equity - international

$F = S_0 \{(1+c_d) / (1+c_f)\}$
$f = F/S - 1 \cong c_d - c_f$
$R_{\$i} = (r_i - c_i) + (c_i + \varepsilon_{\$,i})$
$HR_{\$i} = (r_i - c_i) + (c_\$)$
$CR_{\$i} = (r_i - c_i) + (c_j + \varepsilon_{\$,j})$

Twenty Years of International Equity Investing

flashcard concepts

- The issues that face international equity investors are
  - *Does* international diversification work? and
  - *How* can we improve the international diversification process?
- For the period 1976-95, international diversification into developed markets was effective. Over this time period, investment in developed markets reduced risk more than it enhanced return
- The authors do not find evidence of rising correlations as economic integration rises and they also do not find evidence that correlations rise in down markets
- From 1985-95, investment in EMERGING markets significantly enhanced the risk/return profile of an otherwise domestic portfolio
- The authors suggest that multiple-factor analysis be used to take advantage of stock market anomalies. The informational synergies between multiple factors should improve the reliability of stock price forecasting models
- Transaction costs were found to be lower than expected in developed markets. The commissions, impact costs and opportunity costs of trading ranged from 43 - 108 basis points in a trade analysis of several developed markets
- The results on currency hedging are mixed and depend on the relative proportion of international assets in an overall portfolio. As this proportion rises, hedging becomes more beneficial. For portfolios with small amounts of international exposure, the portfolio should remain unhedged
- An asset allocation study revealed that if a manager wants to enhance return for a given level of residual risk, a portfolio with emerging markets dominated a portfolio that concentrated solely in developed markets

Problem Set: twenty years of international equity investing by Michaud et aL.

1. DISCUSS the trends in global transactions costs and IDENTIFY three major components of total transaction costs

Michaud finds that transaction costs in many developed markets have declined significantly and that liquidity has been enhanced.
The four major components of transaction costs are:

a.) Commissions
b.) Impact Cost (is measured by the price difference between when an order is submitted and when it is executed)
c.) Timing Costs (represents the cost of not simultaneously executing your order
d.) Opportunity Cost (cost of not being able to execute an order at all)

2. DESCRIBE the relationship between your decision to hedge currency risk and the size of your overall portfolio commitment to international assets

If international securities are a small portion of your overall portfolio, then don't hedge because hedging reduces portfolio volatility (GOOD), but increases the correlation between assets (BAD). For a small international commitment, the costs of hedging outweigh the marginally slim benefits of hedging. If your international exposure is large relative to your overall portfolio, then the benefits of hedging may outweigh the costs.

3. CONTRAST the evidence regarding the behavior of stock market cross-correlations in down markets

Michaud et al. provide evidence that when the US market is falling, the average correlation between the US market and other developed markets actually falls. This is good for international diversification.

4. REVIEW the role of international developed markets as diversifying agents for a domestic portfolio

With respect to the diversification benefits of adding developed foreign market exposure to a domestic portfolio, historical risk reduction is much more prominent relative to the additional return that can be gained via EAFE diversification. If you look at the minimum risk portfolio during the period from 1975-95 (a 60/40 split between the S&P 500 and the EAFE, respectively), you find that relative to a 100% investment in the S&P 500, investment in the EAFE reduced risk by more than 100 bp but only increased returns by 25 bp. Hence, international diversification in developed markets was a better risk reducer than a return enhancer. The bottom line is that although the return enhancement wasn't what we would have hoped, Michaud shows that international diversification is still effective.

Emerging Stock Markets; Risk, Return, etc.

