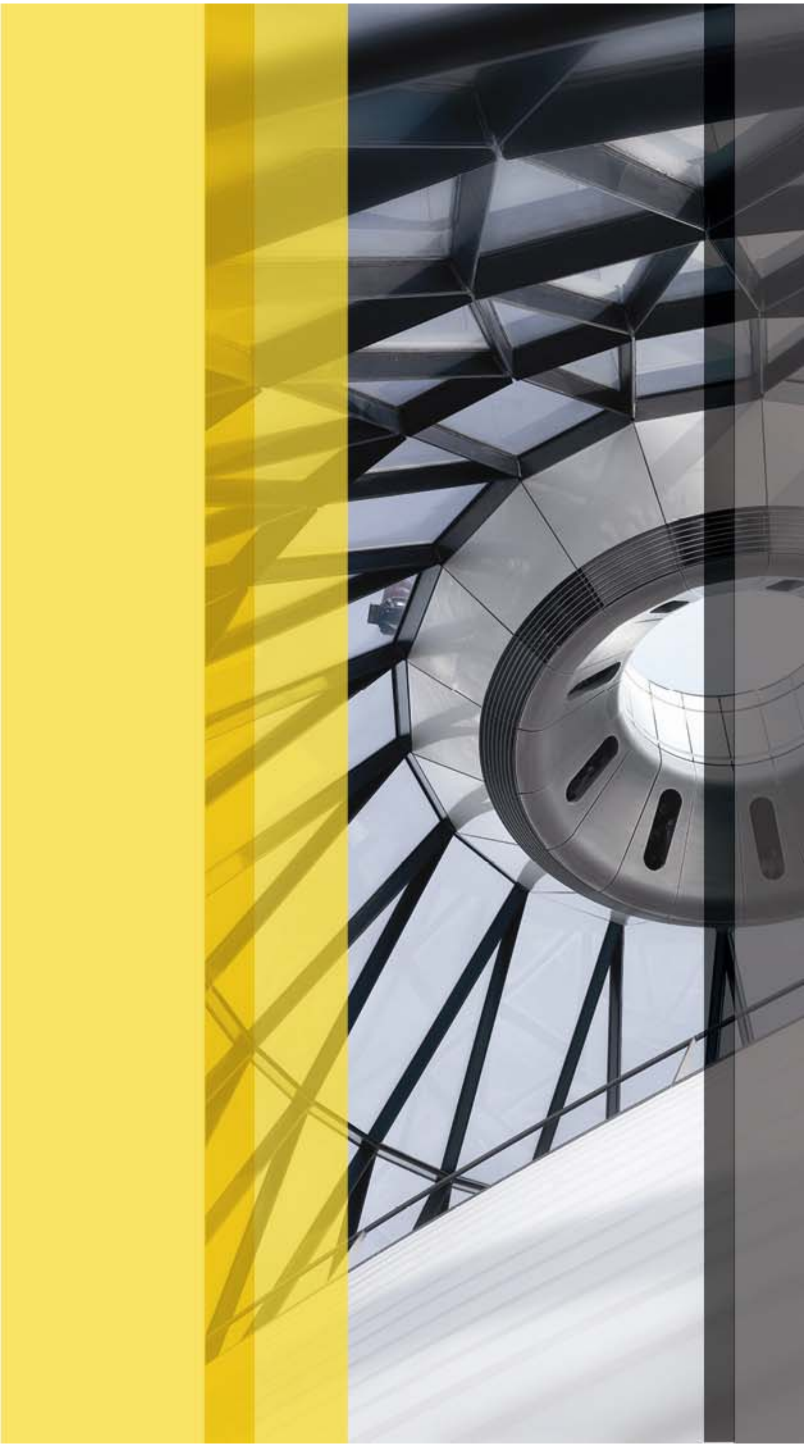
GASB FROM A PORTFOLIO MANAGER'S PERSPECTIVE

A Game Theory Exercise, GASB Reform and Ten Year Capital Market Assumptions

September 13, 2013



Important Information

The views in this presentation are provided by BNY Mellon Investment Strategy & Solutions Group (“ISSG”).

