New Mexico Educational Retirement Board

Sustainability and Solvency

Investments and Pensions Oversight Committee

Representative Tomás Salazar, Chair

George Muñoz, Vice-Chair

Thursday, September 7, 2017

Jan Goodwin, Executive Director

Mary Lou Cameron, Board Chair

H. Russell Goff, Board Vice Chair

Assumption Setting Process

- General process for setting assumptions
  - Actuary recommends assumptions
  - Board considers actuary's recommendation and makes the final decision for the system
- Experience Study is a periodic review of the assumptions and methods used by the actuary
  - ERB has one prepared every two years
    - Last one performed after June 30, 2014 actuarial valuation
  - Two-year interval is a best practice for ERB
    - GFOA recommends at least once every five years

Assumption Setting Process

- Assumptions are not static and must stay current
  - Should be appropriate in each actuarial valuation
  - Can change even without a formal experience study
  - Actuarial Standards of Practice (ASOPs) now require the actuary attest to the reasonableness of the actuarial assumptions in every actuarial valuation report
- Incredibly low levels of current inflation and expectations of future inflation are prompting conversations about the inflation assumption across the country

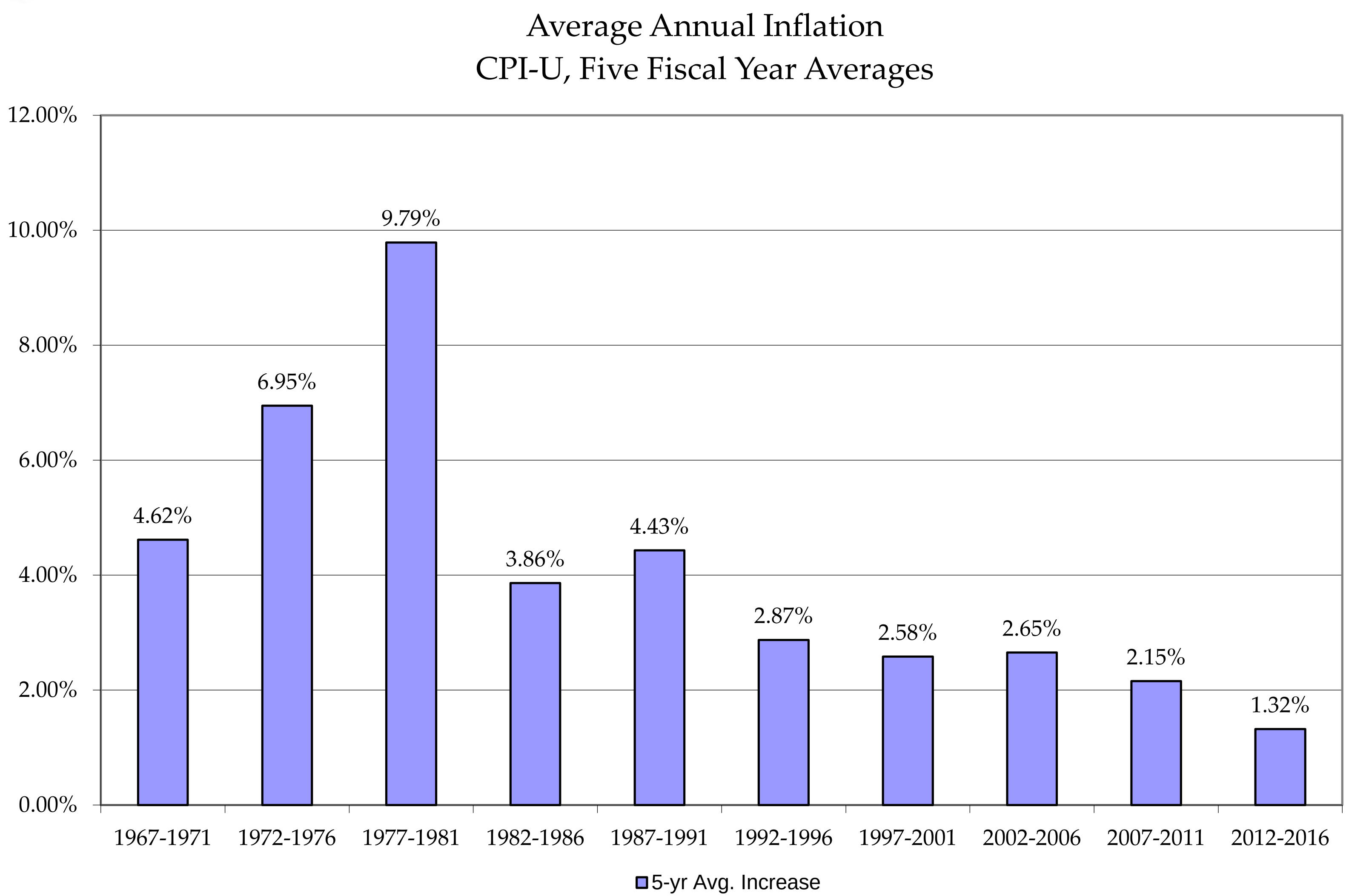
Economic Assumptions

- Investment Return
  - Current Assumption: 7.75%
  - Description: Long-term expected return on plan assets based on asset allocation
  - Purpose: (1) Anticipate the level of investment earnings that will be available to help pay plan benefits in the future, and (2) discount future benefit payments to the valuation date
  - Impact: Lower assumption will increase plan liabilities
  - *Dependent on each system's investment policy*
- Core Inflation
  - Current Assumption: 3.00%
  - Description: Long-term assumption for price inflation (CPI-U)
  - Purpose: Base "building block" of every economic assumption
  - Impact: Lower assumption would trigger a similar shift in most other economic assumptions

