28E35700 Alternative Investments

Introduction

Spring 2024

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School of Business

Juha Joenväärä

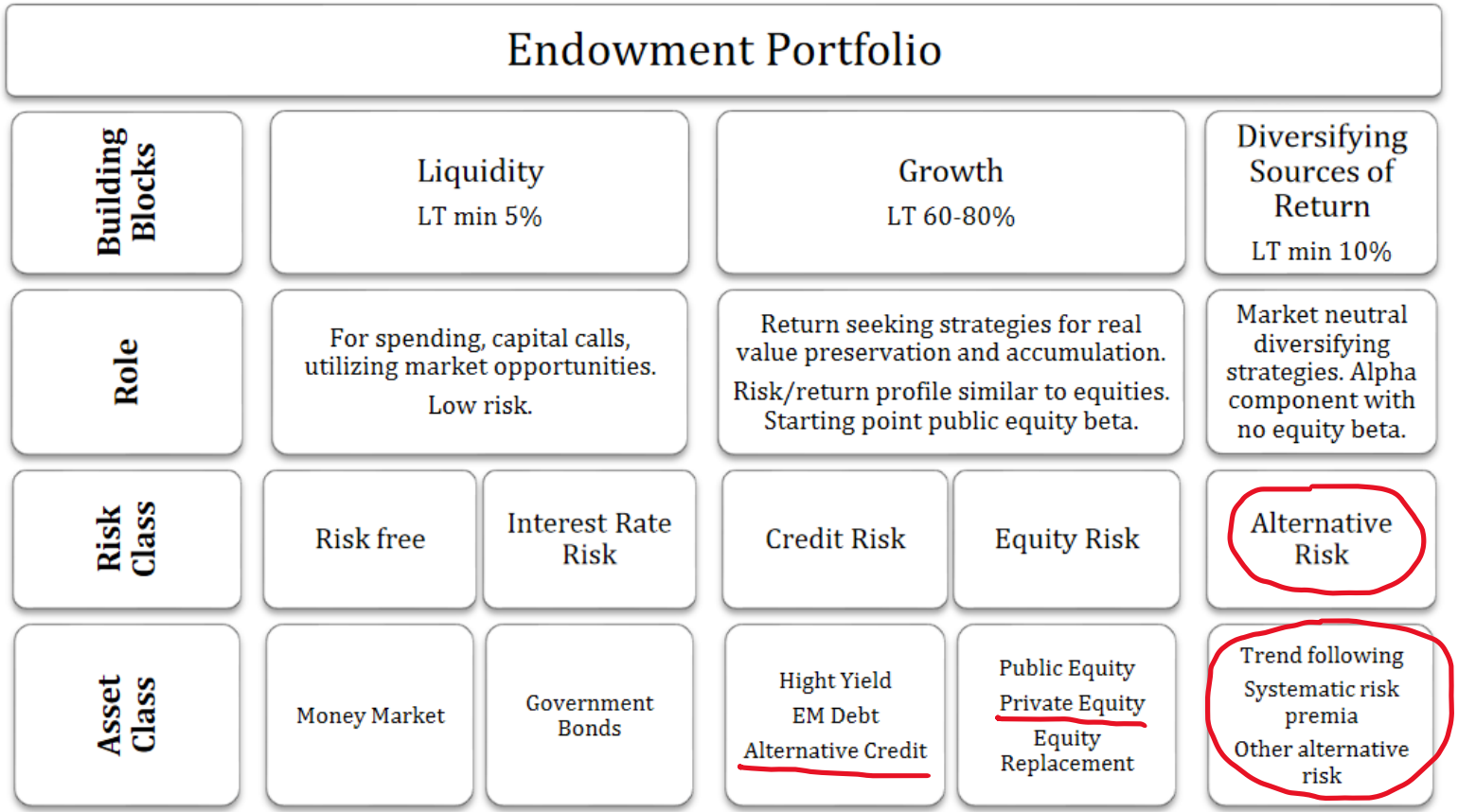
- **Associate Professor**
- **Research focus on Alternative Investments, Financial Markets and Institutions, and Responsible Investing**
- **Unique Hedge Fund Database**
  - Projects with the Center for Financial Policy (UMD), Kenan Institute for Private Capital, and Imperial College's Hedge Fund Centre
  - OFR / FED project (Systemic Risk Board)
  - Academic presentations for Institutional Investors (Blackstone)
- **Consulting Projects**
  - Alternative Risk Premia (internal hedge fund)

Have you invested in Alternatives?

Aalto Endowment’s Investment Strategy

> Sijoitustoiminta on mahdollistanut pitkäaikaiset investoinnit tutkimuksen ja koulutuksen kasvavaan kysyntään.
>
> *Ilkka Niemelä, Aalto-yliopiston rehtori*

