8

Currency in International Investing

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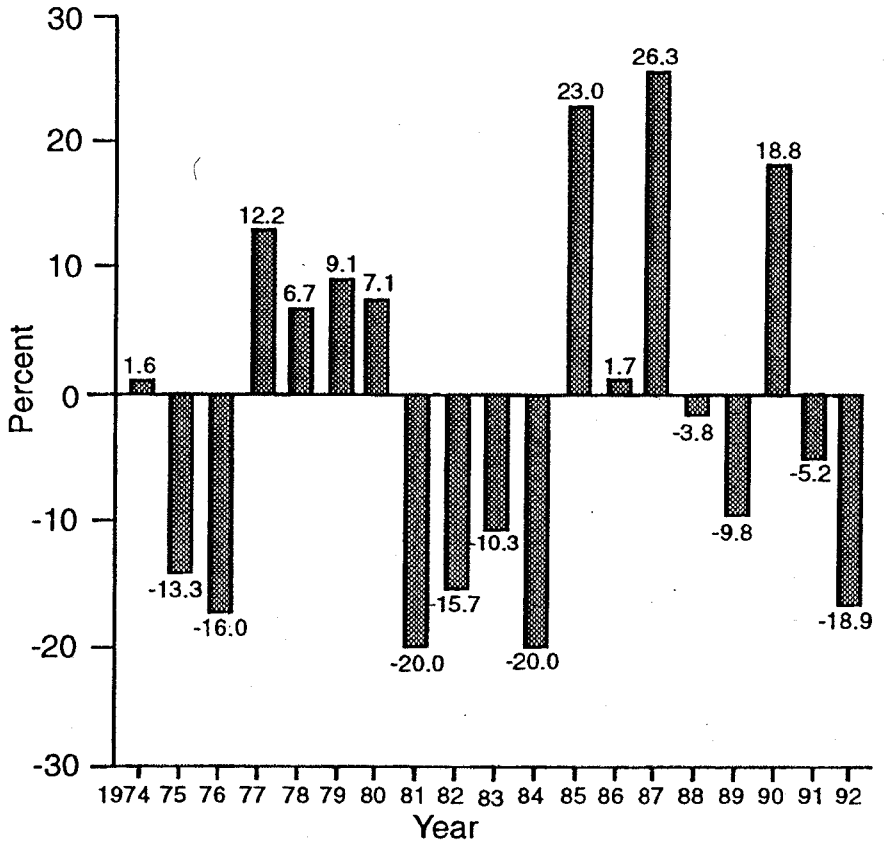
INTRODUCTION

When an investor wishes to purchase a foreign asset, he or she is required to purchase the currency of that country in order to settle the transaction. This second decision, or hidden purchase of currency in international investment, has associated with it a significant risk. Irrespective of the asset return, currency values can fluctuate to impact the market value of the investment in base currency terms.

Historically, 30 percent of the volatility (as measured by standard deviation) of an international equity portfolio has been associated with its inherent currency exposure. The equivalent statistic for international fixed income is 60 percent. This risk has been persistent and fairly stable since the beginning of the most recent period of floating exchange rates, i.e., 1973. See Figures 8.1 and 8.2.

This risk, due to inherent currency exposure associated with international investments, does not appear to be rewarded with an associated expected return. Currency exposure, unlike asset exposure, is not expected theoretically to generate a long-run return in order to compensate for its risk. Empirical data since 1973 on the return to currency is very time period and base currency specific, but is not inconsistent with this long-run zero return hypothesis. It should be pointed out that compared to