Inflation

- The assumed inflation rate is not used directly in the actuarial valuation, but it impacts the development of:
  - Future COLA assumption
  - Investment return assumption
  - Wage inflation assumption
  - Payroll growth rate
- The current inflation assumption is 3.00% per year
- Actual inflation (measured by the CPI-U) during
  - Last 5 years: 1.32%
  - Last 20 years: 2.18%
  - Last 30 years: 2.66%
  - Since 1913: 3.16%

Inflation



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Annual COLA

- Unreduced COLA is a function of CPI increases
  - If change in CPI is greater than 2%, COLA=50% of change in CPI, maximum COLA=4%, minimum COLA=2%
  - If change in CPI is 2% or less, then COLA=100% of change in CPI
- The current COLA assumption is 2.00% per year
  - Based on current price inflation assumption of 3.00%
  - Prior to reductions of COLA when funded ratio less than 100%
- Stochastically modeled future inflation scenarios based on recommended inflation assumption of 2.50%
- Recommend COLA assumption of 1.90%
  - Average COLA paid based on stochastic modeling

Investment Return

- The investment return rate is used to:
  - Anticipate the level of investment earnings that will be available to help pay plan benefits in the future
    - 60-70% of the benefit payments for many systems are paid with accumulated investment returns
  - Discount future expected cash flows (benefits and refunds) in order to determine the actuarial present values (liabilities)
    - Time value of money
- The current assumption is 7.75%
  - This is intended to be the return, net of all administrative and investment expenses
  - Critical assumption since even small changes in the assumption could have a big impact on the funded status of the plan
  - Building Blocks: 3.00% inflation + 4.75% real return

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Investment Return

- Based analysis on ERB's current target asset allocation
- Modeled target allocation against capital market assumptions for seven investment consulting firms
  - Arithmetic average expected nominal return of seven investment firms is 7.73% based on 2016 capital market assumption sets
    - Expected geometric average 7.01%
  - We generally consider anything between the expected arithmetic and geometric returns (7.01% to 7.73%) to be reasonable
  - Measured net of administrative and investment expenses
- We recommend a nominal return assumption of 7.25%
  - Maintains current real return of 4.75%
  - Building Blocks: 2.50% inflation + 4.75% real return

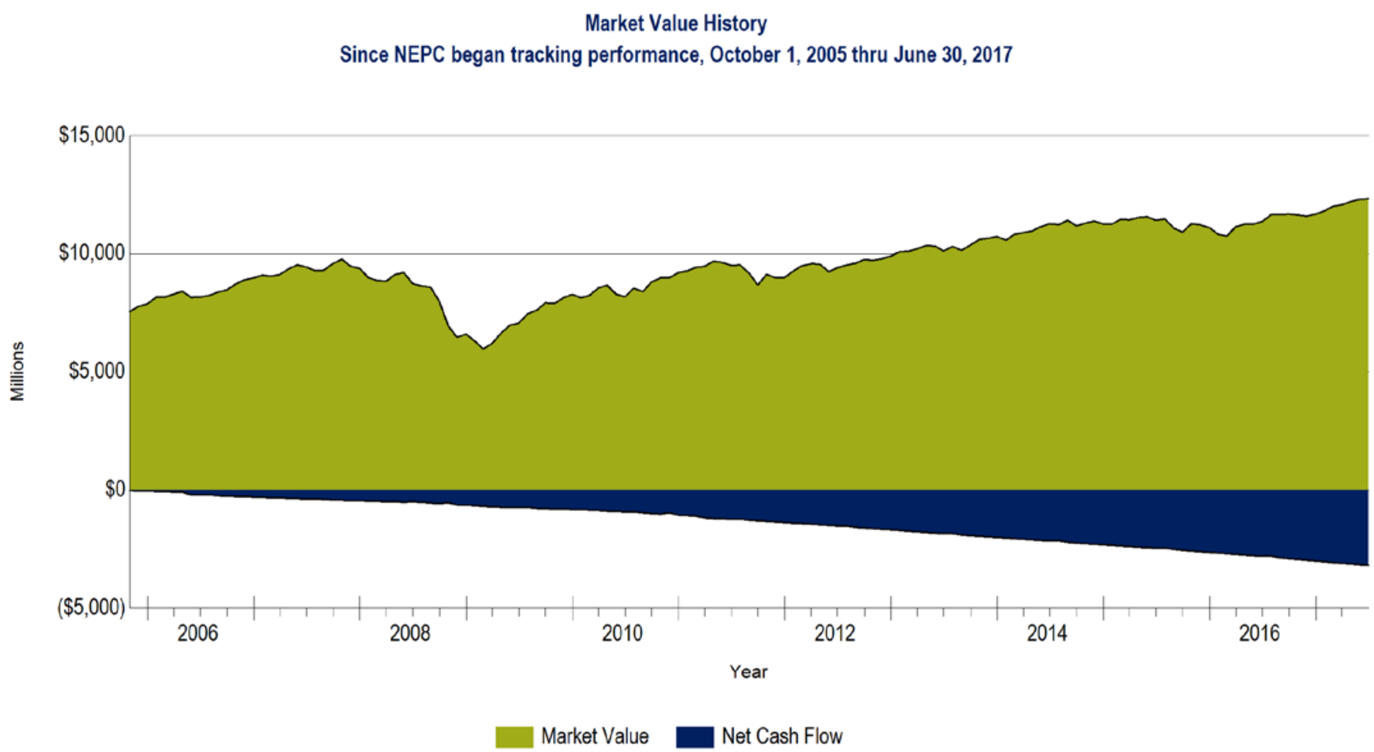
Conclusion

- Recommend following assumption changes:
  - Decrease inflation assumption from 3.00% to 2.50%
  - Decrease nominal investment return assumption from 7.75% to 7.25%
    - Maintain real rate of return assumption of 4.75%
  - Decrease wage inflation from 3.75% to 3.25%
  - Decrease payroll growth assumption from 3.50% to 3.00%
  - Decrease the annual assumed COLA from 2.00% to 1.90%
- Recommend the Board adopt proposed assumptions for valuations as of June 30, 2017 and thereafter, until next experience study

