Tennessee Consolidated Retirement System (TCRS) Overview

February 2011

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Agenda

- ***What is TCRS?***
- ***Economic impact of TCRS in Tennessee***
- ***Issues facing TCRS***
- ***Addressing TCRS' Issues***
  - ☆ Asset Management Improvements
  - ☆ Liability Management Improvements

What is TCRS?

TCRS Background
June 2010

Consolidated System: > State employees, higher education employees and K-12 teachers.
> Benefits portable between governmental employers.
> Local government participation is optional.
> Local government liabilities valued individually.

Membership	Active	Retired	Annualized Benefits
State & Higher Education	61,379	41,552	$ 557,075,346
K-12 Teachers	74,043	38,117	752,565,787
Local Government	79,289	32,464	228,850,554
Total	214,711	112,133	$1,538,491,687

What is TCRS?

TCRS Participation

At June 30, 2010, there were 486 political subdivisions participating in TCRS:

Cities	177
Counties	89
Utility Districts	67
Special School Districts	19
Housing Authorities	11
911 Emergency Communication Districts	43
Miscellaneous Authorities	80
Total	486

What is TCRS?

TCRS Program Oversight and Information

- ***Board of Trustees – 20 Members***
  - Administrative committee
  - Audit committee
  - Investment committee

- ***Legislative Council on Pensions and Insurance***
  - Reviews all pension bills.
  - First year funding must be appropriated to become law.
  - Financial analysis, including lump sum liability, is presented on each bill.

- ***Financial Statements are Prepared in Accordance with Generally-Accepted Accounting Principles and GASB.***
  - GFOA Award for reporting for 22 years
  - Public Pension Standards Award for funding and administration

- ***TCRS Ranking ****
  - 26th largest U.S. public pension fund
  - 40th largest U.S. pension fund
  - 77th largest world pension fund

*Source: Pensions and Investments Magazine – 12/27/2010

What is TCRS?

Moody's Long-Term Debt and Unfunded Pension Liability Report

Issued January 26, 2011

Ranking of Tennessee to Other States

Rank	% / Amount	
48th	2.9%	Pension Liability and Long-Term Debt to Personal Income
48th	1.9%	Pension Liability and Long-Term Debt to GDP
45th	0.8%	Long-Term Debt to GDP
41th	1.1%	Pension Liability to GDP
48th	37.2%	Revenue as Percentage of Pension Liability and Debt
48th	$750	Pension Liability and Debt per Capita
37th	$4.7 billion	Combined Pension Liability and Long-Term Debt
38th	$2.0 billion	Long-Term Debt
37th	$2.7 billion	Pension Liability

(1-highest, 50-lowest)

What is TCRS?

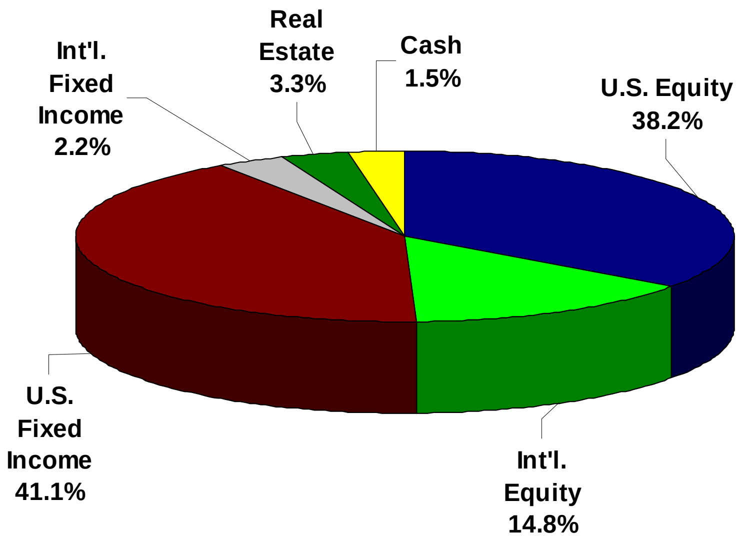
TCRS Investment Program

- ***Internally-Managed, Except for International Equity***
  - 25 Professional Staff
    - 14 Chartered Financial Analysts / 14 hold advanced degrees
    - Average 17 years of professional experience
    - Administrative costs are less than 0.05%
    - Annual savings of $75 million using internal management *
- ***Investment Advisory Council: Five Private-Sector Investment Professionals***
- ***Investment Consulting Services***
  - Strategic Investment Solutions – general consultant
  - Townsend Group – real estate consultant
  - Cambridge Associates – private equity consultant

•***savings of 0.3% on $25 billion in assets***

What is TCRS?

TCRS Allocation by Asset Class (12/31/10)



Asset Allocation	Market Value	%
North American Equity	$12,256,000,000	38.2%
International Equity	4,756,000,000	14.8%
US Fixed Income	12,750,000,000	41.1%
International Fixed Income	703,000,000	2.2%
Real Estate	1,050,000,000	3.3%
Private Equity	50,000,000	0.2%
Cash	494,000,000	1.5%
Total	$32,059,000,000	100%