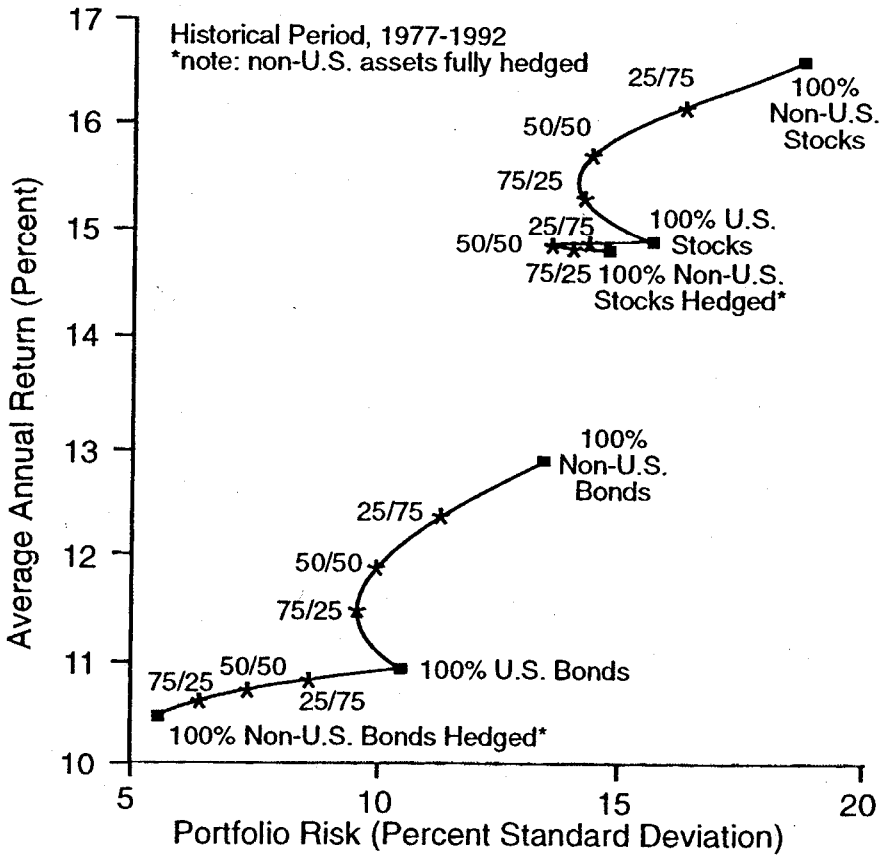
FIGURE 8.1 Sterling Currency Return vs. the Dollar %



other areas such as equity and bonds, historical data on currency is rather short and for all practical purposes dates back to only 20 years ago.

Currency rates and the associated investment returns are driven by a different set of economic fundamentals than those that drive local market asset returns. Conceptually, currency is a medium of exchange between two different national money supplies and the demand for currency itself derives from the demand for cross-border purchases of real goods and assets. Net demand for a given currency is a function of net foreign demand for that country's goods and assets. These demands themselves being a func-

FIGURE 8.2 U.S. and Non-U.S. Asset Class Returns and Risks



tion of cross-border differences in price levels, quality of traded goods, and expected risk-adjusted return on assets. From the foregoing, it is clear that the fundamentals that drive currency are different from those that drive local market returns. This implies a lack of systematic relationship between asset market return (particularly equities) and currency return. Empirically, there is no evidence of any relationship between equity market returns and currency, as evidenced by the low and unstable correlation of equity markets and their own or foreign currency. See Figures 8.3 and 8.4.

Finally and importantly, despite the fact that most evidence points to the long-run return of currency being zero, significant

