

The background of the slide is a golden-yellow color with a dense, repeating pattern of various international currency symbols. These symbols, including the dollar sign (\$), euro (€), pound sterling (£), yen (¥), and others, are rendered in a 3D, embossed style, creating a textured, metallic appearance. The symbols are scattered across the entire background, with some appearing larger and more prominent than others.

Managing the Enterprise Risk in Institutional Portfolios

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Why Enterprise Risk Matters For Institutional Portfolios

Every pool of capital exists for a reason

Investment strategy must be understood in the context of the total enterprise, rather than as a stand-alone, total return fund.

Enterprise and financial risk assessment provides the foundation on which to determine the appropriate level of risk tolerance for the institutional portfolio.

Two Examples:

1. Corporate Defined Benefit Plan (Liability-focused capital)
2. Educational Endowment (Perpetual capital)

How does the Pension Plan impact a corporation's financial health?

Metrics that matter:

Balance Sheet

Size of Plan relative to market capitalization

Impact of funded status (asset or liability?)

Debt ratios and covenants

Income Statement

Pension Expense

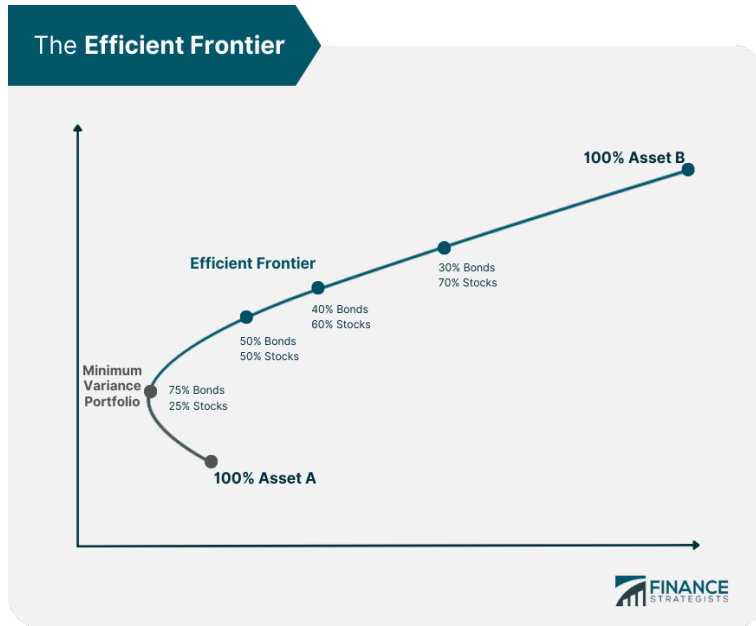
Effect on Earnings

Cash Flow Statement

Required contributions

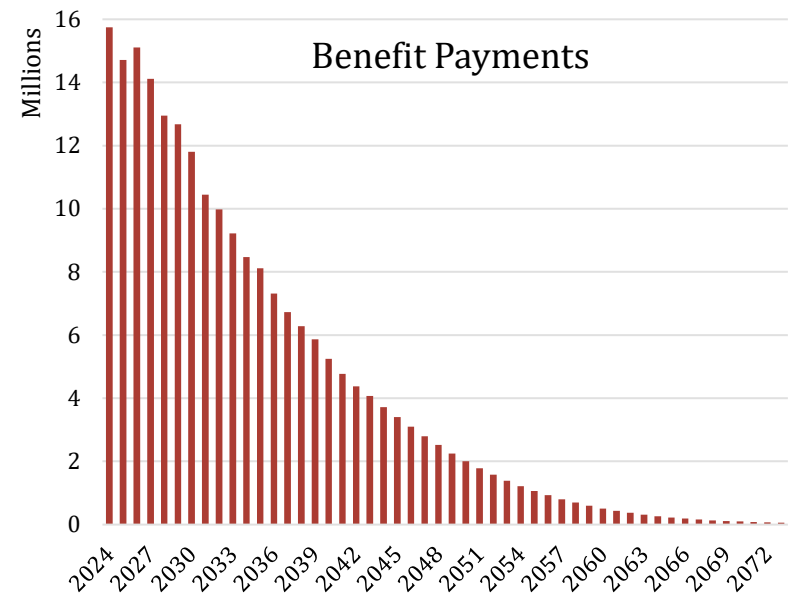
Traditional vs. Liability-Focused Asset Allocation