Aalto Allocation



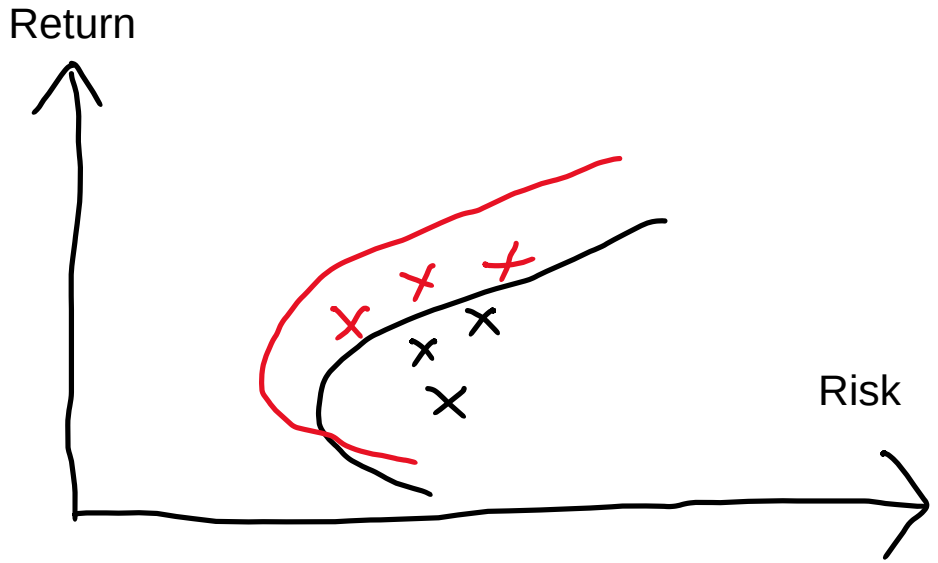
A?

Marketing Jargon says that Alternatives provide maximum return for minimum risk: True or Not?

1. **Portfolio Diversification**
   (***Return diversifies***)

2. **Enhancing Returns**
   (***Return enhancers***)

3. **Managing Risk**



Key Takeaway from the Course

”*Marketing Jargon says that alternatives provide maximum return for minimum risk.*”

After taking the course, you should be able to evaluate this claim critically based on scientific evidence …

… No matter what the context is

Schedule of the Course (PE Part)

• Introduction	7 May, 12:15 - 14
• Private Equity (Juuso Nissinen, PE group work starts)	8 May, 10:15 - 12
• Private Equity Performance Measures	10 May, 10:15 - 12
• Q&A for PE group work in Zoom	13 May, 15:00
• Empirical Facts on Private Equity Fund Performance	14 May, 10:15 - 12
• Venture Capital (Ville Heikkinen, Butterfly Ventures)	15 May, 12:15 - 14
• Private Equity Risk and Return	16 May, 12:15 – 14
• Q&A for PE group work in Zoom	20 May, 15:00

Schedule of the Course (HF Part)

• Measuring Hedge Fund Risk and Return	21 May, 12:15 - 14
• Risk Factor Investing (Kari Vatanen)	22 May, 10:15 - 12
• Hedge Fund Activism (Niko Pakalen, Cevian Capital)	23 May, 10:15 - 12
• Deadline for the PE case	24 May, 16:00
• Empirical Facts on Hedge Fund Performance	28 May, 12:15 - 14
• Hedge Fund Strategies (Risto Alasalmi, ex-HF PM)	29 May, 10:15 - 12
• Risk and Returns in Other Alternatives	30 May, 10:15 – 12
• Open-Book Exam (note the previous date was 7.6.)	6 June, 9:00 - 12:00
• Retake	30 Aug, 14:00 - 17:00

Intended Learning Outcomes of the Course

By the end of the course, you will understand the risk and return characteristics of alternative investments such as private equity funds and hedge funds.

You understand the potential benefits and costs when alternative investments are added to the standard stock/bond portfolio.

You are able to compute and interpret the state-of-art private equity fund and hedge fund performance/risk measures and utilize measures when you perform the quantitative due diligence process.

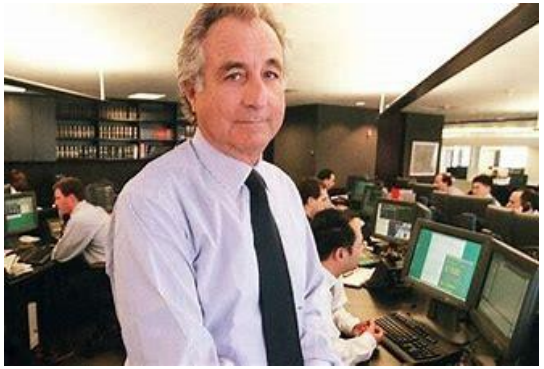
After taking this course, you will be familiar with the most important academic research in this area. You can also interpret academic research and utilize it in research-based decision-making.

Measuring and evaluating Alternative PM risk and return is not a straightforward task

Two famous funds with a huge “alpha”

1. Jim Simons’ Renaissance Technologies Medallion Fund has earned over $100 billion in trading profits since its inception in 1988.

2. Bernie Madoff was the mastermind of the largest Ponzi scheme in history, worth about $64.8 billion.



Grading of the Course

- **Private Equity Group Work (60%)**
  - You will solve an open-ended problem found in trigger material given by Juuso Nissinen (who worked previously in Norwegian Oil, which made this decision)
  - Question: Should a Pension fund invest in PE or not?
- **Open-Book Exam (40%)**
  - Scientifically justified recommendation to your superiors
  - The last year's exam will be soon on the mycourses – page
  - This year, more on performance metrics

Tips for Taking This Course Succesfully

- **We aim for deep-level learning instead of surface-level learning**
  - To support that, we use
  (i) Problem-based learning (PBL) in our group work
  (ii) Open-book exam that tests a “broad” understanding of the whole course content
- **Group Work vs Exam**
  - Group work >> Exams
  - But 40% of the grade comes from the exam
  - Without deep-level learning, it is difficult to get good grade on the exam
  - Last night’s reading does not work very well
- **“*Is it enough if I read only slides?*”**
  - Depends on. Typically, it helps if you read the articles. Especially for exams.
  - Aalto’s strategy supports scientific-based decision-making

Rigorous and Relevant

- **Acedemics have access to the best available data**
  - Private Equity (Burgiss, Kenan Institute)
  - Hedge Funds (Form PF, my work with OFR/FED/Wermers)
  - → Utilize it in scientific-based decision making
- **Guest Speakers**
  - Institutional details
  - Often Aalto Alumni
  - A large number of job opportunities
  - A topic for your Master's Thesis?

