

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Introduction

Currency movements can have a large effect on the returns generated by international investments, yet many investors neglect careful consideration of currency issues when they determine their investment strategies.

Analysis of currency returns has shown that:

- a strategic currency hedging policy can be an important risk control measure for global funds, and
- active currency management can be used to enhance returns with little additional risk.

This article concentrates on this second issue. Why should investors consider active currency management as a source of added value? What types of strategy are used by active currency managers? How can an investor include active currency predictions in their overall investment approach? And what can that investor expect to achieve from their currency management program?

Using Active Currency Management to Enhance Returns

In his famous paper, "*The Arithmetic of Active Management*", William Sharpe[1] demonstrates that, the return on the average actively managed dollar of equities must equal the return on the average passively managed dollar of equities. Indeed, consultants have confirmed that (after fees) the average active equity manager has under-performed the major market indexes over long periods of time. In contrast, recent consultant studies have documented the performance of the average currency manager over the past 10 years, and have found that the average manager has consistently added value over their benchmarks.[2] How is this possible, given currency transactions are zero sum? *The answer is that some currency market participants must consistently lose money if active currency managers are consistently making money.*

The Case for Active Currency Management

First, the currency market differs from other organised asset markets, such as the New York Stock Exchange. This is because, unlike stock markets, a large portion of currency trading is done by market participants who do not trade for profit. Central banks, for example, are important players in the foreign exchange market, and central bank intervention is driven primarily by macroeconomic policy objectives. Central banks typically trade to dampen market volatility and signal policy intentions, not to earn profits.[3] Corporate hedgers and tourists are additional examples of currency market participants who trade currency for good reason, but not necessarily to profit from the transaction. Last, international investors adjust their holding of international assets because of strategic or tactical allocation decisions. It is frequently the case that the allocation decisions are made without regard to the currency component of the transaction. And taken together, the foreign exchange transactions of central banks, corporate hedgers, tourists, and international money managers dwarf the positions of active currency managers.

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[1] See William Sharpe, "The Arithmetic of Active Management," 1991, *The Financial Analysts' Journal*, Vol. 47, No. 1, January/February 1991.

[2] The original analysis was done by Brian Strange in *Pensions and Investments*, September 1998; and has been subsequently confirmed in research by Watson Wyatt, "Active Managers Generating Positive Excess Returns over Benchmarks," by Brian Hersey and Jim Minnick in *Global Pensions,* February 2000; Frank Russell, "Capturing Alpha through Active Currency Overlay," by J. Beldridge, B. Meath, and H. Myers, a May 2000 *Russell Research Commentary*; and by William Mercer, in "Active Currency Management is Worthy of Consideration," in the *Currency Overlay Supplement*, *Global Pensions,* 2001.

[3] See "Do Central Banks Systematically Lose Money in Currency Markets?", *Bridgewater Associates Currency Observations.*

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Second, a textbook efficient market is one where market participants know and use the same valuation model, and have homogeneous expectations of future values of fundamental variables. Consider fixed income pricing. There is universal agreement that the way to price a bond is to determine its future cash flows and then discount them back to the present. Market participants may have differences of opinion on the appropriate term structure of interest rates to use for discounting the cash flows, but no one in the industry doubts the valuation approach. Contrast this situation with currencies. Exchange rates can also be thought of as the present discounted value of future fundamental variables, but there is little consensus on just what the appropriate set of fundamental variables are, let alone the relative weight to attach to each. As such, there is a substantial body of academic and practitioner research demonstrating that currency values can deviate from "fundamental value" for extended periods.[4] Both the lack of consensus on fundamental currency value and the heterogeneity of beliefs regarding expected future values of these fundamentals create an environment where those with superior modeling skills can exploit inefficiencies in currency markets.

Third, as noted above, recent consultant studies have provided evidence that currency managers have, on average, added value. In Table 1 we review performance data compiled by Russell/Mellon Analytical Services on 18 active currency managers over the past 7 years. The median currency manager has added value over their benchmarks over investment horizons of 1 through 7 years. Indeed even the 75th percentile manager has had positive performance over horizons longer than 1 year.

Table 1: Russell/Mellon Survey of 18 Active Currency Manager's Performance (ending 30 June, 2003: annualised active return in % p.a.)

Percentile	1 year	3 years	5 years	7 years
25th	3.55	2.19	1.09	1.98
Median	0.51	1.03	0.72	1.25
75th	-1.56	0.15	0.15	0.80
Mean	0.93	1.13	0.54	1.29

In addition, the currency market is the most liquid asset market in the world, and currencies are inexpensive to trade, especially relative to their volatility, and there are no trading taxes.[5] This means that currency managers can establish meaningful positions cheaply and can profitably manage a higher turnover strategy compared to equity managers.

Active Management Styles

How do currency managers make predictions about future currency movements? As with other assets, currency managers utilise a variety of styles. However there are some common themes that many managers will look to in order to add value.