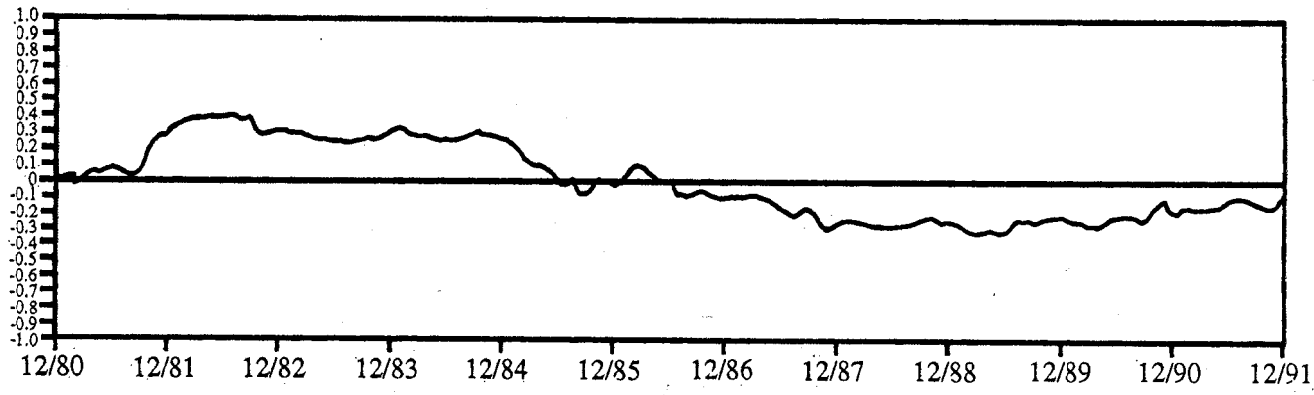


FIGURE 8.3 **U.S. Equity vs. International Currency Real Return**
Monthly Rolling 3-Year Correlations

FIGURE 8.4

CORRELATION		91–85	84–78	77–73
Yen Return vs. Dollar	Japanese Equity Local Return	0.10	0.25	0.14
DM Return vs. Dollar	German Equity Local Return	–0.11	0.11	0.06
Sterling Return vs. Dollar	UK Equity Local Return	–0.10	–0.01	0.25

evidence exists that active management of currency can add value over time, e.g., through a market cycle. The inefficiencies of currency with respect to tactical fundamental analysis and technical analysis are discussed below.

A FRAMEWORK FOR ADDRESSING CURRENCY

The implication of the foregoing is that the currency exposure inherent in international investment ought to be managed and not simply assumed as a hidden investment. Because of the separate nature of currency from assets one should and can prudently unbundle currency from assets and explicitly resolve for currency the main policy issues that need to be addressed for any separate asset class.[1] These are:

1. What is the appropriate strategic or long-run exposure to currency?
2. Should currency be managed actively around this strategic position?
3. Who should manage currency exposure and how?

It is important to emphasize that these currency policy issues, while they may appear new and alien, are in fact issues that most pension plans have in fact addressed already and have made decisions about implicitly. For example, a typical plan not having looked at currency explicitly, would probably have adopted a strategic currency exposure equal to their strategic international exposure, engaged in active currency management through the country allocation decision of international managers, and allowed these currency decisions to be made by their interna-

tional equity managers. We present below a methodology for addressing these issues more analytically and allowing overt policies rather than covert ones to be identified. We discuss each area in turn, emphasizing that the solution to one issue has little or no implication for the solutions to the others. In other words, these issues are separable and independent. In the final section, we discuss some interactions and implementation issues that modify this statement somewhat, but for now the assumption of independence is a reasonably valid one.

The Strategic Currency Allocation Decision

This decision is similar to many other strategic decisions made by long-term investors, such as the stock/bond allocation decision or, for example, the decision to allocate a specific percentage of a portfolio strategically to international equity.

The long-run allocation to currency should be thought of as quite separate and different from the allocation to international assets. One should think of international investments as made up of two unrelated investments—hedged assets and currency. These, after all, are the component economic exposures.

In this improved structure the portfolio choice directly focuses on essentially five separate components: domestic stocks and bonds, hedged foreign stocks and bonds and foreign currency.[2] The appropriate allocation to each is theoretically determined in an overall portfolio context on the basis of risk and return expectation for each asset and investor risk preference for the overall portfolio, as well as transaction cost for hedging currency exposure.

Standard mean variance analysis in this expanded opportunity set then indicates the level of foreign currency expense consistent with investors' expectations and risk preference. Comparison of optimal currency exposure with optimal allocations to hedged assets reveals the implied optimal hedge ratio.

