

INSTITUTIONAL INVESTING CONCEPTS



INVESTMENT PRINCIPLES

■ Invest to Meet Liabilities

□ Key considerations:

- Level of Return
- Need for real or nominal returns
- Time horizon

□ Determines Equity or Fixed Income preferences

■ Diversify To Reduce Risk

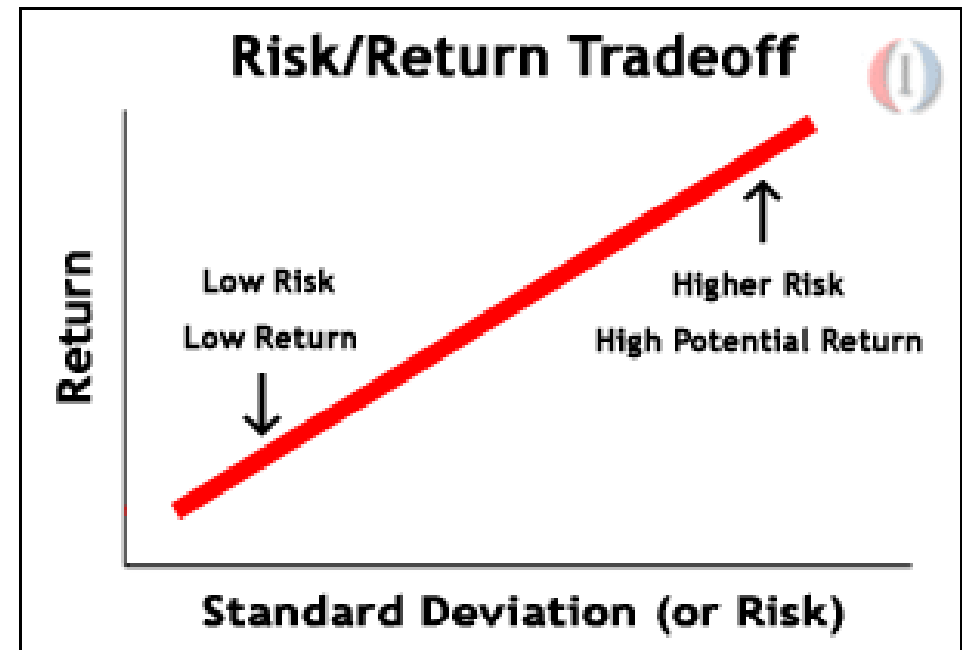
KEY INVESTMENT CONCEPTS

Definitions

- Expected Return: What an investor expects to make from a particular investment
- Risk: The possibility that the expected return will not be earned (measured as the difference between the actual return and the expected return)

Key Concept

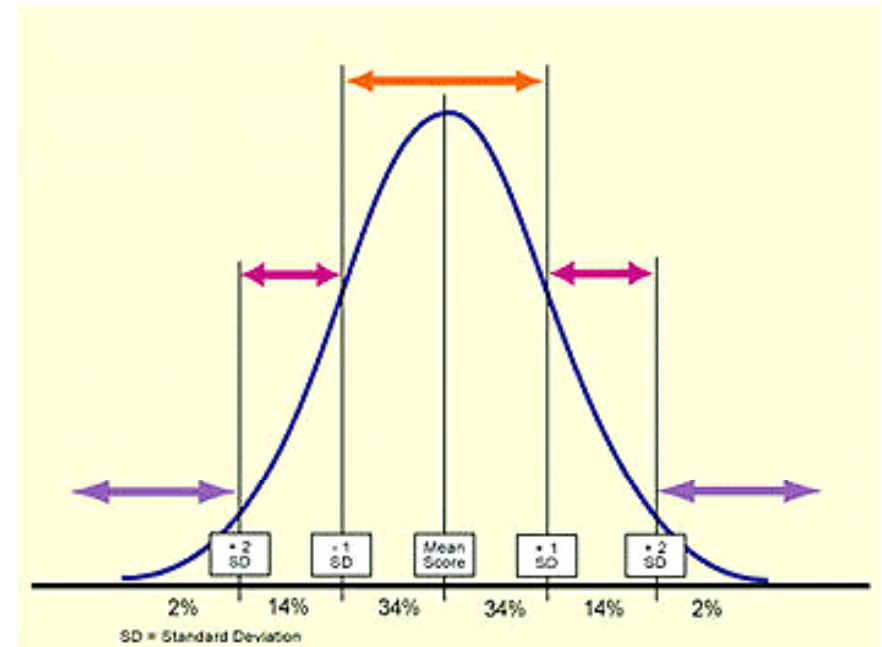
- Assets with higher long-term returns have greater risk



