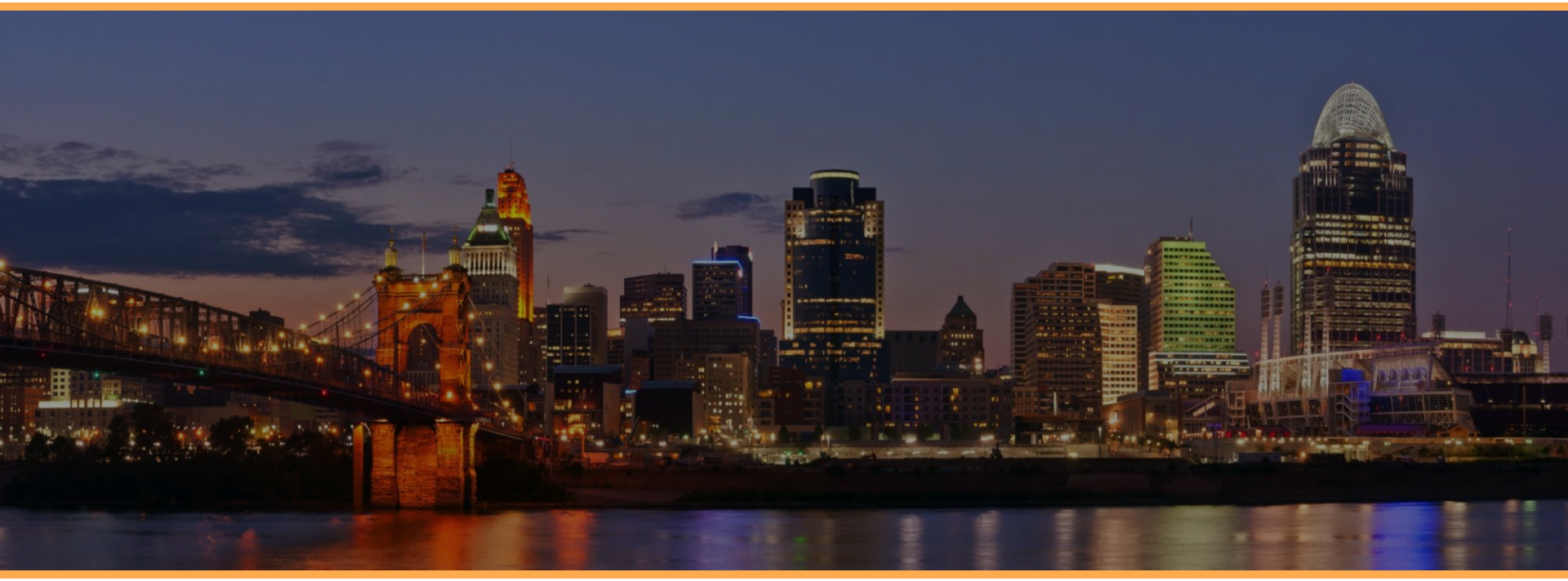
Endowment Accounting Conference 2017



EVALUATING AND EXECUTING CHANGES TO SPENDING POLICY

WHY DO WE CARE ABOUT SPENDING POLICY?

- Subtle change can have a major impact on the value of your portfolio and meeting your mission

- Fiduciary responsibility
  - Diversification / asset allocation
  - Spending policy!

- Balance the needs of today with those of the future
- Intergenerational equity
- It is something we have control over
  - Markets / Risk / Fees-Costs / Spending

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The University of Iowa Foundation

AGENDA

I. Impact of Spending Policy

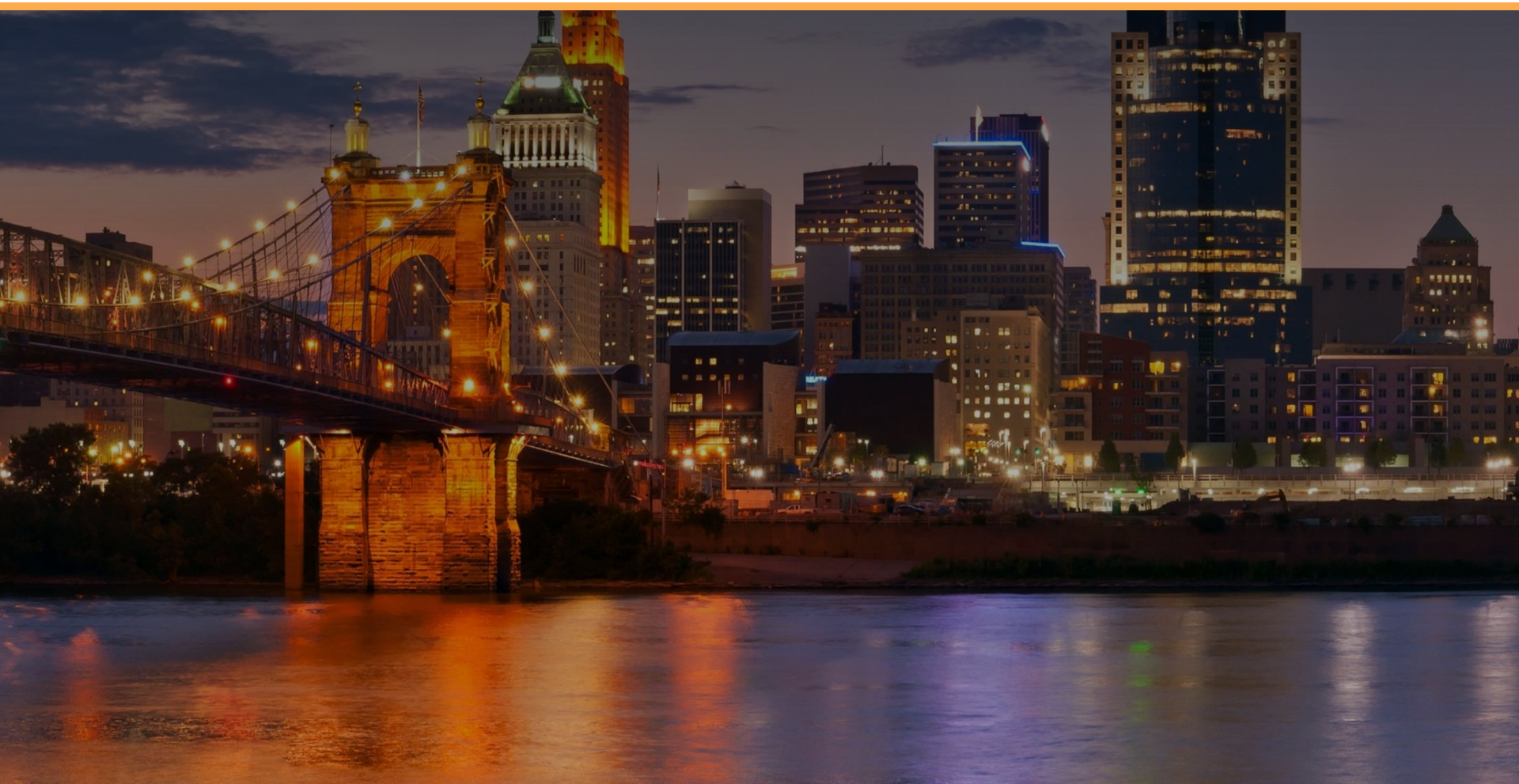
II. Selecting the Right Methodology

III. Case Study: University of Iowa Foundation

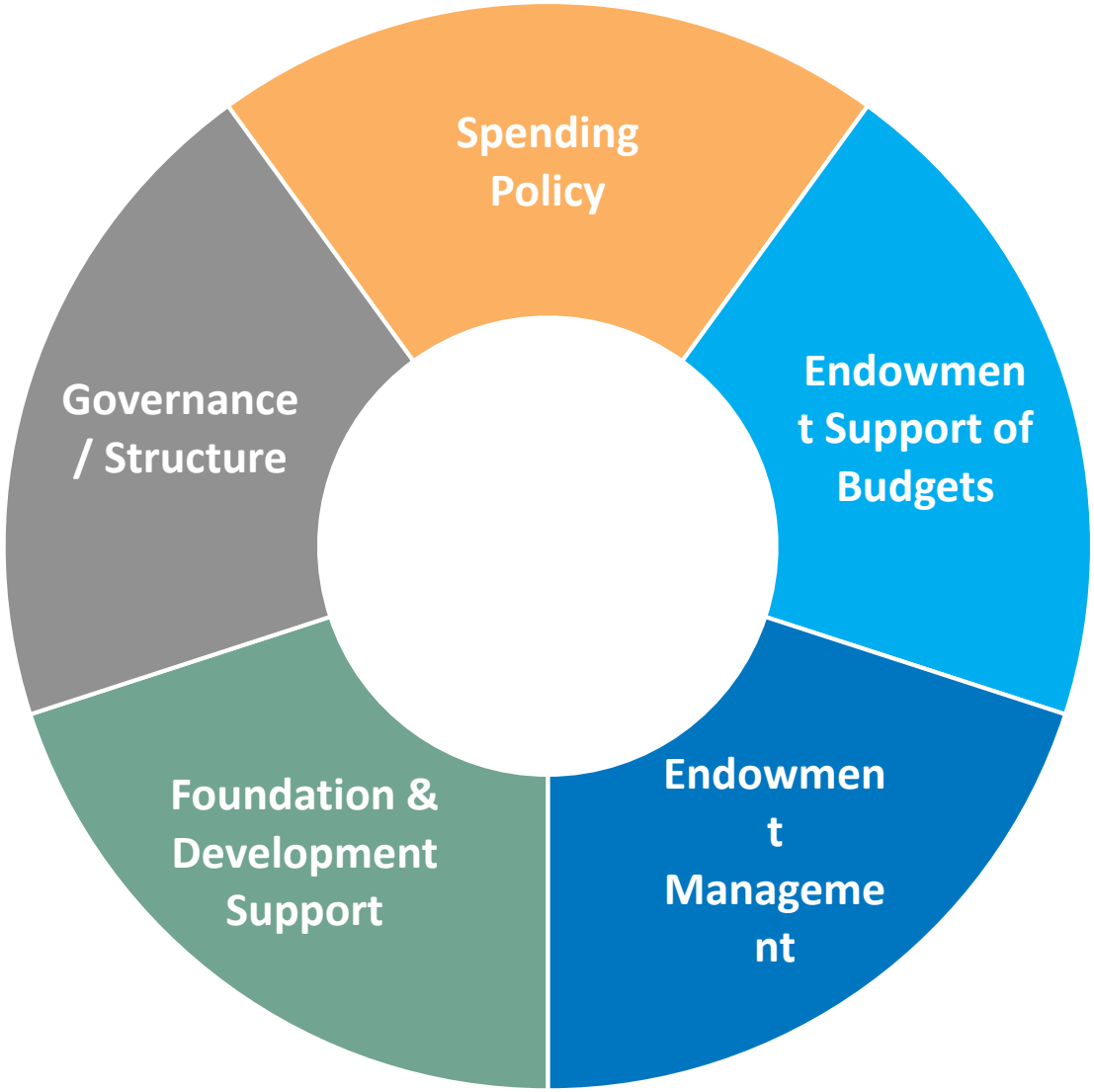
IV. Considerations for a low-return environment