ERB Actuarials at a Glance

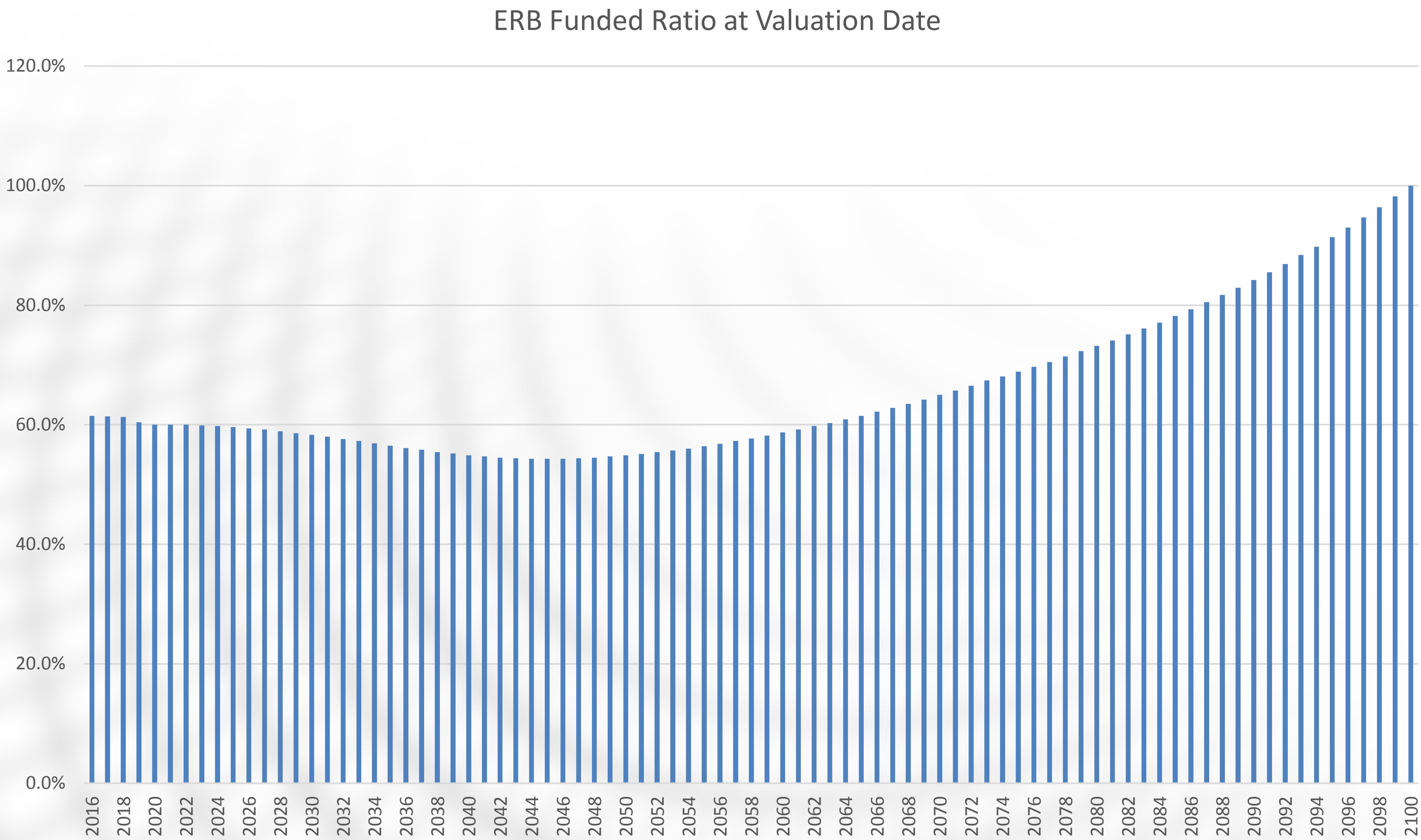
Fiscal Year	6/30/14 Valuation	6/30/14 Experience Study	6/30/15 Valuation	6/30/16 Valuation	6/30/16 Experience Study
UAAL	$6.3B	$6.6B	$6.5B	$6.6B	$7.4B
Funded Ratio	63.1%	62.0%	63.7%	64.2%	61.5%
Funding Period	26 years	32 years	37 years	46 years	84 years

Total Fund Asset Growth Summary



	Last Three Months	Year-To-Date	One Year	Three Years	Five Years	Since 10/1/05
Beginning Market Value	$12,076,800,316	$11,683,011,729	$11,366,601,630	$11,274,476,583	$9,413,328,925	$7,694,652,364
Net Cash Flow	-$84,442,760	-$184,633,074	-$389,012,801	-$1,042,835,872	-$1,670,989,156	-$3,176,237,374
Net Investment Change	$341,176,824	$835,155,725	$1,355,945,550	$2,101,893,668	$4,591,194,610	$7,815,119,389
Ending Market Value	$12,333,534,379	$12,333,534,379	$12,333,534,379	$12,333,534,379	$12,333,534,379	$12,333,534,379