Source: Investopedia,
"Financial Concepts: The Risk/Return Tradeoff"

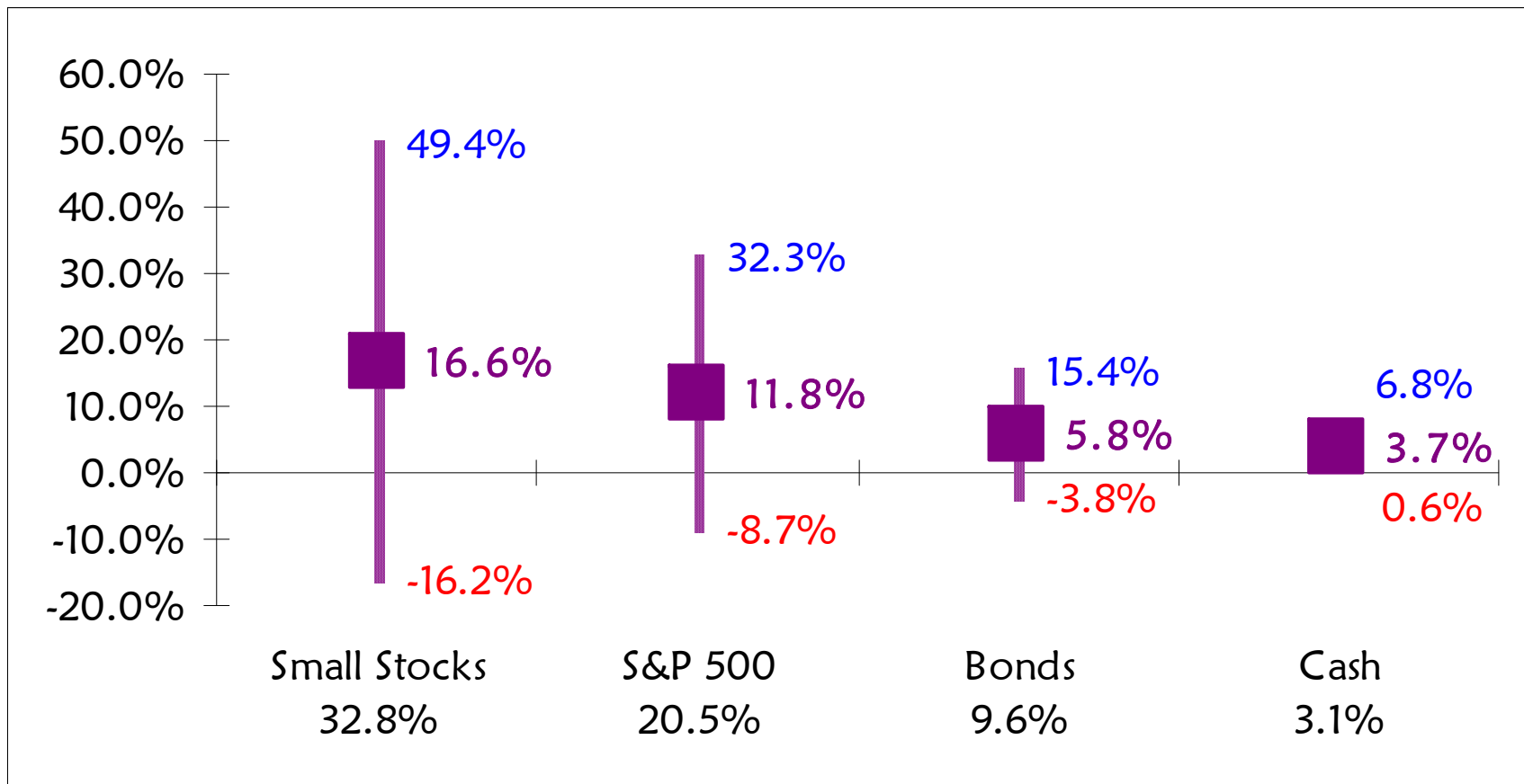
STANDARD DEVIATION - MEASURE OF RISK

- About 2/3rds of annual returns within one standard deviation of the expected return (68%)
- 95% of annual returns are within two standard deviations
- 99.5% of returns are within three standard deviations



Historical Risks: 1926 – 2009

1 Standard Deviation



Diversification Reduces Risk

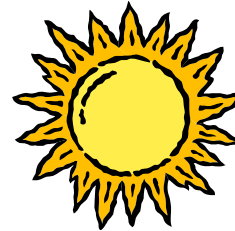
Warren Buffet on Investments:

“Don't put all your eggs in one basket.”



