Morgan Stanley

Presentation to KTRS Funding Work Group

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Participants

Bill Mack, Executive Director
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- Mr. Mack has served as Morgan Stanley's Banking Coverage Officer for the Commonwealth for the past ten years
- In this role, Mr. Mack has led numerous underwritings for all of the Commonwealth's major credits
- Mr. Mack received his J.D. from Loyola University Chicago and B.A. from the University of St. Thomas in St. Paul, Minnesota

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- Mr. Farrell serves as Morgan Stanley's Head of Municipal Credit
- Mr. Farrell formerly served as the Head of Moody's Public Finance Group where he was responsible for the development of the credit policies and procedures currently employed by Moody's analysts
- Mr. Farrell received his B.S. from SUNY-Albany and M.B.A. from Baruch College

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Global Footprint with a Strong Local Presence

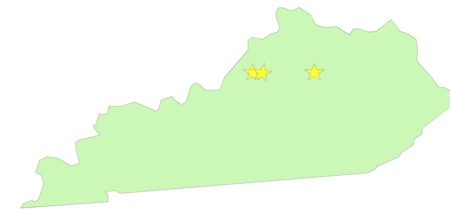
- Access to all capital and money markets:
  - Public finance
  - Corporate finance
  - Taxable fixed income products
  - Real estate
  - Asset management
  - Research
  - Commodities
  - Mortgage finance
  - Individual investor services
  - Mergers and acquisitions
  - Foreign exchange

Morgan Stanley Senior Managed Kentucky Experience

Since 2001

Issuer	# of Financings	Total Par ($MM)
State Property and Buildings Commission	14	3,148
Turnpike Authority of Kentucky	5	717
Kentucky Infrastructure Authority	4	389
Asset/Liability Commission (UK)	4	334
Asset/Liability Commission (Funding Notes)	1	153
Local Correctional Facilities	1	22
Total	**30**	**4,763**

Morgan Stanley Wealth Management in Kentucky



- 68 account executives in 3 retail offices manage over $6.06 billion in retail client assets
- Over 23,000 client accounts
- Our MSWM clients own over $300 million of the Commonwealth's bonds

Morgan Stanley

Key Policy Considerations

Considerations to Address Current KTRS Pension Funding Status

- POBs can be an effective tool when used as part of a broader plan to address pension funding
  - Generally more successful when not merely a function of investment return vs. borrowing cost

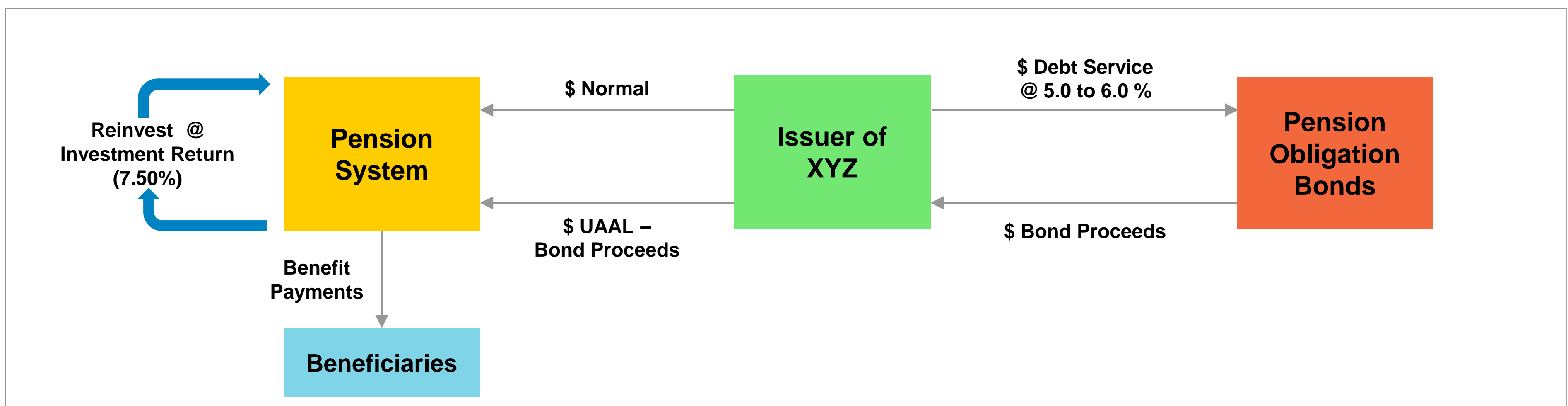
- Evaluating retiree benefits
- Evaluating funding levels and potential revenue sources
  - Impact of funding at actuarially required levels vs. statutory levels
- Evaluating risks and benefits of Pension Obligation Bonds
- Evaluating the impact of unfunded pension liabilities (and POBs) on the Commonwealth's credit ratings and borrowing cost