Actuarial Projection



Plan Design Elements that Affect Funding

- Contribution rates
- Retirement eligibility
- Vesting period
- Retirement benefit:
  - Final average salary
  - Multiplier
- Cost of living adjustment

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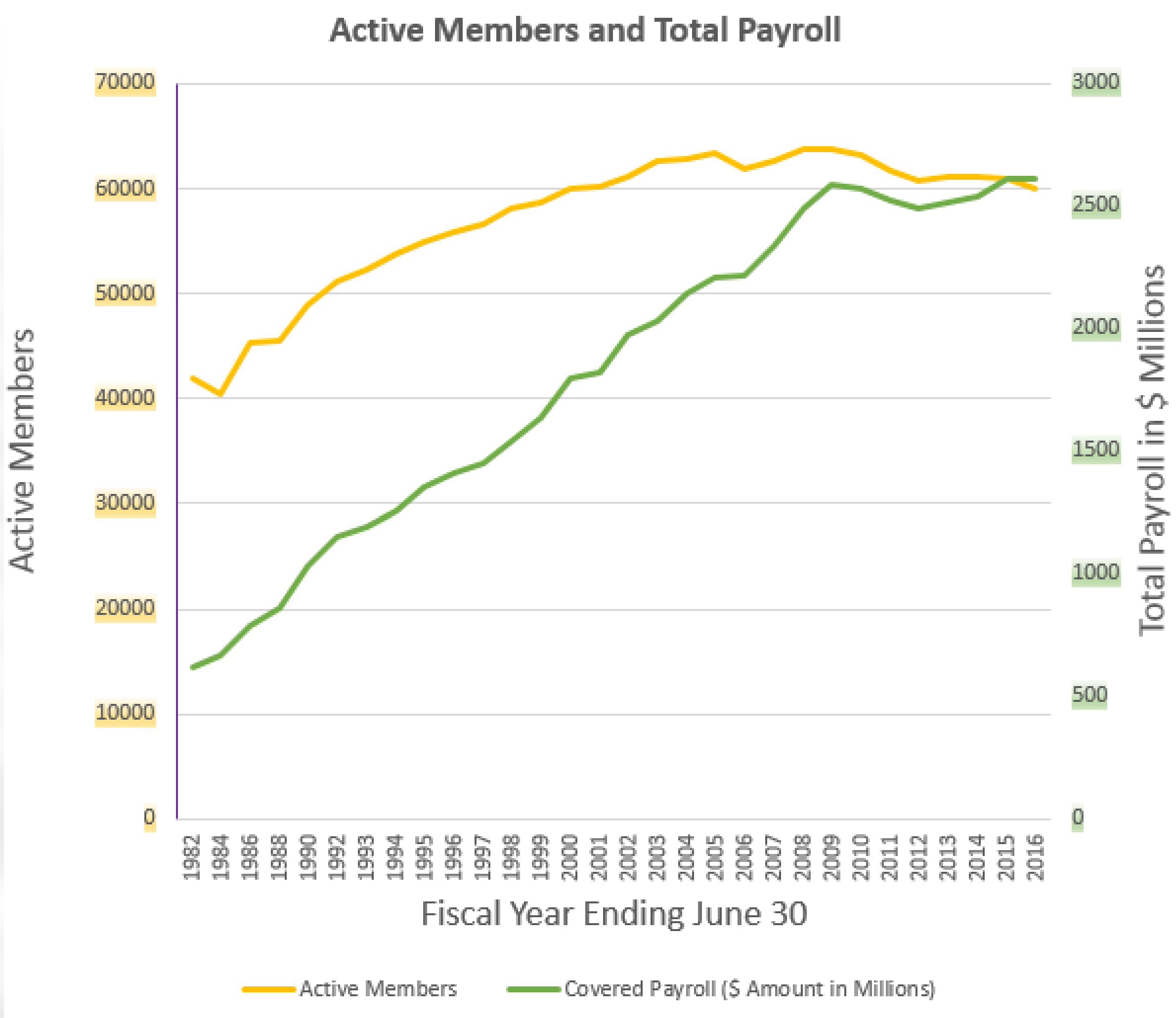
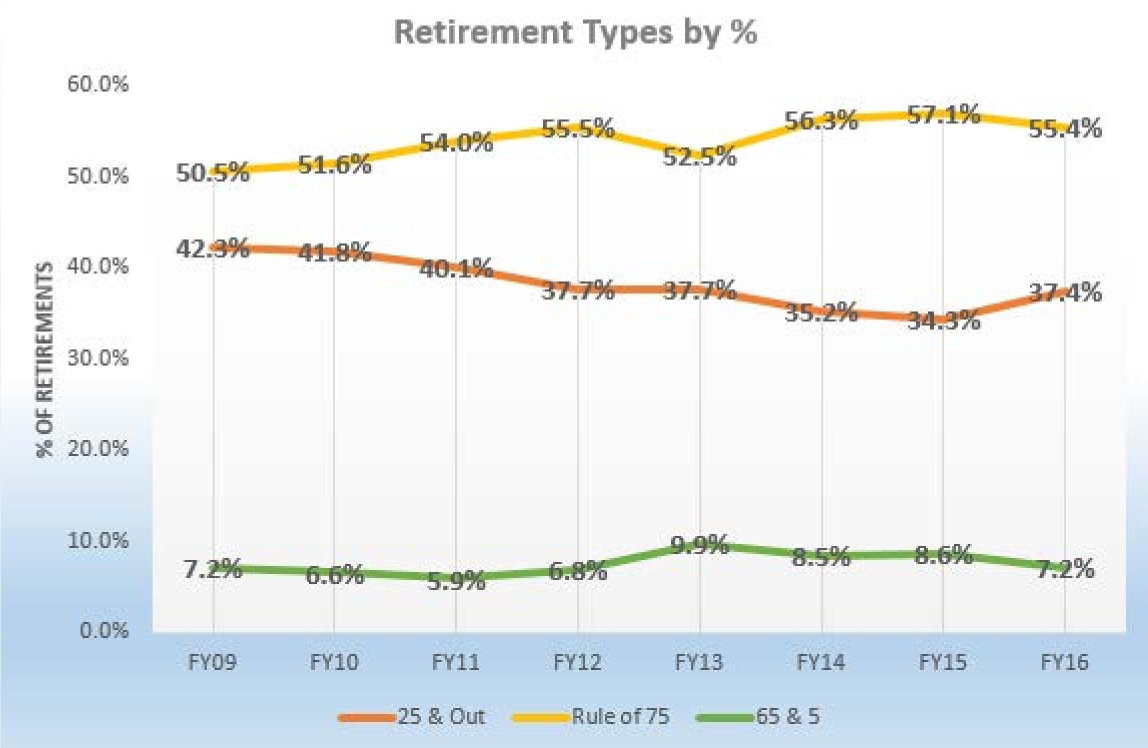
Environmental Factors- Actives and Payroll