V. Conclusion

Impact of Spending Policy



ENTERPRISE MANAGEMENT



SPENDING IS ONLY PART OF THE EQUATION

Long-Term Return > Target Spending Rate + Administrative Costs + Inflation

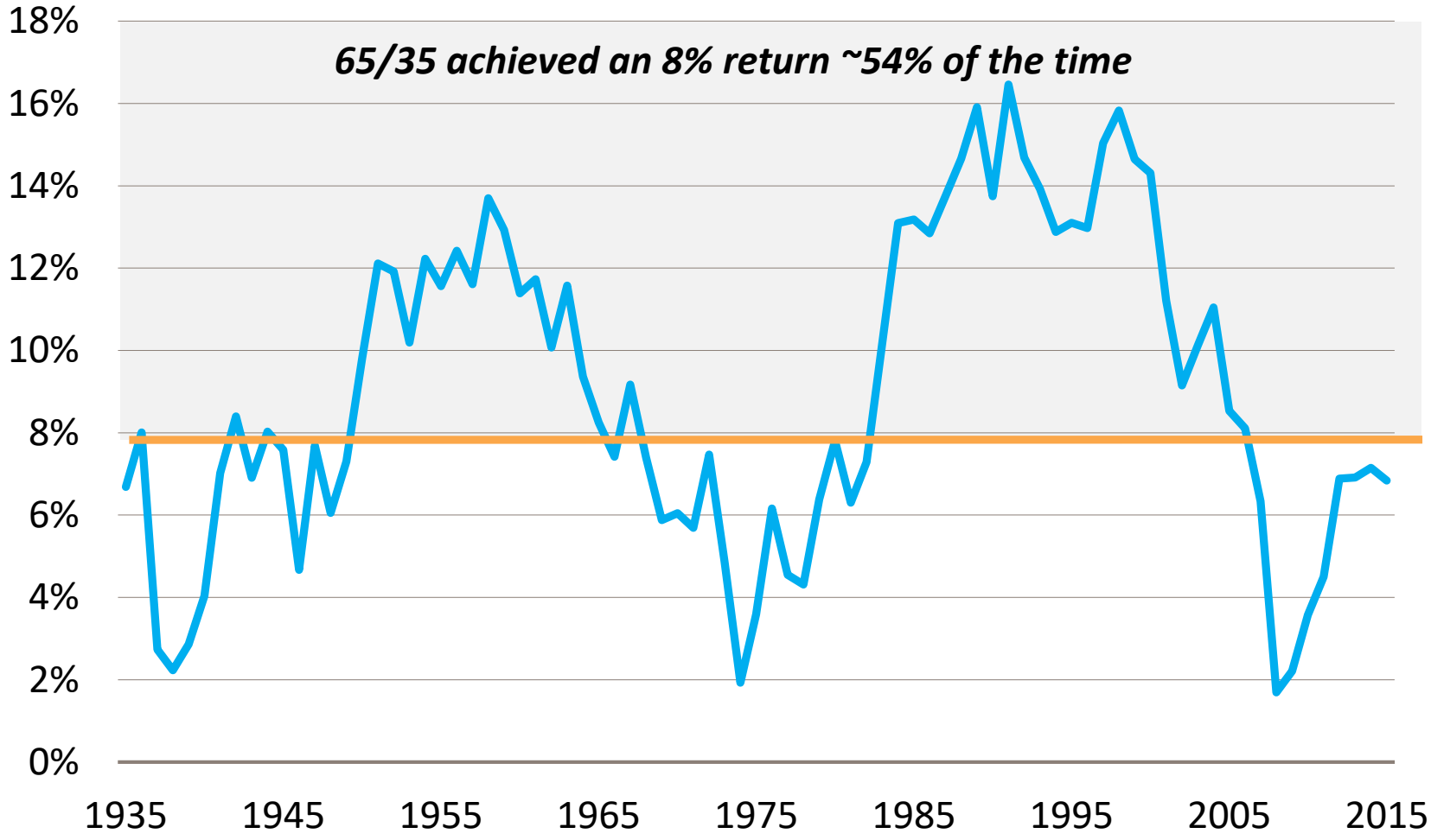
4.5% *Spending*	+	1.5% *Fees*	+	2.0% *Inflation*	=	**8.0% Primary Objective**

CONSIDERATIONS

- Spending needs should not unduly influence asset allocation decisions
- Higher spending needs could lead to overly aggressive asset allocation
- Lower spending needs could lead to overly conservative asset allocation

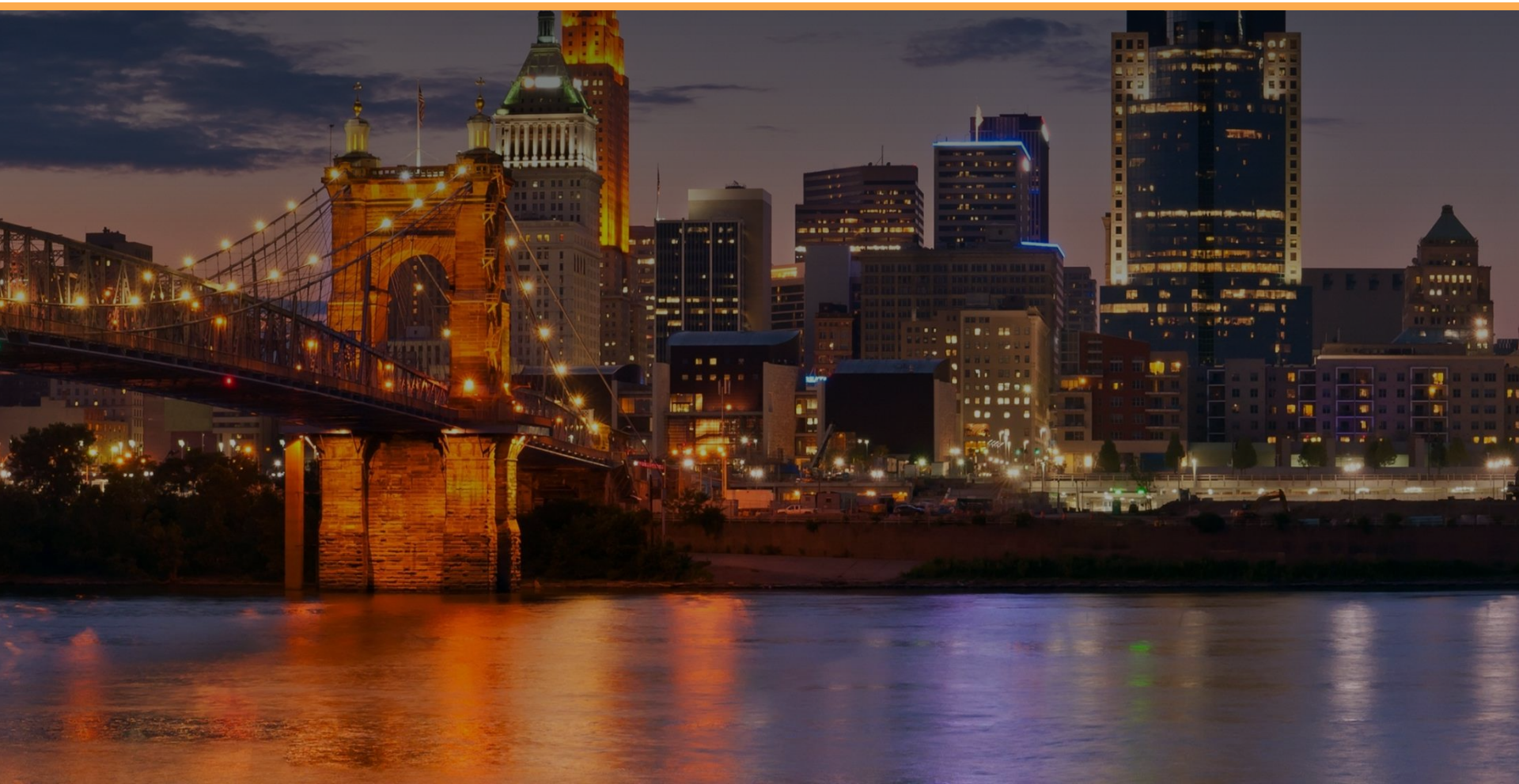
RETURNS VS. OBJECTIVE

65/35 Equity/Bond Portfolio, 10-Year Rolling Return



Data Sources: Ibbotson Associates and Lipper; Data as of 12/31/2015.

Selecting the Right Spending Policy Methodology



SPENDING POLICY METHODOLOGIES

Moving Average

Constant Growth

Constant Growth With Bands

Geometric

Hybrid

"Never think that lack of variability is stability. Don't confuse lack of volatility with stability, ever."