Mean-Variance Optimization



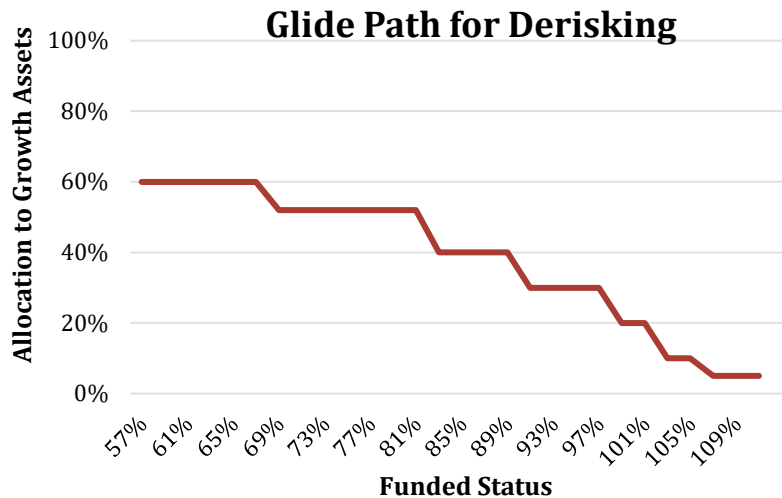
- Maximize return per unit of risk
- Does not consider liability

Liability-Driven Investment



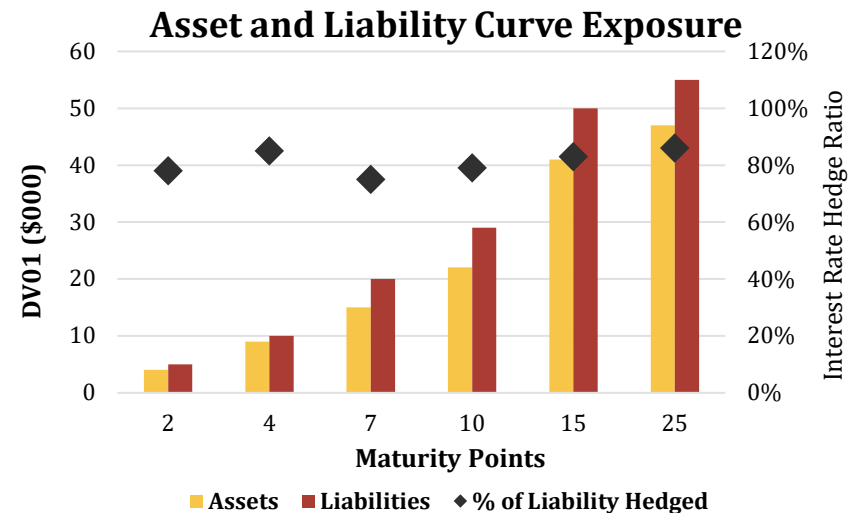
- Series of payments over time
- Effectively a short position in long-duration bond portfolio

Liability Driven Portfolio Construction: Two-Dimensional Portfolio Management



- Allocation to growth assets decreases as funded status improves
- Allocation to liability hedging assets increases to dampen funded status volatility

- Assets are selected to match duration of liability across key rates
- Almost fully hedge interest rate risk and credit spreads immunizes portfolio from market fluctuations



Impact of Investment Strategy on Financial Statements – Balance Sheet

Scenario:

- Corporate pension plan with funded status 80%
 - (Liabilities = \$1 billion; Assets = \$800 million)
- 10% decline in equity market; 100bp decrease in interest rates

Hypothetical Asset Allocations

Total Return Portfolio	60% equity; 40% fixed income
Partial Liability-Hedged	60% equity; 40% long-duration fixed income, Portfolio duration matched to liability duration
Full Liability-Hedged	20% equity; 80% long-duration fixed income, Interest rate hedge ratio = 100%

Impact of Investment Strategy on Financial Statements – Balance Sheet

In millions	After down market, by allocation approach			
	Prior to down market	Total return	Partial liability-driven	Full liability-driven
Pension assets	\$800	\$ 771	\$ 826	\$ 904
Pension liabilities	1,000	1,120	1,120	1,120
Unfunded liability	200	349	294	216
Balance sheet impact	—	149	94	16
Market capitalization	10,000	9,000	9,000	9,000
Unfunded liability as a percentage of market capitalization	2.0%	3.9%	3.3%	2.4%
Balance sheet impact as a percentage of market capitalization	—	1.7%	1.0%	0.2%

Impact of Investment Strategy on Financial Statements – Income Statement

In millions	If marked-to-market, by allocation approach			
	Standard accounting	Total return	Partial liability-driven	Full liability-driven
Service cost	\$24	\$28	\$28	\$28
Interest cost	30	22	22	22
(Return on plan assets)	(48)	29	(26)	(104)
Losses recognized during the year	15	120	120	120
Total pension expense	21	199	145	66
Corporate income	750	750	750	750
Corporate income (less pension expense)	771	949	895	816
Pension expense as a percentage of net income	3%	21%	16%	8%

Enterprise Risk Management for Perpetual Capital – Endowment Example

Asset-Liability framework applies to endowments as well...

Pension Liability =
meet series of declining benefit payments.
Dominated by interest rate risk.

Endowment Liability =
funding long-term operating goals and growing budget support. Dominated by inflation risk.

	Pension	Endowment
Payments over time	Declining	Growing
Dominant risk factor	Interest rate risk	Inflation
Investment strategy designed to:	Dampen volatility	Grow corpus to increase spending
Goal	Hedging	Growth

Operational Considerations for Setting Investment Strategy – Endowment

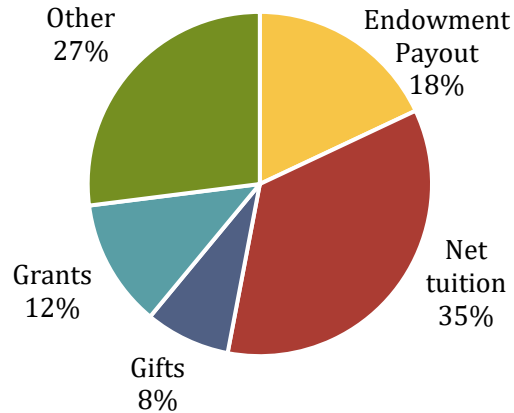


- **Endowment Dependence** measures the role of the endowment in the annual budget
- **Endowment Distribution to Financial Aid** compares endowment spending to the institution's financial aid and tuition discounts; supports pricing flexibility
- **Endowment to Debt** focuses on balance sheet health and the endowment's role in the borrowing capacity of the institution
- **Net Flow** is the ratio of endowment inflows to spending. Indication of a growing or declining institutional role

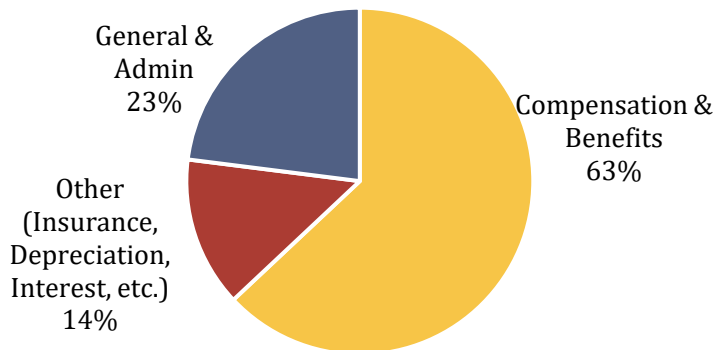
Many Universities Dependent on Endowment Spending to Balance Budget

