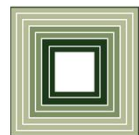


Assumed Rate of Return

**LRC Study Committee on Treasurer Investment Targets
and State Employee Retirement Options**

February 17, 2014



FISCAL RESEARCH DIVISION
A Staff Agency of the North Carolina General Assembly

How Assumption is Used

- **Assumed return of 7.25% is primarily used to discount future benefit payments**
- **Example: \$100 payment one year from now would discount to a present value of $\$100 / 1.0725 = \93.24**
- **Present value of benefits used in calculating accrued liability and normal cost**
- **Accrued liability and normal cost used in calculating Annual Required Contribution (ARC), which the General Assembly has almost always appropriated**
- **Lower assumption gives higher ARC**

How Assumption is Set

- **Board of Trustees has power to set assumption under G.S. 135-6(o).**
- **Reviewed assumption as part of 5-year review of all assumptions in July, 2010. Voted unanimously to keep at 7.25%.**
- **Treasurer Cowell requested another review at January, 2011 meeting. Board discussed the assumption further, but no vote was taken.**
- **Reviews focused on mean/median expected long-term return given asset allocation, and assumptions used by other states.**

Actuarial and Accounting Standards

ASOP 27 (revised September 2013)

- Provides guidance to actuaries (not Boards or legislatures) in selecting economic assumptions**
- Assumption should have “no significant bias”**
- Recognizes that there is a range of reasonable values**
- Allows multiple approaches for discounting benefit payments**

GASB 67 and 68

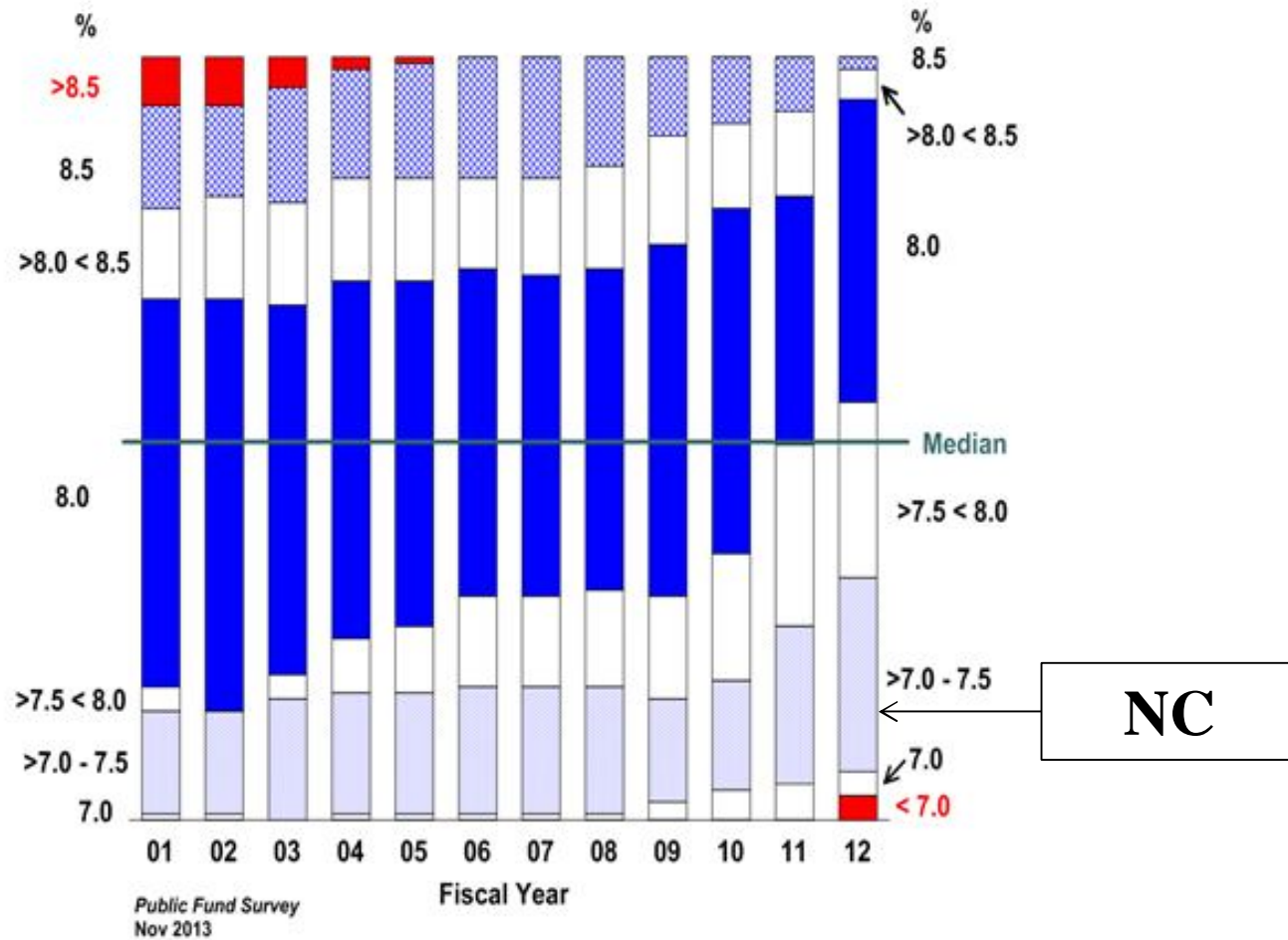
- Long-term expected rate of return on investments to the extent sufficient to pay benefits**
- Only applies to accounting results, GASB explicitly states that basis for contributions is separate**