- Nassim Nicolas Taleb

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MOVING AVERAGE

5% spending rate using a 3-year moving average

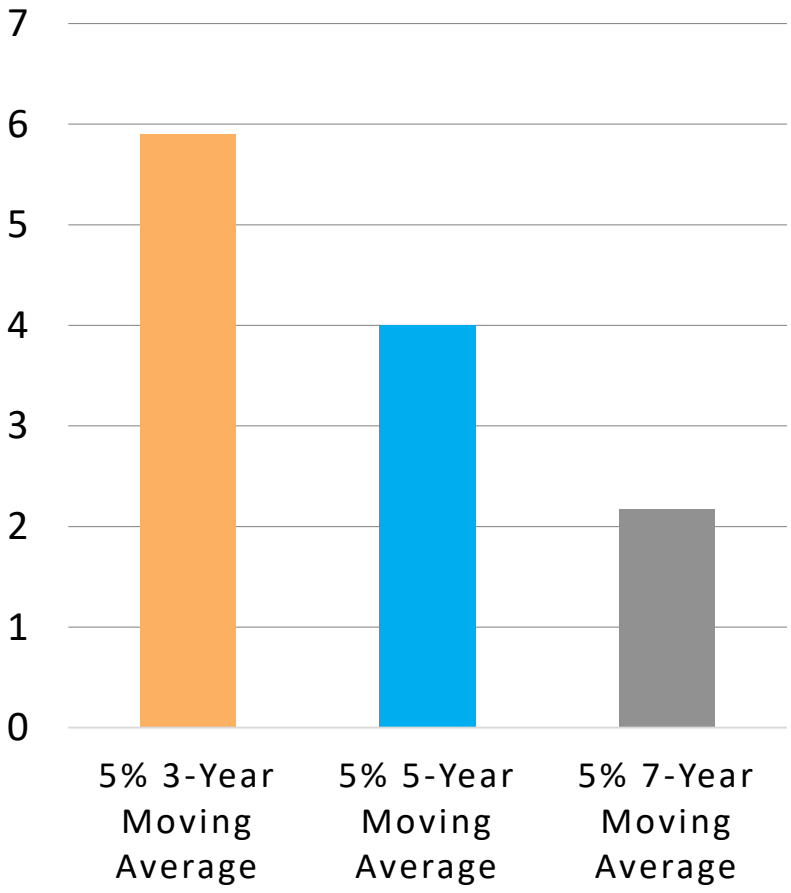
ADVANTAGES	DISADVANTAGES
✓ Smooths spending more than if ending market value used	x All market values are given same level of significance
✓ Simple to implement and explain	x Spending is highly correlated to market value fluctuations

Spend a fixed percentage of the average market value over a set time period

SPENDING METHODOLOGY COMPARISON

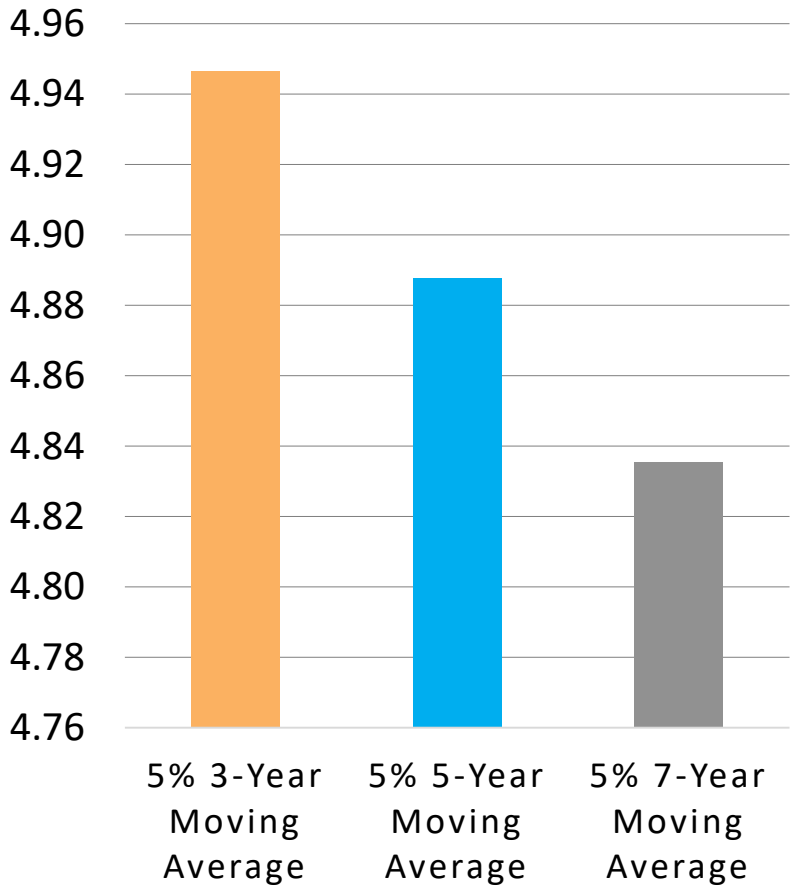
YoY CHANGE IN SPENDING ($)

1994-2015, Standard Deviations



AVERAGE SPENDING (%)

1994-2015



YoY: Year-over-Year.

Data Source: Lipper; Data as of 12/31/2015. Based on starting market value of $100 and a portfolio comprised of 65% S&P 500 Index and 35% Barclays U.S. Aggregate Bond Index.

CONSTANT GROWTH

ADVANTAGES	DISADVANTAGES
✓ Smooths spending	x Judgment in setting annual increase
✓ Simplistic	x Does not consider endowment market value
✓ Higher probability spending increases over previous year	

Increase spending each year by a constant growth rate or inflation

CONSTANT GROWTH WITH BANDS

ADVANTAGES	DISADVANTAGES
✓ Increases endowment value during strong markets	x Moderated spending amount during strong markets
✓ More predictable spending	x Spending higher during prolonged bear markets

Spending is contained within a range +/- a percentage of previous year's market value

CONSTANT GROWTH WITH BANDS

STEPS:

1. Calculate the Bands
2. Calculate the $ Spending
3. Verify Spending Falls within Band

Hypothetical 3-Year Scenario

- Beginning Market Value Y0=$100m, Y1=$125m, Y2=$150m
- Spending Y0=5%
- Inflation Y2=2.0%, Y3=3.5%
- 4-7% Band

For illustrative purposes only.

CONSTANT GROWTH WITH BANDS

1. Calculate the Bands

Floor = Market Value x 4%
Cap = Market Value x 7%

	BEG. MV	FLOOR (4%)	CAP (7%)
Year 0	$100m	$100m x 4% = $4.0m	$100m x 7% = $7.0m
Year 1	$125m	$125m x 4% = $5.0m	$125m x 7% = $8.8m
Year 2	$150m	$150m x 4% = $6.0m	$150m x 7% = $10.5m

For illustrative purposes only.

CONSTANT GROWTH WITH BANDS

2. Calculate the $ Spending

$$Spending_t = Spending_{t-1} \times (1 + Consumer\ Price\ Index_{\ YoY\ \%\ change})$$

	BEGINNING SPENDING ($)	CPI YoY % CHANGE	CONSTANT GROWTH	ENDING SPENDING ($)
Year 0				$5.0m
Year 1	$5.0m	2%	=$5.0m x 1.02	$5.1m
Year 2	$5.1m	3.5%	=5.1m x 1.035	$5.3m

For illustrative purposes only.

CONSTANT GROWTH WITH BANDS

3. Verify Spending Falls within Band

Floor < Spending < Cap

	FLOOR (4%)	ENDING SPENDING	CAP (7%)	ADJUSTED SPENDING
Year 0	$4.0m	$5.0m	$7.0m	$5.0m
Year 1	$5.0m	$5.1m	$8.8m	$5.1m
Year 2	$6.0m	$5.3m	$10.5m	$6.0m

For illustrative purposes only.