Median level of budget support is nearly 18% of operating expenses

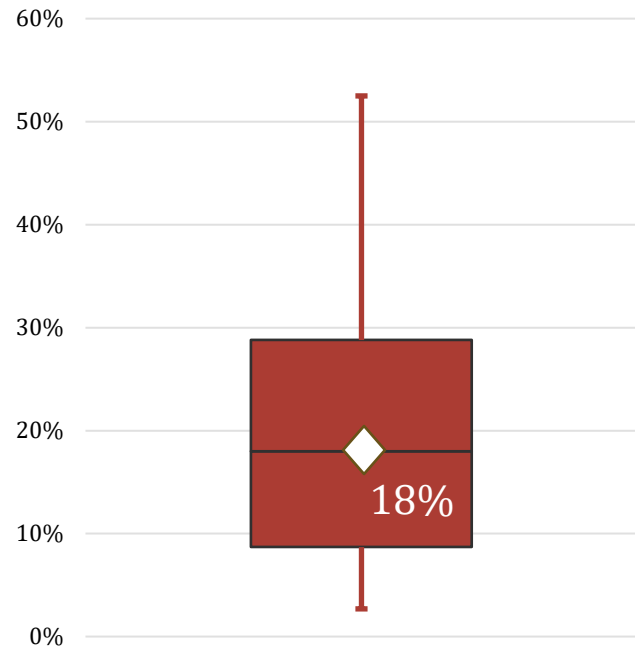
Example Income Sources



Example Operating Expenses



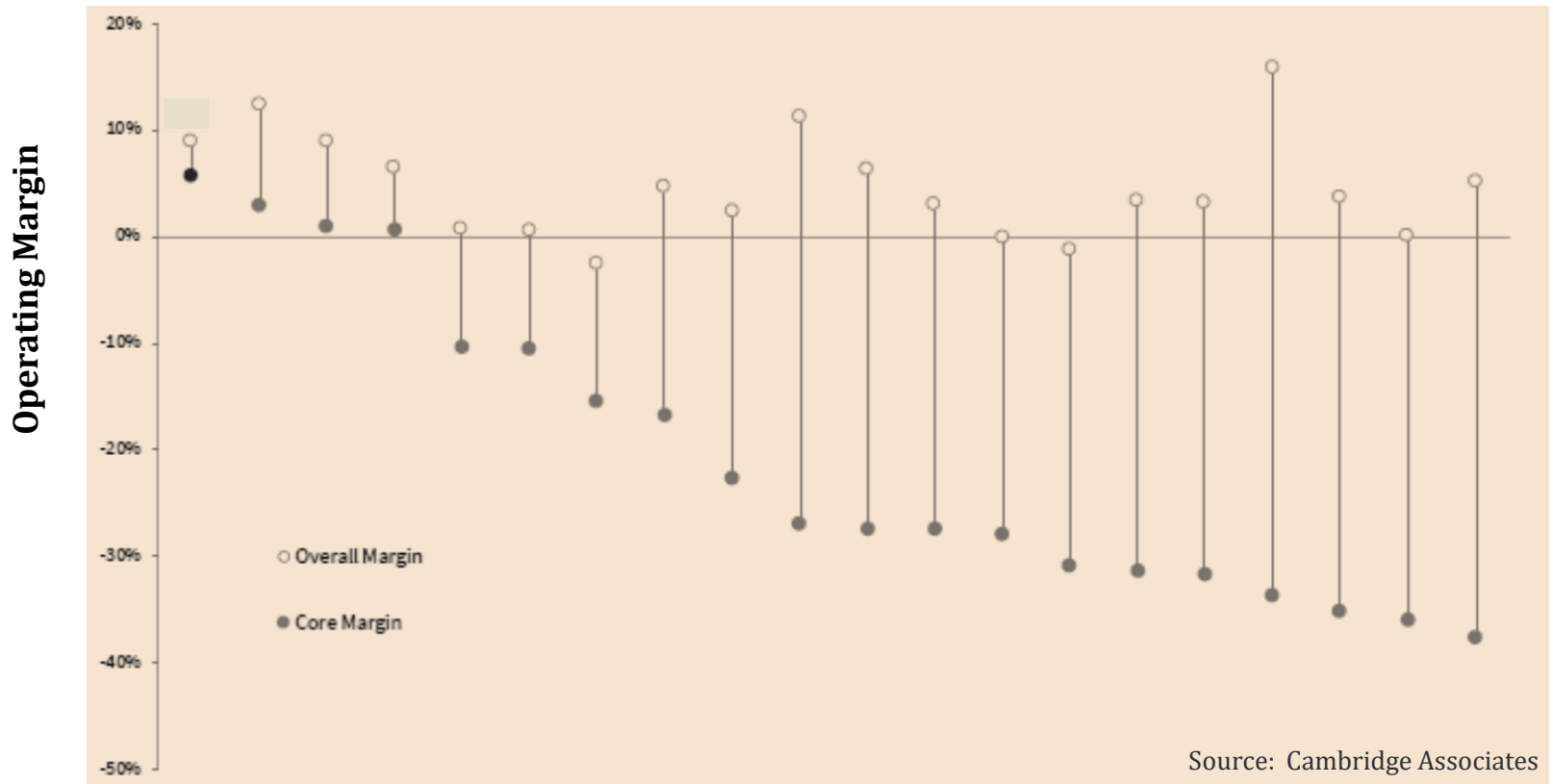
Percent of Operating Budget Covered by Endowment Spending (n=80)