- **Fundamental** – strategies attempt to determine economic fair values for currencies, buying undervalued currencies and selling overvalued currencies. Strategies tend to be longer-term, because the evidence suggests that currencies can diverge from fair value for substantial time periods.

[4] See R. Meese, "Currency fluctuations in the post Bretton Woods era," *Journal of Economic Perspectives*, 1990.

[5] Many readers may associate highly liquid markets with efficiency. This need not be the case. Currency markets are decentralised broker-dealer markets without posted prices or trading volumes. Research on foreign exchange market microstructure suggests that high volume can impede order flow's information role; see R. Lyons, *The Microstructure Approach to Exchange Rates*, the MIT Press, 2001.

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- **Technical analysis** – strategies attempt to predict future currency movements by looking for predictable patterns in past currency movements. These strategies tend to be shorter-term with higher turnover than fundamental based strategies.
- **Interest rate** – strategies that invest in higher interest rate currencies in the hope that spot movements do not erode the gains made on the interest rate carry.

- **Dynamic hedging –** strategies that focus on managing risk of currency loss, placing a floor on currency losses while providing some participation in upside gains. These strategies produce payoff patterns that are similar to a put option on the basket of currencies in the international portfolio.

Another style difference between currency managers involves whether the manager uses a defined quantitative model, and to what degree the management team can utilise qualitative discretion. A quantitative approach is more commonly used in currencies than in most other asset classes. Quantitative models can be used to systematically capture a wide range of forecasting insights, not necessarily restricted to a technical approach. Many currency managers combine a quantitative model with some degree of allowed discretionary override.

Active managers will sometimes combine more than one approach into a composite strategy. In addition to making forecasts about future currency returns, an active currency manager will need to be able to build currency portfolios and measure the risk of the currency strategy, and the costs of trading.

The longest running active currency programs were begun by sophisticated multinational plans some 10-12 years ago. Many of these plans employ multiple managers in their currency programs. The managers are typically selected to have complimentary styles, and it is not unusual for a large currency program to employ three managers, say a technical, fundamental, and a composite manager. Style analysis is quite easy to conduct, as the major international currency consultants keep up-to-date performance databases, and are well aware of the style differences among the 20-25 global currency managers.

Active currency programs have also had a substantial history of being included in alternative investments, such as hedge funds. George Soros famously made huge profits in 1992 when he sold sterling ahead of sterling's forced exit from the European Exchange Rate Mechanism. Some alternative asset programs are devoted entirely to currency management, for example FX Concepts has been running a currency hedge fund since August 1989.

Active Currency Management in Practice

An important benefit of currency strategies is that a specialist currency management team can be appointed to manage the active currency exposures, but this need not affect the management of the underlying assets.

An institutional investor, such as a pension fund, can introduce an active currency management program without investing any additional assets. The currency positions are taken on the basis of existing assets that may be managed entirely separately. This type of program is known as currency overlay. The currency overlay program will take exposures in the currency markets using currency forward contracts. These forward contracts will move into profit or loss based on exchange rate movements. The returns from the currency management will be in the form of cash flows that occur when the forward contracts expire. Within this format, the investor should consider the currency program in terms of pure risk and return: what added value are they expecting to make from the currency positions, and what level of risk are they prepared to accept to achieve this target?

An alternative way of managing active currencies is within a hedge fund format. In this format an active currency manager will take active currency exposure in the same way as those described above, but will also hold other assets (usually cash) that will provide the collateral for those positions. When the currency forwards expire the profit or loss from the currency activity is added to the existing fund assets. Currency hedge funds offer an

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absolute return product and investors expect to receive positive returns relative to the cash interest rate.

Unconstrained Currency Overlays Make the Most Efficient Use of Currency Forecasting Skill
Active overlays and currency hedge funds are long-short strategies similar to market neutral equity funds. There is no connection between benchmark holdings and currency positions, so for example the largest position in the currency portfolio may be in the New Zealand dollar if it offers the best opportunity.

For an efficient currency overlay, an active currency manager will need to take into account the risks and correlations of the various currencies as well as the predicted return when they construct their currency portfolios. For example, financing long positions in the euro by short positions in other currencies with similar risk characteristics, such as the Swedish krone or Swiss franc.

A Typical Active Currency Overlay Portfolio
Unlike full active overlays, many active currency programs place considerable constraints on the currency positions that a manager is permitted to take. This can place considerable obstacles against the manager attaining the maximum expected return for a given amount of risk.

A well-structured currency overlay should be the most efficient way for a currency manager to derive value from their currency forecasting skill. The primary advantage of the active overlay is that the currency manager can make full use of his market insights. The lack of constraints in an overlay strategy also means the expected information ratio[6] is constant for a range of active risk levels. The same cannot be said of more constrained strategies, since the constraints are more binding as active risk increases. At a certain point, the information ratio of an active hedging strategy will decline as active risk increases, since the strategy constraints become binding more often. In these situations, active risk is best spent in areas where there are fewer investment constraints.

What can an Investor Expect to Achieve from a Currency Overlay Program?