Environmental Factors- Retirement Patterns



Environmental Factors- Retirement Patterns, cont.

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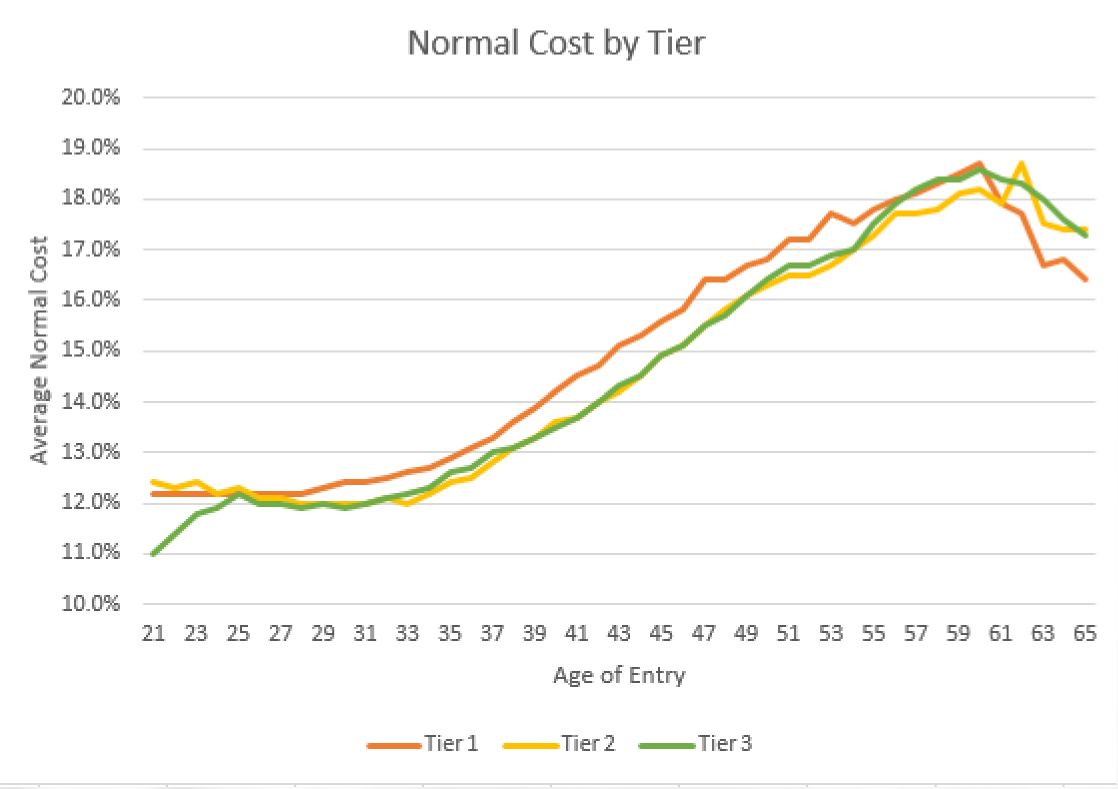
Environmental Factors- Retirement Patterns, cont.



Environmental Factors- Retirement Patterns, cont.

Return to Work by School Type as of 06/30/17	RTW	RTW<$20K
K - 12	972	197
Higher Ed	218	25
Special Schools	9	1
State Agencies	12	0
Total	1,211	223

Return to Work by Job Category as of 06/30/17	RTW	RTW<$20K
Administrator	116	5
Teacher	627	49
Other Certified	122	18
Non-Certified	177	136
Blank	169	15
Total	1,211	223

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Environmental Factors, cont.

Return to Work vs. Working Longer

- Retirees that return to work will accumulate more income in the short term; however, there will eventually be a "crossover date" where the retiree will accumulate more income by continuing to work than with participating in the RTW Program.
- The longer the retiree participates in the RTW Program, the longer it takes to attain the crossover date.
- The greater the number of years worked, the earlier the crossover.
- The higher the assumed earnings rate, the later the crossover.

