WISCONSIN LEGISLATIVE COUNCIL

2015 COMPARATIVE STUDY OF MAJOR PUBLIC EMPLOYEE RETIREMENT SYSTEMS

Prepared by:

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Wisconsin Legislative Council

December 2016

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INTRODUCTION

This report compares significant features of major state and local public employee retirement systems in the United States. The report compares retirement benefits provided to general employees and teachers, rather than benefits applicable only to narrower categories of employees such as police, firefighters, or elected officials. Generally, the report has been prepared every two years since 1982 by the Wisconsin Retirement Research Committee staff or the Legislative Council staff.

The 2015 Report includes data from the same 87 public employee retirement systems that were compared in the prior report. Although this report does not cover all major public employee retirement systems, it describes at least one statewide plan from each state. The same public employee retirement systems have been covered in previous reports to show long-term trends in public employee retirement systems.

The methodology for preparing the 2002-15 Reports differs from that of previous reports. Through the 2000 Report, each public employee retirement system covered by the report was asked to send to the Wisconsin Retirement Research Committee or the Legislative Council all annual reports, employee handbooks, statutes, actuarial reports, and related materials. One issue with this approach was that, in many cases, the published reports, handbooks, and materials were not current with respect to the data included in the report for a given year. In addition, the large volume of material that each plan was asked to send resulted in a relatively inefficient way of gathering and storing the data necessary for the report.

For the 2002-15 Reports, the data was gathered, to the extent possible, from the website maintained by each of the plans covered by the report. All information is based on the most recent actuarial valuation available at the time of publishing. For the 2015 Report, most of the data was gathered from 2014 or 2015 actuarial analyses of each of the plans. Where specific data could not be found on plan websites, the Public Plans Data database was occasionally used to supplement plan data. We thank the Center for Retirement Research at Boston College, the Center for State and Local Government Excellence and the National Association of State Retirement Administrators for the use of this valuable tool.

In most cases, the public employee retirement systems in this report have features that differ according to when an employee was initially hired or the identity of the employer. Where this situation exists, the report describes the features of the plan applicable to the employees who are most recently hired.

One feature of the 2015 Report is a discussion of how retirement benefits and certain other features of the Wisconsin Retirement System (WRS) compare to the other plans in this report. This feature of the report is intended to be useful to Wisconsin legislators and persons interested in comparing the WRS to other plans, while maintaining the structure of prior reports for the convenience of retirement system administrators and policymakers from other states.

While attempts were made to ensure the accuracy of the large amount of data in this report, it is inevitable that errors have occurred in both prior and current reports. Please communicate reports of any errors or comments you may have about the report to: Daniel Schmidt, Principal Analyst and Operations Manager; Wisconsin Legislative Council Staff; Suite 401, One East Main Street; Madison, Wisconsin, 53703; or at the following e-mail address: dan.schmidt@legis.wisconsin.gov.

Any corrections made to the report will be included in the version maintained at the Wisconsin Legislative Council website: http://www.legis.wisconsin.gov.

PART I
DESCRIPTION OF RETIREMENT SYSTEMS IN REPORT

A. INTRODUCTION

Chart 1, on pages 5 to 7, provides descriptive data pertaining to the public employee retirement systems covered in this report.

B. NUMBER OF PARTICIPANTS

The 87 plans in the 2015 Report provide pension coverage for 11,042,042 active employees and 7,537,610 retirees and beneficiaries, for a total of 18,579,652 participants. This total is 12% lower than the 21,198,597 participants in the 2012 Report. The number of active participants has decreased between the 2012 and 2015 Reports by 17% while the number of retirees and beneficiaries has decreased by 4% in the same time period.

C. CATEGORIES OF EMPLOYEES INCLUDED IN PLANS

The column entitled "Employee Coverage" in Chart 1 shows whether each plan provides pension coverage to state employees ("S"), local employees ("L"), teachers ("T"), or some combination thereof. The 87 plans are categorized as follows:

Employee Coverage	Number of Plans
State employees only	13
Teachers only	26
Local employees only	10
State and local employees	13
State employees and teachers	3
State employees, local employees, and teachers	22

See Figure 1, *2015 Employee Coverage*, for a graphical representation of the categories.