Pension Obligation Bond Overview

- Given current low taxable interest rate levels and the relatively high investment return assumptions of typical pension funds, assumed "savings" can be substantial
- POBs are issued on a taxable basis
- Liability of the state or local government issuer, not of the pension system

- A POB financing is the refunding of all or a portion of an unfunded obligation to an issuer's pension fund
  - Anticipated "savings" given the actuarially assumed investment rate (7-8%)
  - Based on current market conditions, a 30-year taxable offering is about 5%
  - As US Treasury rates and/or credit spreads increase or decrease, the anticipated "savings" change

Pension Funding Mechanics *After* POBs



Pension Obligation Bond Considerations

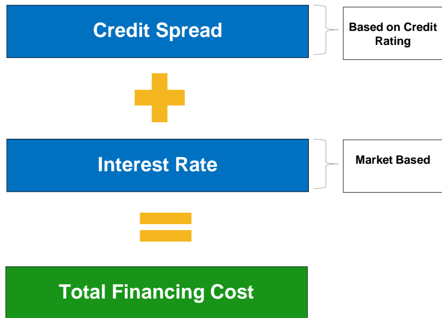
- Credit related risks can be mitigated when the POB issuance is part of an overall plan for sustained improvement in funded status

Risks

- Underperformance of pension investments vs. interest rate on POBs
- Payment and budget flexibility risk
- Default risk
- Investment timing risk
- Impact on the Commonwealth's debt capacity
- Impact on the Commonwealth's credit if the financing is perceived as a deficit borrowing by the rating agencies

Benefits

- Can provide incremental earnings should the pension fund's return be greater than the interest cost of the POB
- Immediately increases funded ratio of the pension fund
- Can have a neutral credit impact when part of structural reforms
- Can provide liquidity so the fund does not need to sell higher performing assets to pay current benefits



- There are two components of financing cost – general rates and credit spreads
- Both change positively and negatively over time
- Reforming the KTRS pension funded status would improve the Commonwealth's overall credit profile

Municipal Credit Spreads

Relative Pricing to 30-Year "AAA" GO MMD Rates

30-Year "AA", "A", and "BBB" Spreads to "AAA" GO MMD

As of July 28, 2015

(Bps)

300
250
200
150
100
50
0

Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15

99 bps
61 bps
24 bps

AA Spread A Spread BBB Spread

Source Morgan Stanley

US Treasury Yields

2005 - Present

- **10 Year Treasury**
  - Min: 1.40%
  - Max: 5.25%
  - Today: 2.25%
- **30 Year Treasury**
  - Min: 2.25%
  - Max: 5.35%
  - Today: 2.96%

UST 10Y and 30Y Yields

As of July 28, 2015

(%)

6.0
5.0
4.0
3.0
2.0
1.0
0.0

Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15

UST 10Y UST 30Y

Source Morgan Stanley

Treasury Forecast and Impact on Borrowing Cost

January 1, 2014 to Fiscal Year End 2016

- The general consensus among economists is that the 10 and 30 year US Treasury Bond yields will increase by about 50 basis points (0.50%) between now and 6/30/2016
- A reasonable assumption for a taxable borrowing cost is 5.0% to 5.5%

UST 10Y and 30Y Yields

As of July 28, 2015

(%)