Economic Impact

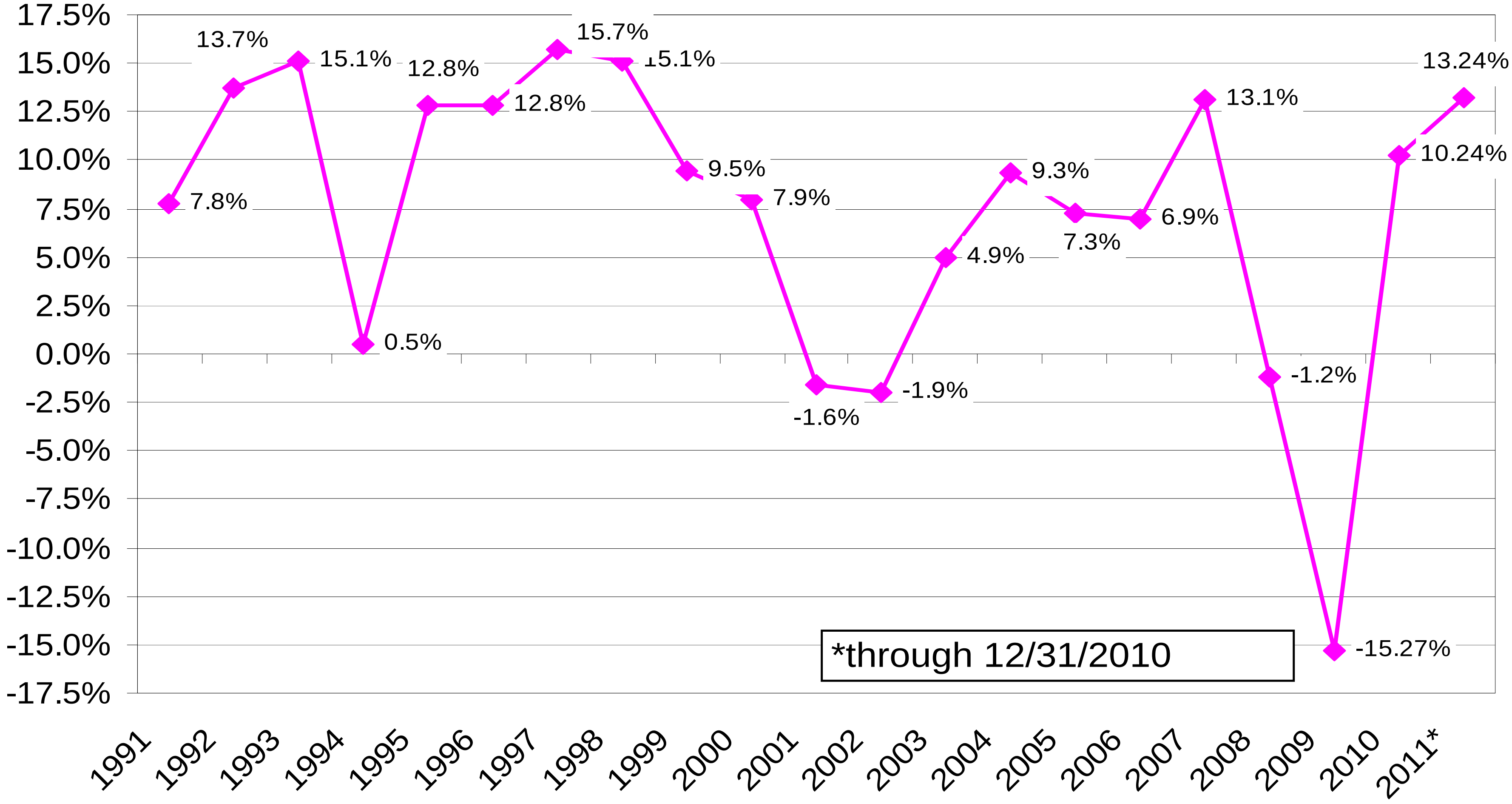
TCRS Economic Impact in Tennessee

	County	Population*	2010 Annual TCRS Benefits
East	Knox	382,032	$103,400,000
	Hamilton	307,896	78,700,000
	Anderson	71,330	20,700,000
	Jefferson	44,294	12,500,000
	Unicoi	17,667	4,500,000
	Hancock	6,786	1,600,000
Middle	Davidson	569,891	$132,300,000
	Montgomery	134,788	31,700,000
	Wilson	88,809	23,400,000
	Maury	69,498	16,400,000
	DeKalb	17,423	3,700,000
	Moore	5,740	1,000,000
West	Shelby	897,492	$208,500,000
	Madison	91,837	34,700,000
	Tipton	51,271	10,600,000
	Dyer	37,279	8,200,000
	Carroll	29,475	8,000,000
	Lake	7,954	2,600,000

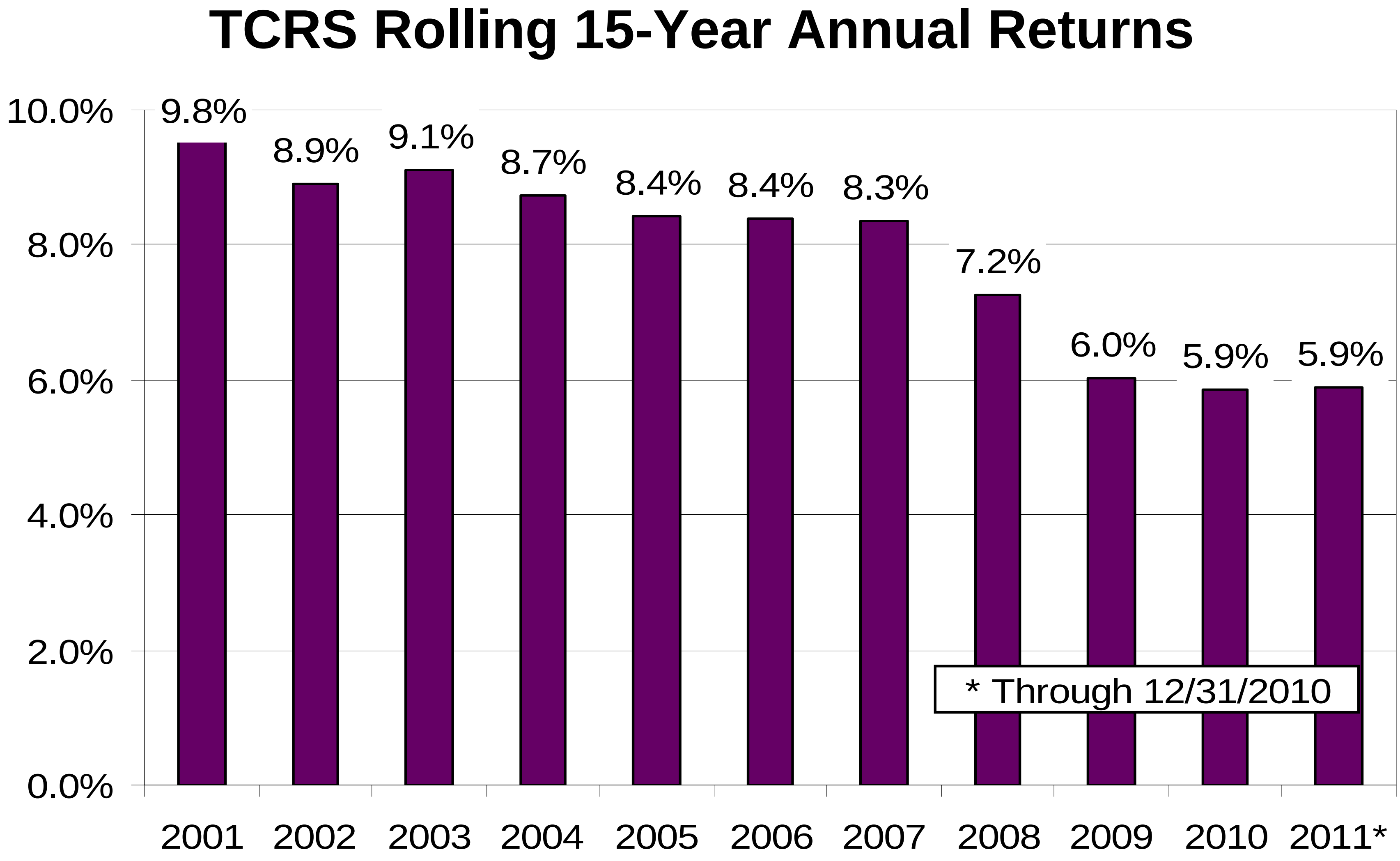
**Based on 2000 Census.*

Issues Facing TCRS

TCRS Investment Performance



Issues Facing TCRS



Issues Facing TCRS

TCRS 2009 Actuarial Valuation Results

- ***Summary of Results:***
  - Assumptions relative to COLA and mortality were adjusted.
  - Accrued liability was reestablished to 20 years.
  - 10-year asset smoothing to help address contribution rate volatility.
  - TCRS utilizes the stronger level dollar amortization method to finance unfunded liability.