D. RATIO OF ACTIVE EMPLOYEES TO RETIRED EMPLOYEES

Chart 1 also shows the ratio of active employees to retired employees in the 87 systems surveyed. The average ratio has generally declined over prior years, however, 2015 shows a slight increase in the average ratio. For 2015, the average ratio was 1.74 while the comparable figures for the 2012 Report, 2010 Report, the 2008 Report, the 2006 Report, the 2004 Report, and the 2002 Report, respectively, were 1.70, 1.87, 2.00, 2.14, 2.24, and 2.38 (see Figure 2, *Participant Growth 2002 to 2015*). Eighty of the systems had an active employees to retired employees ratio of less than two, with 12 systems having a ratio of less than one. In the 2000 Report, 17 of the systems had an active employees to retired employees ratio of less than two.

E. SOCIAL SECURITY COVERAGE

In 70 of the 87 plans, participants are also covered under the federal Social Security program. Of the 17 public employee retirement systems included in this report that do not provide Social Security coverage, 10 represent pension plans covering teachers only. The decision on whether to participate in the Social Security program was at one time elective, rather than mandatory, for public employers. However, for those employers who have elected coverage, future participation is mandatory.

F. TRENDS

Chart 1 shows a decrease in the total number of participants in the plans surveyed. The number of active employees is decreasing at a significant rate, likely due to reductions in hiring of government employees, while the number of retirees has increased slightly. Ultimately, this has resulted in a general trend toward declining ratios of active to retired participants since 2000, but minor change since the 2012 Report. As compared to the 2012 Report, there has been no change in the number of plans whose participants are covered by the federal Social Security program.

G. THE WRS

The WRS, in 2015, had 255,014 active employees and 158,240 beneficiaries and annuitants, for a total of 413,254 participants. This total is a decrease of 11,453 total participants and is 2.7% lower than the 424,707 participants in the 2012 Report. The number of active employees covered by the WRS decreased by 2,240 and the number of beneficiaries and annuitants covered by WRS decreased by 9,213 between 2012 and 2015. The WRS covers state and local employees and teachers. The ratio of active employees to retired employees in the WRS in 2012 is 1.61, which is an increase from the ratio of 1.54 found in the 2012 Report. The ratio of active employees to retired employees in the WRS for 2015 (1.61) is slightly lower than the average ratio for all plans in the report (1.74). WRS employees are generally covered by Social Security.

CHART 1
PUBLIC RETIREMENT SYSTEMS SURVEYED

	State	Fund Name	Employee Coverage[1]	Active Employees	Beneficiaries & Annuitants	Ratio	S.S. Coverage
1	Alabama	ERS	S, L	83,979	43,523	1.93	Yes
2	Alabama	TRS	T	135,230	85,209	1.59	Yes
3	Alaska[2]	PERS	S, L	17,660	32,145	0.55	No
4	Alaska[2]	TRS	T	5,502	12,418	0.44	No
5	Arizona	SRS	S, L, T	203,252	131,536	1.55	Yes
6	Arkansas	PERS	S, L	45,722	33,106	1.38	Yes
7	Arkansas	TRS	T	72,919	40,718	1.79	Yes
8	California	PERS	S, L	772,817	595,930	1.30	Yes
9	California	TRS	T	429,460	282,100	1.52	No
10	Colorado	PERA	S, L, T	203,969	100,877	2.02	No
11	Connecticut	SERS	S	49,976	45,803	1.09	Yes
12	Connecticut	TRS	T	51,433	34,310	1.50	No
13	Delaware	SEPP	S, T	35,998	23,390	1.54	Yes
14	Florida	FRS	S, L, T	512,909	375,428	1.37	Yes
15	Georgia	ERS	S	60,416	47,035	1.28	Yes
16	Georgia	TRS	T	213,990	113,124	1.89	Yes
17	Hawaii	ERS	S, L, T	67,310	44,283	1.52	Yes
18	Idaho	PERS	S, L, T	67,008	42,657	1.57	Yes
19	Illinois	SRS	S	63,273	67,954	0.93	Yes
20	Illinois	TRS	T	159,836	112,682	1.42	No
21	Illinois	MRF	L	173,832	117,028	1.49	Yes
22	Indiana	PERF	S, L, T	138,660	79,198	1.75	Yes
23	Indiana	TRF[3]	S, L, T	52,424	4,136	12.68	Yes

