Quantitative Investments

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Recall

Last lecture we discussed Microfoundations.

- Irrationality;
- Behavioral Finance;
- Neurofinance;
- Prospect Theory;
- Limits to Arbitrage;
- “Voodoo Finance;” and,
- The Equity Premium Puzzle.

Today we will talk about global investing.
Global Investing

Chapter 17, *A Quantitative Primer on Investments with R*
This part discusses global investing.

In particular, we will discuss:

- Global Markets;
- Global Risk Factors;
- Assessing Global Risks;
- Quantifying Global Risks; and,
- Differing Levels of Development.
Thinking Globally

- Home bias is a problem; we should invest more globally.
- However, it may not be obvious where to consider investing.
- We will need a shorthand for countries. Use ISO codes, e.g.:
  - Obvious: AU BR CA CN JP KR MX NZ US.
  - Not-so-obvious: CH DE ES GB KY IN ID SE ZA .
  - And... EU HK MO TW .
Why Invest Globally?

- You already know many well-run international companies:
  - **CA**: Lululemon, BMO Harris, Sunoco, TD Ameritrade, Bombardier;
  - **MX**: Grupo Bimbo, Grupo Lala, América Móvil; **BR**: Embraer
  - **DE**: Sennheiser, Deutsche Telekom, Adidas, Aldi, Bayer, SAP;
  - **UK**: PWC, BP, Body Shop, Dyson, Aon, HSBC, Pret a Manger, Virgin;
  - **NL**: KPMG, Randstad; **NL/UK**: Unilever, Royal Dutch/Shell;
  - **CH**: Nestle, Adecco, Garmin, TetraPak; **AT**: Red Bull, Swarovski;
  - **SE**: Electrolux, H&M, IKEA; **DK**: Maersk, ECCO; **FI**: Fiskars, Rovio.
  - **JP**: Ito Yokado, Sony, Uniqlo, Asics, Bridgestone, Toyota, Subaru.
  - **KR**: Samsung, LG, Hyundai, Hankook Tires.

- Well-run companies exist worldwide; why not invest in them?
Globally, firms not equally likely to finance with equity/bonds.

Still informative to look at sizes of stock, corp bond markets.

So... just how big are these markets?

And are they changing?
Largest Global Markets: Corporate Bonds

Notional Outstanding (USD tn)

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The Difficulties of Investing Globally

- Investing in foreign companies is not always possible.
  - Hard to find platforms allowing trading global stocks, bonds,
  - May be limits on investing in some countries.
- Perhaps you are clever and remember the CAPM: just use indices!
  - Except: there are few well-diversified equity indices.
  - Worse: There are few bond indices and fewer that are investible.
  - Commodities: use an index or build one easily.
  - FX/currency indices? Not really. Also, differs by investor.
Global Equity Indices

- Biggest global equity indices used by investment managers:
  - Europe: Euro Stoxx 50, FTSE 100, SMI, OMX, CAC/DAX/MIB/IBEX;
  - Americas: TSX Composite/TSX 60, Bolsa IPC, Ibovespa;
  - East Asia: Nikkei 225/Topix, KOSPI 200, CSI 300, Hang Seng, Taiex;
  - Non-East Asia: Straits Times, Sensex, RTS;
  - Oceania/Africa: ASX 200, NZX 20, JSE All Shares.

- General rule: Choose the index with most active index futures.
- Why? Institutional money managers use futures as hedging tools.
Global Risks

- Risks we must be vigilant about when investing globally:
  - *Foreign exchange*: easily handled; will discuss shortly;
  - *Informational*: internet helps, but language + culture still matter;
  - *Reporting & governance*: cultural + bureaucratic barriers; slow change;
  - *Govt policy*: expropriation; regulation can be more extractive;
  - *Monetary policy*: may be politicized, arbitrary;
  - *Political instability*: can be a major risk.

- While corruption is not a risk *per se*, it makes these worse.
- While politicians cannot usually make markets rise . . .
- . . . bumbling/corrupt politicians can reduce growth.
Global Risks Gone Wrong

Let’s discuss some examples and see what can go wrong.

- **Rhodesia** → **Zimbabwe**: govt, monetary policy issues;
- **Venezuela**: govt policy (expropriation), governance;
- **China**: informational/reporting and some govt policy;
- **India**: governance, govt bureaucracy/regulation;
- **Italy**: Political instability;
- **South Africa**: govt policy (expropriation threats).
- Worse: China & Mao; Khmer Rouge; Shining Path; Apartheid.
Assessing and Managing Global Risks

How do we assess/manage these risks? It varies.