4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0

Jan-14 Apr-14 Jul-14 Oct-14 Jan-15 Apr-15 Jul-15 Oct-15 Jan-16 Apr-16 Jul-16

UST 10Y
UST 30Y
Projected UST 10Y
Projected UST 30Y

Source Morgan Stanley

General Rating Agency Views of Pension Liabilities

Moody's Investors Service

- Moody's is generally the most aggressive in viewing pension liabilities as long-term debt
- Pension liabilities are responsible for 10% of a state's credit rating:
  - Direct tax-supported debt is also responsible for 10%
- Concerned with pension liabilities as a percentage of state revenues
- To bring consistency to their analysis of public pension systems, Moody's makes adjustments to as-reported data:
  - The discount rate used for liabilities will be adjusted for a high-grade long-term taxable bond index
  - Asset smoothing will be replaced with reported market value
  - The resulting adjusted net pension liability will be amortized over 20 years on a level dollar basis

STANDARD & POOR'S

- S&P views pension obligations as long-term liabilities that must be funded over time and a state's commitment to funding is a key credit consideration
- Makes a distinction between tax supported debt and a state's pension debt
  - S&P analyzes debt and unfunded pension liabilities separately
- Concerned with a state's:
  - Funding ratio
  - Level of ARC funding
  - Unfunded liability per capita
  - Ratio of pension debt to personal income
- S&P expects pensions to remain a significant public policy and funding challenge for many state governments
  - Also a continuing source of expanding liabilities for most

FitchRatings

- The Fitch methodology does not use a scorecard and is more subjective
- Fitch is concerned with a state's tax-supported debt and pension debt as a percent of personal income
  - Tax-supported debt burdens generally range from 0% - 9%
  - Pension debt burdens range from 0% - 19%
- Fitch also views current demographic trends as challenging to pension plans, raising plan liabilities and putting pressure on cash flows:
  - Declining government employment
  - Rising retirements
  - Longer lifespans in retirement
- Fully paying an ARC is an important measure of a government's commitment to addressing its pension liability over the long-term

Rating Agency Views of Kentucky's Pension Funding

Moody's Investors Service

STANDARD &POOR'S

FitchRatings

Aa2 Implied GO Rating (Stable)
(as of January 20, 2015)

- Combined adjusted net pension liability (ANPL) under Moody's methodology is $39 billion
  - Ranks as the third highest in the nation on an ANPL basis
- The Commonwealth recently passed reforms to its general employees pension plan, reducing benefits for new hires and increasing state contributions
  - Unfunded liabilities remain large
  - ARC funding beginning in FY15
  - Reform did not address KTRS
- Lack of reform for KTRS means pension contributions will continue to be below the ARC and the unfunded liability will continue to grow
- Rating could improve with significant increase in pension funding levels

AA- Implied GO Rating (Negative)
(as of January 26, 2015)

- S&P notes that sizable pension unfunded liabilities further pressure the budgetary imbalance that Kentucky is working to correct
- It is noted that the recent reforms to KERS and SPRS are positive, including full ARC funding
  - S&P also notes that the reforms did not address the sizable KTRS liabilities
- In absence of meaningful pension reform for KTRS, S&P indicates it could lower its rating
- Low funded ratios have in part led to deterioration in Kentucky's credit profile

AA- Implied GO Rating (Stable)
(as of January 20, 2015)

- The Commonwealth's combined debt plus unfunded pension system liabilities are amongst the highest for U.S. states
  - Represented about 22% of personal income, well above the median of 6.1%
- Recently adopted pension reform measures are a positive step, but significant challenges remain
- KTRS is continually underfunded:
  - Kentucky's contribution to KTRS has been short of the full ARC for 7 of the past 8 years
  - FY14 contribution to KTRS was 68.4% of the ARC, leaving a gap of roughly $260 million, or 2.7% of annual general fund revenues
- Fitch views the KTRS issues as a challenging but not insurmountable problem for the Commonwealth

Conclusion

Use of POBs

- POBs work best when success is not merely a function of investment return vs. borrowing cost

- Contributing the full actuarially required contributions is the key to any long term solution

- While positive earnings can *potentially* be a benefit, Pension Obligation Bonds work best when they are part of an overall plan
  - Provide liquidity temporarily while transitioning into full actuarial contributions
  - Combine with other benefit or funding reforms

- POBs can have a negative credit impact when used as a one-time budgetary solution

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