What are Alternative Investments?

Alternative Assets

- **Traditional asset classes are stocks, bonds, and cash**
- **Alternative Investments are:**
  - Private Equity
  - Venture Capital
  - Hedge Funds
  - Private Debt
  - Real assets (Real estate, Infrastructure, and Natural resources)

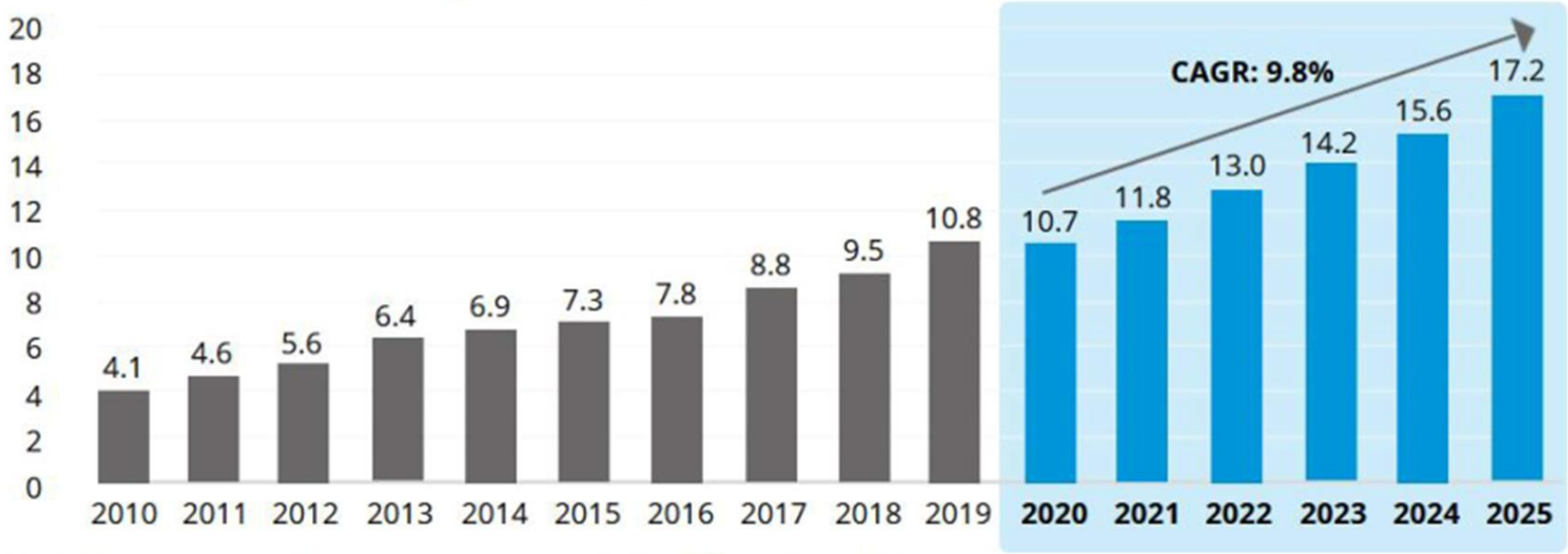
Characteristics of Alternative Investments

Traditional Investments	Alternative Investments
Liquid investments	Largely illiquid investments
Numerous and passive owners	Active owners
Highly regulated	Less regulated
Extremely correlated with, and sensitive to, market movements	Low correlation to public markets
Generally, do not use leverage and long-only	Use of leverage, shorts and complex derivatives
Low fees	High fees
Low investment amounts allowed	High minimum investment requirements
Open to general public and accredited investors	Only open to accredited investors

Where Is the Industry Today and Where Are We Headed?

The alternative assets industry has continued to grow in recent years and is now a mainstay of the modern investment landscape. Industry assets under management (or AUM) are at record highs, and investor and fund manager interest in alternatives has increased steadily over time.

Alternative Assets under Management ($tn)*



*2020 figure is annualized based on data to October. 2021-2025 are Preqin's forecasted figures.