BNY Mellon Investment Strategy and Solutions Group (“ISSG”) is part of The Bank of New York Mellon (“Bank”). In the U.S., ISSG offers products and services through the Bank, including investment strategies that are developed by affiliated BNY Mellon Investment Management advisory firms and managed by officers of such affiliated firms acting in their capacities as dual officers of the Bank.

BNY Mellon Investment Management is one of the world’s leading investment management organizations and one of the top U.S. wealth managers, encompassing BNY Mellon’s affiliated investment management firms, wealth management organization and global distribution companies. BNY Mellon is the corporate brand of The Bank of New York Mellon Corporation and may also be used as a generic term to reference the Corporation as a whole or its various subsidiaries generally. Products and services may be provided under various brand names and in various countries by subsidiaries, affiliates, and joint ventures of The Bank of New York Mellon Corporation where authorized and regulated as required within each jurisdiction.

This material is not intended, nor should be construed, as an offer or solicitation of services or products or an endorsement thereof in any jurisdiction or in any circumstance that is otherwise unlawful or unauthorized. The results shown are provided for illustration purposes only.

Discussion Points

1. A Game Theory Exercise, Public Pensions: 2030
2. GASB Reform, Implications and Considerations
3. Ten Year Capital Market Assumptions

1. A GAME THEORY EXERCISE,

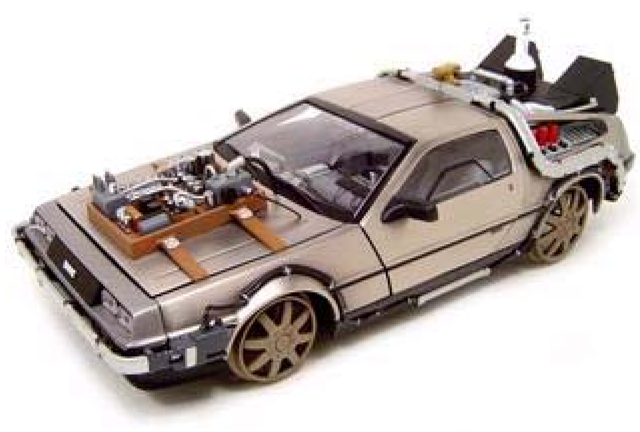
   PUBLIC PENSIONS: 2030

"The only constant is change“

Heracliitus of Ephesus

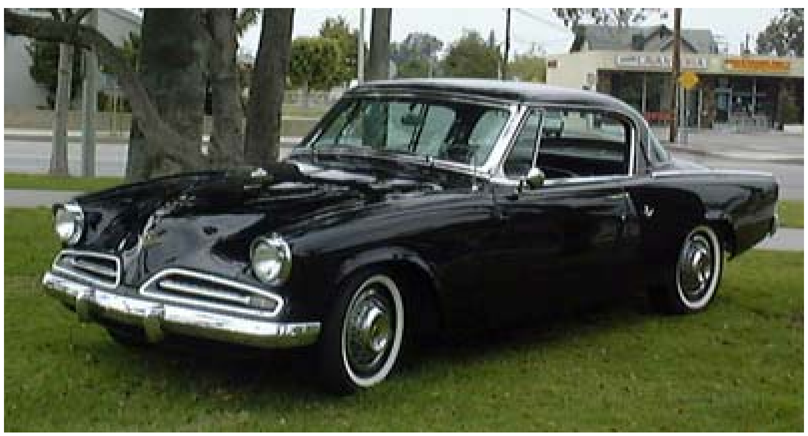
A Game Theory Exercise

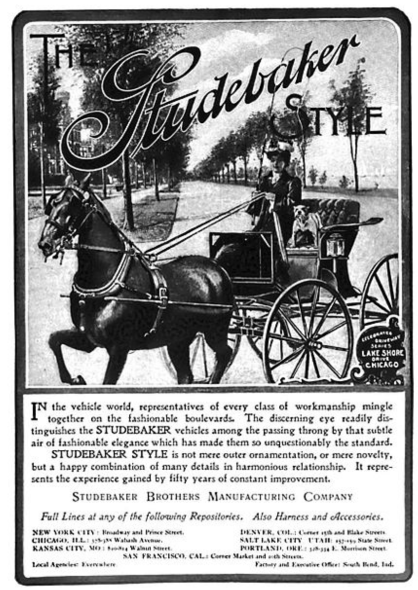
- The military and private sector use applied game theory to assist with long-range planning
- In its simplest form, game theory is a study of strategic decision making
- A game consists of a set of players, a set of moves available to those players and a spectrum of outcomes
- **In light of GASB accounting changes in 2014, we challenged ourselves to imagine a very different public pension landscape in 2030**
- Although we do not believe our selected path likely, stakeholders must be prepared for any path