Nonpayment of contributions by PERA retirees and RTW Exception Rule

Information for Fiscal Year 2017				
Category	**Total Wages**	**Employee- $20K or less 7.90%; Over $20K 10.70%**	**Employer- $20K or less 13.90%; Over $20K 13.90%**	**Contri Not Collected (shown in red)**
Return to Work	$ 53,445,701.88	$ 5,718,690.10	$ 7,428,952.56	
Return to Work < $20K	$ 1,906,687.63	$ 150,628.32	$ 265,029.58	
RTW Exception: <.25 FTE	$ 10,405,721.55	$ 1,113,412.21	$ 1,446,395.30	($2,559,807.50)
RTW Exception: <$15K	$ 6,649,935.01	$ 525,344.87	$ 924,340.97	($1,449,685.83)
PERA RTW	$ 18,405,239.50	$ 1,969,360.63	$ 2,558,328.29	($1,969,360.63)
PERA RTW < $20K	$ 3,708,890.83	$ 293,002.38	$ 515,535.83	($293,002.38)
				($6,271,856.34)

Environmental Factors, cont.

Substitute teachers

?

Environmental Factors, cont.

Perception of abuse:

- Spiking
- Work 20 years part-time then 5 years full-time

How Do We Get to 100% Funding?

Contributions + Investment income = Benefits

We can make changes to:

Contributions-

- Employer
- Employee

Benefits-

- Current members/retirees- can only change COLA
- Future members- can change all aspects of plan design:
  - retirement eligibility, multiplier, COLA, minimum retirement age, FAS and vesting

ERB COLA and Sustainability

ERB’s COLA follows best practices for sustainability:

- Based on change in CPI
- Begins at later of retiree reaching age 65 or one year after retirement

ERB’s COLA is 10% of normal cost- 12.63%

How ERB COLA Has Changed over Time

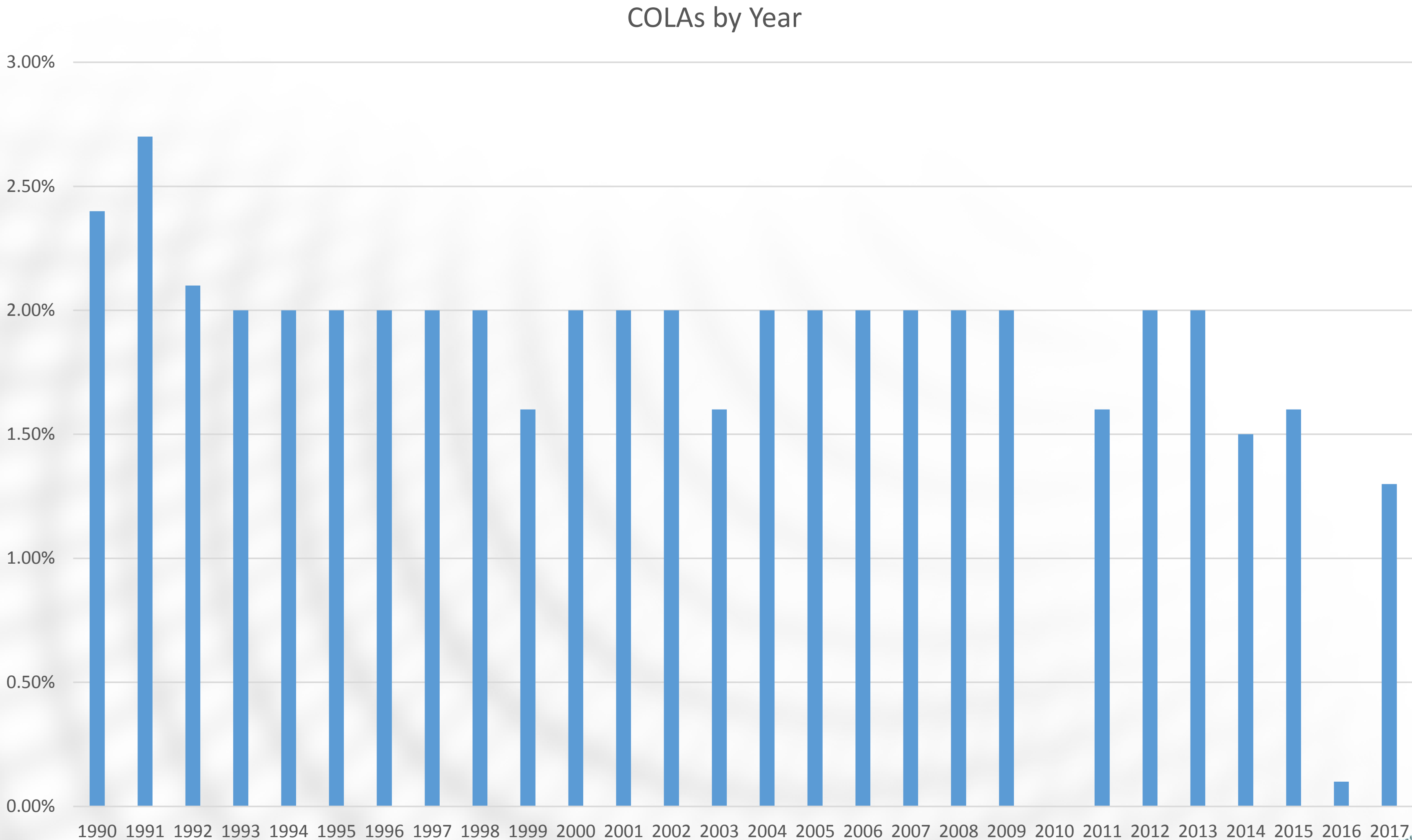
1984- COLA based on change in CPI, capped at 4%, begins at later of age 65 or one year after retirement

2010- elimination of negative COLA provision; added $15 to UAAL ($4.5 billion as of June 30, 2009)

2013- 10 or 20% COLA reduction until 90% funded, then 5 or 10% reduction until 100% funded. No immediate impact on UAAL. Savings recognized annually.