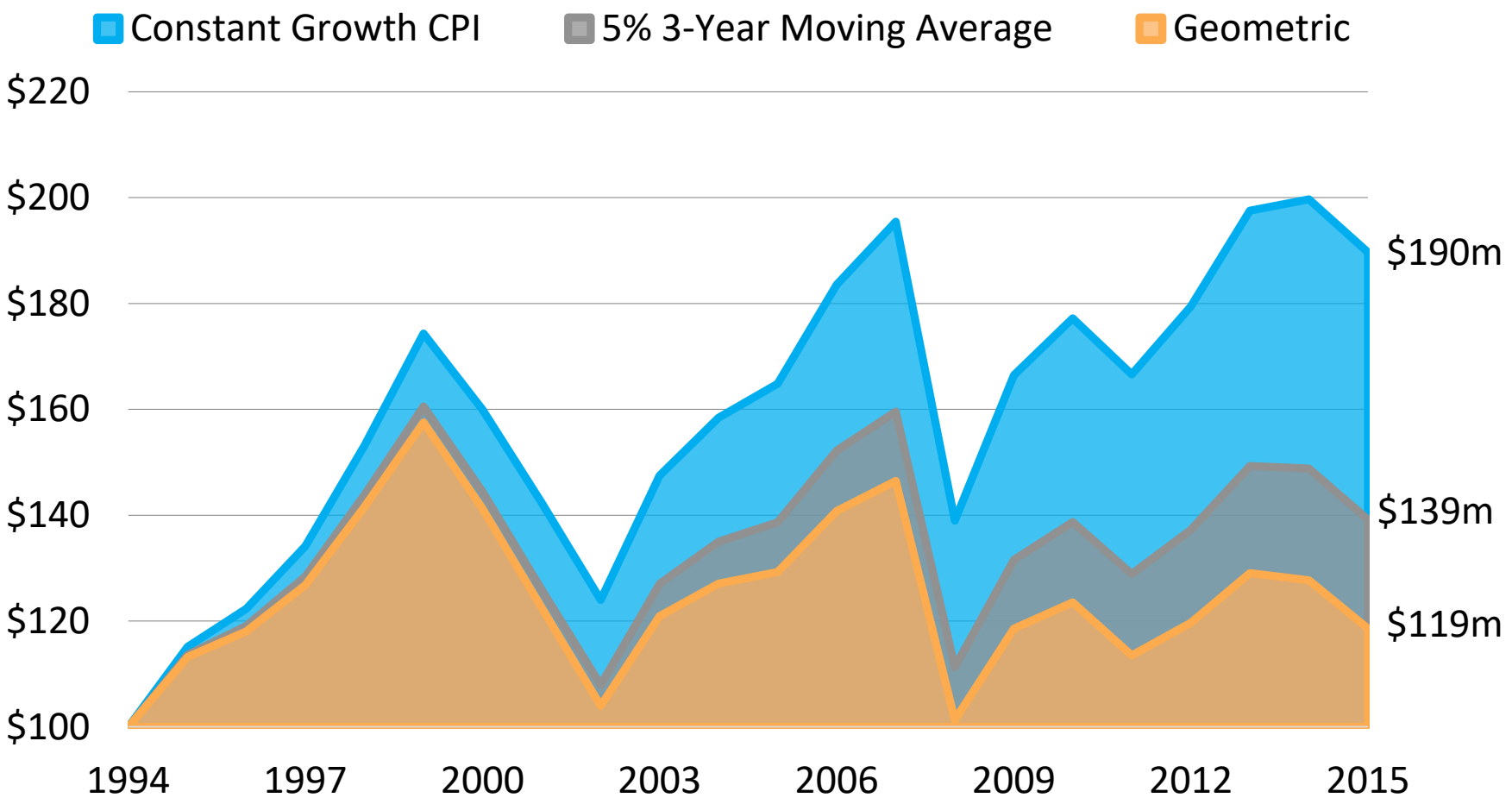
GEOMETRIC

ADVANTAGES	DISADVANTAGES
✓ Accounts for inflation and market movements	x Slightly lower endowment values
✓ Good balance between spending and market value – can customize smoothing rate	x Complex

Weight given to inflation adjusted spending and target spending of market value

IMPACT ON MARKET VALUE

1994-2015, 65/35 Equity/Bond Portfolio

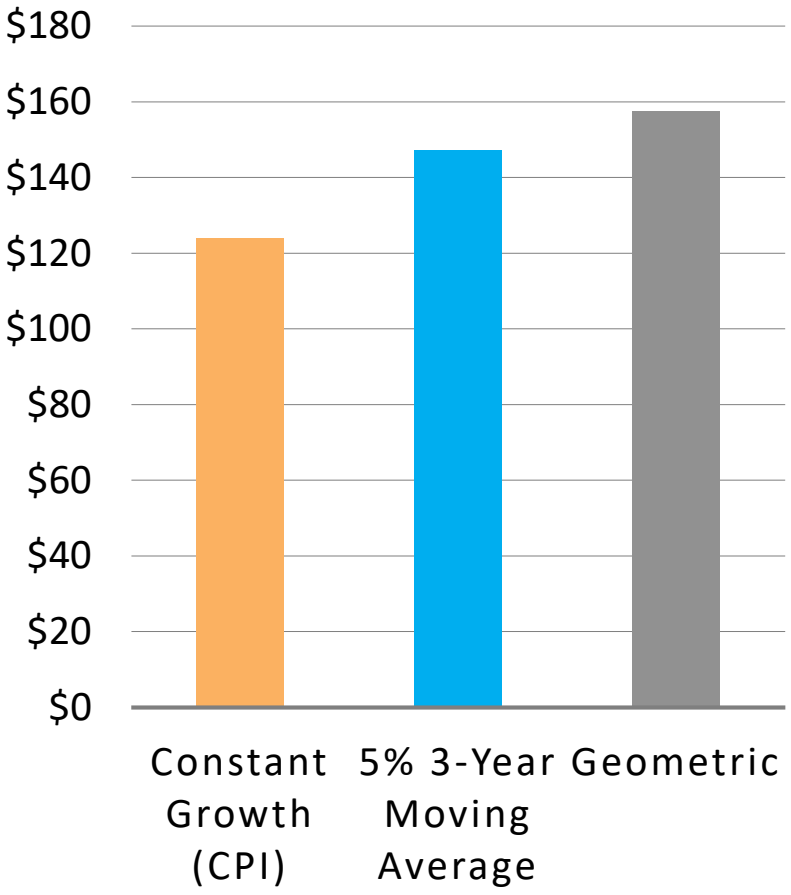


Data Source: Lipper; Data as of 12/31/2015. Based on starting market value of $100 and a portfolio comprised of 65% S&P 500 Index and 35% Barclays U.S. Aggregate Bond Index. Geometric policy is 70% of last year's distribution adjusted for inflation and 30% of a 5.5% target spending rate based on prior year's ending market value.

SPENDING METHODOLOGY COMPARISON

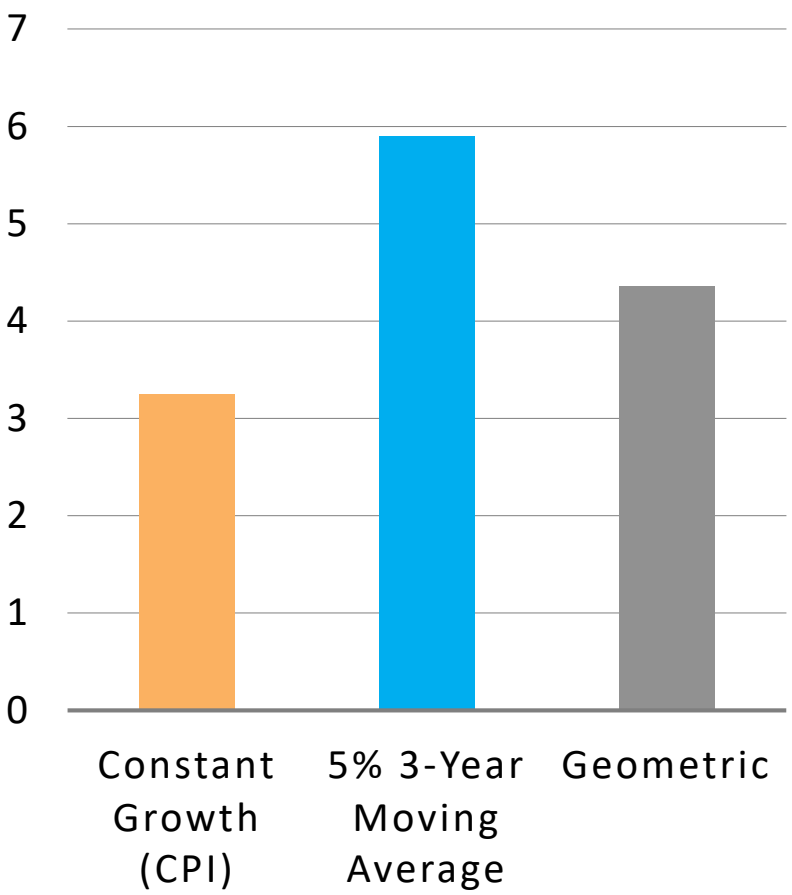
CUMULATIVE SPENDING

1994-2015



VOLATILITY OF SPENDING

1994-2015, Standard Deviations



Data Source: Lipper; Data as of 12/31/2015. Based on starting market value of $100 and a portfolio comprised of 65% S&P 500 Index and 35% Barclays U.S. Aggregate Bond Index. Geometric policy is 70% of last year's distribution adjusted for inflation and 30% of a 5.5% target spending rate based on prior year's ending market value.

HYBRID

ADVANTAGES	DISADVANTAGES
✓ Can favor either stable distributions or maintaining purchasing power	x Finding and maintaining the right combination of spending rules
✓ Spending rules can be customized to fit the specific needs of the institution	x Complex

Custom combination of spending rules to meet the specific needs of an institution

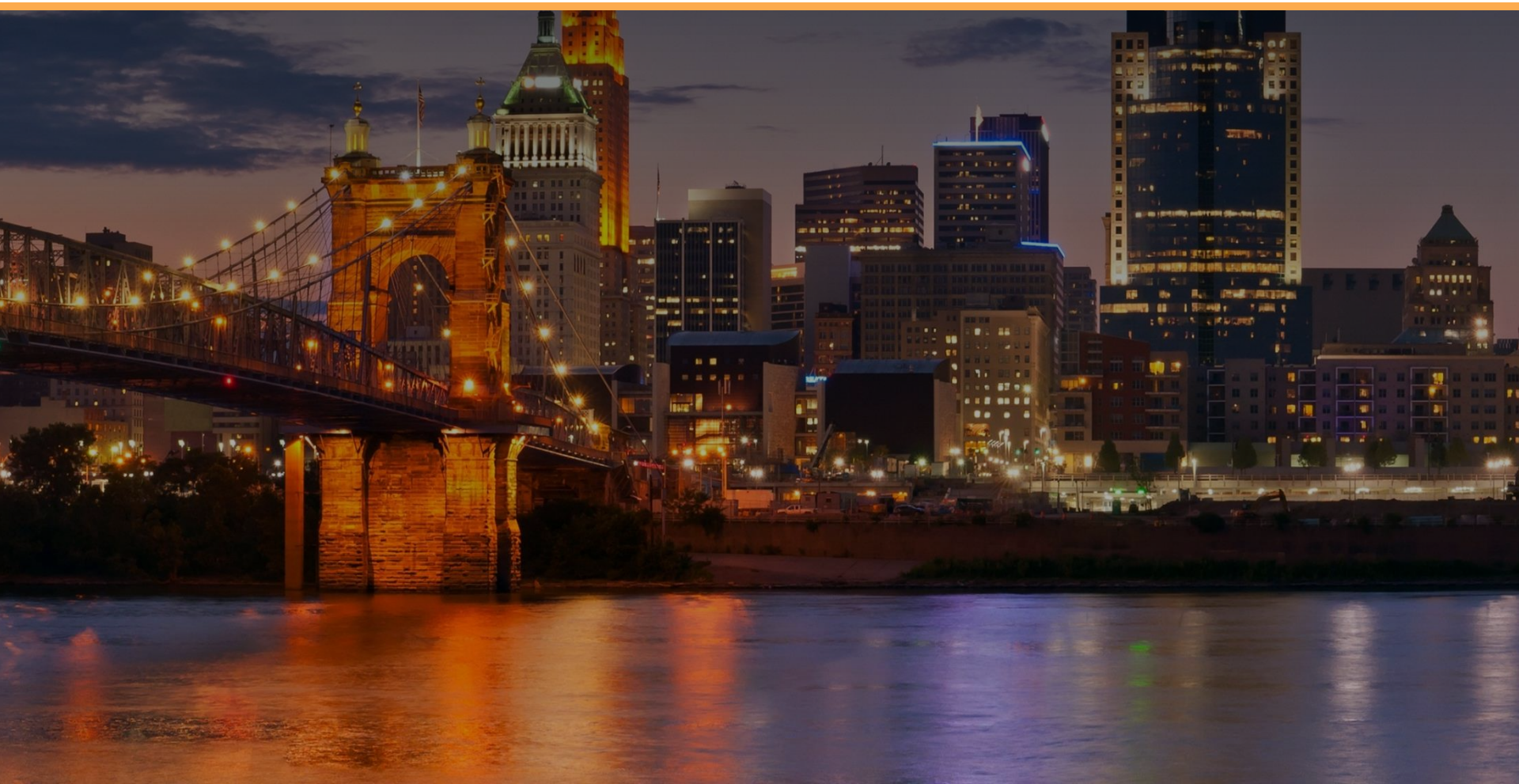
FINDING BALANCE

A rational spending policy should be identified and implemented consistently to balance between the competing needs of stable outlays and the preservation of assets for future generations