Source: Preqin

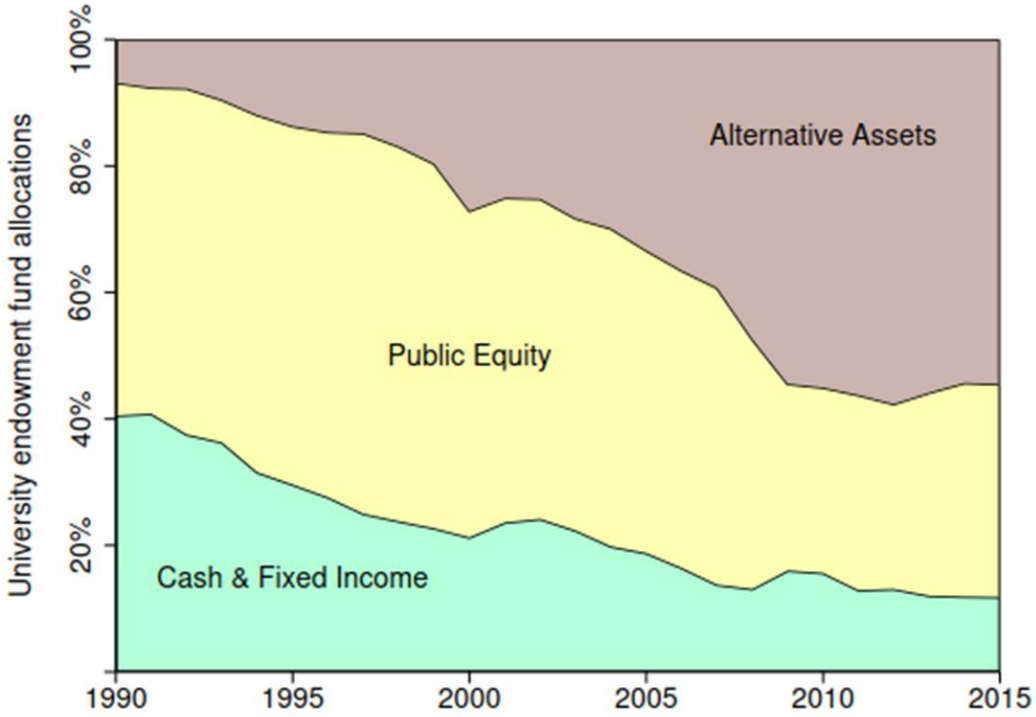


Figure 1: Endowment data are from the National Association of College and University Business Officers (NACUBO) and Commonfund surveys of endowment funds. This figure shows the portfolio allocations for the value weighted "aggregate fund" by summing up the value of the holdings of the endowments in the sample in each year from 1990 to 2015. For the purpose of comparison, this sample includes only the endowment funds that entered the sample by 1990. The green area shows the allocations to cash and fixed income securities, the yellow area shows the allocations to public equity, and the red area shows the allocations to alternative assets (hedge funds, private equity, venture capital, private real estate, and illiquid natural resources).

Source: Dimmock, Neng, and Yang (2019)

Why Invest in Alternatives?

Marketing Jargon says that alternatives provide maximum return for minimum risk: True or Not?

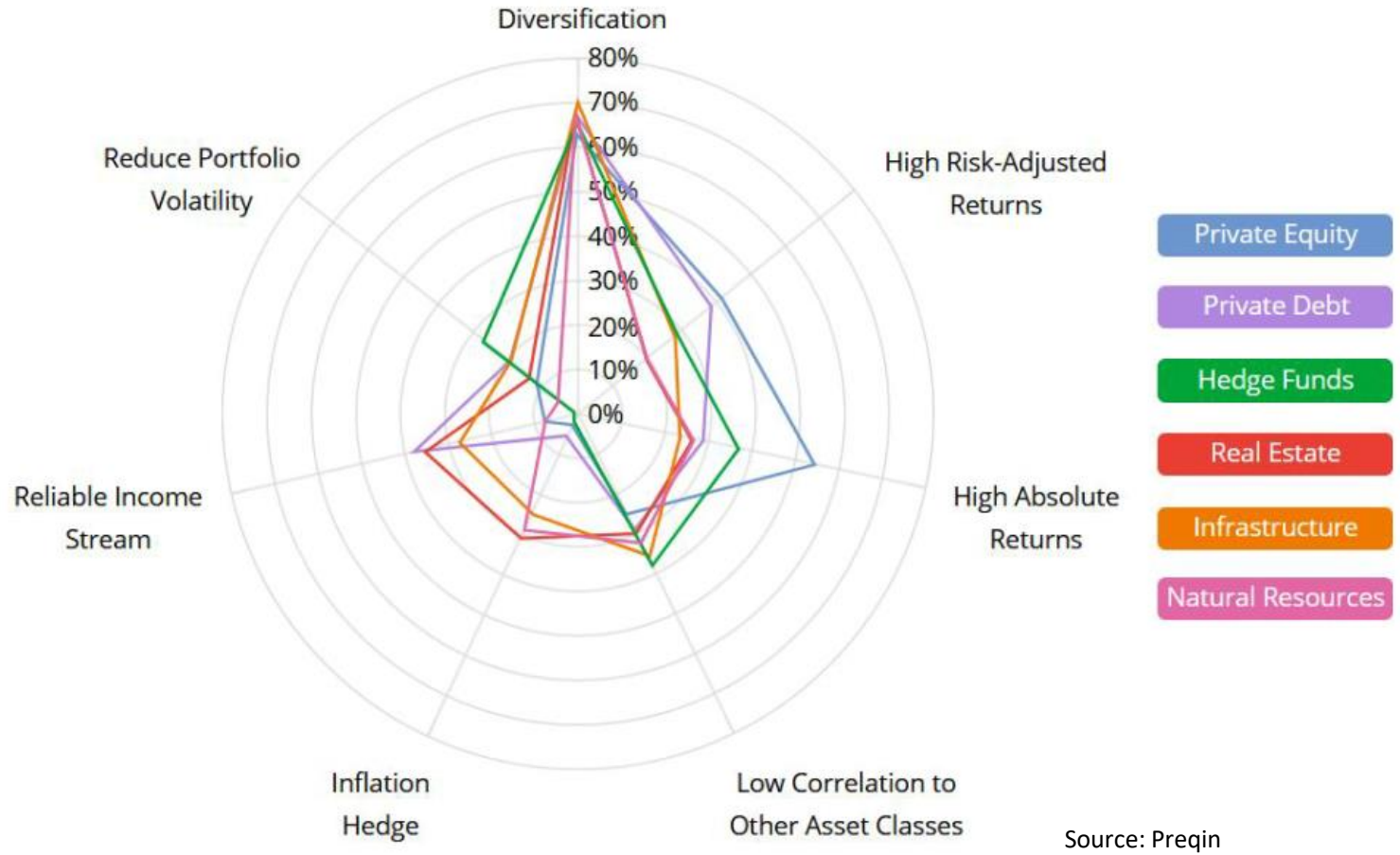
1. **Portfolio Diversification (*Return diversifies*)**
   - Low correlation with traditional asset classes
   - Hedge against inflation