As discussed above, the average active currency manager adds value and a top-tier currency manager will be able to achieve returns above and beyond the average manager.

Because currency overlay is a long-short strategy, clients can freely set the magnitude of the currency exposures, and thereby choose their level of active currency risk depending on their strategic aims. For example, a UK pension fund may choose to run a currency overlay program on their international equity assets at an active risk level of 2% per annum, while targeting an expected return of 1.6% per annum.

An alternative example would be to run an active currency overlay within a hedge fund structure. In this case the fund manager may hold exactly the same portfolio as the overlay manager, but simply have proportionally larger positions relative to the size of the assets invested. A hedge fund may typically be run at 10-12% per annum risk. Therefore, a skilled currency hedge fund manager may target adding returns in excess of 8% per annum above cash interest rates.

Active Currency Management as Part of an Investment Strategy
Another advantage of active currency returns is that they tend to have low correlation with the returns from other investment strategies, and in particular strategies that involve buying and holding equity portfolios.

This means that the affect of active currency on the total risk of the client's overall strategy will typically be low despite the significant extra return the currency strategy is expected to achieve.

[6] Information ratio is defined as active return divided by active risk.

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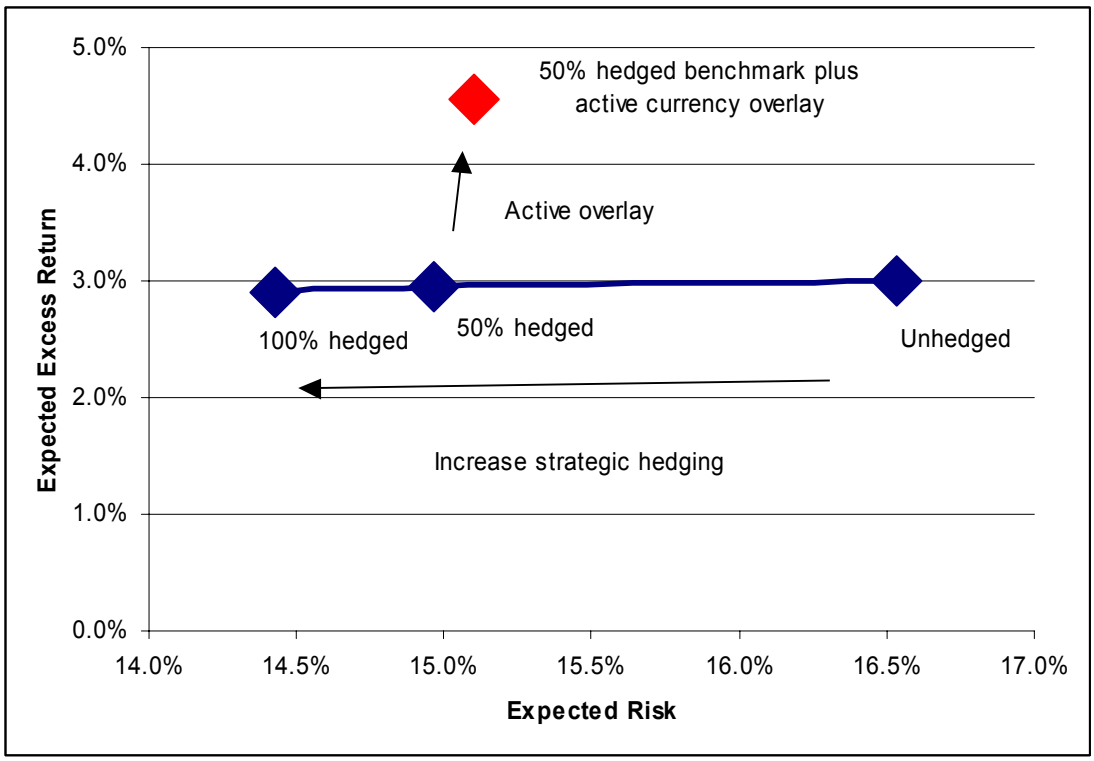
The example in Figure 1 shows how an active currency overlay can enhance the expected excess return of an international equity portfolio, in this case from a UK investor's perspective. For such a client, the diagram also shows how an active currency overlay can combine with a strategic hedging policy[7] to reduce the overall risk level, as well as enhancing returns.

Figure 1: How Currency Management Can Affect the Expected Excess Return and Risk from a UK based International Equity



Source: MSCI and Barclays Global Investors

Conclusion

Currency management is an important consideration for any international portfolio.

Active currency management should be considered since the structure of the currency market makes it a fruitful area to seek additional excess returns. There are several different styles of active management available to currency managers. The most successful currency management programs frequently combine several of these styles.

Even with conservative return expectations, an active currency strategy can dramatically increase the total expected return of an investment strategy. Because active currency returns tend to be uncorrelated with other investment strategy returns, currency management can add return, whilst having a small effect on the overall strategy risk.

[7] A strategic hedging strategy automatically hedges a fixed amount of the currency exposure that is gained from investing in assets not denominated in the investor's base currency.