INCREASE INTERGENERATIONAL EQUITY	MORE CONSISTENT PAYOUT
Increase # of years in moving average	Increase # of years in moving average
Move to banded constant growth	Implement bands with moving average
Reduce payout percent	Use geometric rule

A hybrid approach may meet both goals, but will also increase complexity.

Case Study:
University of Iowa Foundation

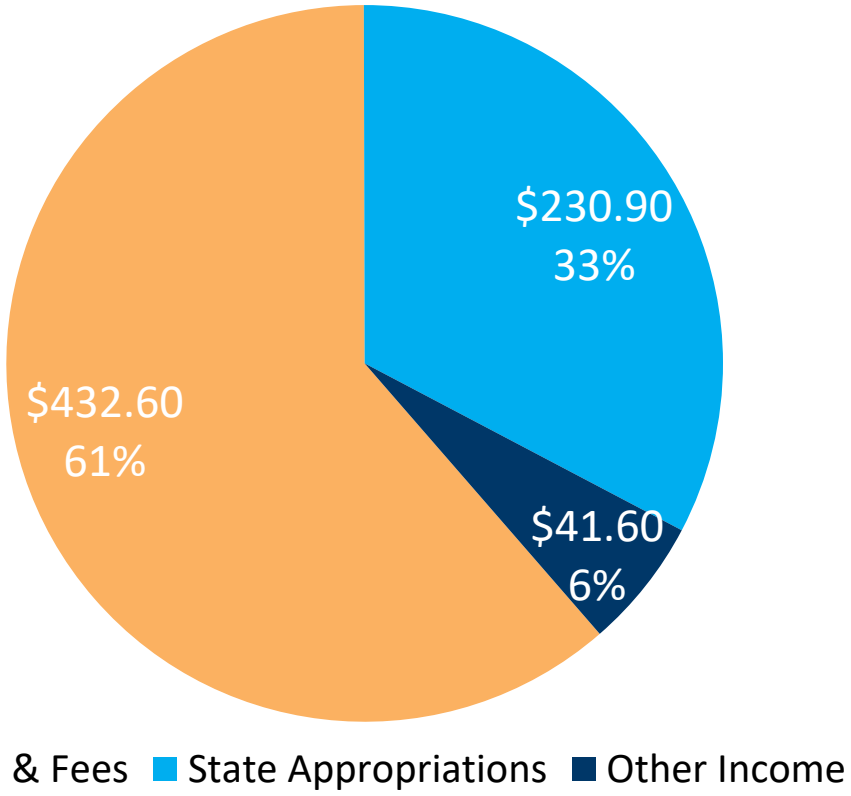


THE UNIVERSITY OF IOWA

- Endowment assets of $861m[1]
- Endowment supports 2% of University Operating Budget

THE UNIVERSITY OF IOWA

General Education Fund Budgeted Revenues FY2016
(in millions of dollars)



[1] As of December, 2015. Information provided by UIF.

The purpose of this case study is to illustrate the spending policy process. These case studies have been used for that purpose only. Results may significantly vary for other FEG clients. The case study should not be viewed as an indication of overall past or future portfolio performance.

CATALYST FOR CHANGE

Long-Term Return > Target Spending Rate + Administrative Costs + Inflation

4.5% *Spending*	+	1.0% *Fees*	+	2.0% *Inflation*	=	**7.5% Primary Objective**

- Credit Crisis market returns increased spending percentage
  - Increased need to take on risk to meet return objective at a time when investors were reluctant to add risk
- Campus needed return projections to make budgets
  - Mismatch between long term investment horizon and current investment needs

OBJECTIVES

Volatility and the impact (real/perceived) focused attention on the Spending Formula

- Lower the year-to-year volatility in distributions while increasing spending dollars
- Preserve the long-term purchasing power of the endowment
- More closely align spending policy time horizon with that of the investments, which are assessed on 3/5/10 year rolling basis

Move from 12-Quarter Moving Average (without cap and floor) to Constant Growth with a 6% Cap and 4% Floor[1]

- Starting year new formula will be FY2010
- Previous spending model resulted in average payout of 4.5%, this rate is used for new gifts
- Lower year-to-year volatility in distributions
- Spending dollars are known after release of calendar year CPI

[1] % of Quarter-End Market Value

UI Finance Staff

Investment & Finance Committees

Deans

Board

CONSENSUS

HISTORICAL ANALYSIS

1988-2009

Spending Policy Method	Effective Annual Spend Rate	Standard Deviation of Spending	Probability of Achieving Intergenerational Equity
5% 3-Year Moving Average	4.9%	5.4%	57%
4.5% 7-Year Moving Average	4.3%	5.8%	66%
Banded Inflation Method	4.3%	3.8%	66%

Analysis begins in 1990 and assumes an initial value of $100.
Moving Average formulas incorporate a 3% floor and 6% cap.
Banded Inflation Method uses 70% of last year's distribution adjusted for inflation and 30% of a 3-year moving average 4.5% policy.

FORWARD LOOKING ANALYSIS

2010 - 2016

Spending Policy Method	5% - 3 Year Moving Average	4.5% - 7 Year Moving Average	Banded Inflation Method
Assumed FY2010 Value	$200	$200	$200
FY2011 Payout	$11.2	$11.2	$11.2
FY2012 Payout (% Change)	$10.7 -5.0%	$11.0 -2.2%	$11.5 2.5%
FY2013 Payout (% Change)	$11.2 4.8%	$10.9 -1.4%	$11.9 2.5%
FY2014 Payout (% Change)	$11.6 2.7%	$10.7 -1.4%	$12.2 2.5%
FY2015 Payout (% Change)	$11.9 2.8%	$10.4 -2.9%	$12.4 2.5%
FY2016 Payout (% Change)	$12.2 2.7%	$10.4 0.0%	$12.8 2.5%