flashcard concepts

- The characteristics of emerging markets are GROWTH, CHANGE, INVESTABILITY, SIZE and LIQUIDITY
- The benefits of emerging markets investing are prospects for portfolio return enhancement and risk reduction
- The problems of investing in emerging markets are CLOSED MARKETS, INFORMATION BARRIERS, UNFAVORABLE TAXATION, RESTRICIONS on the MOBILITY of CAPITAL, and HIGH TRANSACTION COSTS
- The historical performance of emerging markets is mixed. Over the full 1975-95 period, an emerging markets portfolio underperformed the S&P 500 and had a higher standard deviation. Emerging markets fared better during the 1985-95 period by outperforming the S&P 500 on both an absolute and a risk-adjusted basis
- The impact of currencies for an emerging markets investor is critical. The foreign investor cannot achieve the local market return. A depreciating foreign currency reduces the dollar return to an emerging markets position and an appreciating foreign currency enhances returns. Over the period of the study, many emerging markets currencies depreciated relative to the US dollar
- The risks of investing in Emerging Markets include CURRENCY RISK, CORRELATION RISK, POLITICAL RISK, and INSTRUMENT-SPECIFIC RISK
- The diversification benefits of emerging markets over the study period were also mixed. Although the addition of emerging markets securities reduced portfolio risk, return also

declined. This is not a desirable diversification result. In contrast, adding emerging markets to a domestic portfolio reduced risk and increased return during the 1985-95 period. Hence, diversification was beneficial during this period

- Less developed markets exhibited relatively poor diversification benefits whereas more developed markets showed relatively good diversification benefits
- Diversification benefits depend to a great extent on the correlation coefficient. Emerging markets correlations vary substantially through time. Hence, the emerging markets investor faces the risk that correlations rise after portfolio construction, reducing the potential diversification benefits. The use of conditional expectations in the derivation of correlation estimates reduces the impact of changing historical correlations on portfolio structure.
- A market is INVESTIBLE if foreigners are not restricted from buying securities in that market. Other factors that affect investiblity are SIZE and LIQUIDITY
- A subset of 'investable' emerging market securities significantly outperformed a portfolio composed of all emerging markets securities over the period 1989-95. This set of investable securities also exhibited better diversification characteristics relative to the set of all emerging markets securities.
- Closed-end mutual funds are an alternative for developing an exposure to an emerging market. However, closed-end funds tend to have higher fees and higher correlations - making them poorer diversification vehicles relative to direct investment in the underlying emerging markets index.

Problem Set: Emerging Stock Markets: Risk, Return by Barry, Peavy & Rodriguez

1. BRIEFLY DISCUSS the potential benefits of emerging markets investing to a global investor.

Emerging markets investing can add value to a portfolio through:

Growth Prospects - Emerging markets have the potential for above-average growth and returns

Low Correlations - Emerging markets also exhibit low correlations with developed markets and other emerging markets. The lower the correlation, the higher the potential for portfolio risk reduction

2. OUTLINE the problems that emerging markets investors face.

The problems of investing in emerging markets are :

Closed Markets
Information Barriers
Unfavorable Taxation
Restrictions on the Mobility of Capital
High Transaction Costs

3. ILLUSTRATE the importance of currency risks for emerging markets investors.

The impact of currencies for an emerging markets investor is critical. The foreign investor cannot achieve the local market return. A depreciating foreign currency reduces the dollar return to an emerging markets position and an appreciating foreign currency enhances returns. Over the period of the study, many emerging markets currencies depreciated relative to the US dollar

4. EVALUATE the effects of the time variation of emerging markets correlations on the portfolio construction process.

Diversification benefits depend to a great extent on the correlation coefficient. Emerging markets correlations vary substantially through time. Hence, the emerging markets investor faces the risk that correlations rise after portfolio construction, reducing potential diversification benefits. The use of conditional expectations in the derivation of correlation estimates reduces the impact of changing historical correlations on portfolio structure

5. DISCUSS the concept of an emerging market's INVESTABILITY and EVALUATE its impact on the portfolio construction process.
A market is Investable if foreigners are NOT restricted from buying securities in that market. Other factors that affect investability are SIZE and LIQUIDITY. A subset of Investable emerging market securities significantly outperformed a portfolio composed of all emerging markets securities over the period from 1987-95. This set of investable securities also exhibited better diversification characteristics relative to the set of all emerging markets securities.