- Holding only a few “safe” assets is more dangerous than owning many assets, including some exposure to “risky” assets
- Avoid Extreme Results

Diversification: an example



Sun



Rain



Total



Sunscreen

30%

-10%

17%



Umbrellas

-20%

40%

12%



Sunscreen &
Umbrellas

5%

15%

21%



SUMMARY: INVESTMENT THEORY

- Three factors:
 - expected returns
 - the variance (risk) in those returns
 - the co-movement (correlation) of the returns
- The primary principle is diversification
- The main purpose is to put together a mix of different assets in a manner that
 - reduces the risk
 - For a given necessary level of return



PORTFOLIO CONSIDERATIONS & IMPLEMENTATION



CONSIDERATIONS

- Governance structure
- Resources
- Investment Policy

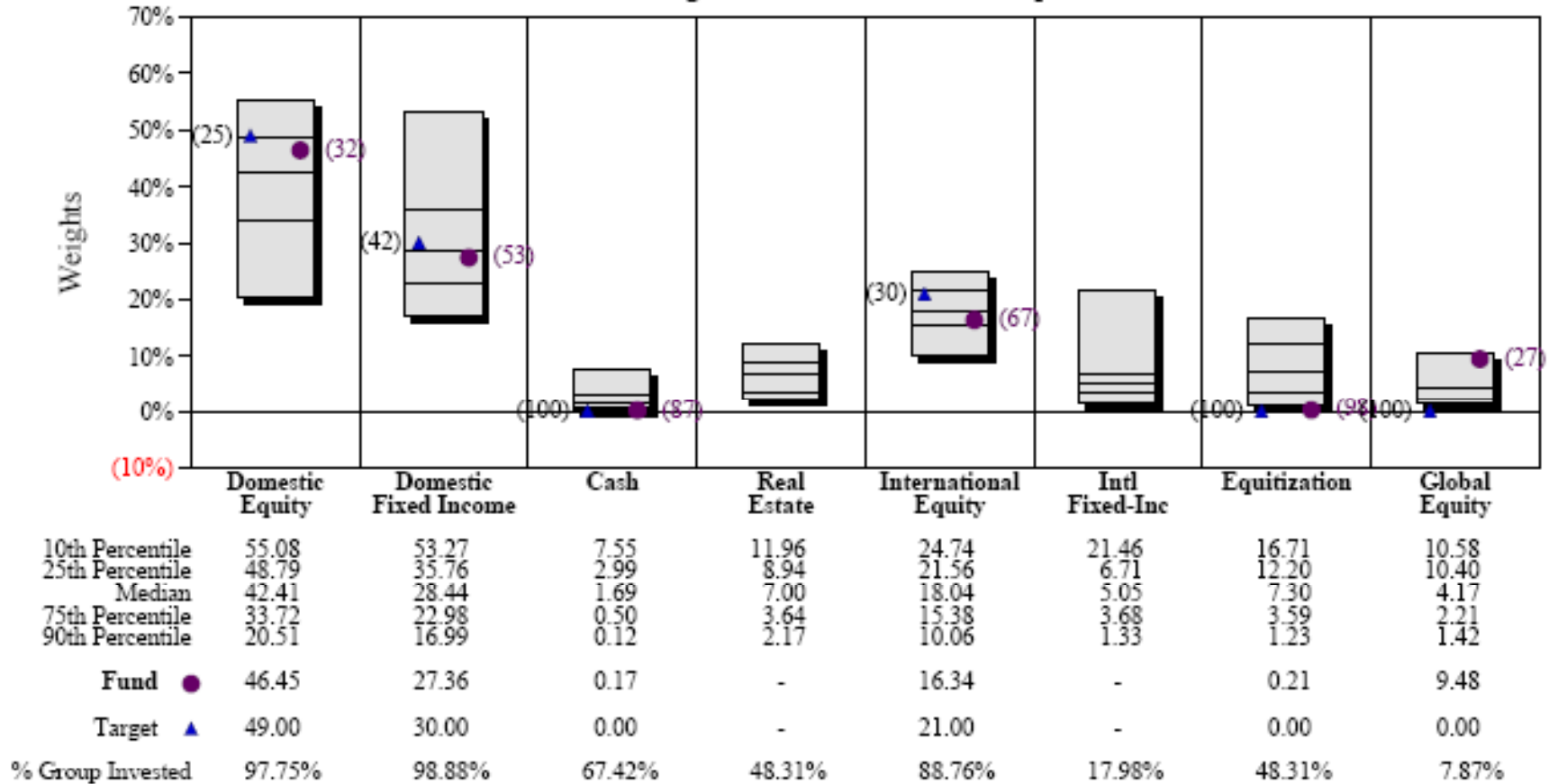
IMPLEMENTATION

- Simple vs. Complex
(Basic vs. Endowment Model)
- Internal vs. External Management
- Active vs. Passive Management