Those Who Do Not Remember the Past…

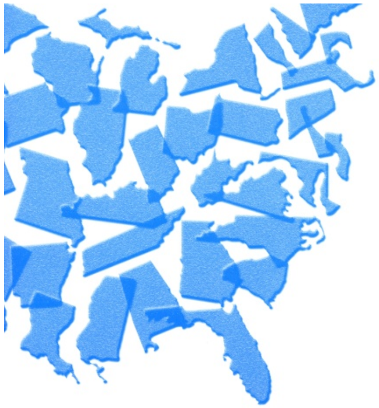
- During the 1960s, several large private DB plans collapsed[1]
- Thousands of workers lost their promised pensions[1]
- When Studebaker Corporation closed its automobile manufacturing plants in 1963, 7,000 workers lost virtually all of their retirement benefits[1]
- Ten years later, Congress passed ERISA of 1974 to address perceived flaws in the private pension system

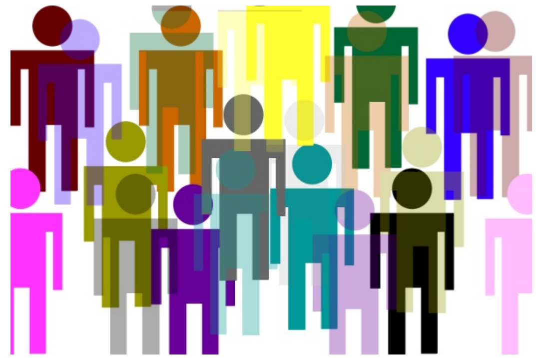


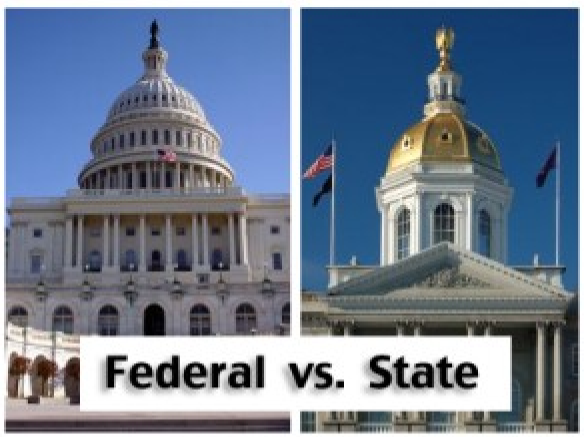


[1] Is Your Defined-Benefit Pension Plan Safe? June 26, 2012, Investopedia.com

One Potential Path







2. GASB REFORM, IMPLICATIONS AND CONSIDERATIONS

GASB Reform Summary

The table below summarizes GASB reform that will take place in 2014:

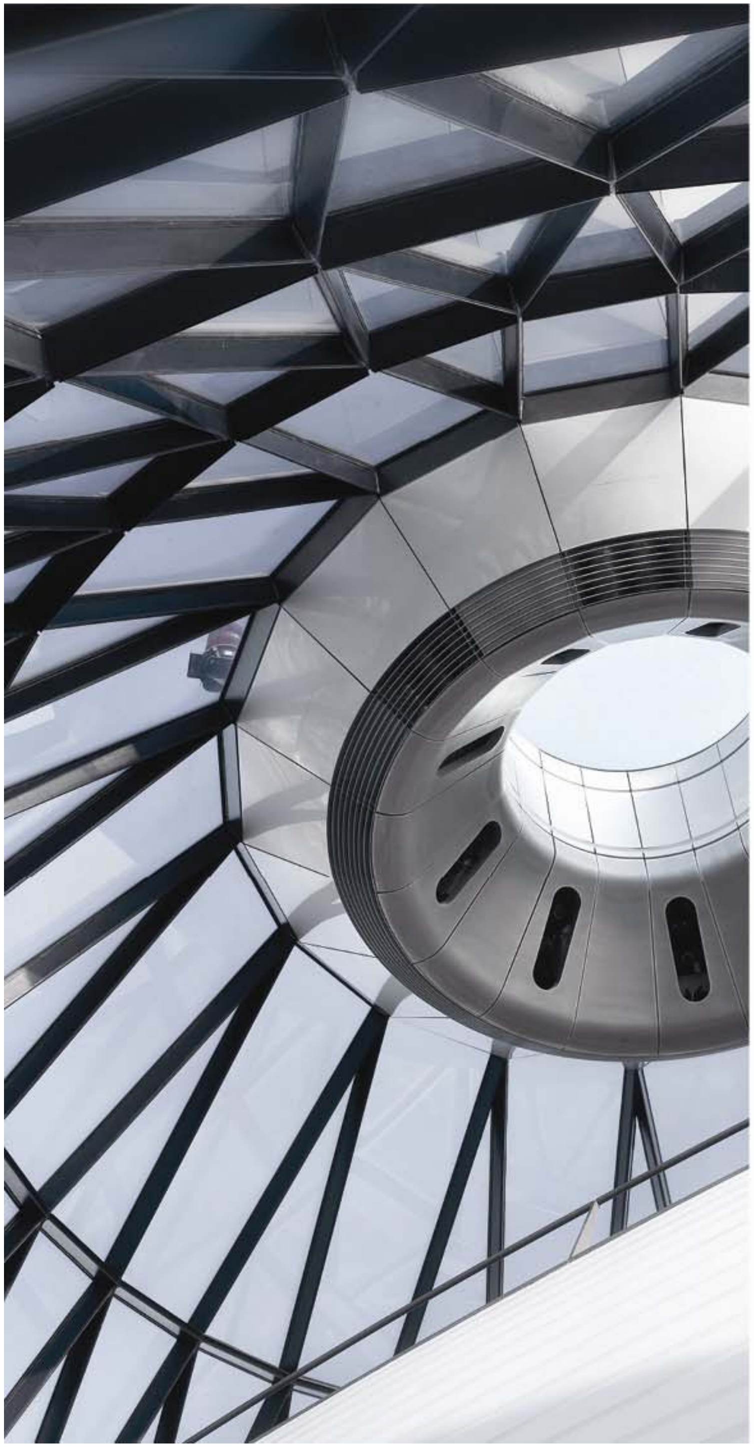
Issue	Effective Today	Effective 2014
Financial Reporting	Net pension liability disclosed in footnotes	Net pension liability to be reported directly on balance sheet
Discount Rate	Projected benefit payments discounted at long-term expected rate of return on plan assets	Funded liability to be discounted at long-term expected rate of return on plan assets; unfunded liability discounted at a 20 year AA+ rated General Obligation Muni Bond rate
Expense Recognition	Certain components of pension expense can be amortized over long time periods (i.e. 30 years)	Amortization periods for certain components as low as 5 years (for more immediate recognition)
Footnote Disclosures	Limited information required to be disclosed in financial reporting footnotes	Description of plan and benefits, significant assumptions, and impact of discount rate changes to be disclosed in footnotes

The above summary reflects our understanding of the state and local government pension accounting changes. Please see gasb.org for more information.

Potential Implications

Below are potential implications of GASB changes:

CNN, Fox News or MSNBC	"…state funded ratios *worse* than previously reported"	Public relations issues	?
Moody's, Fitch Ratings or Standard & Poor's	Potential *downgrade* of credit rating	Increase in borrowing costs	?
Beneficiaries	Fear mindset due to media attention	Pressure to reduce investment risk taking	?