2. **Enhancing Returns (*Return enhancers*)**
   - Potentially higher returns than their traditional counterparts
   - Returns can be adjusted relative to benchmark/risk/inflation

3. **Managing Risk**
   - High risk and high minimum investments → for long-term investors
   - Strong risk management and exposure to non-traditional risk factors

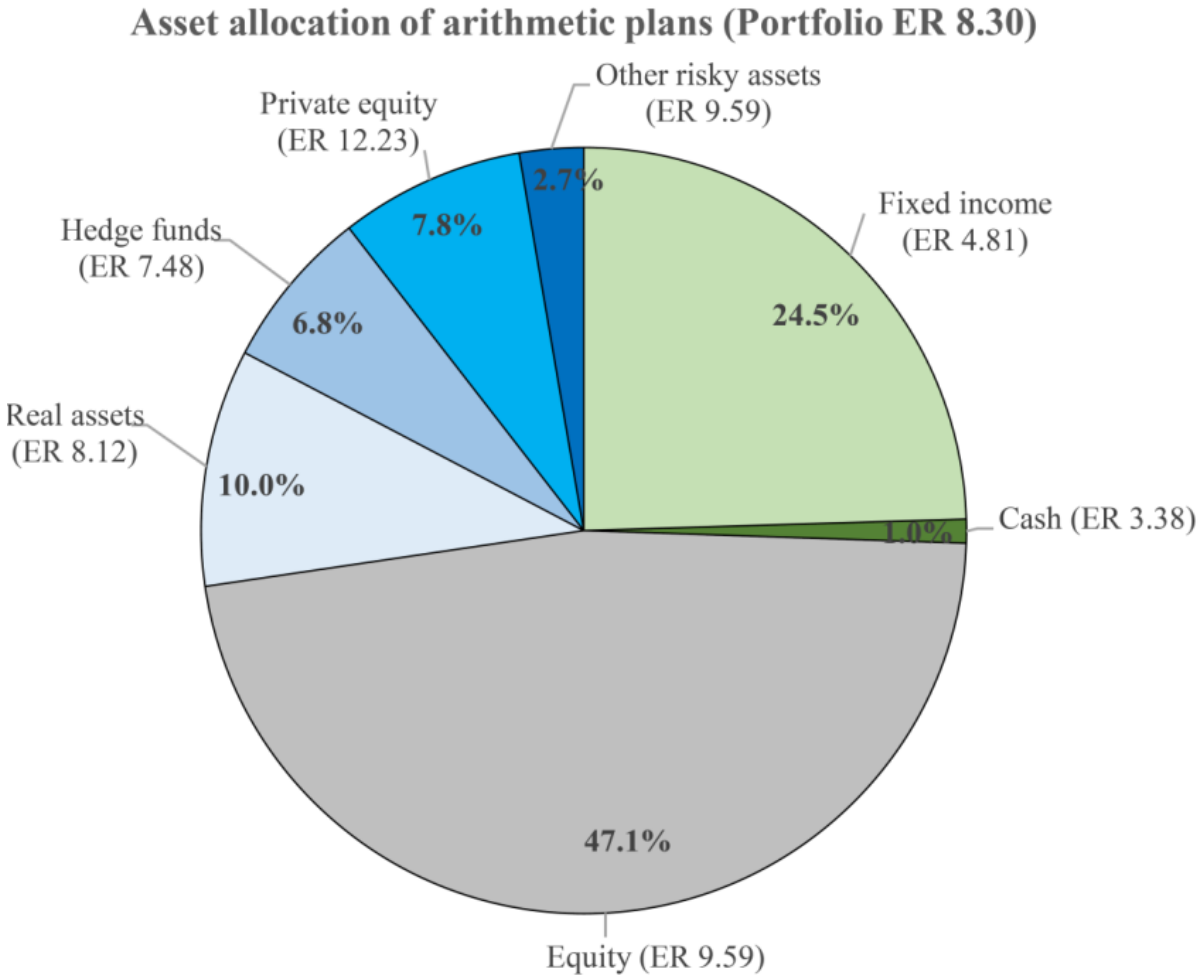
Institutional Investors' Main Reasons for Investing in Alternative Assets

