

# **BOLTON PARTNERS**

## **Actuarial Audit**



# New York City Office of the Comptroller

Actuarial Audit, Experience Study and  
Administrative Review

First Engagement

Board of Trustees Presentation  
on March 21, 2018

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# First Engagement:

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Hired by the Office of the Comptroller to:

## Valuations:

- Replicate Valuation calculation

## Experience Study:

- Compare actual experience to assumptions

## Administrative Review:

- Review the data management process and other administrative policies and practices

# Results in Multiple Documents

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Power Point Presentation:

- Contains summary of results

Separate documents covering detailed findings:

- Replication findings and recommendations
- Experience study results
- Administrative review
- Independent Actuary's statement

# Part I: Full Replication of 2014 Valuations

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Comparison of OA and BP Results (\$ Millions)						
System	Category	OA Results	BP Results	Percentage Difference	Tolerance Limit	Pass / Fail
NYCERS	PVFB	\$ 90,534	\$ 90,850	0.35%	4.00%	Pass
	Employer Contribution	\$ 3,365	\$ 3,402	1.08%	5.00%	Pass
TRS	PVFB	\$ 81,378	\$ 80,878	-0.62%	4.00%	Pass
	Employer Contribution	\$ 3,703	\$ 3,619	-2.25%	5.00%	Pass
BERS	PVFB	\$ 5,616	\$ 5,631	0.27%	4.00%	Pass
	Employer Contribution	\$ 266	\$ 269	1.34%	5.00%	Pass
Police	PVFB	\$ 58,258	\$ 58,195	-0.11%	4.00%	Pass
	Employer Contribution	\$ 2,394	\$ 2,386	-0.32%	5.00%	Pass
Fire	PVFB	\$ 22,764	\$ 22,679	-0.37%	4.00%	Pass
	Employer Contribution	\$ 1,054	\$ 1,044	-0.98%	5.00%	Pass
Total	PVFB	\$ 258,550	\$ 258,233	-0.12%		
	Employer Contribution	\$ 10,782	\$ 10,720	-0.57%		

# Part I: Full Replication of 2014 Valuations

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## Preliminary findings:

- Close match for all five Systems
- Recommend prefunding of TRS/BERS 8.25% interest rates on TDA funds
- Actuarial losses from higher than expected firefighter overtime should be considered in revising assumption (recognizing 2006-2014 hiring freeze) in Experience Study
- LAG method could be improved



# Part I: Full Replication of 2014 Valuations

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## Other issues:

- Agree with GRS that all plans should have actuarial reports (Police and Fire already do)
- Coordinate, between the OA and the Systems, the treatment of VSF payments and potential offsets for escalation for Police, Fire, and NYCERS
- Some minor, non-material programming recommendations
- Suggest review of TDA annuity loads (and all loads)

## Part 2: Experience Study through 6/30/2015

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- All tables and assumptions reviewed
  - Including economic assumptions
- Not currently recommending any revisions, only assumptions to consider in second biennial audit
- Recommend measuring overtime based on average of beginning and end of year pay
- Recommend using confidence intervals to help decide which assumptions require revision



## Part 2: Experience Study through 6/30/2015

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NYCERS Experience Study Summary of Findings Likely (L), May (M) or Unlikely (U) to Recommend Changes Red indicates liability increase, Black Decrease						
Assumption	GEN	TRA	SAN	COR	TBTA	Impact
Service Retirement Mortality	U	U	U	L	U	Significant
Disability Retirement Mortality	U	U	U	L	M	Insignificant
Employee Ordinary Mortality	L	L	L	L	M	Insignificant
Unreduced Retirement	L	L	L	L	M	Very Significant
Reduced Retirement	L	N/A	N/A	N/A	L	Insignificant
Withdrawal	U	M	U	L	L	Significant
Ordinary Disability	L	U	U	L	U	Insignificant
Accidental Disability	L	M	U	M	M	Insignificant
Salary Increase	M	M	L	M	L	Very Significant
Overtime	L	L	L	L	L	Significant
Dual Overtime Retirement	L	L	U	L	L	Very Significant
Dual Overtime Disability	L	L	L	L	L	Significant