6. INTRODUCE TWO Characteristics of emerging markets.
The characteristics of Emerging Markets are:

Growth
Change
Investability
Size
Liquidity

7. DISCUSS the ability of closed-end mutual funds to serve as a proxy for direct investment in emerging markets from the following perspectives:
i. DIVERSIFICATION - The correlation coefficient between emerging market closed-end funds and the S&P 500 does indicate that some diversification benefits exist. However, closed-end funds are not as good a diversifying agent as investing directly in the underlying emerging market indexes because fund returns are also related to the stock markets in which they are sold. This makes closed-end funds a less effective substitute for direct investment in the respective emerging markets
ii. PERFORMANCE - Emerging market closed-end funds under-performed and exhibited higher volatility than their relevant country indexes. The averaged monthly return for the funds during the study period was about 1/2 that of the matching country indexes. The high expense ratio of the funds were one of the primary factors contributing to this under-performance. In a recent study, most funds exhibited a higher average monthly standard deviation than that of their respective underlying indexes.
iii. TRADING ENVIRONMENT - Closed-end fund performance can be affected by the trading environment in the following ways:

- Most funds trade on the NYSE, which may cause fund performance to be influenced by movements in the US stock market
- Demand and supply alter closed-end fund prices, which may cause significant premiums or discounts relative to NAV
- Fund managers may not be able to generate returns as high as those in the underlying markets (i.e., active management may not pay off)

International Bond Portfolio Management

flashcard concepts

equity - international

- The standard investment process includes five steps:
  - Determining investor OBJECTIVES and CONSTRAINTS
  - Setting Investment POLICY
  - Developing Portfolio STRATEGY
  - CONSTRUCTING the Portfolio
  - MONITORING Performance
- The International Bond Portfolio Manager must ALSO consider
  - CURRENCY Risk Management
  - SETTLEMENT and CUSTODIAL Issues
  - Local Market Structures
  - The impact of Differing ACCOUNTING and REPORTING Systems
  - The lack of RELIABILITY of public information
- Partially Hedged Benchmark Portfolios exhibit HIGHER RISK-ADJUSTED returns than Fully or Unhedged Benchmarks. However, the choice of currency exposure for the benchmark depends on whether the fund will be actively or passively managed
- Risk Exposures can be managed relative to TRADING BLOCS. A trading bloc is a group of countries whose bond markets are highly correlated. Important blocs for you to remember are
  - Dollar Bloc
  - Core Europe
  - Peripheral Europe
  - Japan
  - Emerging Markets
- International Bond Management is similar to domestic EQUITY management because
  - The Manager must think about Several Different Markets Simultaneously
  - International Bond Markets do not move in unison in response to economic stocks
  - International Bond Managers tend to employ different investment styles
- Bond market selection and currency management tend to have the most impact on international bond portfolio returns. Factors such as duration management, sector selection, and extra-index market selection have lesser impacts on portfolio returns.
- Changes in economic factors, such as *Inflation, Monetary Policy, Fiscal Policy, Level of Government Debt,& Trade Policies* will affect international bond prices

- Memorize the following formulas

$$F = S_0 \{(1+c_d) / (1+c_f)\}$$

F = forward exchange rate (in $ per foreign currency unit)
S_0 = current spot exchange rate ($/FX)
c_d = domestic (US) risk-free interest rate (cash return)
c_f = foreign risk-free interest rate

$f = F/S - 1 \cong c_d - c_f$

f = forward premium (or discount)

$R_{\$i} = (r_i - c_i) + (c_i + \varepsilon_{\$,i})$

The Unhedged Return of a Bond Investment in Country i

$HR_{\$i} = (r_i - c_i) + (c_\$)$

The Hedged Return where $(r_i - c_i)$ is the Return Premium
The Return Premium drives the decision about which country to invest in.
$(c_i + \varepsilon_{\$,i})$ drives the currency hedge decision
If the cash return in the foreign market PLUS the expected appreciation of the foreign currency exceeds the cash return in the US, then don't hedge

$CR_{\$i} = (r_i - c_i) + (c_j + \varepsilon_{\$,j})$

- If the expected foreign currency appreciation is GREATER than the interest rate differential (forward premium) then leave your currency position UNHEDGED - you will be able to buy more dollars in the spot market when you sell your investment than if you buy dollars using forward contracts. If the expected foreign currency appreciation is LESS than the forward premium (interest rate differential), then hedge. Hence, the forward premium can be thought of as a BREAK-EVEN rate between hedged and unhedged currency returns
- Invest in bond markets with the highest RETURN PREMIUM. Place currency exposure in the market with the highest $ cash returns
- Market correlations within trading blocs are much higher than market correlations across trading blocs. As a result, you can shift bond allocations within trading blocs to capture tactical trading opportunities without affecting the structure of the overall portfolio very much

Problem Set: International Bond Portfolio Management by steward & Lynch

1. INDICATE FOUR responsibilities that are unique to an international bond portfolio manager relative to a domestic bond portfolio manager and illustrate why international bond portfolio management may be similar to domestic equity portfolio management.