- ***Contribution rates effective July 1, 2010 through June 30, 2012.***

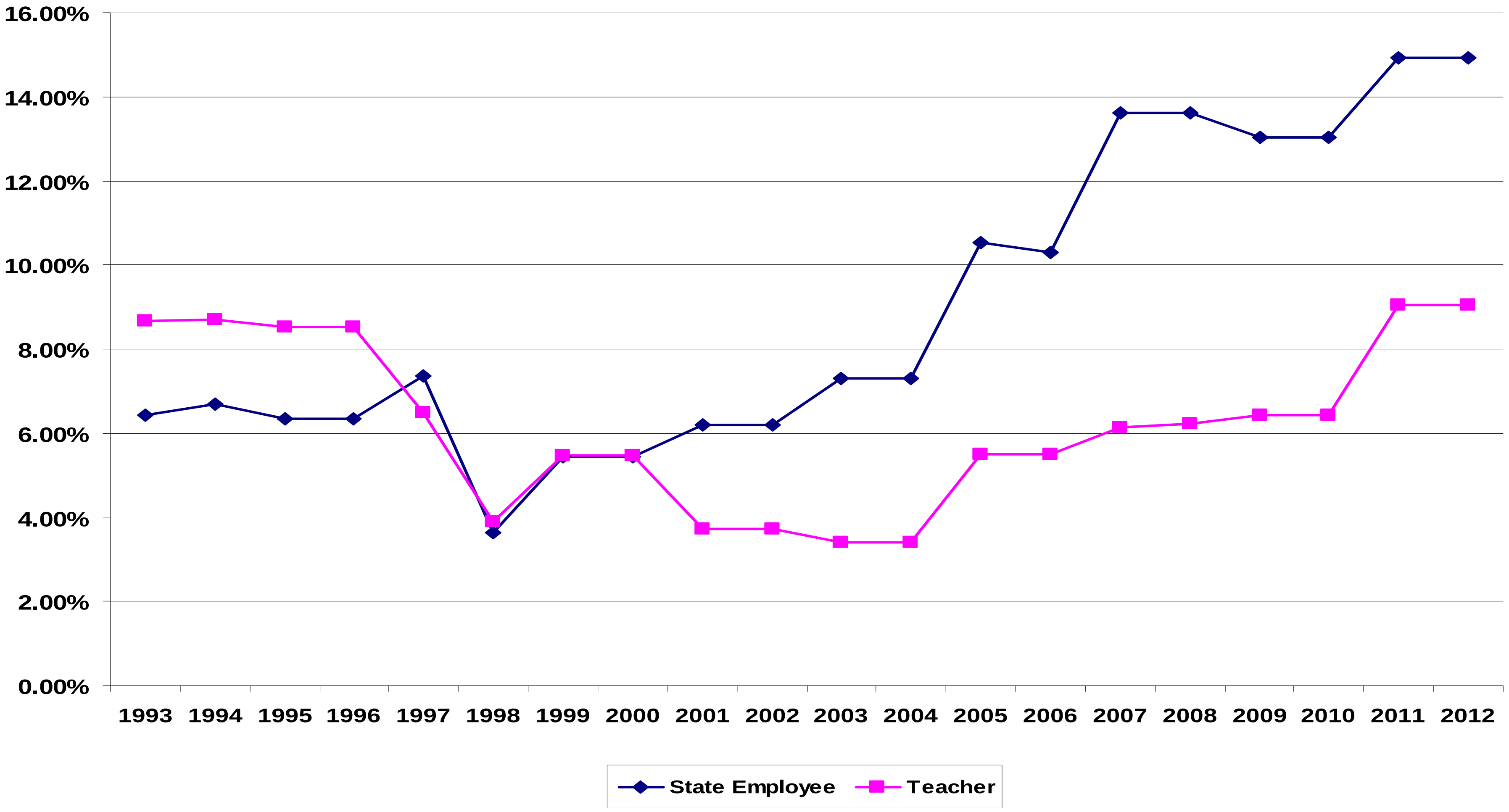
	Employer	Employee	Total
State Non-Contributory	14.91%	0%	**14.91%
Teacher K-12	9.05%	5%	14.05%

- ***The state and teacher group is 90.64% funded with $2.7 billion in unfunded accrued liability. In aggregate, the local government group is 86.34% funded with $839 million in unfunded accrued liability.***

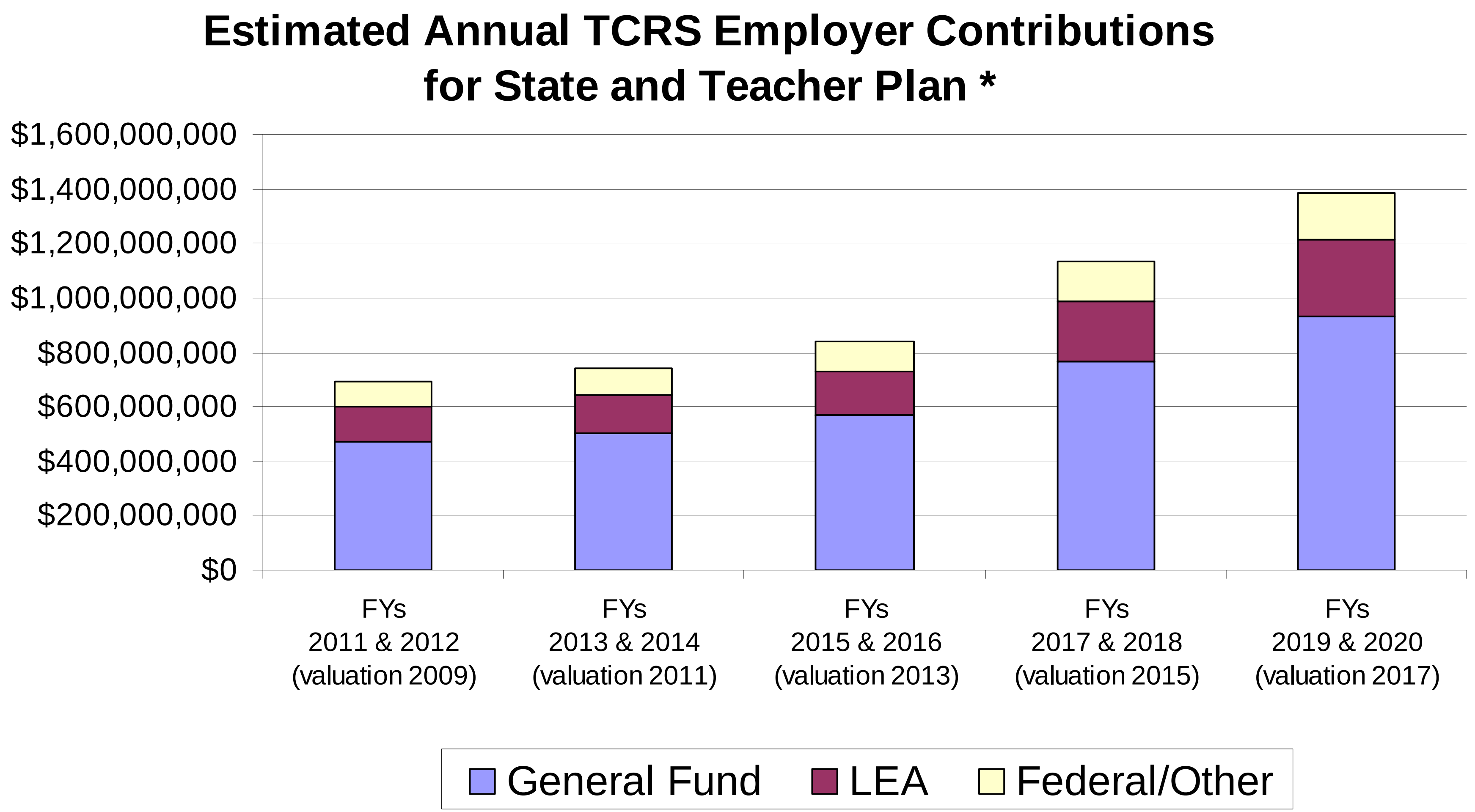
** ***The effective rate, including public safety officers, is 15.01%***

Issues Facing TCRS

Historical Employer Contribution Rates



Issues Facing TCRS



***** Includes assumption for salary increases.*

Issues Facing TCRS

Estimated Contribution Requirements

	General Fund	LEA	Federal/Other	Total
FY 2011	$473,100,000	$128,600,000	$93,400,000	$695,100,000
FY 2012	473,100,000	128,600,000	93,400,000	695,100,000
FY 2013	504,200,000	137,200,000	99,500,000	740,900,000
FY 2014	504,200,000	137,200,000	99,500,000	740,900,000
FY 2015	570,300,000	156,700,000	111,700,000	838,700,000
FY 2016	570,300,000	156,700,000	111,700,000	838,700,000
FY 2017	766,200,000	222,700,000	144,100,000	1,133,000,000
FY 2018	766,200,000	222,700,000	144,100,000	1,133,000,000
FY 2019	934,400,000	279,800,000	171,600,000	1,385,800,000
FY 2020	934,400,000	279,800,000	171,600,000	1,385,800,000

Notes:
1. 3% salary assumption is included.
2. State employee cost is distributed 75% general fund / 25% federal or other funds.
3. Teacher cost is distributed 60% general fund / 40% LEA.