Sponsor Considerations

I
Educate Stakeholders
Accounting versus actuarial values

II
Consider Multiple Valuations
Stakeholders have different interests

III
Break the Circular Reference
Return objective based on scheme-specifics

IV
Ability to Take Risk
Time horizon, future contributions and benefits

V
Include Liabilities in Reporting
Add liability values to performance reporting

3. TEN YEAR CAPITAL MARKET ASSUMPTIONS

Capital Market Assumptions: Highlights

BNY Mellon's assumptions were created to assist our clients in long term strategic asset allocation planning (10-year time horizon)

1. Equities are expected to return in the range of 7-8% based on our building blocks of inflation, real earnings growth, and dividend yield
2. Low single digit returns are expected for fixed income due to rising interest rates over the next 10 years
3. Alternatives are expected to generate returns similar to equities on a risk adjusted basis
4. Risk and correlations are expected to be lower than experienced over the past five years but more elevated than long term averages

Capital Market Assumptions: Details

	Asset Class	Representative Index	Expected Return	Standard Deviation
Equity	U.S. Equity	Russell 3000	7.25%	18.25%
	U.S. Large Cap Equity	Russell 1000	7.00%	18.00%
	U.S. Mid Cap Equity	Russell Mid Cap	7.75%	21.25%
	U.S. Small Cap Equity	Russell 2000	8.00%	23.75%
	U.S. Micro Cap Equity	Dow Jones Wilshire U.S. Micro-Cap	8.25%	25.50%
	Global Equity	MSCI ACWI	7.25%	19.00%
	International Developed Equity	MSCI EAFE	7.00%	20.25%
	International Small Cap Equity	MSCI EAFE Small Cap	7.00%	22.50%
	Emerging Equity	MSCI Emerging	8.25%	28.50%
Fixed Income	U.S. Aggregate	Barclays U.S. Aggregate	1.25%	3.75%
	U.S. Treasury	Barclays U.S. Treasury	0.50%	5.00%
	U.S. Treasury Bills	Barclays U.S. Bellw ethers 3 Month	1.50%	0.50%
	U.S. Intermediate Treasury	Barclays U.S. Intermediate Treasury	0.75%	3.50%
	U.S. Long Treasury	Barclays U.S. Long Treasury	-0.25%	12.75%
	U.S. Investment Grade Credit	Barclays U.S. Credit	1.75%	6.25%
	U.S. Intermediate Investment Grade Credit	Barclays U.S. Intermediate Credit	1.75%	5.00%
	U.S. Long Investment Grade Credit	Barclays U.S. Long Credit	2.00%	11.25%
	U.S. TIPS	Barclays U.S. TIPS	0.25%	7.25%
	U.S. Agencies	Barclays U.S. Agencies	1.25%	3.50%
	U.S. MBS	Barclays U.S. MBS	2.00%	2.75%
	U.S. Investment Grade CMBS	Barclays Investment Grade CMBS	2.25%	12.25%
	U.S. Non-Taxable Municipal (1-10 year)	Barclays U.S. Non-Taxable Municipal (1-10 year)	1.50%	3.50%
	U.S. High Yield	Barclays U.S. Corporate High Yield	5.25%	12.50%
	U.S. Leveraged Loans	CSFB Leveraged Loan	3.00%	8.25%
	Global Aggregate	Barclays Global Aggregate	1.25%	6.50%
	Global Treasury	Barclays Global Treasury	1.00%	7.75%
	Global Corporate	Barclays Global Corporate	2.25%	8.50%
	Emerging Markets (U.S. Dollar)	Barclays Emerging Markets (U.S. Dollar)	3.50%	13.25%
	Emerging Markets Sovereign Local Currency	Barclays EM Local Currency Government	6.00%	13.25%
Alternatives	Absolute Return	HFRX Absolute Return	2.50%	3.50%
	Hedge Funds	HFRI Funded Weighted Composite	3.75%	7.50%
	Hedge Funds - Equity Hedge	HFRI Equity Hedge	4.75%	10.25%
	Hedge Funds - Event Driven	HFRI Event Driven	3.75%	7.75%
	Hedge Funds - Macro	HFRI Macro	3.50%	6.25%
	Hedge Funds - Relative Value	HFRI Relative Value	3.25%	5.75%
	Commodities	Dow Jones UBS Commodities	2.50%	19.50%
	Global Natural Resources Equity	Morningstar Global Upstream Natural Resources	7.50%	27.50%
	U.S. Direct Real Estate	NCREIF Property	5.50%	6.50%
	Timberland	NCREIF Total Return Timberland	5.50%	6.50%
	Farmland	NCREIF Total Return Farmland	5.75%	7.50%
	U.S. REIT	FTSE NAREIT Equity	7.75%	29.50%
	Global REIT	FTSE EPRA/NAREIT Developed	7.75%	24.75%
	Global Private Equity	LPX 50 Private Equity	10.50%	32.50%
	U.S. Private Equity	S&P Listed Private Equity	11.75%	33.75%
	Infrastructure	Alerian MLP Infrastructure	6.00%	19.75%