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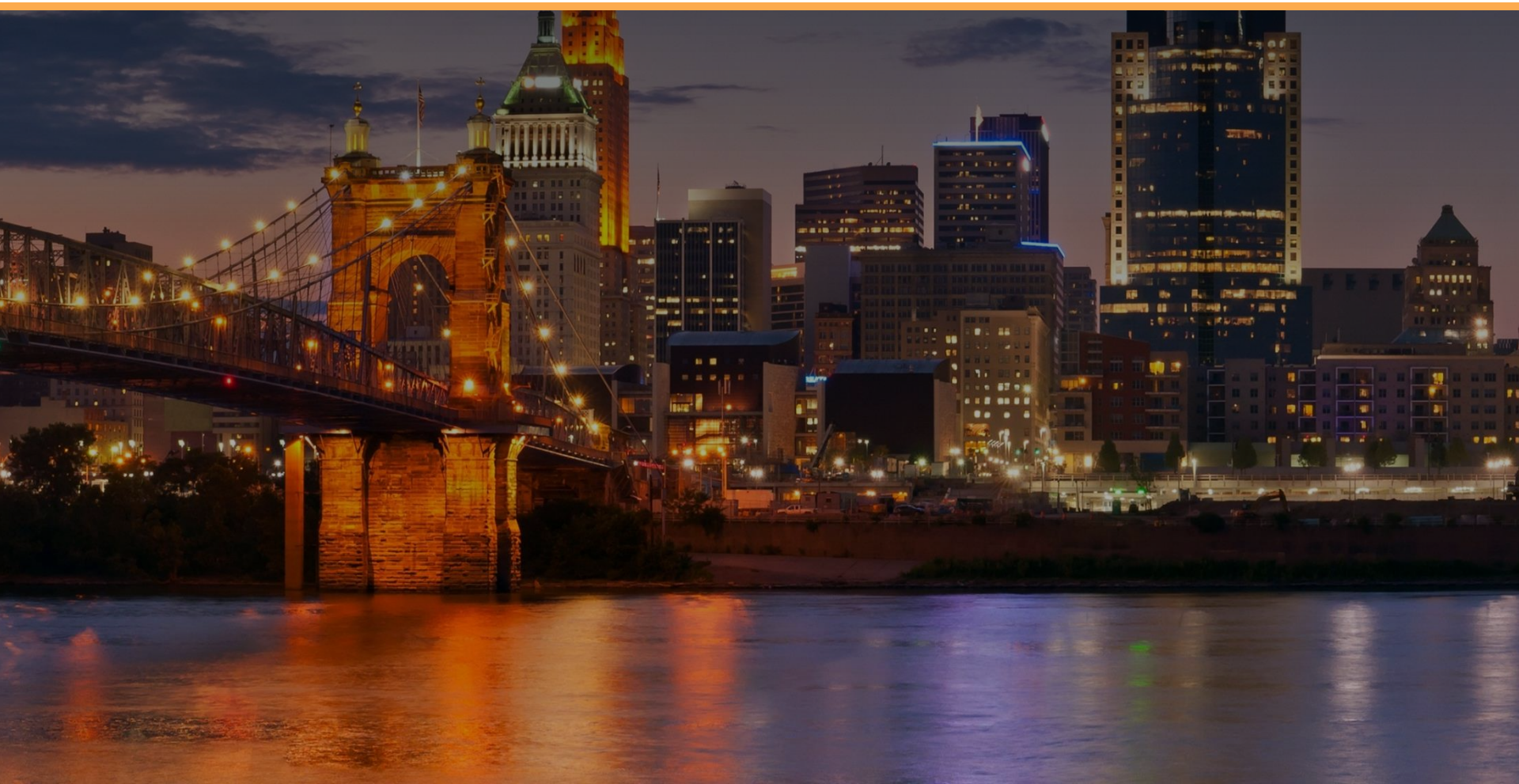
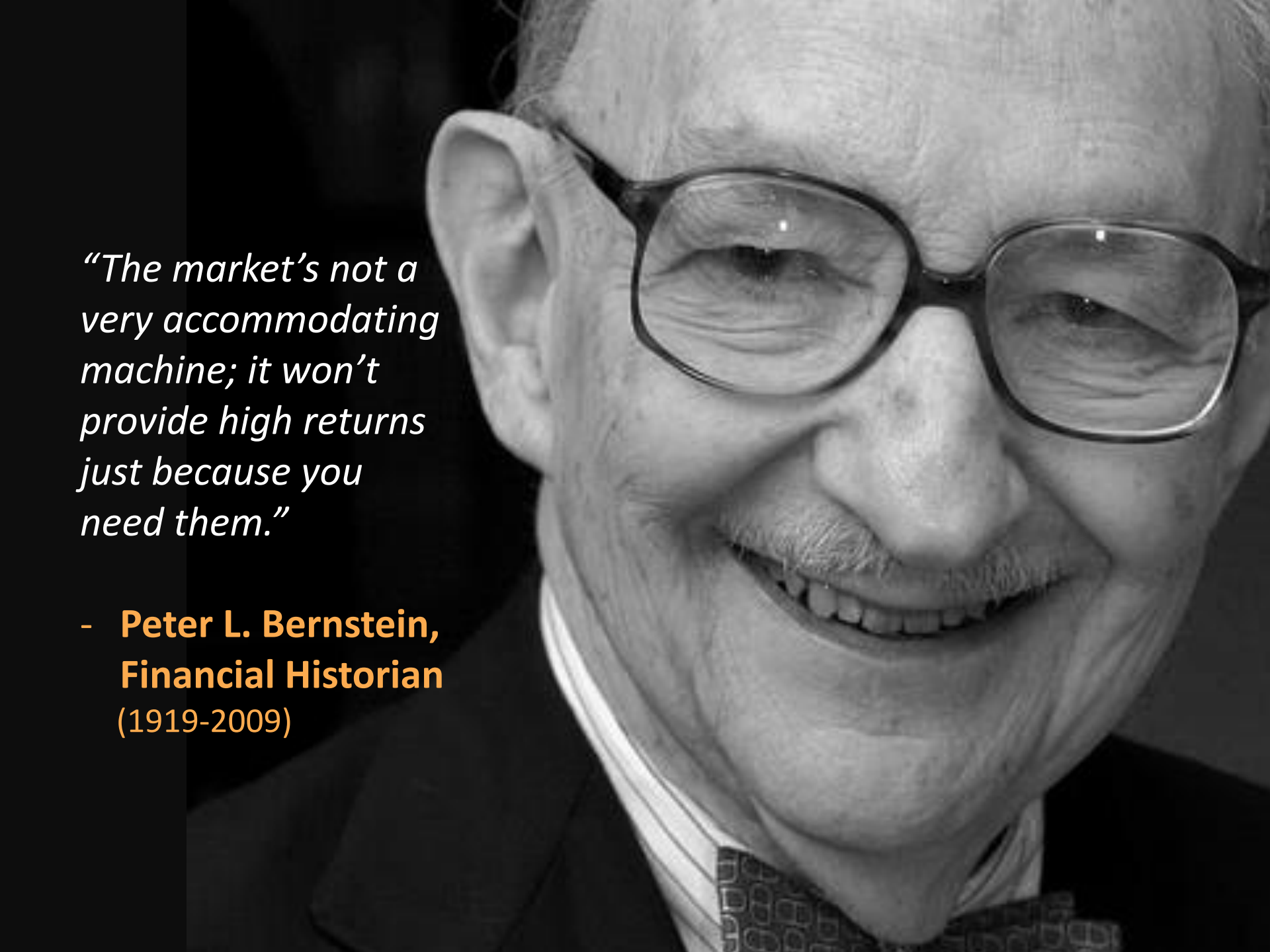
Considerations for a Low-Return Environment



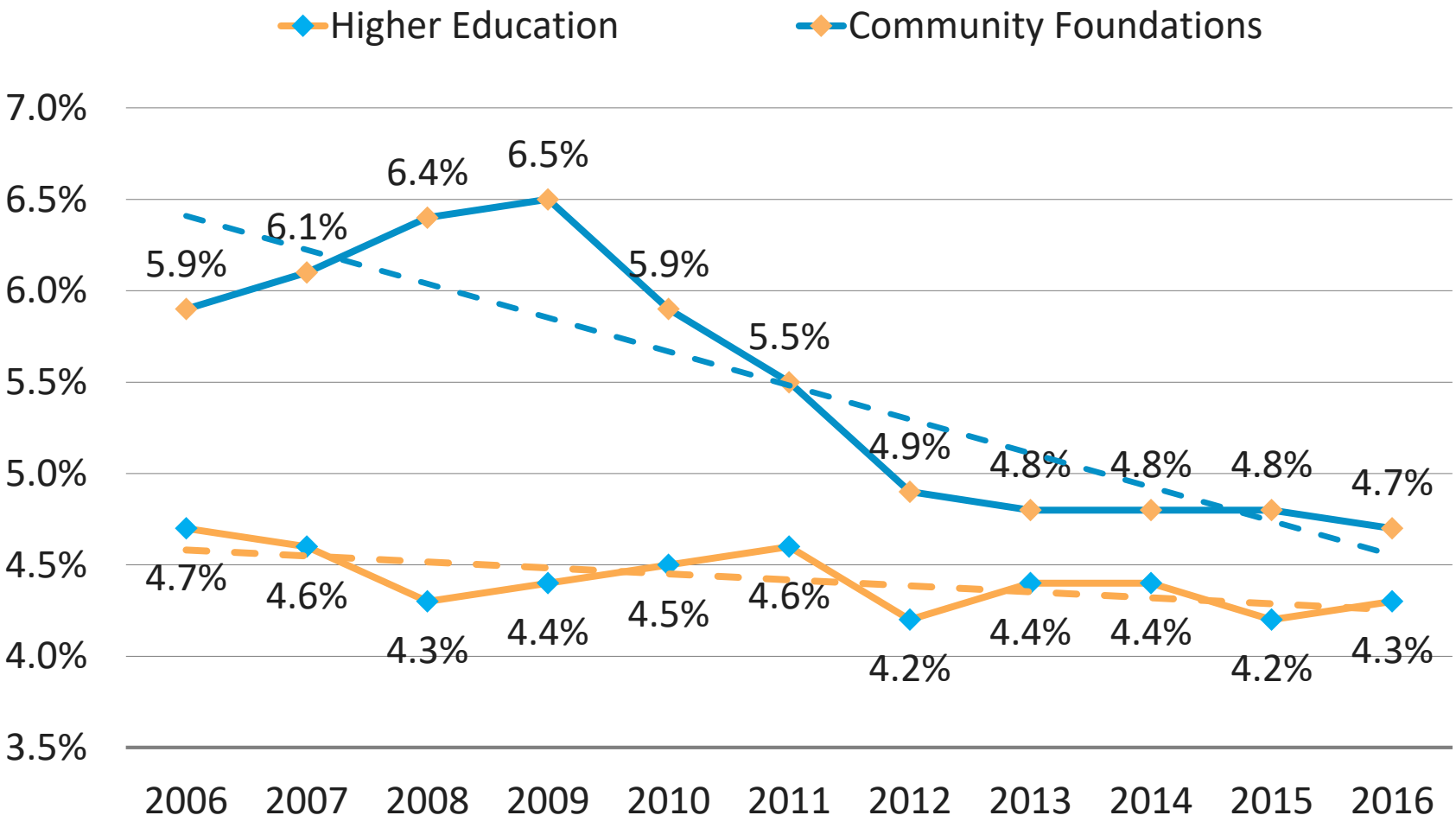


"The market's not a very accommodating machine; it won't provide high returns just because you need them."