ASSET ALLOCATION

PUBLIC FUNDS - RANGE

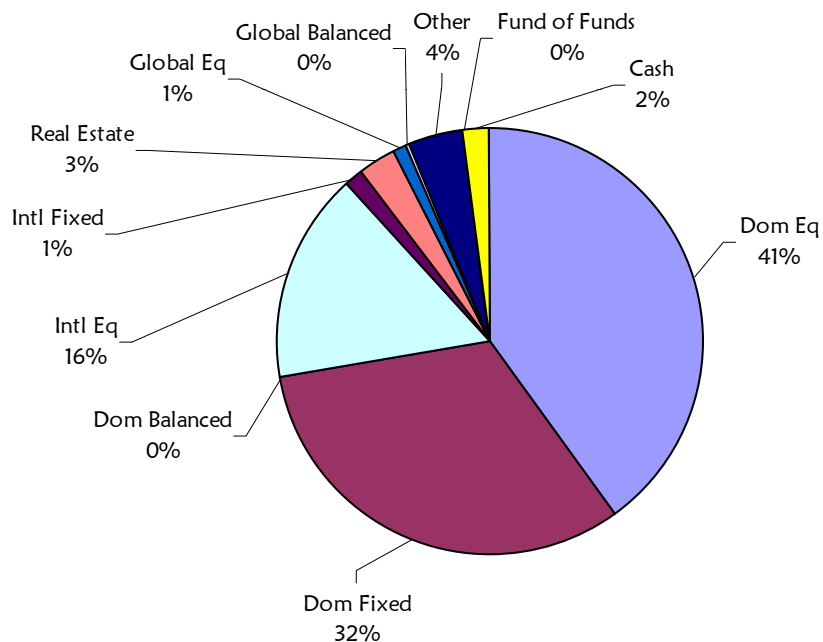
Asset Class Weights vs CAI Public Fund Sponsor Database



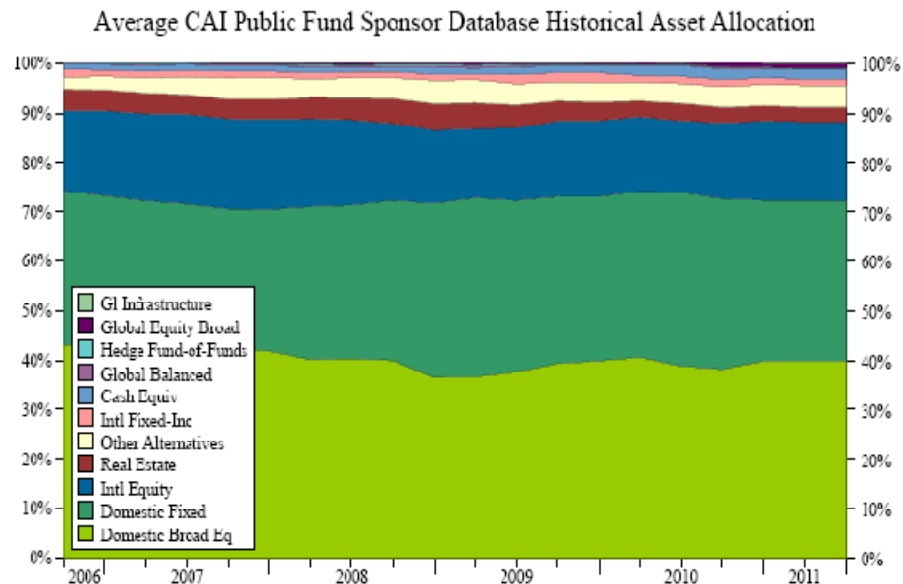
Source: Callan Associates, June 30, 2011

ASSET ALLOCATION

PUBLIC FUNDS - AVERAGE



Source: Callan Associates, March 31, 2011



Source: Callan Associates, June 30, 2011