Click the asset classes below to add/remove them from the chart



Source: Preqin

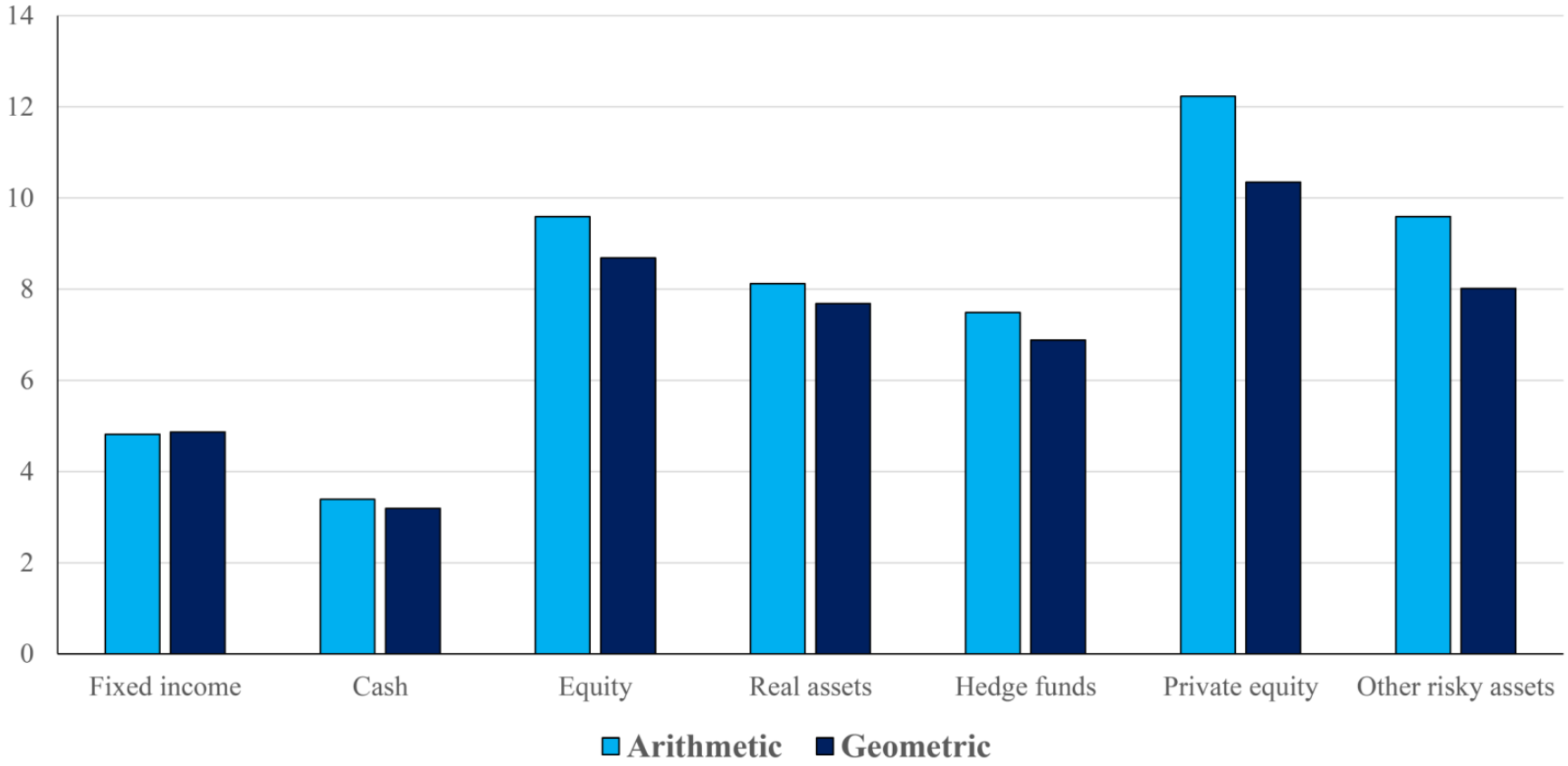
- 231 U.S. public pension plans
- Time period 2014–2016
- 679 observations



Source:

Mandatory CAFRs or separate GASB 67 disclosure statements, **Andonov and Rauh (2018)**

Expected (nominal) returns by asset class



What Modern Portfolio Theory Says?

Rationale of 60-40 Stock/Bond Portfolio

- **Modern portfolio theory:**

$$Optimal\ weights\ = \frac{\eta}{\gamma\sigma} = \frac{1}{\gamma}\frac{\mu}{\sigma^2}$$

  - $\eta(=\frac{\mu}{\sigma})$ is the Sharpe ratio
  - σ is the volatility of public equity
  - γ is the investor's coefficient of relative risk aversion (γ=2.5)

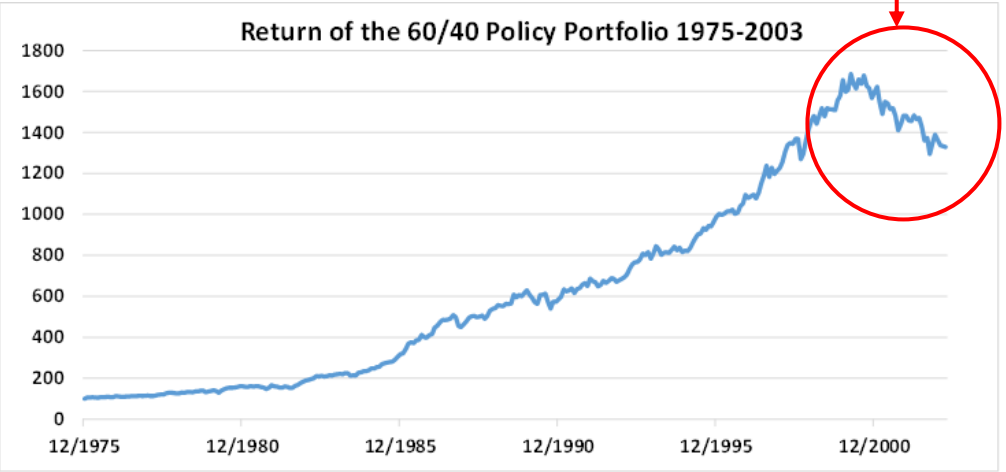
- **What are the optimal weights to stocks and bonds for investors with γ = 2.5?**

