

Asset Classes

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1 Asset Classes

An asset class is a *investment vehicle*.

1.1 Three main classes

- **Bonds** – “fixed income securities”

Issuers

- Governmental/agency
- Corporate
- Asset backed
 - * Mortgage-backs (packaging private borrowing)
 - * Other assets (packaging corporate assets/borrowing)

Characterizing

- Maturity?
- How fixed are payments?
 - * Treasuries – Certain future payments
 - * Floating rate – Uncertain future payments
 - * Bankruptcy risk – additional uncertainty about future obligations met

- **Equities/Common Stock**

Own a fraction of equity in a corporation – Residual claimant

Listed/Nonlisted

- **Derivatives** – value depend on price of other financial asset

- Futures/Forwards
- Options
- Swaps

1.2 Wider grouping

- Equities
- Bonds
- Derivatives
- Mutual Funds/Hedge Funds
- Private Equity/Venture Capital
- Real Assets
 - Real Estate
 - Infrastructure

But classification can be more finely specified

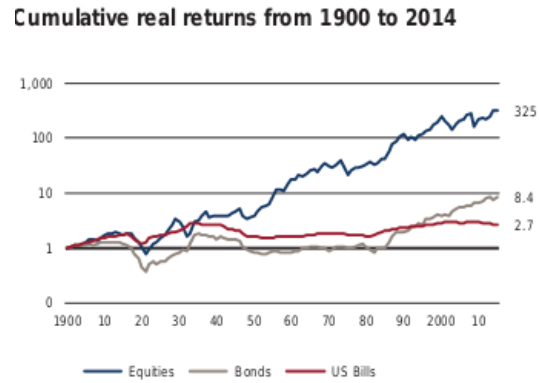
- Equities
 - Industry-Grouped
 - Country-Grouped
- Bonds
 - Country Grouping, e.g.
 - * Industrialized countries
 - * Emerging Economies
 - * ...
 - Type of Issuer Grouping, e.g.
 - * Treasury securities (Sovereign debt)
 - * Company debt
 - * ...
 - Creditworthiness grouping, e.g.
 - * Sovereign debt
 - * Investment grade company debt
 - * High yield company debt (Junk Bonds)

1.3 Facts: Returns on broad asset classes

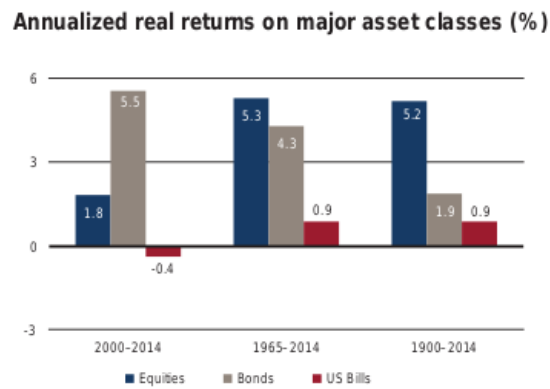
Let us now show some facts about the world portfolio. Figure 1 describes an estimate of the world's return (wealth increase) for the period 1900–2015. The cumulative returns in panel A should be interpreted as the amount an investment of \$1 would have increased to. As we see the best choice would have been to have held equities over the period.

But a word of warning. Equities may have long periods of low returns. See the average returns for the 2000-2015 period. (The lost decade.)

Panel A: World cumulative returns



Panel B: World average returns



Real (inflation-adjusted) returns. Source Credit Suisse Global Investment Returns Yearbook 2015

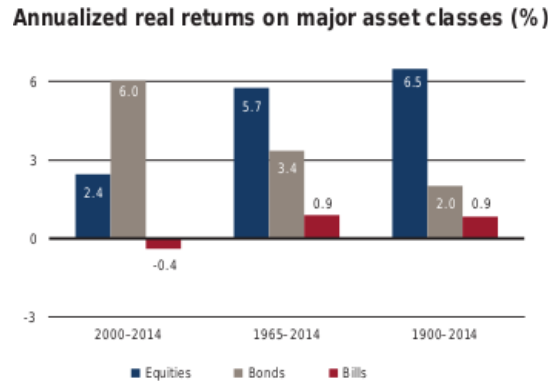
Figure 1: Historical performance of the world portfolio

The country that has done best over this period is the US. (It should not be a surprise, they have had no wars on their own soil since the civil war ended in 1865.) Let us therefore also show similar numbers for the US market (figure 2).