Other States

- **Median assumption is 7.9% (Public Fund Survey, FY 2012)**
- **More than half of the plans included in the survey have reduced their return assumption since FY 2008. Average decrease is 45 bp (0.45%)**
- **Impact varies:**
 - **Some states are phasing in the reduction (e.g. WA and MD)**
 - **Some states do not contribute the amount recommended, so there is not necessarily an increase in the cash outlay due to a lower assumption (e.g. IL, NJ, and VA)**
 - **Some states use longer amortization periods, so impact is smaller, but drop in assumption did increase employer contribution (e.g. IN and UT)**
 - **Some states cut benefits at the same time they decreased assumption (e.g. ME and RI)**
 - **Some states are living with the large employer contribution increase (e.g. NY and CT)**
- **Systems that use less than 7.25%:**
 - **6.50%: DC**
 - **6.75%: IN**
 - **7.00%: TX Municipal, NYC Employees, VA**
 - **7.20%: WI**

Other States

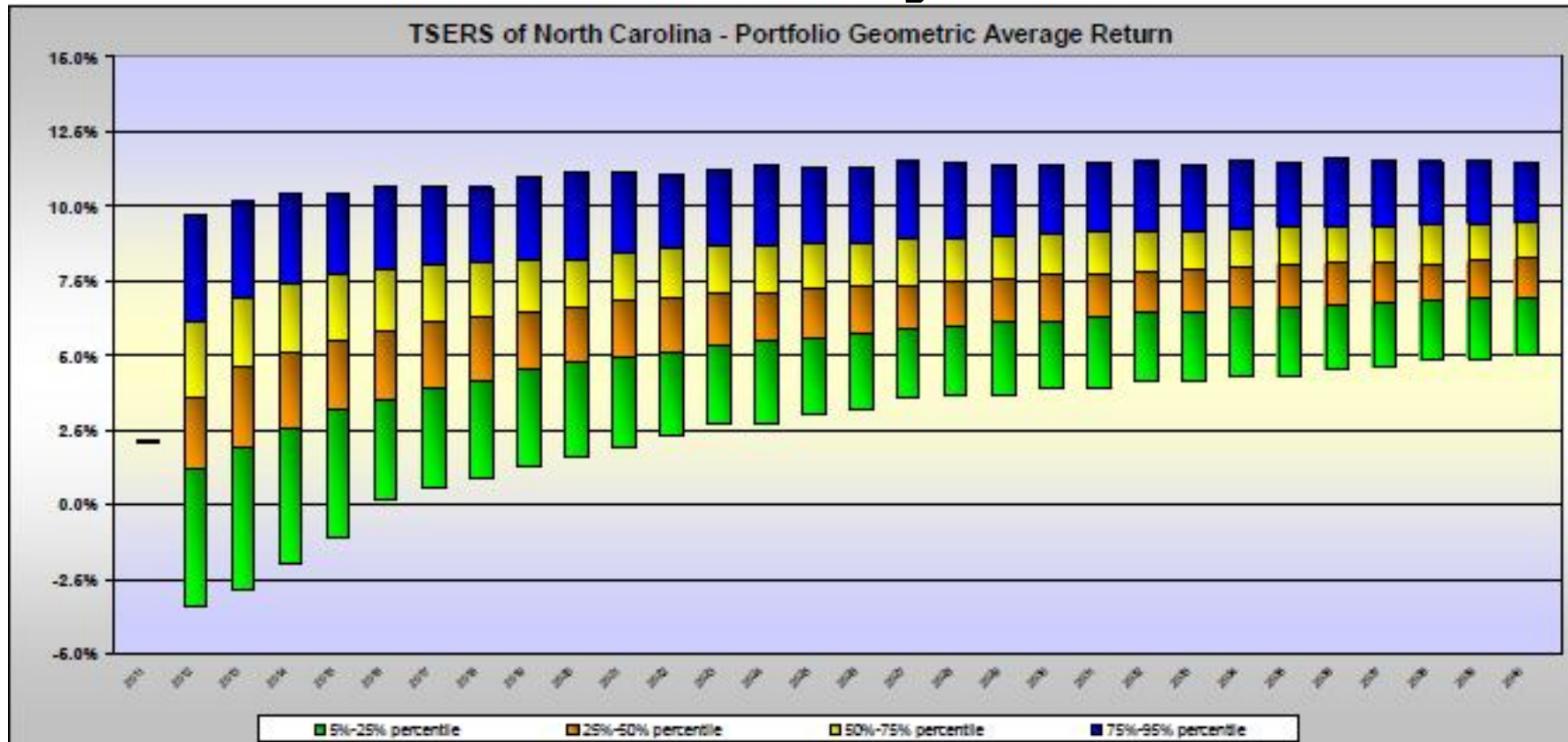
Figure N



Private Sector

- **Corporate defined benefit pensions use three different assumptions**
- **Discount rate for accounting purposes.**
 - Governed by ASC 715 or other applicable accounting standards
 - Requires use of yields on high-quality corporate bonds
 - Citigroup Pension Liability Index gives a sense of where assumptions might be. Value was 4.68% at the end of January, 2014. Reached a low of 3.73% in July, 2012.
- **Asset Return Assumption for accounting purposes**
 - Governed by ASC 715 or other applicable accounting standards
 - Only used for estimating one-year returns, not used for discounting benefit payments
 - Expected long-term return based on current asset allocation
 - Towers Watson 2012 survey Accounting for Pensions and Other Postretirement Benefits showed average assumption of 7.70%, down from 9.18% in 2000
- **Discount rate for funding purposes.**
 - Governed by Internal Revenue Code
 - Requires use of yields on high-quality corporate bonds
 - Rates calculated by U.S. Treasury Department
 - Law allows smoothing over 24 months and currently operating under “funding relief” allowing higher rates
 - For January, 2014, the three “segments” are 4.43%, 5.62%, and 6.22%

Asset Liability Model



- Source: Buck Consultants, Nov. 2012
- Based on these assumptions, >50% chance of earning 7.25% in long-run, <50% in short-run