- **FX risk**: easily measured; hedge with futures, currency forward.
- **Informational**: hire analysts who understand local language/culture.
- **Reporting**: analysts help parse reporting differences; lobby politicians.
- **Governance**: analysts help detect issues; lobby politicians.
- **Govt & monetary policy**: dialogue w/policy makers, central bankers.
- **Political instability**: very tough to assess; more on that in one slide.
- Note that corruption is like a high tax; but, slow to change.
- Ultimately: diversify; limit portfolio exposure to any one country.

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\(^2\)Related: Firms cannot accept investors w/laundered/dubious cash; KYC!
Recently, new tools/datasets emerged to quantify global risks.

- Helps rank countries relatively. (A riskier than B?)
- May offer guidance on absolute risk. (A high, medium, or low risk?)
- Can also see when risk changes.
- Believe it or not, you can use this for modeling.
- A lot of this is very new; there is little research on it.
Quantifying Global Risks: Risk Indices

Many indices help us assess *institution quality*:
- Press freedom: Reporters Without Borders; Freedom House;
- Economic freedom: Fraser, Cato, Heritage Institutes;
- Political freedom: *Economist* Intelligence Unit, Freedom House;
- Corruption: Transparency International; and,
A number of databases now track wars and unrest.

- *Global Database of Events, Location, and Tone*
- *Center for Systemic Peace*: political violence, state failure/fragility
- *Global Terrorism Database*
- *Collaborative Research Center 700*: armed conflict, private security

Data on conflict b/w state, non-state actors at a few universities.

Can try to model likelihood of chaos which would hurt investments.

Text mining is also being used on these types of problems.

Early research shows effects on growth, stock prices.
Prediction Markets

- One of the more unusual innovations: *prediction markets.*
  - Allow people to bet on event outcomes.
  - Real money is at stake, so bets often backed by analysis.
  - Assessments of probabilities perform well... mostly.\(^3\)

- Market-driven form of scenario analysis; can be controversial.
- Unfortunately, not liquid enough to use for hedging.
- Markets: Nadex, PredictIt, Smarts, FAZ.NET-Orakel, Augur.

\(^3\)Political election markets have been manipulated by candidates/zealous fans.
When investing, most money focuses on *developed markets*. Often: high GDP/capita, advanced finance system, rule of law. Also: free press, low corruption, stable politics, urbanized. IMF advanced economies $\subset$ World Bank High-income economies Unclear (*e.g.* World Bank\IMF): PL, HU, CZ, HR, SK, SI, IL. Some are not sure if KR and TW are developed; that is absurd.
Emerging and Frontier Markets

- Lesser focus on *emerging markets* (aka *developing economies*):
  - Rising GDP/capita, improving finance system and laws.
  - Move from laborious farming, urbanizing, lowering corruption.
  - Often also means: stable political transitions, freer press.
  - IMF EM&DevE; World Bank Upper- and Lower-Middle Income.
  - *e.g.* MX, BR, CL; BG, RO, TR; RU, CN, IN, MY, ID, TH, VN; BT, ZA.

- Riskier still are *frontier markets*:
  - Low GDP/capita, nascent finance system, unequally-applied laws.
  - Often: more corruption, high-labour farming, lower education.
Why Invest Outside Developed Markets?

- Why would people invest outside of developed markets?
  - Cleaning up laws, politics allows business to flourish.
  - As finance industry develops, business growth easier.
  - Emerging markets diversify and may yield much higher returns.
- Many treat emerging markets like high yield investments:
  - Buy country-diversified portfolio since some will do poorly.
- Successes: Portugal, Slovenia, Slovakia: now in EU;
- Huge successes: Singapore, Hong Kong, South Korea, Taiwan.
However, should ask why some markets have not developed. Perhaps the country has pursued foolish economic policies. Scariest words: “This time it’s different.” Really?? W/o rule of law, courts may overlook seizing of investments. Politicians may break contracts if greedy, bribed by other firms. Fiji versus FIJI Water? Worse: in times of crisis, emerging markets often fare worst. Losses in even developed markets; investors sell for cash. Scary times: hard to argue to hold riskier emerging markets. Selling causes losses to spread to many other markets.
The Road Ahead

We covered Global Investing; on to Foreign Exchange next time!

- Valuation II: Foreign Exchange;
- Risk Alleviation: Futures, Options, Credit, Structured Products; and,
- All Together Now: Active Portfolios, Investment Firms, Crises.