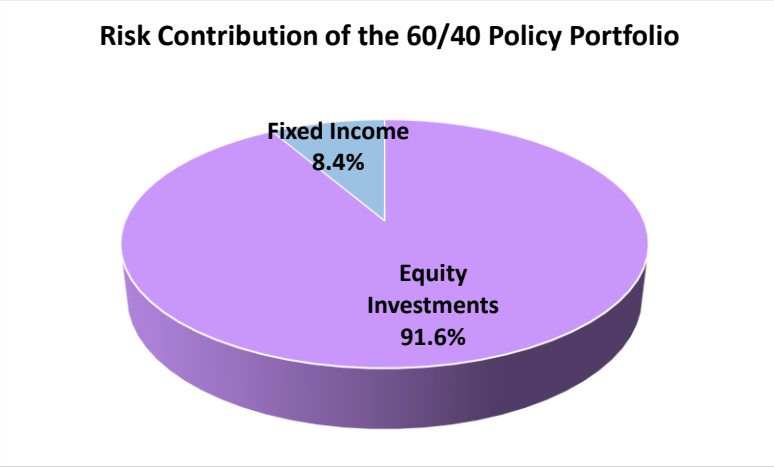
  Equity risk premium is 6% and volatility is 20%

- **Answer:** $\frac{\eta}{\gamma\sigma} = \frac{1}{\gamma}\frac{\mu}{\sigma^2} = \frac{0.06}{2.5\times0.20\times0.20}$ **=0.60 or 60% (to stocks and rest to bonds)**

60/40 Policy Portfolio Failed during Tech Bubble

- 60/40 Policy Portfolio has been the typical investment portfolio of an institutional investor in US during 1980's and 1990's





Many investors rejected conventional 60/40

Endowment funds were the leading force

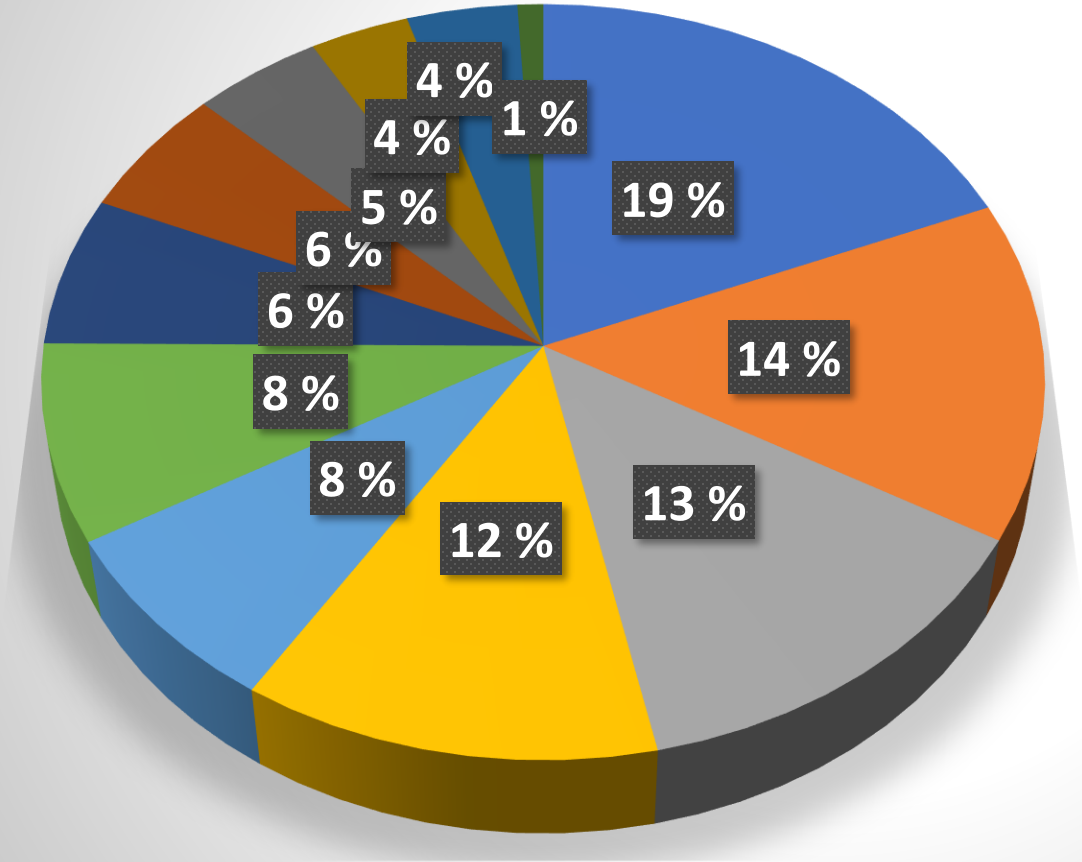
- David Swensen (2000): Pioneering Portfolio Management