The international manager is responsible for the following aspects of international investing:

- *Currency Risk Management*
- *Settlement & Custodial Issues*
- *Local Market Structures - Laws, Trading Practices, etc.*
- *Different Accounting Systems*
- *The potential Lack or Reliability of Information*

International Bond Portfolio Management is similar to domestic equity management for the following reasons:

- The International Bond Manager must operate in Several Markets SIMULTANEOUSLY
- Similar to the equity markets, international bond markets may move in different directions in response to a change in economic activity or investor preference
- Like equity managers, international bond managers may utilize one or more styles

2. DISCUSS optimal benchmark currency hedge strategies. Be sure to relate these strategies to the investor's overall investment strategy.

There are three cases:

- Research has show that PARTIALLY HEDGED benchmarks exhibit greater risk-adjusted returns than either fully hedged or unhedged benchmarks. Hence, a 50% hedged benchmark may be optimal
- If the investor's goal is to pick up EXTRA RETURN from active management, an unhedged benchmark may be optimal to give the manager more opportunities to pick up return through active currency management
- If the investor's goal is DIVERSIFICATION, then a fully hedged benchmark may be optimal due to the low standard deviation of returns from hedged foreign bonds relative to unhedged foreign bonds and domestic bonds

3. DISCUSS Investment Policy Risk Limits as they apply to international bond investing. Be sure to integrate the concept of TRADE BLOCS into your discussion

Investment policies should place limits on duration exposure, credit risk, liquidity, bond positions and currency exposures. These limits can be expressed in terms of *trading blocs*. A trading bloc is a subdivision of international bond markets that are highly correlated

The purpose of classifying risk limits in terms of trading blocs is to allow the portfolio manager more leeway to shift bond exposures without affecting overall portfolio risk. For example, the portfolio's currency exposure will not be affected much if the manager shifts bonds between countries within the dollar bloc.

4. IDENTIFY FIVE methods that international bond portfolio managers can use to manage portfolio returns. BRIEFLY DISCUSS the two methods that are thought to have the most impact on return.

The five methods are:

- *Bond Market Selection*
- *Currency Selection*
- *Duration Management*
- *Sector Selection*
- *Investing in Markets Outside the Index*

Two factors affecting portfolio returns the most are:

-*Bond Market Selection* - Historically there has been a wide spread between the highest and lowest returns across bond markets. Hence, there are significant opportunities for international portfolio managers to outperform their benchmarks by COUNTRY TIMING

- *Currency Selection*- Active management of currency exposures can also significantly enhance the return to an international bond portfolio. There are three active management strategies that have been shown to *consistently* generate excess returns from the currency decision.
    - Currencies from countries that currently have high interest rates tend to depreciate LESS than the depreciation implied by current forward rates. Hence, hold the currencies of countries with high interest rates
    - If a country has HIGH REAL interest rates, its currency will tend to provide better returns
    - Technical analysis has been shown to be effective in generating incremental currency returns

5. DESCRIBE the relationship between the forward premium, cash interest rates and the decision to hedge a foreign bond exposure.

If you believe that the Spot Foreign Exchange Rate will Appreciate MORE over the investment horizon than the forward premium (interest rate differential), you will leave your position unhedged. In other words, you will be able to buy more dollars at the end of your investment horizon in the future spot market and your return will be higher than if you buy dollars with forward contracts. Alternatively, if you believe that the spot rate will appreciate LESS than the current interest rate differential, than you will hedge your position

Hence, the forward premium can be thought of as the BREAKEVEN Rate between hedged and unhedged currency returns