24	Iowa	PERS	S, L, T	167,368	111,127	1.51	Yes
25	Kansas	PERS	S, L, T	152,175	93,866	1.62	Yes
26	Kentucky	KERS	S	39,056	42,269	0.92	Yes
27	Kentucky	CERS	L	80,852	52,651	1.54	Yes
28	Kentucky	TRS	T	72,246	49,822	1.45	No
29	Louisiana	SERS	S	40,194	47,643	0.84	No
30	Louisiana	TRSL	T	83,602	75,259	1.11	No
31	Maine	PERS	S, L, T	40,016	30,939	1.29	No
32	Maryland	SRPS	S, L, T	193,600	147,850	1.31	Yes
33	Massachusetts	SERS	S	88,508	57,774	1.53	No
34	Massachusetts	TRS	T	90,070	62,312	1.45	No
35	Michigan[2]	SERS	S	13,404	57,615	0.23	Yes
36	Michigan	MERS	L	35,302	35,754	0.99	Yes
37	Michigan	PSERS	T	194,957	207,651	0.94	Yes
38	Minnesota	MSRS	S	49,037	32,690	1.50	Yes
39	Minnesota	PERA	L	145,650	82,173	1.77	Yes
40	Minnesota	TRA	T	79,406	57,160	1.39	Yes
41	Mississippi	PERS	S, L, T	157,215	96,338	1.63	Yes
42	Missouri	SERS	S	49,980	42,964	1.16	Yes
43	Missouri	LAGERS	L	33,310	19,985	1.67	Yes
44	Missouri	PSRS	T	46,835	26,298	1.78	No
45	Montana	PERS	S, L	28,237	20,505	1.38	Yes
46	Montana	TRS	T	18,316	14,839	1.23	Yes
47	Nebraska[4]	SERS	S	13,084	1,436	9.11	Yes
48	Nebraska[4]	CERS	L	6,432	513	12.54	Yes
49	Nebraska	SPP	T	40,994	21,512	1.91	Yes
50	Nevada	PERS	S, L, T	100,522	55,208	1.82	No
51	New Hampshire	NHRS	S, L, T	48,307	31,054	1.56	Yes
52	New Jersey	PERS	S, L	259,161	166,637	1.56	Yes
53	New Jersey	TPAF	T	140,227	94,932	1.48	Yes
54	New Mexico	PERA	S, L	49,173	34,530	1.42	Yes
55	New Mexico	ERA	T	60,998	44,043	1.38	Yes
56	New York	ERS	S, L	526,131	440,943	1.19	Yes
57	New York	TRS	T	267,715	158,458	1.69	Yes
58	North Carolina	TSERS	S, T	307,313	194,607	1.58	Yes
59	North Carolina	LGERS	L	123,184	60,408	2.04	Yes
60	North Dakota	PERS	S, L	22,845	10,060	2.27	Yes
61	North Dakota	TRF	T	10,514	8,025	1.31	Yes
62	Ohio	PERS	S, L	325,181	202,136	1.61	No
63	Ohio	STRS	T	164,925	158,116	1.04	No
64	Oklahoma	PERS	S, L	43,843	32,754	1.34	Yes
65	Oklahoma	TRS	T	90,388	58,929	1.53	Yes
66	Oregon	PERS	S, L, T	164,859	131,505	1.25	Yes
67	Pennsylvania	SERS	S	105,025	124,689	0.84	Yes
68	Pennsylvania	PERS	T	259,868	219,775	1.18	Yes
69	Rhode Island	ERS	S, T	24,466	21,943	1.11	Yes
70	South Carolina	SCRS	S, L, T	187,318	125,875	1.49	Yes
71	South Dakota	SRS	S, L, T	39,383	25,656	1.54	Yes
72	Tennessee[5]	CRS	S, L, T	10,926	None	N/A	Yes

73	Texas	ERS	S	142,409	97,541	1.46	Yes
74	Texas	TRS	T	828,851	377,738	2.19	No
75	Texas	MRS	L	106,894	56,481	1.89	Yes
76	Utah	SRS	S, L, T	101,178	56,810	1.78	Yes
77	Vermont	SRS	S	5,465	6,204	0.88	Yes
78	Vermont	TRS	T	7,295	8,484	0.86	Yes
79	Virginia	SRS	S, L, T	340,048	181,110	1.88	Yes
80	Washington	PERS	S, L	153,297	92,149	1.66	Yes
81	Washington	TRS	T	68,820	46,997	1.46	Yes
82	West Virginia	PERS	S, L	36,413	24,931	1.46	Yes
83	West Virginia	TRS	T	35,593	33,007	1.08	Yes
84	Wyoming	WRS	S, L, T	36,489	23,512	1.55	Yes
85	Milwaukee	City	L	10,964	12,597	0.87	Yes
86	Milwaukee	County	L	3,619	7,991	0.45	Yes
87	Wisconsin	WRS	S, L, T	255,014	158,240	1.61	Yes
	Totals: (87 Funds)			11,042,042	1,183,792	1.41	

[1]Coverage: S = State; L = Local; T = Teachers
[2]New employees are covered under a Defined Contribution Plan.
[3]Based on post 1995 account.
[4]Cash balance plan.
[5]New hybrid plan for employees hired after 2014.