Conclusion #1

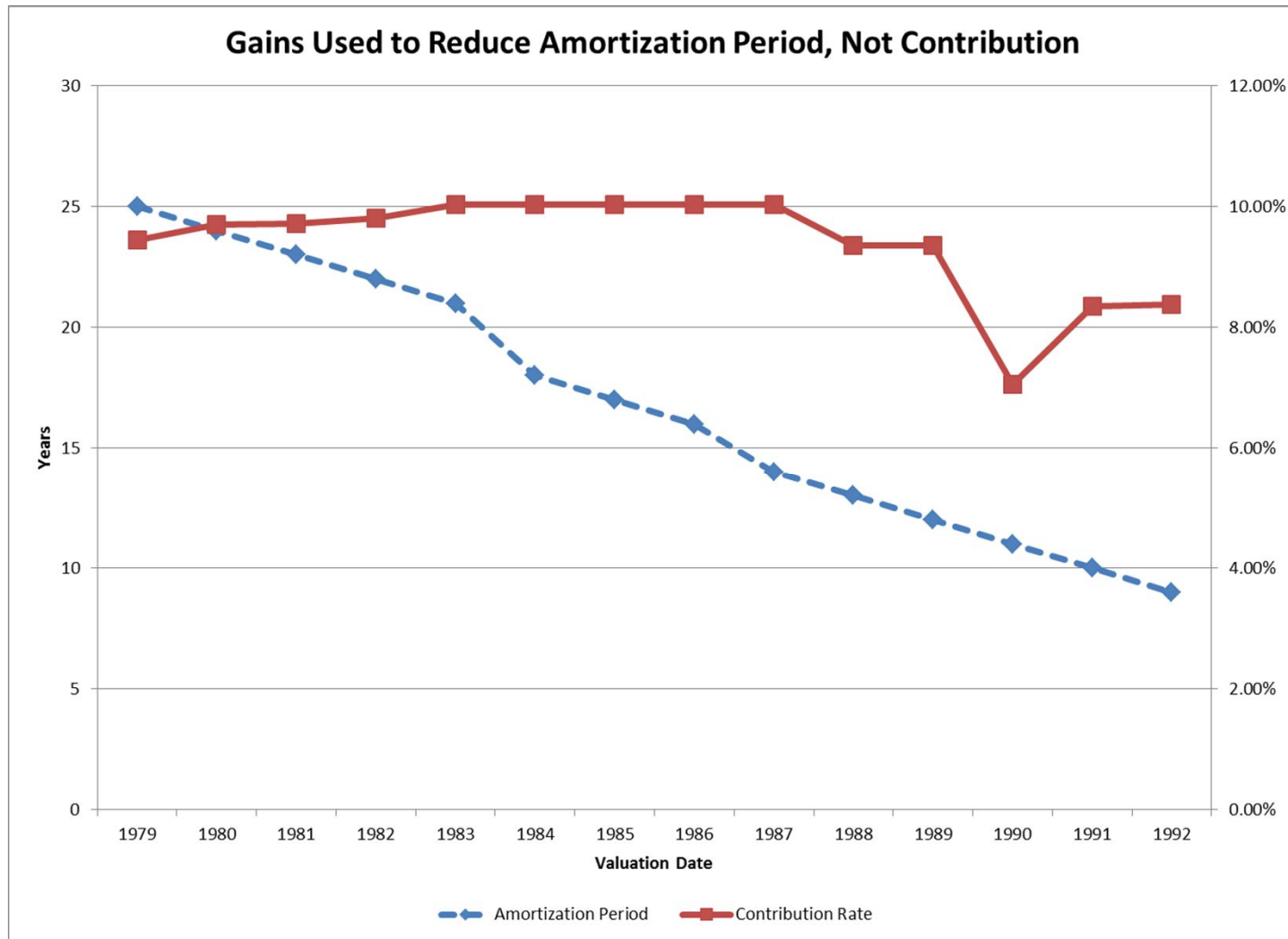
- **Current assumption (7.25%) is reasonable based on**
 - **Actuarial and accounting standards**
 - **Assumptions used by other states**
 - **Assumptions used in private sector where basis is the same**
 - **Roughly 50% chance of meeting assumption in the long-run**
- **Are those the correct benchmarks for N.C.?**