Addressing TCRS' Issues

Most Significant Issue is Contribution Rate Pressure

Treasury seeks to mitigate rate pressure with a two pronged approach:

Assets: Maximize Portfolio Efficiency

Liabilities: Cost Containment

Addressing TCRS' Issues

Increasing Asset Productivity

2010 Asset Allocation Study

2011 Implementation

Increasing Asset Productivity

2010 Asset Allocation Study

Increase expected returns by $150 million per year*

- Improve expected returns 0.51%

Decrease funding pressures

- Ease pressure on state and local governments

Diversify portfolio risks

- Broaden risks instead of just pushing equity allocation higher

Closer matching of assets to liabilities

- Liabilities have a duration of 15 – 18 years

****$2,250 million versus $2,100 million,***

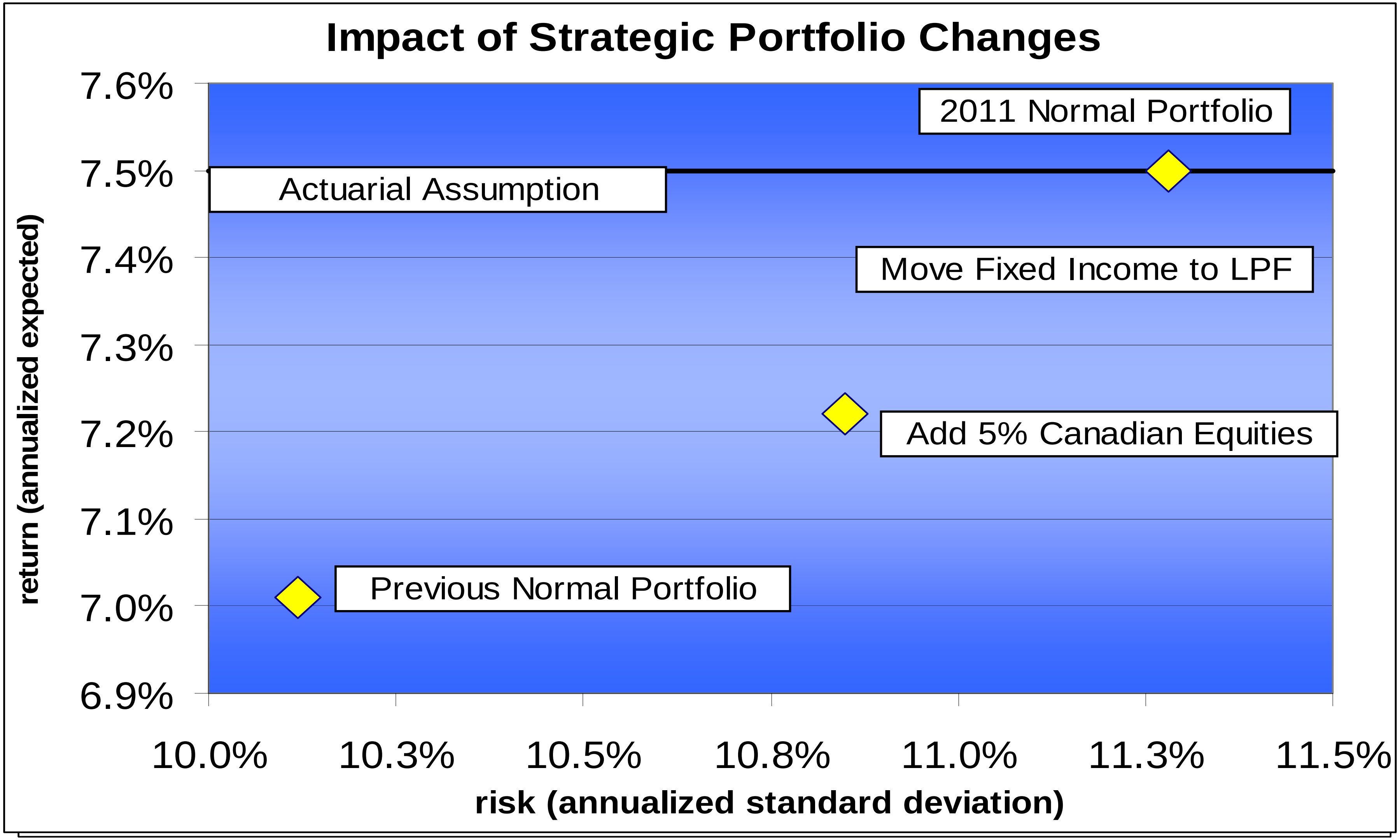
(7.5% * 30 billion versus 7% * 30 billion)

Increasing Asset Productivity

Asset Class	Current Normal	Proposed Normal	Description	Impact (bps)
US Equity	35%	35%		
International Equity	15%	15%		
Canadian Equity	0%	5%	Increase the overall equity exposure and international exposure by creating a Canadian index portfolio.	22
US Fixed Income	27%	26%	Lengthen fixed income portfolio by moving from Citigroup BIG benchmark to the LPF benchmark.	22
Intl Fixed Income	4%	0%	This portfolio currently has a yield to maturity of 1.6% and a duration of 6.6 years. It has a low expected return with a moderate amount of risk. This change should increase the expected returns of the fund at least 5 basis points.	5
Inflation Hedged Bond	8%	8%		
Real Estate	7%	7%		
Private Equity	3%	3%		
Short Term	1%	1%		
Securities Lending			Adding a prudent securities lending program should increase the returns of the fund by $6 to $10 million.	2
Total	100%	100%		51

**** additional $150 million per year***

Increasing Asset Productivity



Addressing TCRS' Issues

Mitigating Plan Liabilities

Executive Committee Researching Plan Design

Focus on cost containment

Understanding cost "levers"

Addressing TCRS' Issues

Summary of Changes Made by Other State Pension Plans

	Number of States Making Changes		
Plan Change	New Hires Only	Vested Members	Non-Vested Members Only
Increased Employee Contributions	3	8	
Increased Retirement Eligibility	11	1	
Reduced Pension Formula	2	1	1
Created Hybrid or DC Plan	2		
Increased Vesting Period	4		1
Changed Average Salary Calculation	5	1	
Reduced COLA payment for Retirees	2	3	
Decreased Interest Credited to Account		2	
Rescinded DROP Plan		1	
Limit Overtime in Average Salary	1		