For members joining on or after July 1, 2013 COLA begins at later of age 67 or one year after retirement.

Recent COLAs



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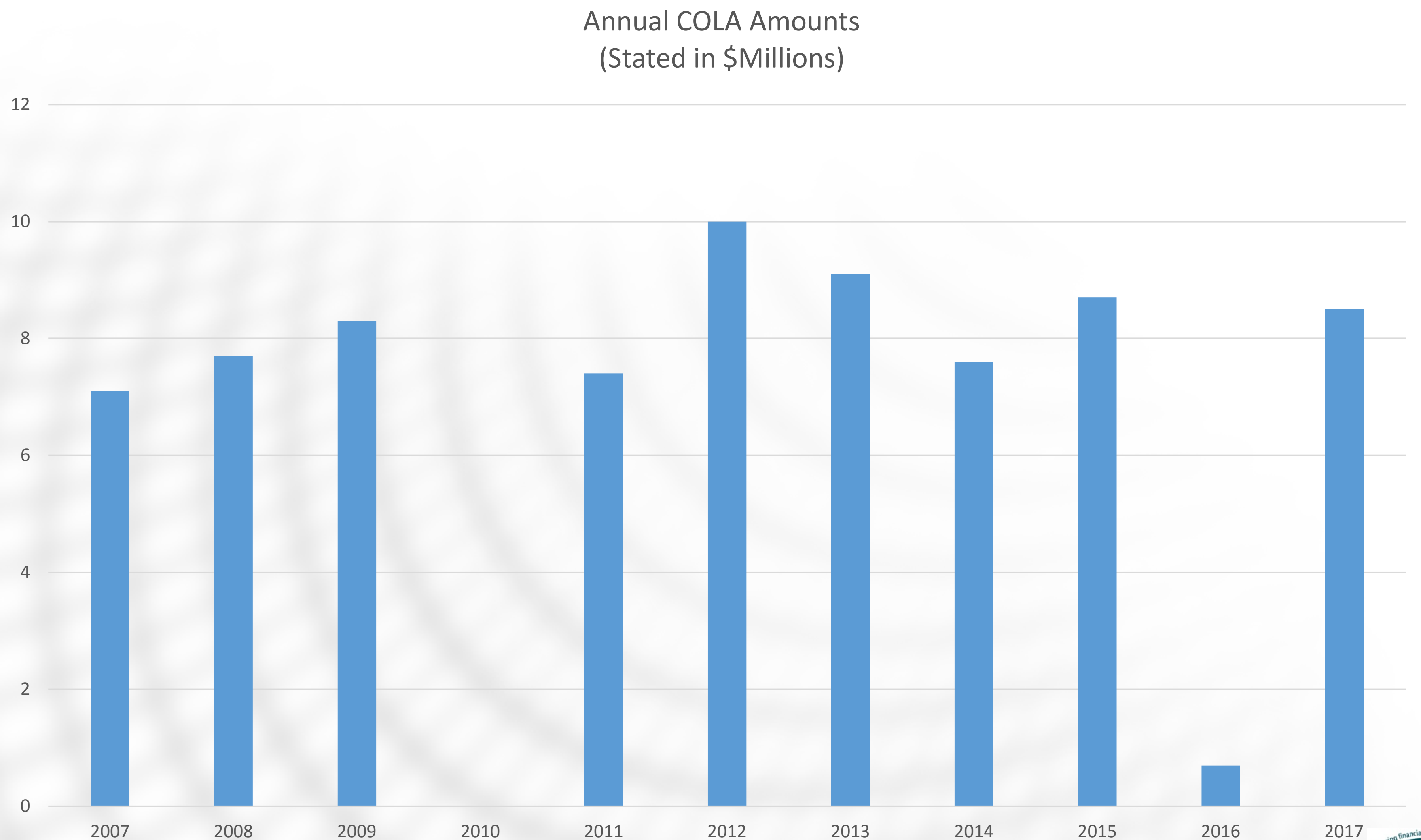

Impact of HB 628- 2011 Legislative Session

HB 628's effects:

- Contribution swap
  - FY2010-2013 1.5-3.25%
  - Cost to fund- $37.4 million as of June 30, 2014
- Delayed employer contributions from 2005 legislation
  - Originally scheduled to be 13.9% in 2012
  - Did not reach 13.9% until 2015
  - Cost to fund- $143.6 million as of June 30, 2014

ERB Retirement Eligibility: Tier Structure

Tier 1: ERB Membership Prior to July 1, 2010

* "25 and Out" – Earned service credits + allowed service credits = 25 or more years. There is no minimum age required.
* "Rule of 75" – Your age + earned service credits = 75 or more. Under the Rule of 75, allowed service credits are used to calculate retirement benefit but do not count toward eligibility. There are permanent and significant reductions if you are under age 60, and even more if you are under age 55.
* "65 and 5" – If you are at least 65 years old and have at least five years of earned service credit, you are eligible for retirement.

Tier 2: ERB Membership Beginning on or after July 1, 2010, but prior to July 1, 2013

* "30 and Out" – Earned service credits + allowed service credits = 30 or more years. There is no minimum age required.
* "Rule of 80" – Your age + earned service credits = 80 or more. As with the Rule of 75, allowed service credits are used to calculate retirement benefit but do not count toward eligibility. There are permanent and significant reductions if you are under age 65, and even more if you are under age 60.
* "67 and 5" – If you are at least 67 years old and have at least five years of earned service credit, you are eligible for retirement.

Tier 3: ERB Membership Beginning on or after July 1, 2013

* Same retirement eligibilities as immediately above. If member receives pension benefit before age 55 with 30 and Out retirement eligibility, benefit will be actuarially reduced.
* Cost of Living Adjustment (COLA) begins at age 67 or on July 1 of the year following member's effective retirement date, whichever is later.