Clearly in this framework optimal hedge ratios become unique to each investor's expectation, risk preference, and overall asset mix. Therefore, no optimal currency hedge ratio exists for all international investors. Each investor should undertake such analysis to identify the hedge ratio that is consistent with its overall plan characteristics.

Nevertheless, several tentative generalizations are possible. On the basis of largely historical risk and correlation results, an

assumption of zero long-run return to currency and a 15 basis points annual cost of hedging currency, the following observations can be made:

1. Partial hedging of currency exposures may appear optimal for investors who have greater than five international assets and a typical 60/40 stock/bond mix.
2. Obviously, the greater the allocation to international assets the larger the hedge ratio, by simple arithmetic, e.g., an investor with 10 percent international assets might hedge 50 percent; the same investor with 20 percent international assets correspondingly should hedge 75 percent, to maintain the same optimal 5 percent allocation to currency.
3. The more aggressive the investor the lower the optimal hedge ratio—a 70/30 stock/bond investor may hedge zero percent, whereas a 50/50 investor may hedge 100 percent, for a given level of international assets.

Overall, such analysis tends to be considerably more sensitive to input assumptions than is normally the case with mean variance analysis. This is because currency is a "noncompeting" asset class—in other words, currency can be invested in without displacing other assets, and any slight return to currency will make it desirable as it offers a purely additional return. Of particular importance in the strategic currency hedging equation is the overall portfolio exposure to fixed income. Historical data and economic theory weakly support a positive relationship between foreign currency return and domestic bond return, through the link of interest rates, particularly short rates. This implies that the greater the domestic bond allocation, the less desirable is foreign currency exposure strategically because of its nondiversifying characteristic.

The role of a dynamic hedge or an option-based hedging strategy for currency is also appropriately viewed in the overall strategic/long-run portfolio context. However, because of the asymmetric payoff pattern associated with options, quadratic optimization of mean variance analysis masks the short-run distributional characteristics of this strategy. Monte Carlo simulation under equilibrium assumptions indicates that such a policy in the long run is equivalent to some level of fixed partial hedging (about 50 percent, depending on the structure of the dynamic hedge) with high-

er transaction costs. The short-run asymmetry of return—say on a one-year basis—begins to dissipate after about 5–10 years. While dynamic hedging has often been viewed as a style of active currency management, research suggests that it is essentially equivalent to a passive 50 percent hedge with special short-run risk management characteristics. It does, however, have a built-in technical characteristic that may provide excess return, to the extent that currency markets exhibit persistent trends in the shorter run. Historical results associated with trend-following strategies are discussed below.

Active Versus Passive Currency Management

While currency may offer a zero long-run return to an investor, it is clear that currency returns can be quite significantly positive or negative in the short run (3–5 years). Therefore, to the extent that active management of currency can capitalize upon this volatility and add return, then actively managed currency will have a positive return despite the strategic long-run zero return of a passive exposure. This excess return can be thought of as purely additive over the international portfolio, and incremental to any excess return for active asset management.

Before we discuss the evidence relating to active currency management it is important to point out that international investors who make active country allocation decisions are indeed engaging in the active management of currency with respect to their benchmark. For example, if a manager underweights Japan in favor of Europe, a hidden currency decision is implemented shorting yen in favor of European currency. Active currency management is not generally a new activity for investors. The issue is one of overt versus covert currency management.

Equilibrium currency rates are determined on the basis of the relative economic fundamentals of the countries involved. These fundamentals are essentially the relative demands for goods and assets and expectations thereof. Overtime spot rates tend toward this equilibrium, which itself is dynamic and changing in accordance with the relative fundamentals.

Significant evidence exists in the public and private domain that active currency management undertaken in a structured way, based on the relevant network fundamentals, adds value over time. An example of such evidence in the public domain is work done in 1985 by John Bilson indicating nominal short-term interest

rate differentials provided insight and excess risk-adjusted return to currency management. More recently Jack Glen at the University of Pennsylvania provided evidence that relative inflation differences or PPP has provided insight into currency return over longer periods of time. This evidence is in sharp contrast to the popular perception of the usefulness of this factor.