Inflation

In the US, our headline inflation expectation over the next 10 years is 2.5% per year, slightly ahead of consensus forecasts. We expect higher energy prices due to supply/demand imbalances to put upward pressure on inflation, while aging demographics in developed markets will offset some of the upward momentum. We also expect inflation in emerging economies to be slightly higher than consensus forecasts at 4% per year.

Equity

Our primary building blocks for developing US equity returns are inflation, real earnings growth, and dividend yield. Our expectation for real earnings growth in the US is 2% per year, significantly below consensus forecasts of over 6%. This low growth expectation is based on our belief that real earnings growth cannot exceed real GDP growth over the long run. Given corporations' excess cash, we expect dividend yields for US equities to be 2.25% per year, slightly above long-term historical averages and current dividend yields. Our building blocks derive an expected return of 7% for US large cap stocks. We see similar risk-adjusted returns for US small and mid cap stocks. International developed equities are also expected to generate returns similar to those in the US, but with greater risk due to currency exposure. Emerging equities are expected to generate stronger risk -adjusted returns, due to continued relative strength in emerging economies and currency appreciation.

Fixed Income

We expect returns to be weaker than historical norms in most sectors due to rising interest rates. In the US, we see real cash rates rising from negative levels today to 1% in 10 years. With inflation at 2.5%, this results in US Treasury bills yielding 3.5% in 10 years. This will cause some flattening of the curve, but not enough to protect US long-dated Treasury bonds from negative returns over 10 years. Higher credits spreads and defaults compared to current levels will have an adverse impact on credit markets. However, higher yields in credit markets will help preserve positive returns over the next 10 years. Emerging market debt, especially issued in local currency, will fare better over the 10-year horizon due to relative strength in emerging economies and currency appreciation.

Alternatives

Absolute return and hedge funds are likely to generate risk-adjusted returns similar to those of equities. These asset classes may be more appropriate for reducing risk from equities, rather than the traditional view of shifting assets to fixed income. Overall, we expect commodities to experience returns similar to inflation of 2.5%. Energy will generate returns in excess of inflation due to supply/demand imbalances, while agriculture and metals are expected to return slightly less than inflation. Private real estate will see similar risk -adjusted returns as REITs, plus a liquidity premium. Private equity returns are likely to be on par with those of public equity, after adjusting for a meaningful increase in risk levels.

Note: The capital market assumptions are The Bank of New York Mellon's estimates based on historical performance and the current market environment. We do not present the capital market assumptions as actual or guaranteed future performance. This material is approved for institutional investors or other qualified, sophisticated individuals only. Not for retail use or distribution. Accordingly, this material is not to be reproduced in whole or in part or used for any other purpose. Refer to Disclosures.

Disclosures

- **HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT OF CERTAIN MARKET FACTORS. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK. NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF THE TRADING LOSSES ARE MATERIAL FACTORS WHICH CAN ADVERSELY AFFECT THE ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE ECONOMY OR MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS, ALL OF WHICH CAN ADVERSELY AFFECT TRADING RESULTS.**
- The capital market assumptions are The Bank of New York Mellon's estimates based on historical performance and the current market environment. We do not present the capital market assumptions as actual future performance.
- This presentation is not intended as an offer to sell or a solicitation of an offer to buy any security.
- The hypothetical performance information provided is gross of fees and reflects both income and capital appreciation. Management fees will reduce a client's actual return.
- This information has been prepared by The Bank of New York Mellon based on data and information provided by internal and external sources. While we believe the information provided by external sources to be reliable, we do not warrant its accuracy or completeness.