

# Asset Classes

“What is available for investing”

- ▶ Equities / Stocks
  - ▶ Exchange listed equities
  - ▶ Private Equity
- ▶ Bonds / Debt
- ▶ Real Assets
  - ▶ Real Estate
  - ▶ Infrastructure
- ▶ Derivatives

# Characterizing asset classes

Key information:

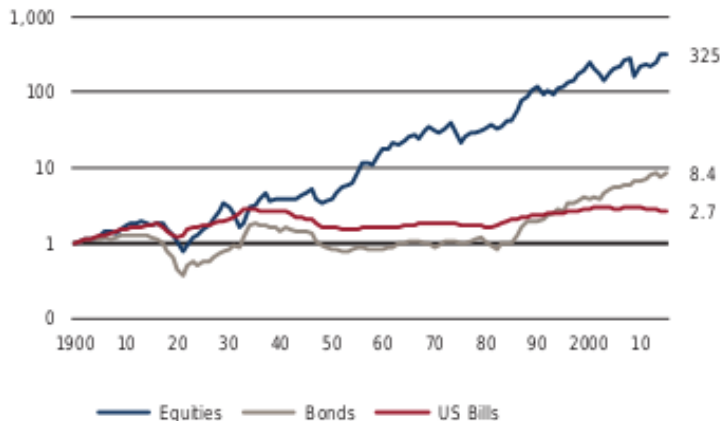
- ▶ Return over time
- ▶ Uncertainty in return over time

Why return as the important comparison?

- ▶ Comparable across assets
- ▶ Time-invariant

# Historical performance of the world portfolio

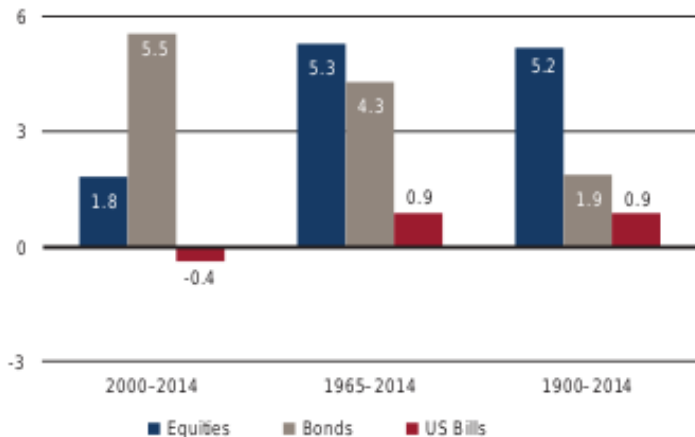
## Cumulative real returns from 1900 to 2014



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

## World average returns

### Annualized real returns on major asset classes (%)



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

# Historical performance of the US portfolio

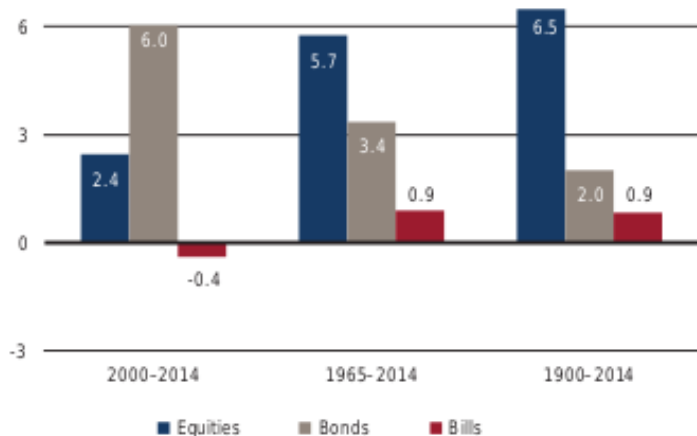
## Cumulative real returns from 1900 to 2014



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

## Historical performance of the US portfolio

### Annualized real returns on major asset classes (%)



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

## Historical performance of real estate investments

	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).

# The Market Portfolio

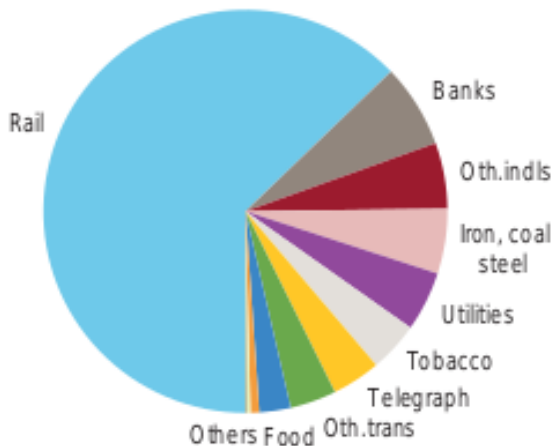
The main components of a country's market portfolio:

- ▶ Government Bonds – debt to the country.
- ▶ 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.

## The Market Portfolio

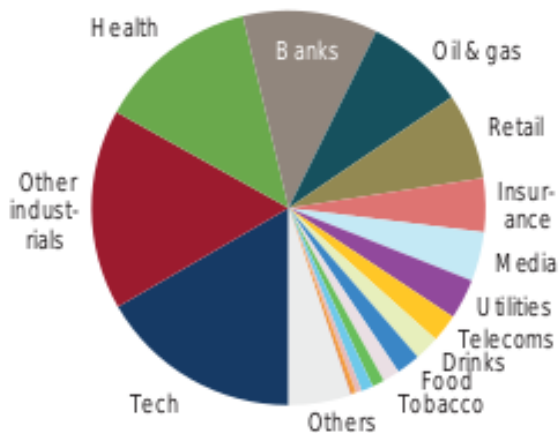
**The composition of the US stock market portfolio in 1900.**



(If Morgan Kane was investing.)

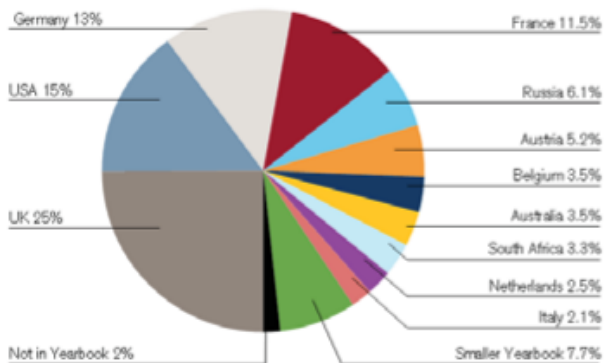
# The Market Portfolio

## Industry Composition US stock market portfolio 2015



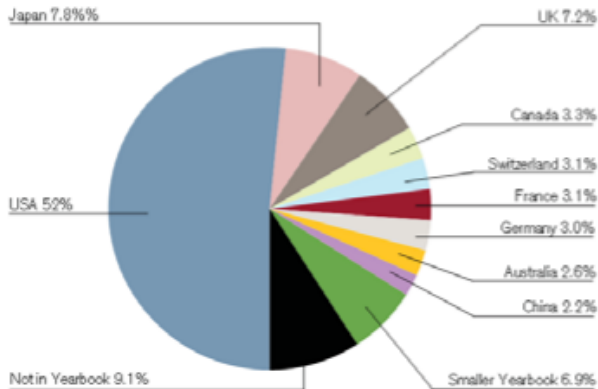
# The World Market Portfolio

## Country Composition World Stock market portfolio. 1900.



# The World Market Portfolio

## Country Composition World Stock market portfolio. 2015.



Source Credit Suisse Global Investment Returns Yearbook 2015

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