Asset allocation was expanded to the alternative and illiquid asset classes

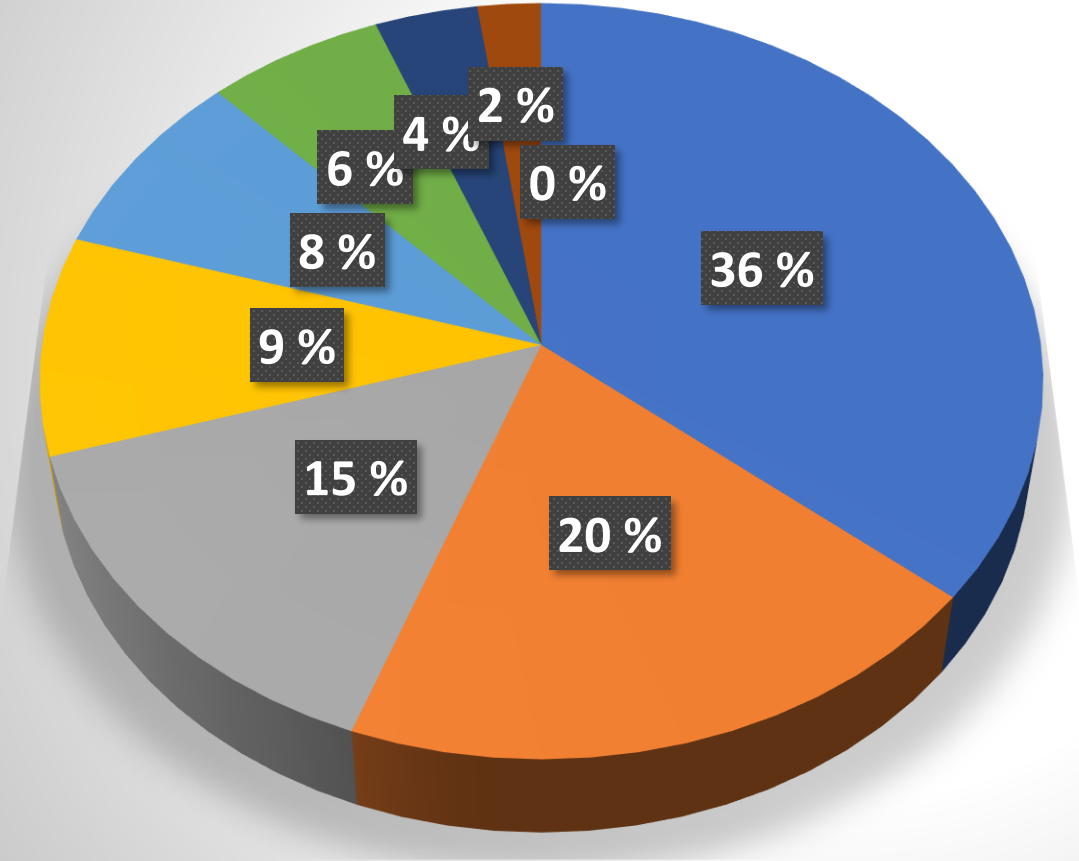
Equity market risk was diversified by

- Private Equity and Debt
- Hedge Funds
- Real Assets (Real Estate, Infrastructure and Commodities)

Yale's Asset Allocation



Varma's Asset Allocation



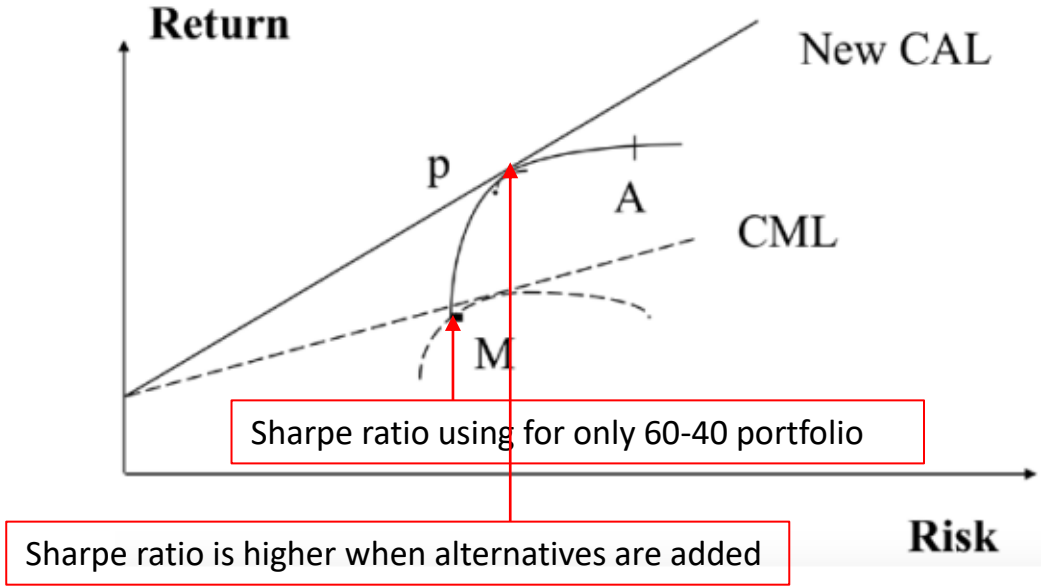
Decomposing Returns to Alpha and Beta

Higher Sharpe ratio using alternatives?

- **Sharpe ratio for optimal portfolio:**

$$= \left[\frac{\mu_M}{\sigma_M}\right]^2 + \left[\frac{\alpha_A}{\sigma_A}\right]^2$$

- $\alpha_A = alpha\ for\ alternatives$
- $\sigma_A = Tracking\ error$
- $\mu_M = mean\ return\ on\ 60/40\ rule$
- $\sigma_M = Standard\ deviation$



Alpha and Beta

- **Returns can be decomposed using the standard model:**

$$r_A = \alpha + \beta r_M + \varepsilon$$

  - r_A **is a return for any alternative (active) investment (e.g., hedge fund)**
  - r_M **is a return for benchmark/market (60/40 portfolio)**

- **By adding α investments to portfolio, investors can increase the efficiency of their portfolios**
  → α can be achieved via alternatives (PE funds, HFs, Real assets,…)
  → β can be achieved via ETFs (mutual funds)

- **Some people believe that all α is just expensive 'exotic' β which is not known**

Economic Rationale for Alpha

Sources of Alpha

Let's read the FT article

- By Raghuram RaMay (Prof at Univ of Chicago and former Chief Economist at IMF (https://www.ft.com/content/18895dea-be06-11dc-8bc9-0000779fd2ac)

True alpha

- Undervalued financial assets
- Activism
- Financial engineering / innovation

Fake alpha

- Produce a steady positive return most of the time as compensation for a rare, very negative, return
- Examples of Fake Alpha (short side of Fake alpha)

Compensation structure / incentives

Takeaway from the intro lecture

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… No matter what is the context