International Portfolio Investing
A primer for the individual

Issues Addressed
1. What are the benefits of investing internationally?
2. What investment vehicles are available to individual investors?
3. What barriers are there to international investing?
4. Are the correlations among international assets stable over time?
5. Do the benefits vary with the investment horizon?
6. What impact does the exchange rate have on investment returns?
7. How should I determine Asset Allocation?

What are the benefits of investing internationally?

• Expanded Investment Opportunities
  – Percentage of world capitalization
  – Percentage of largest companies

SOURCE: World Development Indicators database 2003-2005

Expanded Investment Opportunities

United States 47
United Kingdom 8
Germany 8
France 7
Japan 6
Netherlands 6
Switzerland 4
Italy 3
Spain 2
China 2
Canada 1
Finland 1
Belgium 1
South Korea 1
Australia 1
Russia 1
Bermuda 1

What are the benefits of investing internationally?

• Access to faster growing economies
  – Growth in developing economies (emerging markets)

What are the benefits of investing internationally?

• Diversification (better return/risk trade-off)
  – Markowitz Efficient set
  – Systematic Domestically, Unsystematic Globally

Growth in Real GDP 2007 CIA Fact book

United Kingdom 3.5
European Union 2.8
Japan 2.8
Australia 2.8
Canada 2.8
United States 3.4
Spain 3.6
Mexico 4.5
Ireland 5.2
Turkey 5.2
Poland 5.3
Czech Republic 6.2
Russia 6.6
India 8.5
China 10.5
Markowitz Model
Efficient Set
Better Return/Risk Ratio Given by slope
Invest only in US asset

Systematic (non-diversifiable) vs. Unsystematic (diversifiable)

What investment vehicles are available to individual investors?
1. Multinational Corporations
   - Multinationals are poor substitutes to international diversification.

   - Rowland and Tesar Review of Economic Dynamics Volume 7, Issue 4 October 2004, Pages 789-826
   - There is weak evidence that U.S. multinationals provided global diversification benefits in the full 1984-92 sample and in the post-1987 sub-sample

What investment vehicles are available to individual investors?
2. American Depositary Receipts (ADRs)
   - ADRs are domestically traded securities that represent a claim to shares of foreign stock

   - Three types of ADR
     - Unponsored
     - Unrestricted or Publicly traded sponsored
     - Restricted or Privately placed

Three types of ADR
- Unponsored
  - Issued in response to market demand but without a formal agreement with the company
- Unrestricted or Publicly traded sponsored
  - Issued under a deposit agreement
    - How dividends will be paid
    - How shareholder notices and voting is managed
  - Level I:
    - Traded over-the-counter
    - Company does NOT have to comply with GAAP or SEC Full Disclosure
  - Level II:
    - Listed on US exchanges
  - Level III:
    - Used to raise capital
    - Restricted or Privately placed
ADR Features

- Traded on US exchanges
- Priced in dollars (still face exchange risk)
  - Avoids individual having to deal in exchange market
  - Faster settlement
  - Better conversion rate for dividends than an individual would get
- Can be converted into the underlying stock for a fee
- Less liquid than US equity shares
- Diversification Benefit (Wahab and Khandwala (1993))
  - Can cut total risk by half by investing ½ of portfolio in 7 ADRs
  - ADR portfolio variance about 26% lower than for foreign share portfolio

What investment vehicles are available to individual investors?

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- Mutual Funds
  - Closed End Funds
    - Brokerage house collects funds during a period and buy foreign stock. Creates a new “share” that trades on the secondary market.
    - Fund shares can trade at a premium or discount from the underlying shares
  - Open End Funds
    - Brokerage house collects funds and buys shares. Investors buy and redeem shares with the Brokerage house

More Types of Mutual Funds

- Country Funds
  - Buy Share from one country
- Regional Funds
  - Asia Fund, Pacific Rim Fund
- International Fund
  - Many different countries, but NOT the US
- Global Fund
  - International + US shares

Diversification Effectiveness

- Compare Correlations of US market with direct ownership of foreign shares and US market with Foreign Mutual Funds (Bailey and Lim 1992)
  - Northern and Western Europe no difference
  - Asian, Latin America and Southern Europe
    - Correlation between US and Korea index about 0
    - Correlation between US and Korea fund about 0.4
  - Closed end funds more closely linked to the US market

What investment vehicles are available to individual investors?

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- Direct purchases on foreign Exchanges
  - May need to find a broker that specializes
  - Higher commission costs
  - Higher custodial fees
  - Higher information costs

What barriers are there to international investing?

- Language differences
- Different trading regulations and procedures
- Different Accounting and Reporting procedures
- Different fee and commission schedules
- Timing and communication problems
- Tax differences
- Information costs
- Capital and exchange controls
Different Accounting and Reporting procedures

- Center for International Financial Analysis and Research

Are the correlations among international assets stable over time?
- Efficient set depends on the correlations among the countries’ asset returns
- Maldonado and Saunders (1981)
  - 1 and 2 year investment horizon returns are not constant and largely unpredictable
- Koch and Koch (1991)
  - Lead/lag of daily returns
  - Clusters of markets in the same geographical region
  - US becoming more sensitive to other markets

Modeling the Correlations
- ARCH and GARCH
- On average correlations increase 0.01 per year over the past 30 years and increase during periods of increased market volatility
  - May be asymmetric for Bull and Bear markets
    - US and Germany in Bull → correlation = 0.08
    - US and Germany in Bear → correlation = 0.59

Correlation and Investment Horizon

Are correlations Stable?
- Correlation in the Very long run
  - US, Germany, UK, Japan and Canada 1974-1990 (Kasa(1992))
    - Test reveal that correlation among these markets approaches 1 for long investment horizons.
Correlation in the Very Long Run

• DeFusco, Geppert and Tsetsekos (1995) find opposite results for emerging markets

What impact does the exchange rate have on investment returns?

• Some argue that currency risk is diversifiable
  – If so, bearing currency risk does not come with a risk premium and should be eliminated
    • Diversify and Hedge
  – If not currency risk can be treated
    • As a separate risk
    • Integrated into the risk of the underlying assets

Diversify and Hedge Currency Risk

• If currency risk is not systematic, it should be eliminated
  – Diversify across many currencies
  – Hedge
    • Individual hedge
    • Portfolio hedge

Asset Allocation

• Mean variance analysis
  – Markowitz, Efficient Set
• Match Global Capitalization
• Fund Consumption Basket