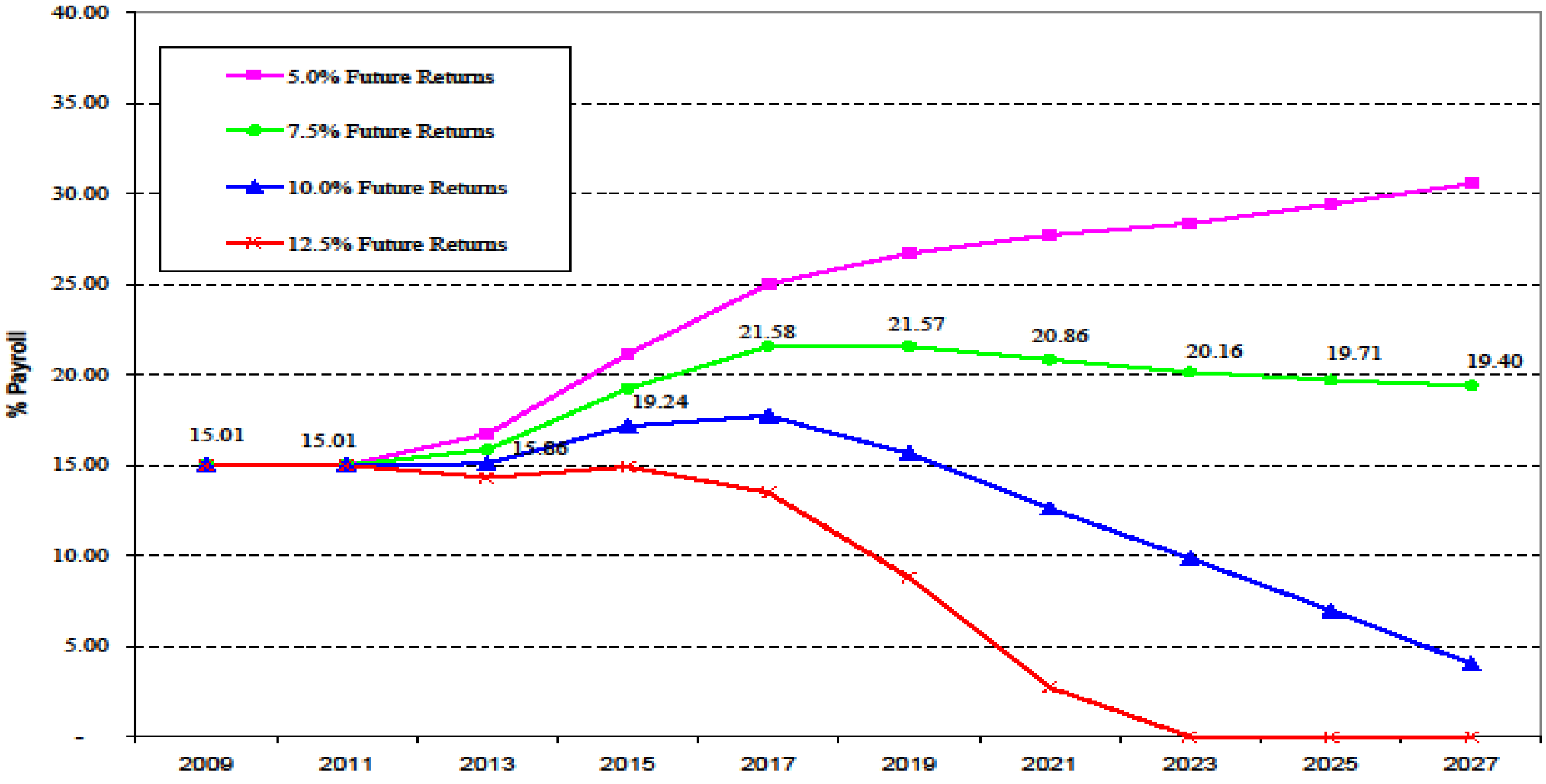
Source: National Association of State Retirement Administrators

Lawsuits are pending in Colorado, Minnesota, and South Dakota for reduced COLA for current retirees. A lawsuit is pending in Rhode Island regarding a reduction in benefits to existing plan participants.