Figure 1. 2015 Employee Coverage

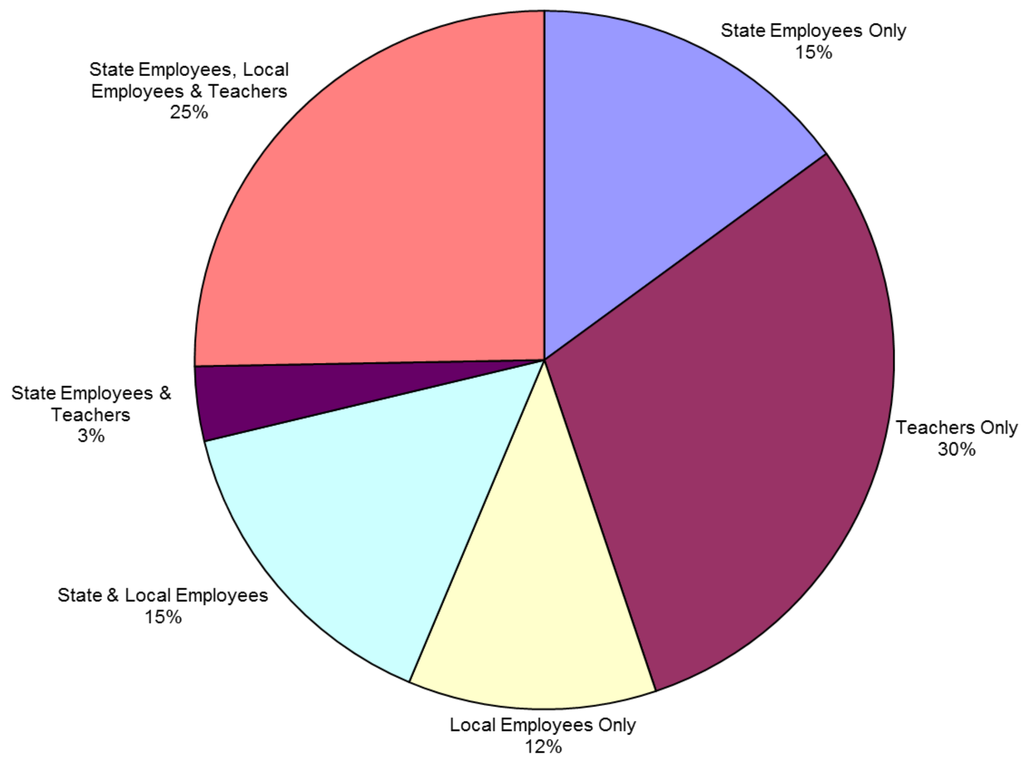
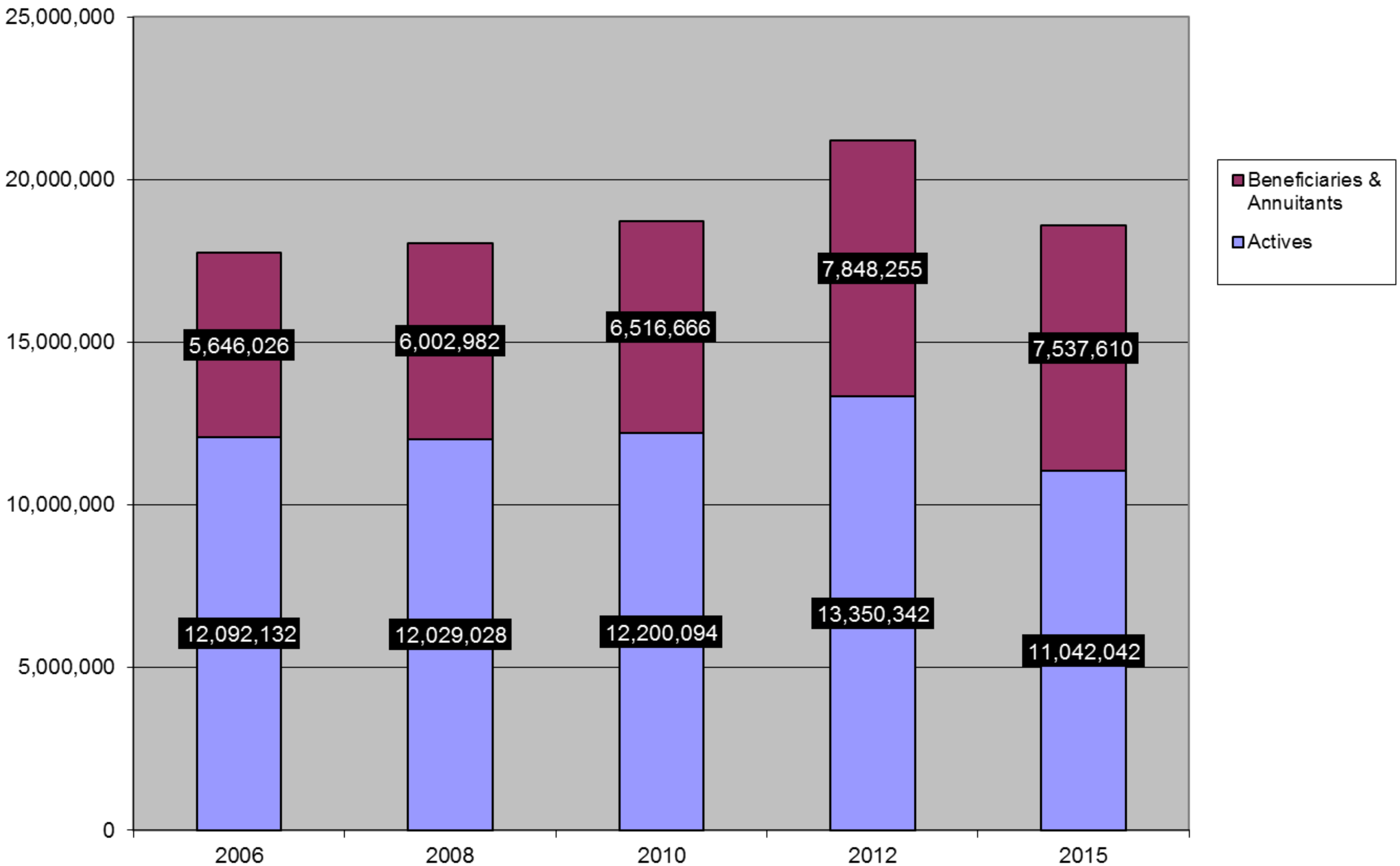