Source: Cambridge Associates

Many Universities Dependent on Endowment Spending to Balance Budget

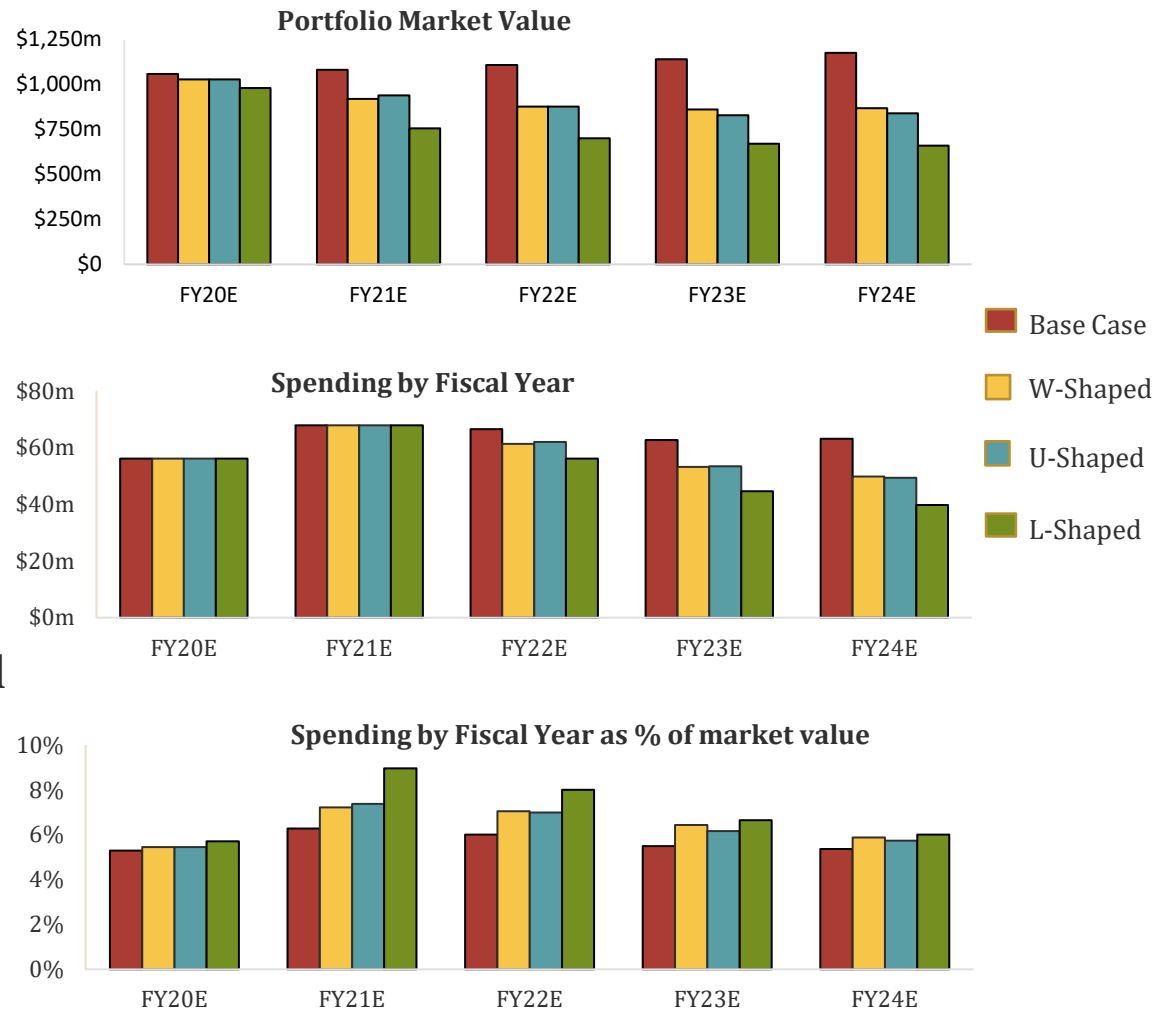
Revenues from tuition, etc. do not usually cover operating