ERB Retirement Eligibility – Benefit Structure

ERB Benefit Structure

* Final average salary (FAS) x service credit x .0235 = annual benefit
* Cost Of Living Adjustment (COLA) available on July 1 of the year in which you reach age 65 or on July 1 of the year following member's effective retirement date, whichever is later for Tier 1 and Tier 2 members. For Tier 3 members, COLA begins at age 67 or on July 1 of the year following member's effective retirement date, whichever is later. The amount depends on the annual change in the Consumer Price Index (CPI). The average COLA over time has been 2%. COLA was reduced as part of the 2013 sustainability bill until ERB is 100% funded.
* Five year vesting period
* No minimum retirement age (with exception of reductions in Rule of 75 and Rule of 80)

Examples of retirement percentage rates:

25 years x .0235 = 58.75% 30 years x .0235 = 70.5% 35 years x .0235 = 82.25%

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History of ERB Retirement Benefits

YEAR	RETIREMENT ELIGIBILITY	MULTIPLIER	COLA
1962	30 years of service with actuarial reduction if younger than age 60 Age 60 with 15 years of service	1.5% first $4,000 of Final Average Salary (FAS) and 1% thereafter	Ad Hoc
1965	30 years of service with actuarial reduction if younger than age 60 Age 60 with 15 years' service Age 65 with 10 years of service	SAME	Ad Hoc
1971	35 years of service 30 years of service with actuarial reduction if younger than age 60 Age 60 with 15 years of service Age 65 with 5 years of service	1.50%	Ad Hoc
1974	35 years of service Rule of 75 with reduction if younger than age 60 Age 65 with 5 years of service	1.5% for years before July 1, 1957 2% for years after July 1, 1957	Ad Hoc
1979	SAME	SAME	Based on change in CPI, capped at 2%. Can decrease - but not below original retirement benefit. Begins after 4 years of retirement.
1981	30 years of service Rule of 75 with reduction if younger than age 60 Age 65 with 5 years of service	SAME	SAME
1984	25 years of service Rule of 75 with reduction if younger than age 60 Age 65 with 5 years of service	SAME	Based on change in CPI, capped at 4%. On average, 2%. Begins the later of age 65 or one year following retirement.
1987	SAME	2.15%	SAME
1991	SAME	2.35%	SAME
2010	SAME	SAME	Elimination of negative COLA
2010	Hired prior to 7/1/2010: SAME Hired after 7/1/2010: 30 years of service Rule of 80 with reduction if younger than 65 Age 67 with 5 years of service	SAME	SAME
2013	Hired after 7/1/2013: Actuarially reduced benefit if member retires with 30 years of service and is younger than age 55	SAME	Hired after 7/1/2013: COLA begins at later of age 67 or one year following retirement Until ERB is > 90% funded: Retirees with benefits at or below the median AND with 25 or more years' service have a 10% COLA reduction from statutory COLA formula. All other retirees have a 20% COLA reduction. ERB Funding >90% <100% Retirees with benefits at or below the median AND with 25 or more years' service have a 5% COLA reduction from statutory COLA formula. All other retirees have a 10% COLA reduction. ERB Funding=100% COLA reductions cease.

ERB Schedule of Contribution Rates

Fiscal Year	wage category	Date Range	Member Rate	Employer Rate	Total	% Employee Pays
58-59		7/1/1957 -6/30/1959	3.00%	4.00%	7.00%	42.86%
60-74		7/1/1959 -6/30/1974	4.00%	6.50%	10.50%	38.10%
75-79		7/1/1974 -6/30/1979	5.50%	6.50%	12.00%	45.83%
80-81		7/1/1979 -6/30/1981	6.50%	6.50%	13.00%	50.00%
82-84		7/1/1981 -6/30/1984	6.80%	6.80%	13.60%	50.00%
85-93		7/1/1984 -6/30/1993	7.60%	7.60%	15.20%	50.00%
94-2005		7/1/1993 -6/30/2005	7.60%	8.65%	16.25%	46.77%
2006		7/1/2005 -6/30/2006	7.675%	9.40%	17.075%	44.95%
2007		7/1/2006 -6/30/2007	7.75%	10.15%	17.90%	43.30%
2008		7/1/2007 -6/30/2008	7.825%	10.90%	18.725%	41.79%
2009		7/1/2008 -6/30/2009	7.90%	11.65%	19.55%	40.41%
2010 & 2011	$20k or less	7/1/2009 -6/30/2011	7.90%	12.40%	20.30%	38.92%
2010 & 2011	Over $20K	7/1/2009 -6/30/2011	9.40%	10.90%	20.30%	46.31%
2012	$20k or less	7/1/2011 - 6/30/2012	7.90%	12.40%	20.30%	38.92%
2012	Over $20K	7/1/2011 - 6/30/2012	11.15%	9.15%	20.30%	54.93%
2013	$20k or less	7/1/2012 - 6/30/2013	7.90%	12.40%	20.30%	38.92%
2013	Over $20K	7/1/2012 - 6/30/2013	9.40%	10.90%	20.30%	46.31%
2014	$20k or less	7/1/2013 - 6/30/2014	7.90%	13.15%	21.05%	37.53%
2014	Over $20K	7/1/2013 - 6/30/2014	10.10%	13.15%	23.25%	43.44%
2015	$20k or less	7/1/2014 - future	7.90%	13.90%	21.80%	36.24%
2015	Over $20K	7/1/2014 - future	10.70%	13.90%	24.60%	43.50%

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