Figure 2. Participant Growth 2006-2015



PART II
NORMAL AND EARLY RETIREMENT PROVISIONS

A. INTRODUCTION

Chart 2, on pages 14 and 15, shows the normal and early retirement provisions for each of the plans covered in the report. Generally, the plans covered in this report are classified as "defined benefit plans" in which retirement benefits are calculated by a formula that takes into account years of service and final average salary.

Note that some of the defined benefit plans may also contain elements of defined contribution or money purchase plans. These provisions are generally not reflected in Chart 2, which describes the features of each plan that are standard and that apply to employees in general.

B. NORMAL RETIREMENT

"Normal retirement" refers to the age, number of years of service, or both, that a person must attain in order to qualify for full retirement benefits without an actuarial reduction in his or her annuity for early retirement. Most plans in this report have adopted multiple combinations of age and service under which a person may qualify for normal retirement. These are shown in the column entitled "Normal Retirement" in Chart 2.

Some retirement plans integrate normal retirement with the age under which a person is entitled to receive retirement benefits under the Social Security system. Age 65 is the age at which a person is entitled to receive full Social Security benefits, but this age is scheduled to increase to 66 and then to 67 over time.

Age 62 is the earliest age at which a person can receive Social Security retirement benefits, although the amount of the benefits are reduced to reflect the longer payout period. Chart 2 shows that 69 of the 87 plans allow normal retirement at age 62 or earlier for persons with many years of service. In addition, Chart 2 shows that 33 of the 87 plans permit normal retirement at age 62 or earlier with 10 or less years of service. Fourteen of the plans in this report restrict normal retirement to persons who are at least 65.