Proprietary currency research undertaken by various firms over the last five years and actual experience confirm that significant opportunity exists to add return to international portfolios by actively managing the currency inherent to the portfolio.

Interestingly also, but more complex to explain conceptually, is the significant body of literature in the public domain confirming statistically that technical analysis or trend following has been a profitable trading strategy (in spite of the high turnover associated with such techniques). This research has also been confirmed by Morgan in-house research.

In summary, it is fair to say that unlike other asset classes, it appears that the burden of proof is not with the case for active management but with the case for passive management of currency.

Who Should Manage Currency Exposure—Individual Asset Managers or Specialist Managers?

The key conceptual issue here is to recognize that currency management inevitably will take place in some form or other—even passive—and that because of the unique characteristics of currency, particularly compared to equity markets, there are significant benefits to using a specialist. These benefits, some quite obvious and some less so, are listed below:

1. Higher long-run return to the portfolio through a specialist approach adding value.
2. Lack of disruption to individual asset managers, who can continue to focus on allocation and asset selection with or without implied currency bets.
3. Improved cash flow and transaction cost management associated with currency hedging. International asset managers sell international assets to fund currency hedging activities. Specialist currency managers integrate their cash flow management with the overall cash of the fund.

4. Specialist currency managers trade foreign exchange on a competitive basis with a diversified range of counterparties. International asset managers normally trade foreign exchange spot and forward with the custodian only.
5. Specialist managers generally use dedicated and specialized in-house traders to execute client orders, provide separate performance measurement and a range of other specialized reports relating to currency separate from the underlying assets that originally generated such exposures.

PRACTICAL/IMPLEMENTATION ISSUES AND OTHER MATTERS ASSOCIATED WITH SPECIALIST CURRENCY MANAGEMENT

Within the area of specialist currency management, there is a range of multiple-manager, benchmark/performance measurement and operational issues that arise.

Multiple-Manager Issues

1. Should currency management be handled differently for international equity portfolios versus international bond portfolios? Is the case for overlay less valid for international fixed-income portfolios? Do local bond market allocations imply a hidden currency strategy that should be left intact?
2. While strategic exposure and active management are conceptually separate, are there any interactions that might argue for a different benchmarks? For example, asymmetric benchmarks distort ability to add value and symmetric ones maximize a manager's excess return, but increase total risk.
3. If one overlays an international manager should that manager be dissuaded from currency management? Should all equity portfolios be included in an overlay program? Should active and passive equity portfolios be treated differently?
4. Is it necessary, and if so, what alternative currency management styles should I use to give diversification across currency managers?

Benchmark Issues

1. If the underlying asset managers hold U.S. dollars, is that hidden currency bet to be included in the program or ignored?
2. For performance measurement purposes in partially hedged policies, what is the appropriate normal position for non-U.S. currency exposure—EAFE, G.D.P. weights, the underlying asset exposures, or some other normal position?

Operational/Performance Measurement

1. How much cash is required, if any, to undertake a currency overlay program and what are the associated opportunity costs? How can they be minimized? How should this cash be managed and when should it be reinvested?
2. How often should the overlay manager get updates on asset positions? How should underlying manager hedges, if any, be taken into account? Who is responsible for the consolidation of various international portfolios at different custodians?
3. Should performance be rebased when new asset exposures are given as frequently as weekly?

NOTES

1. While there are significant methodological and investment benefits to encourage the separation of assets and currency, this does not imply that currency is a "separate asset class." The latter notion, which is often associated with advocating a strategic investment in that class, is difficult to justify in face of the long-run zero return hypothesis.
2. In this format, total investment adds up to 100 percent in assets *plus* currency. In other words, it need not add up to 100 percent.