## Part 2: Experience Study through 6/30/2015

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NYCERS Sans NYCERS Experience Study Summary of Findings Likely (L), May (M) or Unlikely (U) to Recommend Changes Red indicates liability increase, Black Decrease					
Assumption	TRS	BERS	POLICE	FIRE	Impact
Service Retirement Mortality	L	L	U	U	Significant
Disability Retirement Mortality	U	L	U	U	Insignificant
Employee Ordinary Mortality	U	L	U	L	Insignificant
Unreduced Retirement	U	L	U	L	Very Significant
Reduced Retirement	L	L	N/A	N/A	Insignificant
Withdrawal	U	U	L	M	Significant
Ordinary Disability	U	U	L	L	Insignificant
Accidental Disability	U	U	L	U	Insignificant
Salary Increase	U	U	U	U	Very Significant
Overtime	N/A	N/A	L	M	Significant
Dual Overtime Retirement	N/A	N/A	L	M	Very Significant
Dual Overtime Disability	N/A	N/A	L	M	Significant

## Part 2: Experience Study through 6/30/2015

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- Changes that Affect all Plans
  - We anticipate using not just lives to determine exposure, but weighting those lives by the amounts of the members' benefits, to better reflect the effect of mortality on NYCERS' accrued liability. Because of the typical relationship between income and longevity, we anticipate that this will reduce the ratio of actual experience to assumed, by 5% or more.
- Inflation assumption
  - We are not currently suggesting any change in the inflation assumption, although we note that the current assumption is relatively high compared to recent experience.
  - We also note that the current inflation assumption is slightly higher than the typical investment advisor's or economist's expectation, although it is consistent with the market expectation, as reflected in the TBI.
- Investment Return Assumption
  - We are not currently suggesting any change in the investment return assumption. We note that the assumption appears to be slightly conservative relative to the long-term expectations of the three groups of investment advisors included in our analysis.
  - We note that if we were to suggest revising the inflation assumption, we would also likely suggest revising the investment return assumption in tandem.
  - We expect to consider any additional changes in the investment markets and the investment mix, and may suggest revising the investment return assumption.

# Part 2: Experience Study through 6/30/2015

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## Summary

- No revisions currently required
- Some assumption changes likely to be suggested in next study – and significant
  - Retiree Mortality
  - Salary Improvement
  - Turnover/Withdrawal
  - Unreduced Retirement
  - Dual Overtime
- Other assumption changes likely to be suggested in next study – but not significant
  - Disabled Retiree Mortality
  - Employee Mortality
  - Reduced Retirement
  - Disability
  - Some of the changes mentioned above, but with minor adjustments
    - e.g. increasing “Elected” and decreasing “Mandated” Retirement
- Still other assumption changes might be suggested, depending on 2016 and 2017 experience or further changes in expectations
  - CPI
  - Investment Return
  - Some of the assumptions mentioned above
- So, be on the look out for next year’s study!

## Part 3: Administrative Review

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### Scope of Review:

- Data collection, validation, and transmission processes
- Retiree maintenance
- Benefit calculation / certification processes
- Benefit statement process
- Data security procedures and protocols
- Update on recommendations made in prior administrative reviews
- “Wish lists”

Overall, we were very impressed by the work the OA and the Systems are doing to administer the plans and serve their members.

Most of the Systems have recently upgraded, or are in the process of upgrading, their pension management systems for technology improvements. Many of our recommendations will naturally be satisfied as the system upgrades take place.

Recommendations made for each system and OA.

# Next Steps:

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- 2016 Replication
- Review Experience for 2008-2017
- Review administrative changes

# THANK YOU!

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**QUESTIONS?**