Panel A: US cumulative returns



Panel B: US average returns



Real (inflation-adjusted) returns. Source Credit Suisse Global Investment Returns Yearbook 2015

Figure 2: Historical performance of the US portfolio

1.4 Real Estate

December of 2015 there was a presentation of an expert group on investments in real estate and infrastructure. This is part of the process of investigating changes in the mandate of NBIM.

From that we show their estimates of returns on real estate investments, in figure 3.

These are the types of numbers used to evaluate how to treat real estate as an investment class in the period ahead.

2 The Market Portfolio

The main components of a country's market portfolio:

- Government Bonds – debt to the country.

	CREI	Stocks	Bonds	U.S. REITs
Panel A: Dec 1994–June 2015				
Mean	9.79	8.73	5.39	12.78
Standard Deviation	17.63	15.18	5.52	20.00
Sharpe Ratio	0.41	0.41	0.51	0.51

Source: (Nieuwerburgh, Stanton, and de Bever, 2015, pg 39).

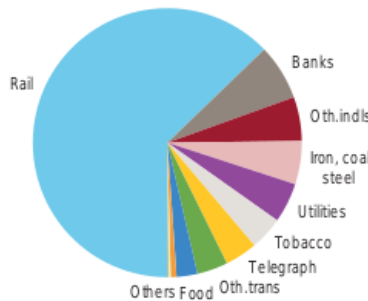
Figure 3: Historical performance of real estate investments

- Corporate Bonds – debt to largest companies in country.
- Listed equities – equity of largest companies in country.

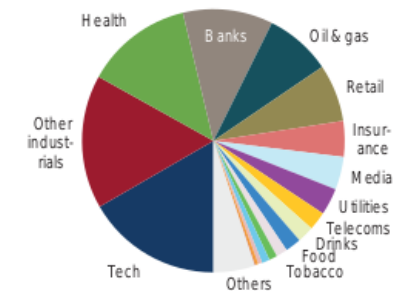
By holding the market portfolio of a country, own a “fraction” of country’s productive capacity.

Example: The composition of the US stock market portfolio in 1900. (If Morgan Kane was investing.) Shown in Panel A of figure 4. Over half of the investments were railroads, which was the infrastructure investment of its day. Compare that with today’s market composition, in panel B.

Industry composition US 1900



Panel B: Industry composition US 2015

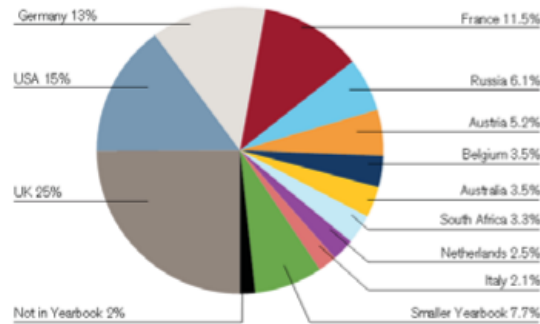


Source Credit Suisse Global Investment Returns Yearbook 2015

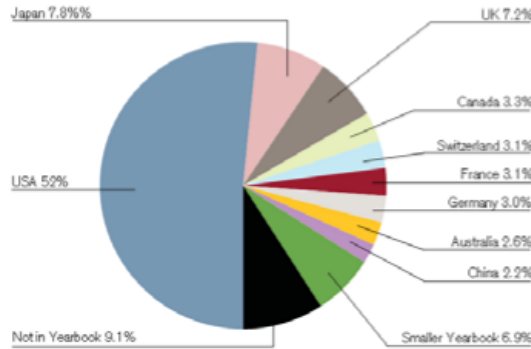
Figure 4: Industry Composition US stock market portfolio. 1900 vs 2015

What countries enter the index? Again, compare 1900 with 2015, in figure 5.

Panel A: 1900.



Panel B: 2015.



Source Credit Suisse Global Investment Returns Yearbook 2015

Figure 5: Country Composition World Stock market portfolio. 1900 vs 2015

References

Stijn Van Nieuwerburgh, Richard Stanton, and Leo de Bever. A review of real estate and infrastructure investments by the Norwegian Government Pension Fund Global (GPGF). Report submitted to the Norwegian Ministry of Finance, December 2015.