N.C. Pension Funding Practices

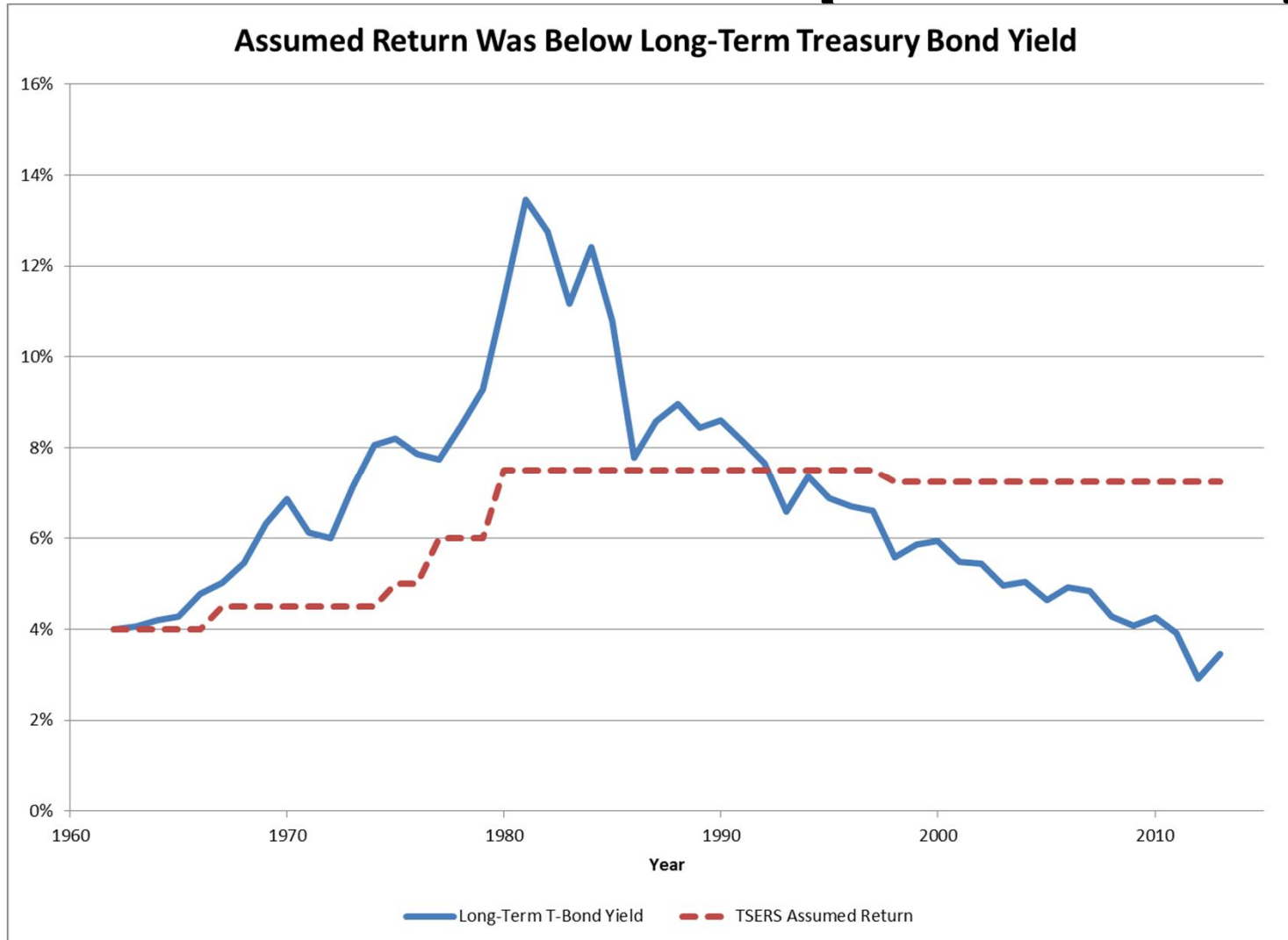
- Frequently cited as a model for other states**
- Established with sound actuarial funding in 1941**
- General Assembly appropriated recommended contribution every year except FY 2010-11**
- Reduced amortization period in 1980s and 12 year period is one of the shortest among public pensions**
- Often used assumptions and methods that gave high probability of good news**
 - Low turnover assumption in early years**
 - Low asset return assumption in 1960s to 1990s**
 - Book value accounting until 1996**



Amortization Period Reduction



Asset Return Assumption History



Asset Return Assumption History

- **Why did we raise it? Why did we not lower it?**
- **1979 experience study report by Buck Consultants to Board of Trustees:**
 - **Cited actual earnings of 6.78% to 7.72% in preceding years**
 - **Cited 8% expected yield on the book value of assets as of June, 1980**
 - **“On the basis of the foregoing and the general expectation for continued inflation a valuation interest rate of 7-1/2% is recommended for consideration.”**
- **Current asset return assumption is one of the last vestiges of out-of-control 1970s inflation**
- **It is really hard to bring the assumption back down because short-term appropriations have to go up**

Conclusion #2

- **Current assumption (7.25%) is out of line with historical approach to assumptions and methods**
- **Other practices remain in line:**
 - **12 year amortization period**
 - **Renewed commitment to contributing recommended amount**