expenses; reliant on the endowment spending to make up the deficit.



Source: Cambridge Associates

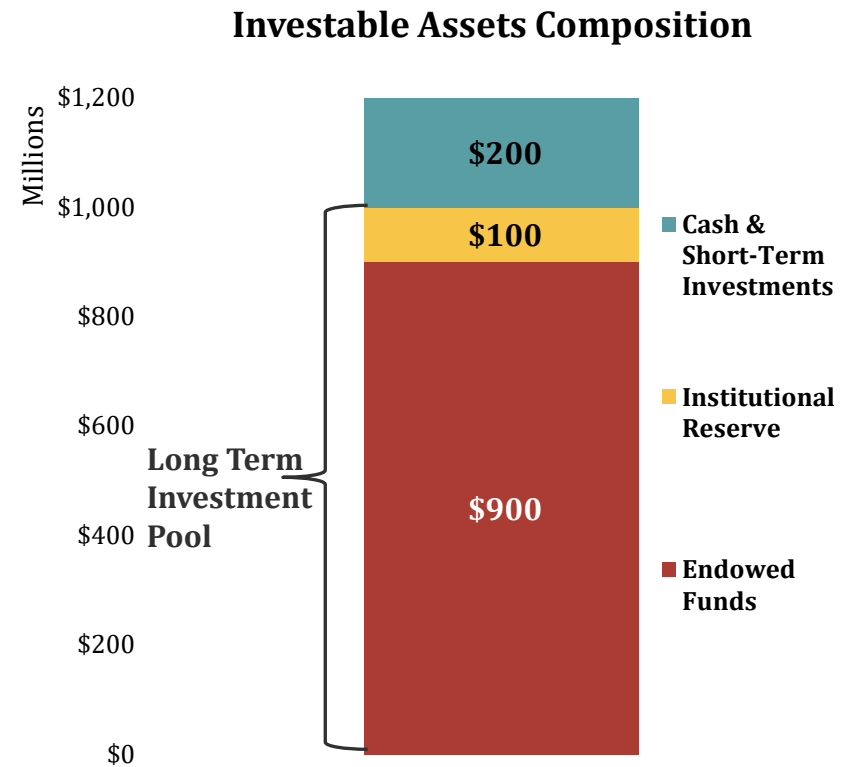
Can your institution withstand portfolio volatility?