- **Peter L. Bernstein, Financial Historian**
  (1919-2009)

AVERAGE ANNUAL EFFECTIVE SPENDING RATE

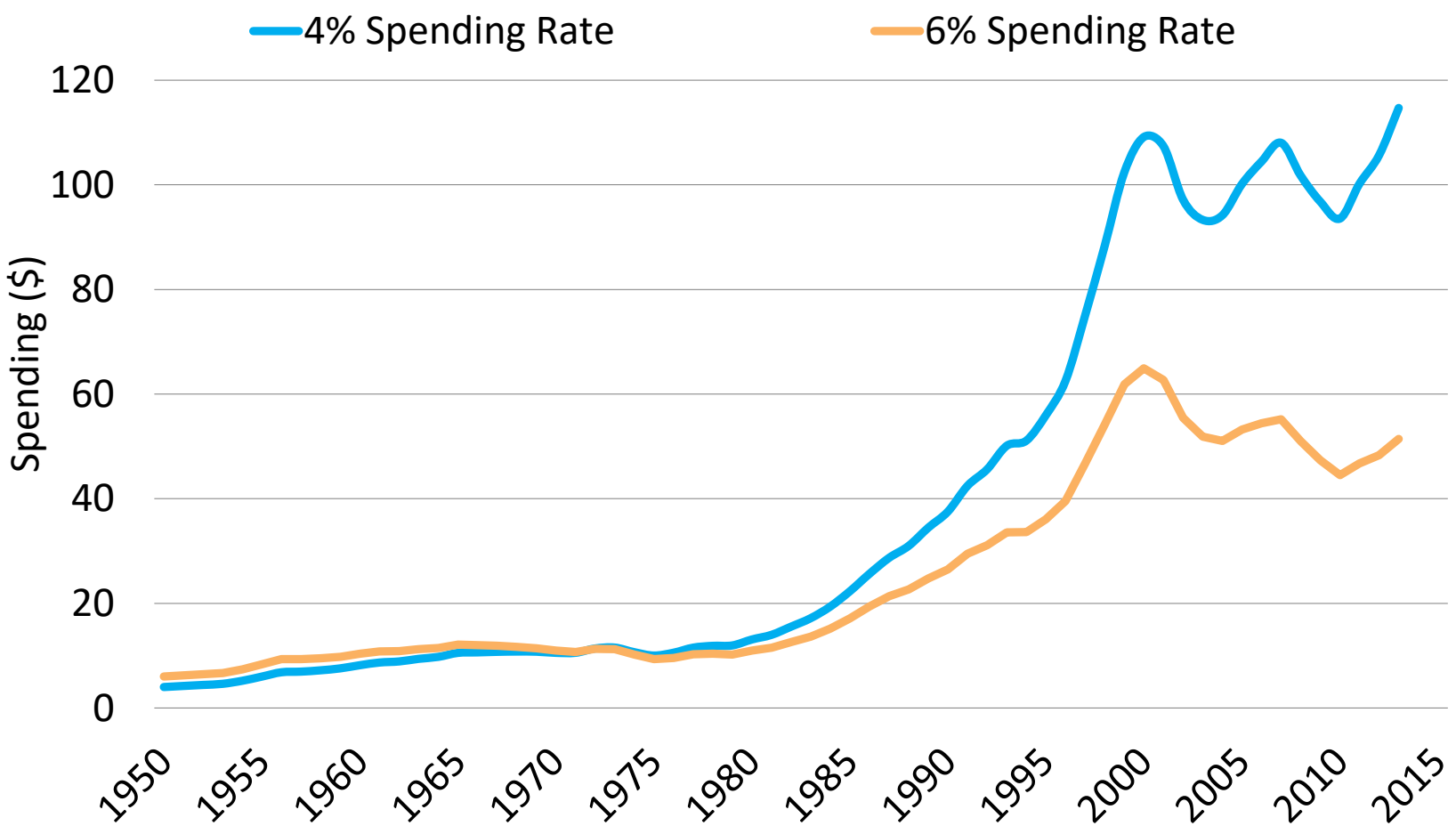
2006-2016



Data Source: NACUBO-Commonfund Study of Endowments 2016; 2016 Council on Foundations – Commonfund Study of Investment of Endowments for Private and Community Foundations

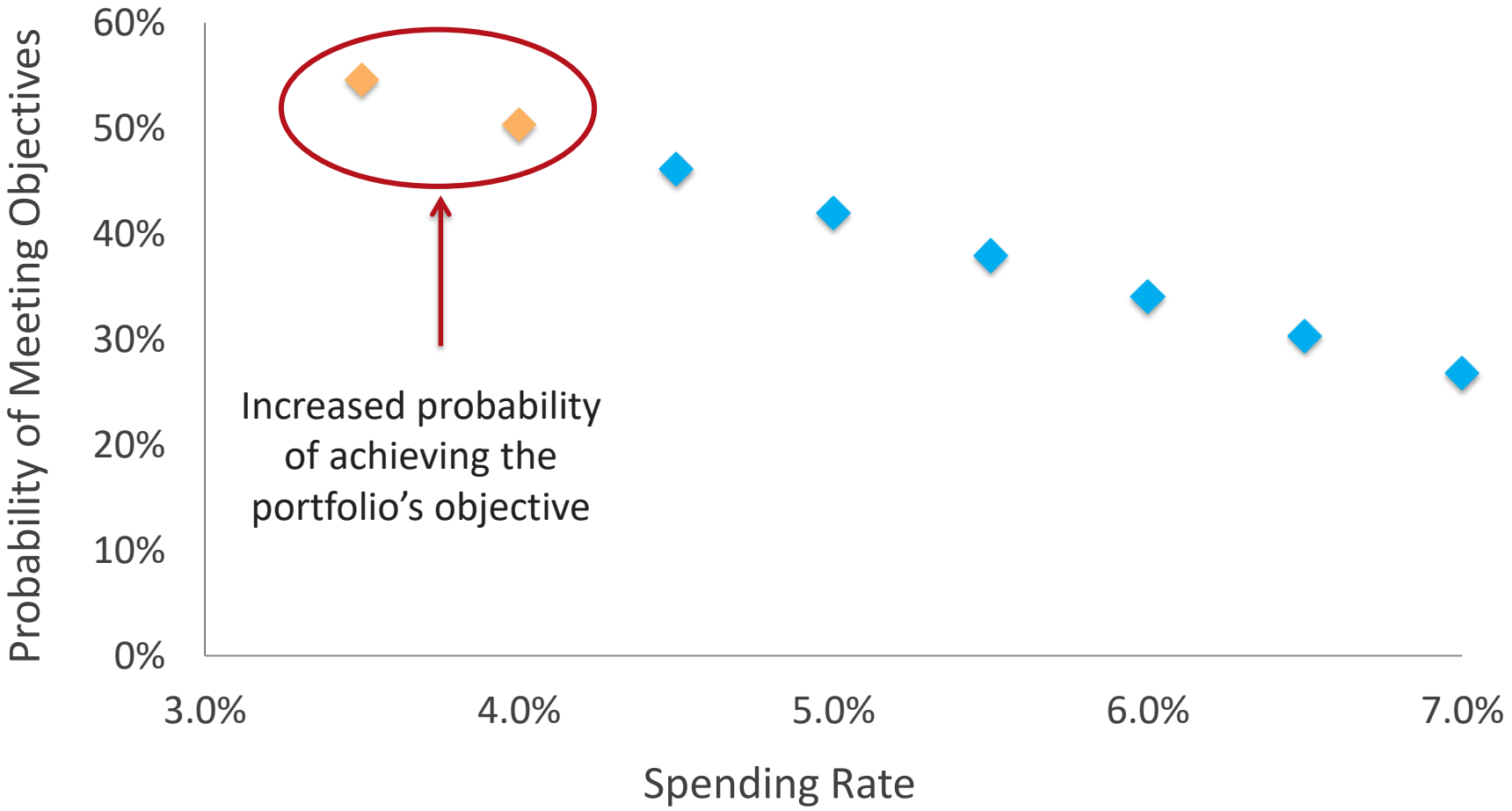
SPENDING GROWTH

4% vs. 6% Spending Rates



Data Source: Lipper; Data as of 12/31/2015. Based on starting market value of $100 and a portfolio comprised of 65% S&P 500 Index and 35% Barclays U.S. Aggregate Bond Index. Assumes a 3-year moving average spending policy.

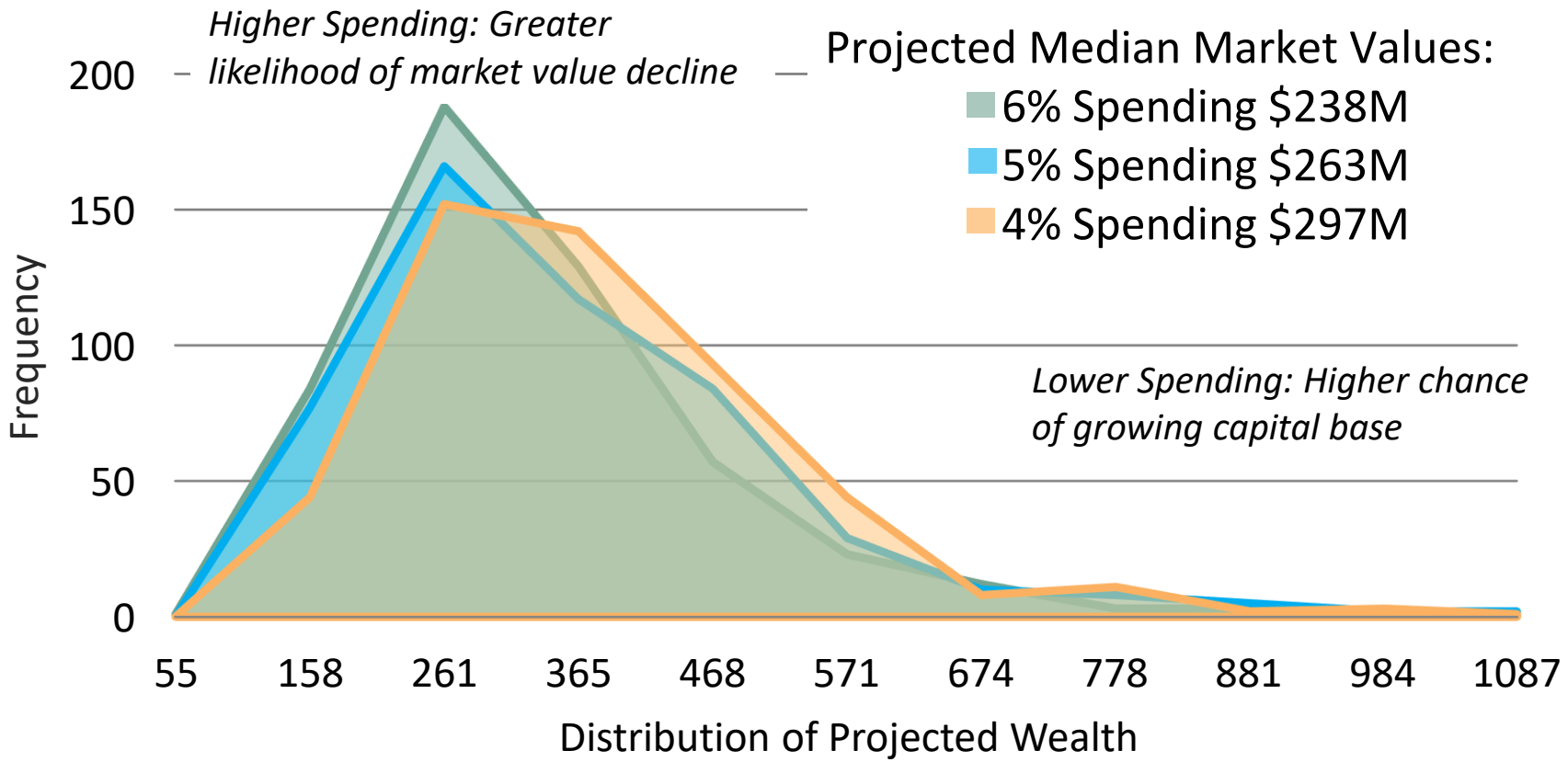
IMPACT OF CHANGE IN SPENDING RATES



Source: FEG modeling 10 year projection, assuming a global 70/30 stock/bond split and starting market value of $250m.