Addressing TCRS' Issues

Contribution Rate Projections

Current Plan – State Employees ***(dates relate to actuarial valuation)***

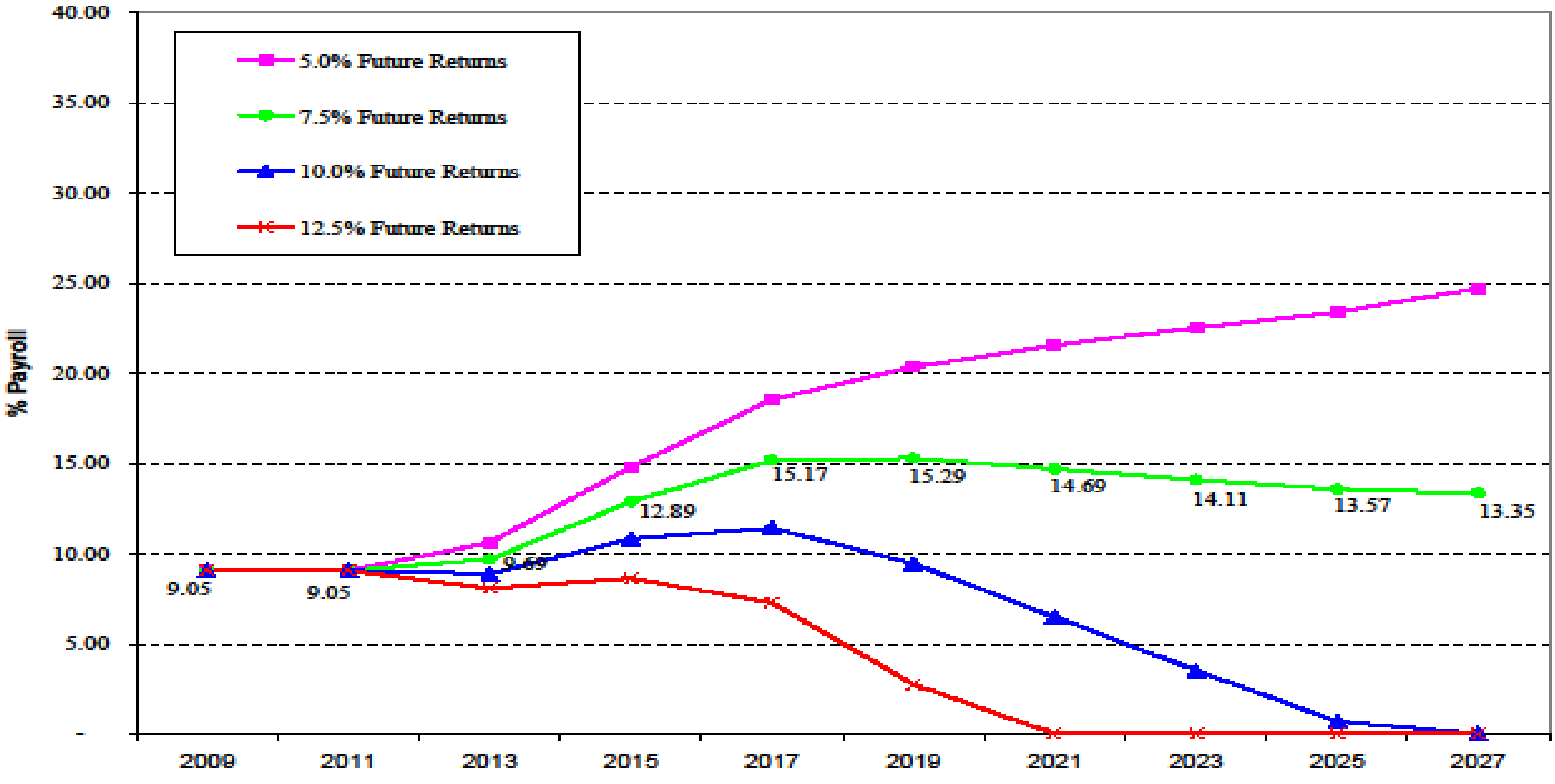


Addressing TCRS' Issues

Contribution Rate Projections

Current Plan – Teachers

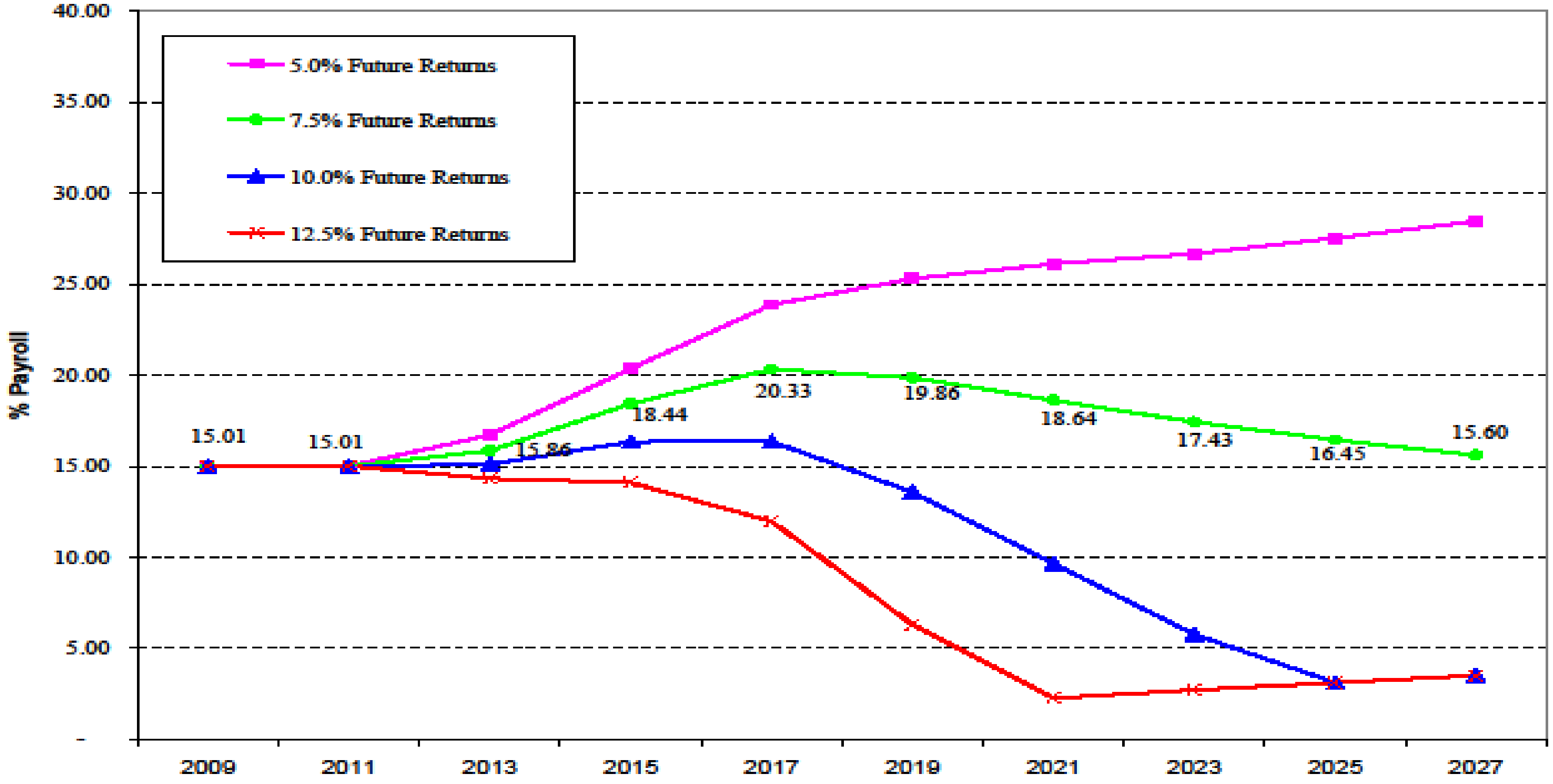
(dates relate to actuarial valuation)



Addressing TCRS' Issues

Contribution Rate Projections

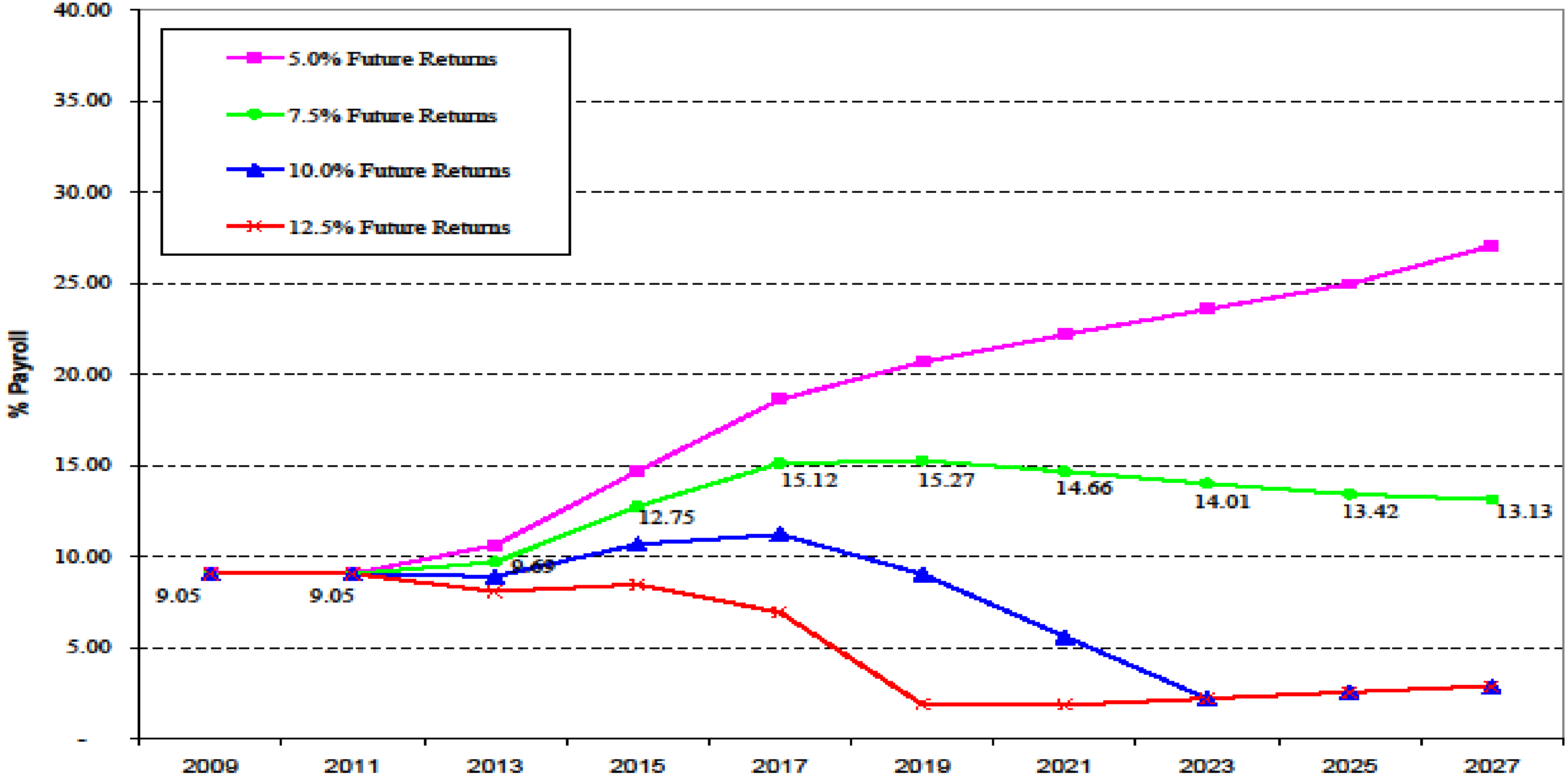
New Hires to a 6% Defined Contribution Plan – State Employees