- Volatility in financial markets can have a significant impact on University finances
- Example institution maintains dollar level of spending to meet expenses during market drawdown
- Portfolio value is impaired, and future spending is diminished
- Assumptions:
 - 5% normalized spend
 - Spending policy uses 36 month smoothing
 - Bespoke market return scenarios



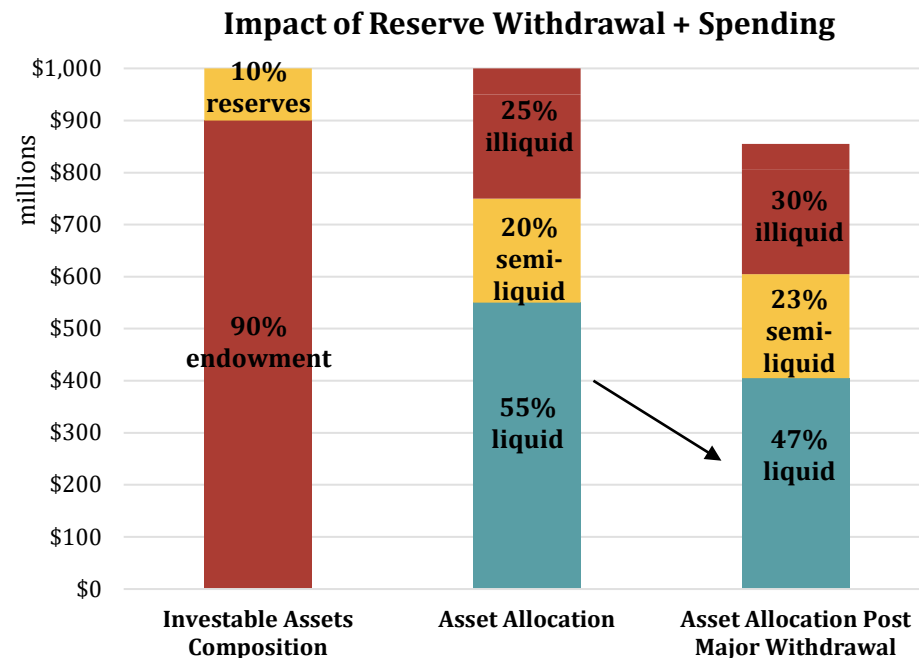
Are University Operating Reserves Long Term Capital?

- Reserves are excess cash that provide working capital and can be used to fund operations, strategic plans, or capital projects.
- Reserves can serve as a buffer for endowment volatility or operating revenue shortfalls.
- Reserves not earmarked for near-term purposes can be invested alongside the endowment to earn higher returns that will further support the institution.
- Negative endowment returns can simultaneously compound operating deficits and impair reserves.



Are University Operating Reserves Long Term Capital?

- Long-term investing tolerates volatility and illiquidity. Reserves should only be invested in the LTIP if the institution agrees they are not needed in foreseeable future.
- Misaligned liquidity needs can undermine the long-term investment strategy which accounts for predictable outflows.
- Higher exit rate can compromise liquidity of remaining portfolio as withdrawals come from most liquid investments.
 - Too high private allocation
 - Too high unfunded/total capital
 - Selling assets at depressed prices = permanent loss of capital
 - Less recovery of the pool when markets rebound
- Impairment of reserves balances can impact capex plans, general operations



Thank You / Q&A