Alternatives

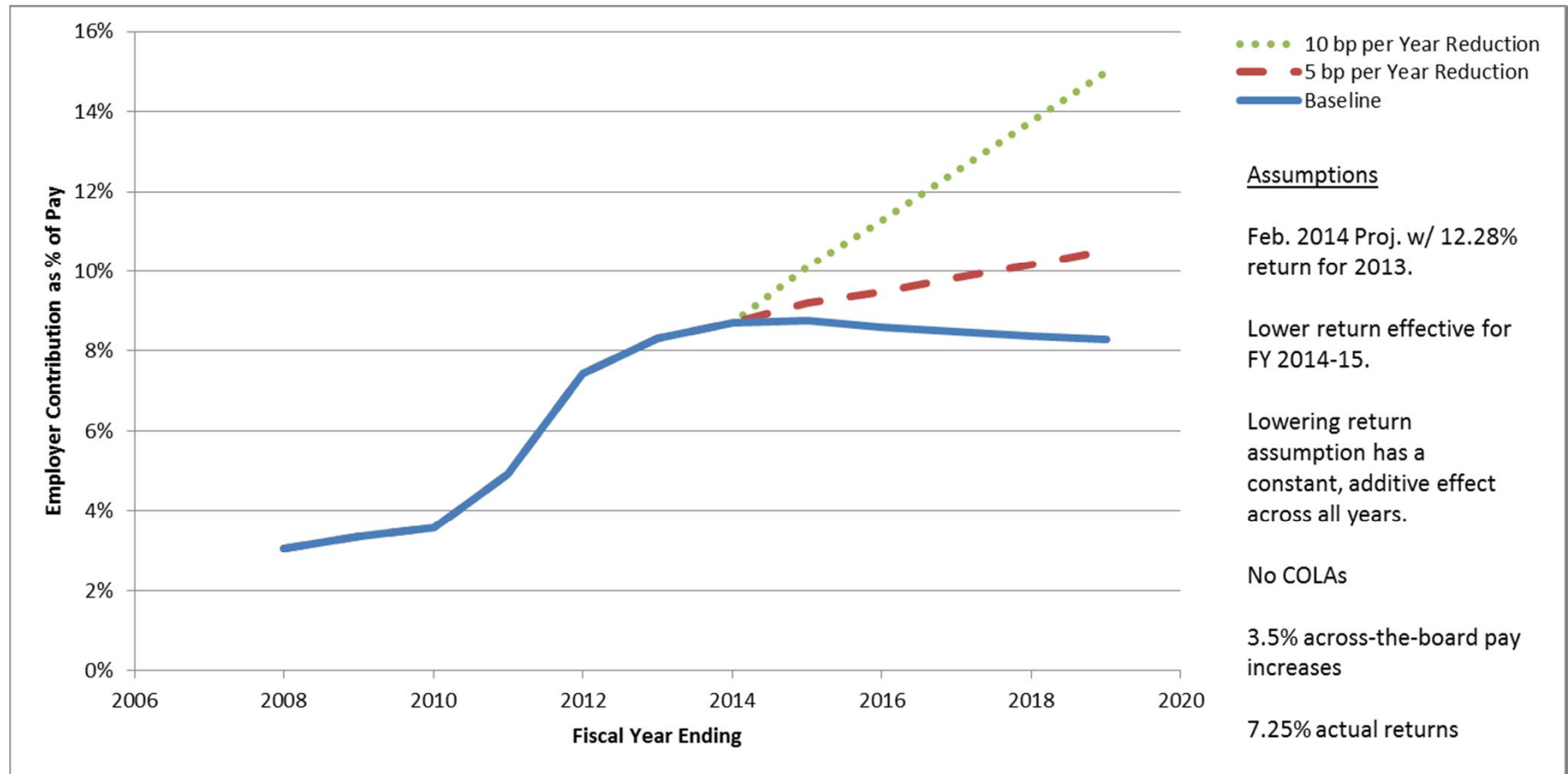
- **Moving quickly to a lower return assumption would require significant appropriations**
- **Increase in General Fund appropriation:**
 - **At 7.00%: \$224 million**
 - **At 4.00%: Around \$3 billion**
- **Reducing assumption slowly over a long period is more feasible in current budget environment**
- **Decisions:**
 - **Pace of reduction**
 - **Effective date**
 - **Stopping point**

Pace of Reduction

- Each 5 basis point (0.05%) reduction increases General Fund contribution by roughly \$45 million
- Consider 5 bp or 10 bp per year reduction
- Steady reduction adds up over time
- Recent reserve appropriations were in same range:

Fiscal Year	Pension Reserve Appropriation
FY 2013-14	\$36 million
FY 2012-13	\$88 million (\$336 million over previous biennium)
FY 2011-12	\$248 million
FY 2010-11	\$139 million (\$160 million over previous biennium)
FY 2009-10	\$21 million
Average	\$106 million

Projection



Situation is similar to 1980s when amortization period was reduced instead of contribution

Effective Date

Consider effective with:

- Dec 31, 2012 valuation (retroactive), determines FY 2014-15 contribution, or**
- Dec 31, 2013 valuation, determines FY 2015-16 contribution**



Stopping Point

Consider stopping at:

- **Long-term Treasury Bond Yield**
- **Long-term Treasury Bond Yield + Risk Premium**
- **4.00%**
- **Discretion of future General Assembly (no fixed point)**

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