Addressing TCRS' Issues

Contribution Rate Projections

New Hires to a 6% Defined Contribution Plan – Teachers



Addressing TCRS' Issues

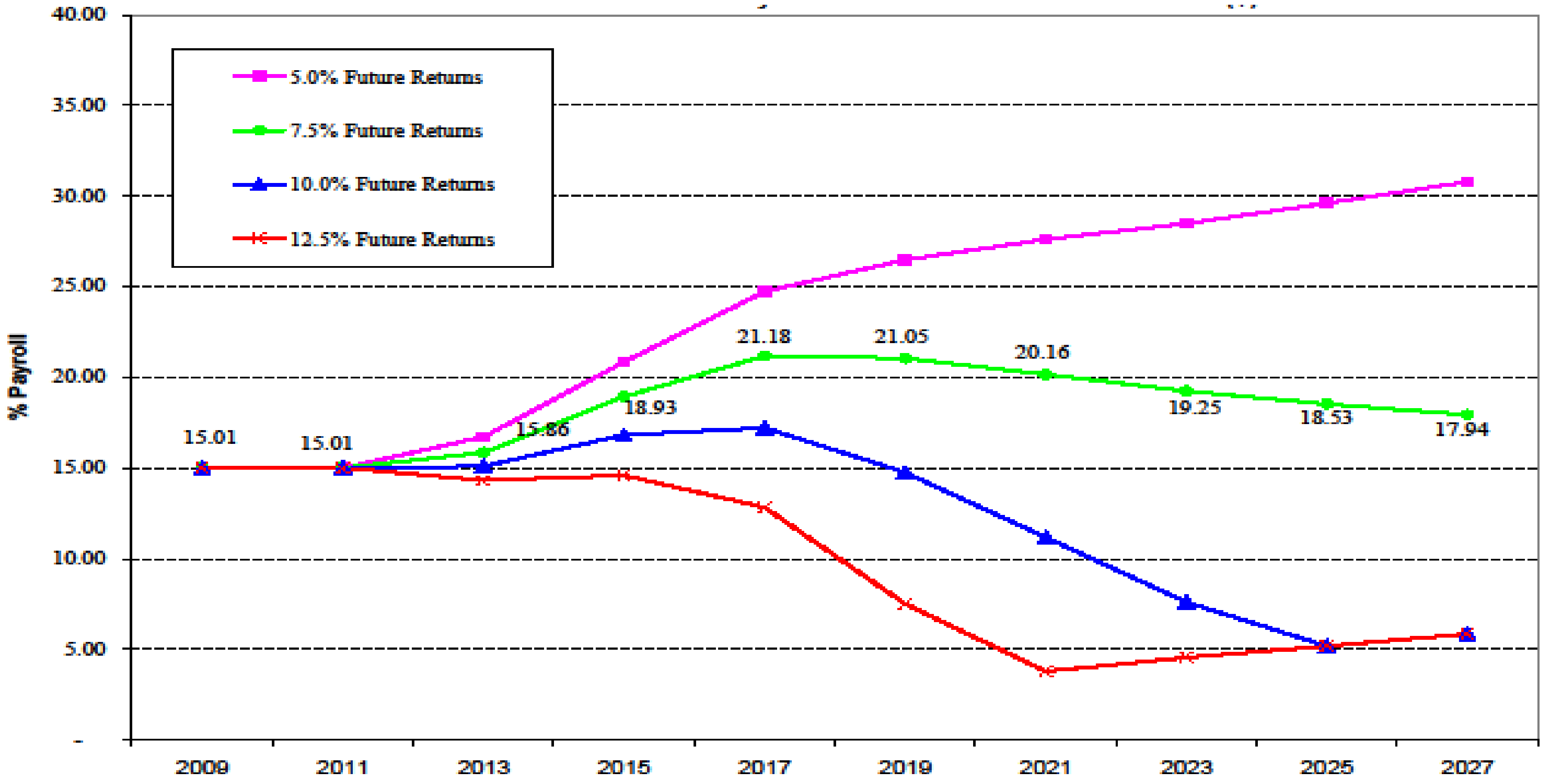
Utah's Pension Reform

- Enacted reforms in 2010 to become effective July 1, 2011.
- Creates a new benefit tier for employees hired after June 30, 2011. There is no impact to existing employees.
- New employees can choose a DC retirement plan where the employer contributes 10% of salary.
- Alternatively, a new employee can choose a hybrid plan consisting of a DB and DC component.
- The hybrid DB has a lower benefit formula, less favorable eligibility conditions to retire, and a lower COLA provision after retirement than the prior DB plan.
- Under the hybrid plan, the employer contributes up to 10% to the DB. If the rate is less than 10%, the difference is contributed to a DC plan. If the rate is more than 10%, the employee contributes to the DB plan for the amount greater than 10%.
- Essentially, Utah has established a pension plan for employees where the employer contribution rate does not fluctuate over time.