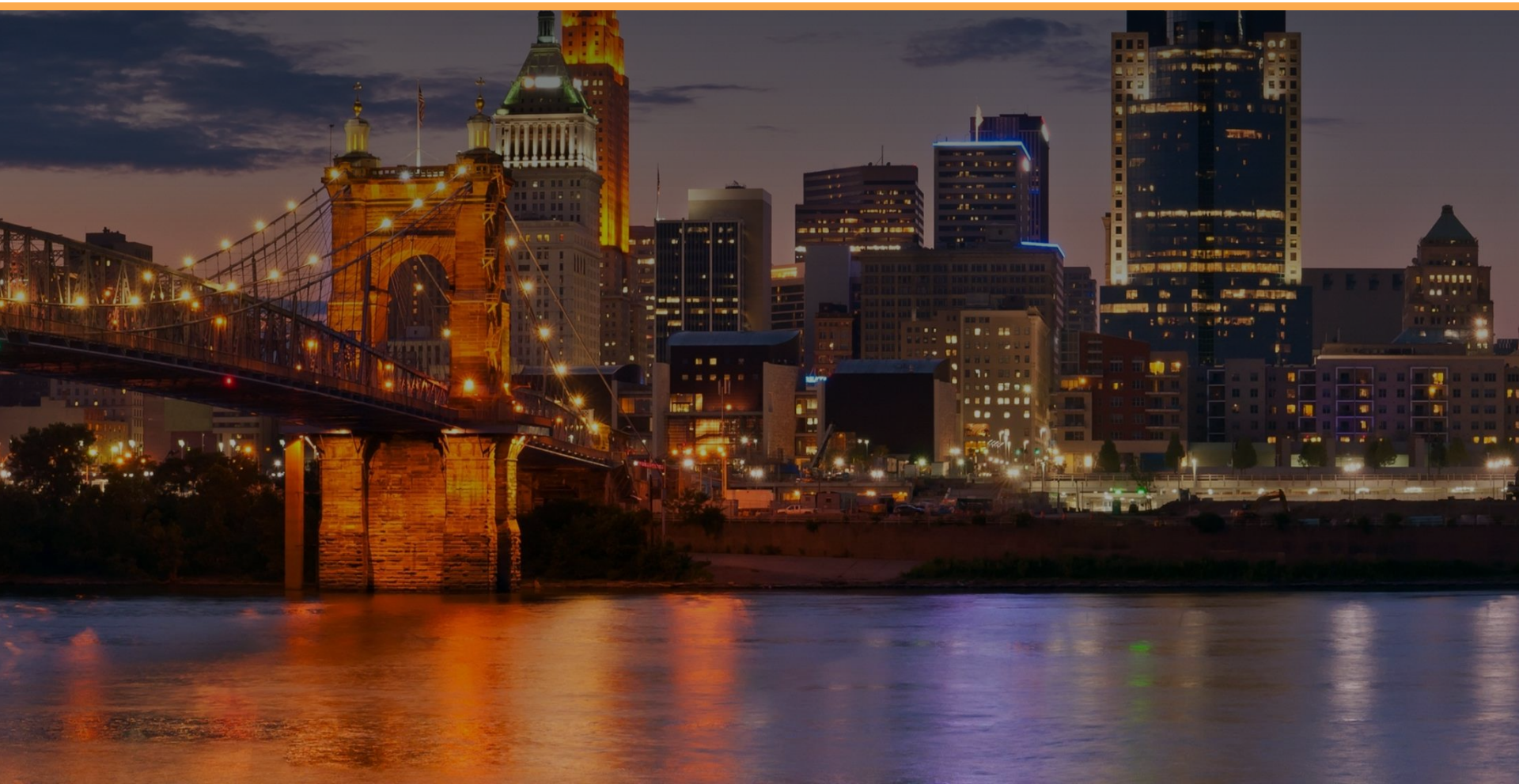
IMPACT OF CHANGE IN SPENDING RATES

Starting market value of $250m



Source: FEG modeling 10 year projection, assuming a global 65/35 stock/bond split and a 20-quarter moving average spending policy. Created with mpi Stylus. © 2009 Markov Processes International LLC. All Rights Reserved. Data provided by Morningstar, Inc. The information contained herein: (1) is proprietary to MPI and/or its content providers; (2) may not be copied or distributed; and (3) is not warranted to be accurate, complete or timely. MPI is not responsible for any damages or losses arising from any use of this.

Conclusions



SPENDING POLICY CONSIDERATIONS

- Coordinate asset allocation and spending policies to ensure the long-term spending rate is consistent with the investment approach and an institution's risk tolerance, factoring in level of institutional support (% of operating budget funded)
- Spending policy can be designed to "smooth" amount distributed from year-to-year
- When selecting a methodology, no correct answer, just a "best-fit" solution that addresses institutions' varying needs to maximize spending, minimize volatility, or maximize market value
- Expected returns today are lower this historically—consider reducing absolute spending level

Questions?

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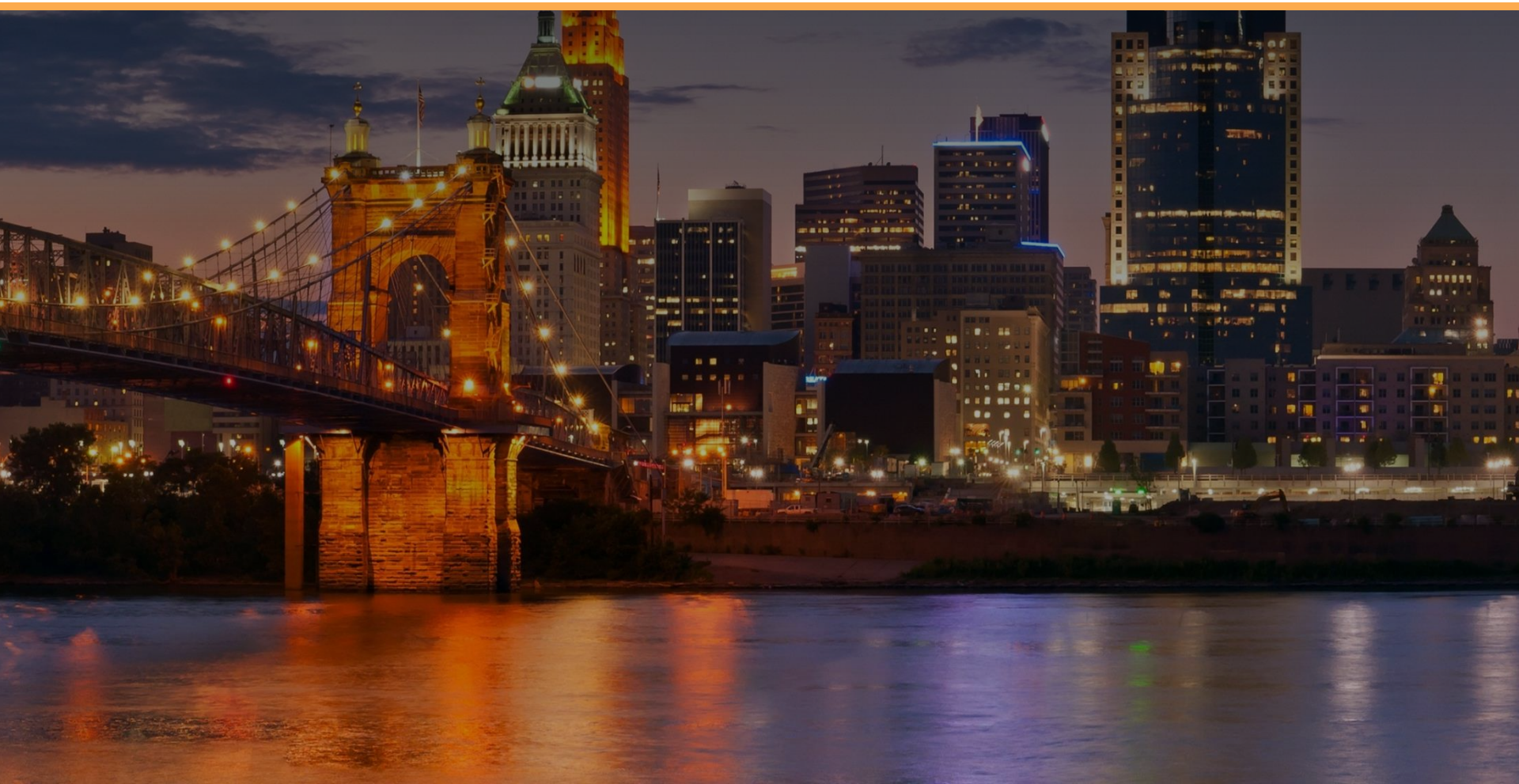
Appendix



SPENDING POLICY METHODOLOGIES

MOVING AVERAGE	Spend a fixed percentage of the average market value over a set time period
CONSTANT GROWTH	Increase spending each year by a constant growth rate or inflation
CONSTANT GROWTH W/BANDS	Spending is contained within a range +/- a percentage of previous year's market value
GEOMETRIC	Weight given to inflation adjusted spending and target spending of market value
HYBRID	Custom combination of spending rules to meet the specific needs of an institution

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