Addressing TCRS' Issues

Contribution Rate Projections

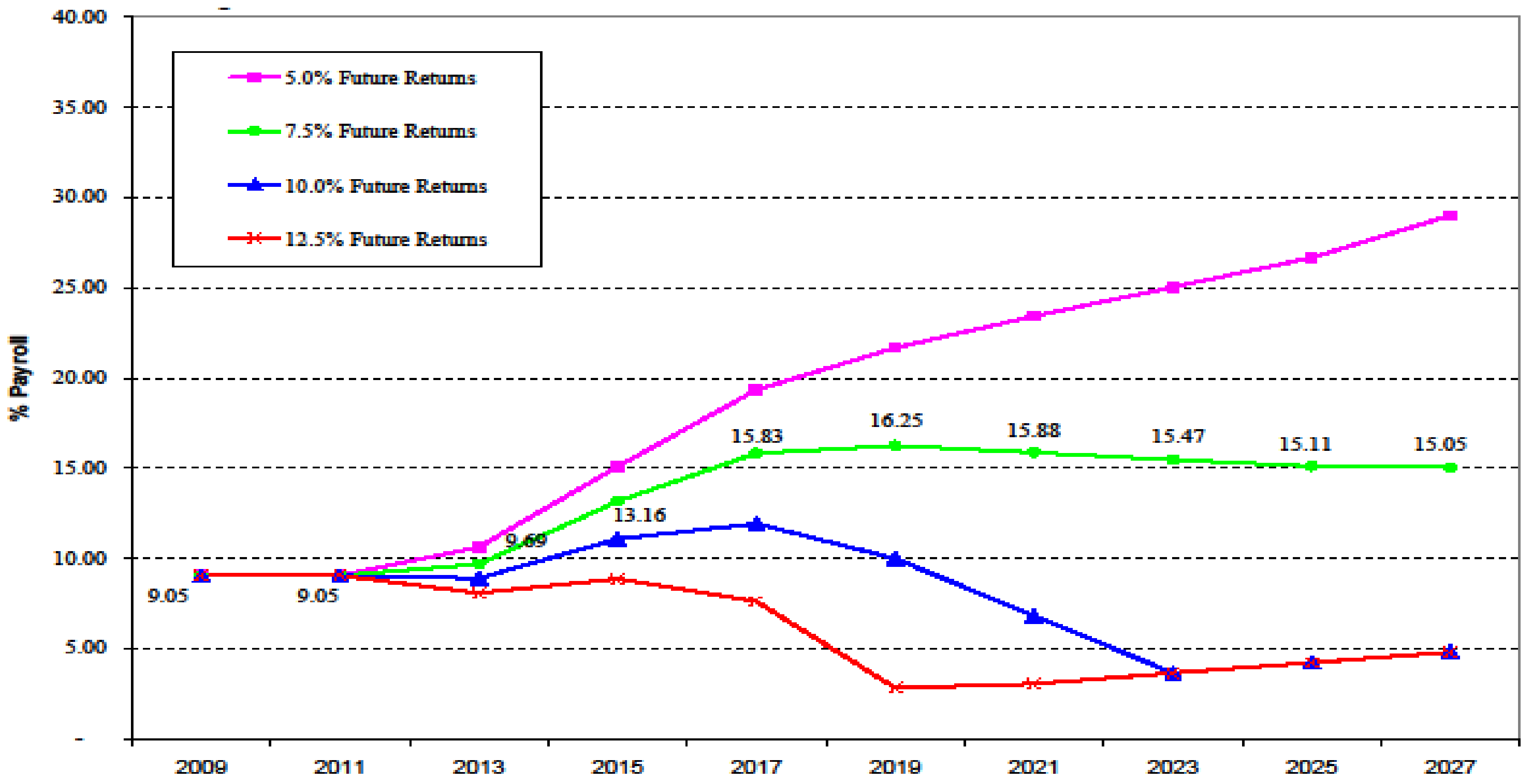
New Hires to a 10% Hybrid Plan (Utah Model) – State Employees



Addressing TCRS' Issues

Contribution Rate Projections

New Hires to a 10% Hybrid Plan (Utah Model) – Teachers



Addressing TCRS' Issues

Elements of New Pension Tier for New Hires

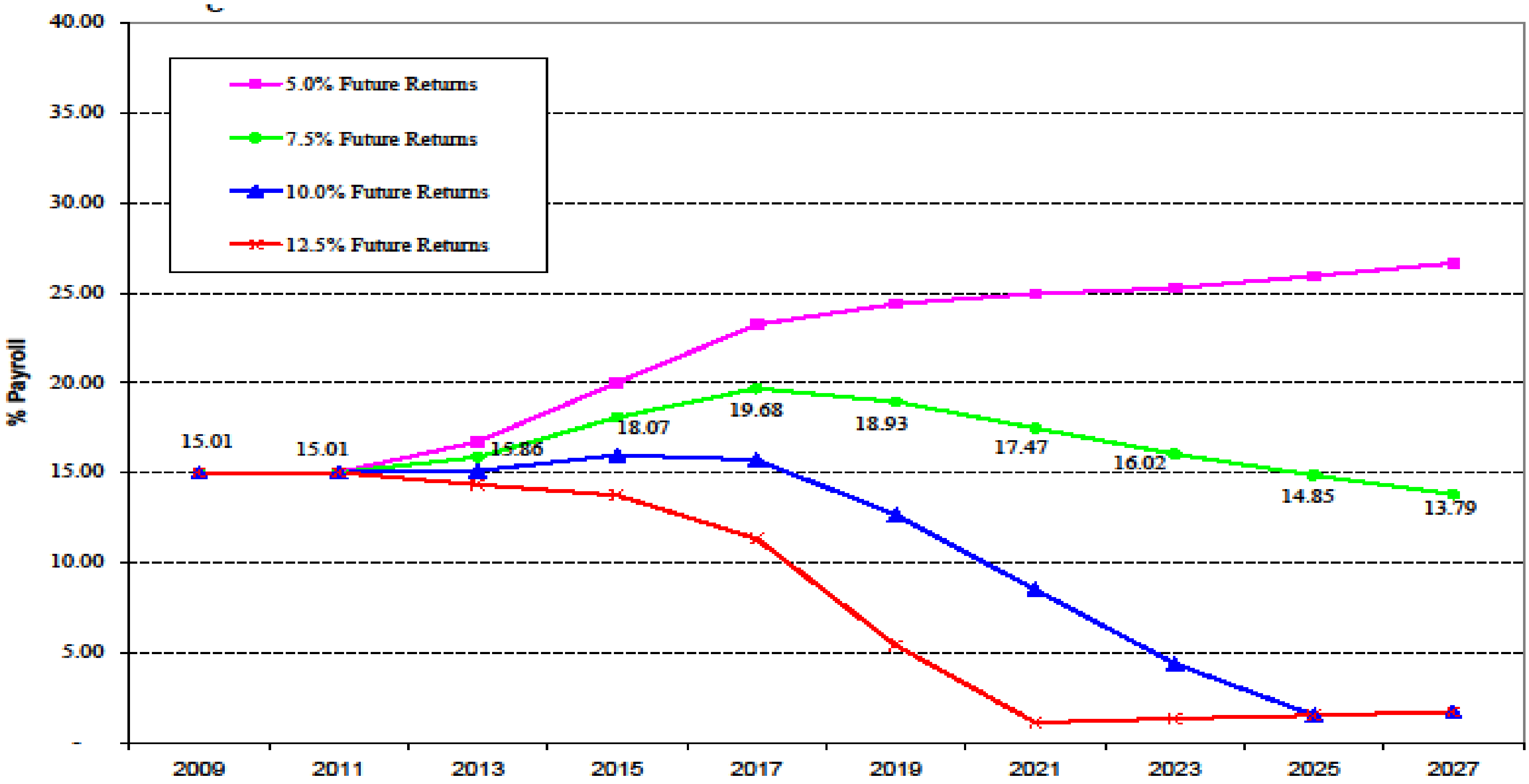
- 1.4% multiplier (currently 1.5%)
- AFC based on 7 years (currently 5 years)
- Employee contributions (5% state, 7% teachers)
  (currently state 0%, teachers 5%)
- COLA capped at 2.5% (currently 3%)
- Retirement eligibility based on rule of 90 or age 65
  (currently 30 years of service or age 60)
- Early retirement is also available based on a rule of 80 or age 62 with the benefit being actuarially reduced.
  (currently reduced benefit at 25 years of service or age 55)
- Annual TCRS benefits capped at $65,000 (currently no cap)
- 5 year vesting (no change)

* These elements only affect the general employee and teacher groups. Special groups such as public safety officers, are not included and will require separate analysis.

Addressing TCRS' Issues

Contribution Rate Projections

Defined Benefit Plan, New Tier for New Hires – State Employees



Addressing TCRS' Issues

Contribution Rate Projections

Defined Benefit Plan, New Tier for New Hires – Teachers