Some plans that permit persons to retire earlier than age 62 also allow them to elect to increase their annuity prior to age 62 to reflect the amount of Social Security benefits it is estimated that they will receive at that time. The amount of the annuity paid after age 62 is then adjusted to compensate for the earlier payments.

Many of the plans in this report have adopted "**X years and out**" provisions, which allow employees to retire at any age (or at a minimum age) with normal retirement benefits after "X" years of service. The most common provision is 30 years of service combined with a minimum age of 55. The following table shows the number of plans that, in 2012, had in effect "X years and out" provisions and compares these with the number of plans that had in effect "X years and out" provisions in the 2015 Report:

	2012	2015
35 years of service/age 55 or older	5 plans	6 plans
33 years of service/age 55 or older	1 plan	2 plans
30 years of service/age 55 or older	24 plans	23 plans
27 or 28 years of service/age 55 or older	3 plans	3 plans
25 years of service/age 55 or older	7 plans	5 plans
20 years of service/age 55 or older	6 plans	6 plans
TOTAL	46 plans	45 plans

See Figure 3, *2015 Normal Retirement "X Years and Out" Provisions*, for a graphical representation of the 2012 "X years and out" provisions.

In addition to the "X years and out" provisions, some plans have adopted "**Rule of Y**" provisions under which a person can retire with normal retirement benefits when that person's number of years of service, plus his or her age, equals a specified number. The following table shows the number of plans that, in 2015, had "Rule of Y" provisions and compares these with the number of plans that had "Rule of Y" provisions in 2012:

	2012	2015
Rule of 92	2 plans	2 plans
Rule of 90	7 plans	10 plans
Rule of 88	1 plan	1 plan
Rule of 87	4 plans	4 plans
Rule of 85	6 plans	6 plans
Rule of 80	5 plans	4 plans
TOTAL	25 plans	27 plans

See Figure 4, *2015 Normal Retirement "Rule of Y" Provisions*, for a graphical representation.

C. EARLY RETIREMENT

Eighty of the 87 plans covered in the 2015 Report permit "early retirement" before the normal age and service requirements of the plans have been met. The annuity of a person who elects early retirement is reduced from the amount that would have been received if the person had reached the normal retirement requirements. The early retirement provisions of each of the plans are shown in the column entitled "Early Retirement" in Chart 2. The most common minimum age for early retirement is age 55, with some minimum years of service. The second most common minimum age for early retirement is age 60.

Sixty-three of the 87 plans in the 2015 Report allow early retirement at a minimum age of 55 or more. Eight of the 87 plans in the report allow early retirement at a minimum age of less than 55. Fifteen of the 87 plans have provisions which allow early retirement at any age with a minimum number of years of employment. Seven of the 87 plans in the report do not allow early retirement. (see Figure 5, *2015 Early Retirement Provisions*).

The annuity of a person who elects to retire before reaching the minimum age and years of service required for normal retirement is subject to a reduction that is commonly referred to as an "**actuarial discount**." The amount of the reduction for each of the plans is shown in the column entitled "Reduction for Early Retirement" in Chart 2. In many cases, the column in Chart 2 is not able to show the details of how the amount of the reduction is actually computed, because this amount is frequently different for employees at different ages or with different numbers of years of service or for various classifications of employees. However, the column shows the most common percentage reduction for each of the plans in the report.

D. TRENDS

The 2015 Report indicates continued reversal of the trend noted in previous reports (2000-2010) that permitted retirement at earlier ages. Between the 2000 and 2004 Reports, nine plans reduced their normal retirement provisions by reducing the minimum age or the number of years of service required, or both. Between the 2004 and 2006 Reports, only two plans did so. Between the 2006 and 2008 Reports, an additional seven plans reduced their normal retirement provisions. Between the 2008 and 2010 Reports, 21 states increased their normal retirement provisions and one decreased its normal retirement provision. Between the 2010 and 2012 Reports, 29 states increased their normal retirement provisions and four decreased their normal retirement provisions. Between 2012 and 2015, nine states increased their normal retirement provisions and no states decreased their normal retirement provisions.

In addition, between the 2000 and 2004 Reports, 10 plans reduced their early retirement provisions by reducing the minimum age or the number of years of service required, or both. Between the 2004 and 2006 Reports, only two plans did so. Between the 2006 and 2008 Reports, an additional eight plans reduced their early retirement provisions. Between the 2008 and 2010 Reports, 11 plans increased their early retirement provisions. Between the 2010 and 2012 Reports, 19 states increased their early retirement provisions. Between the 2012 and 2015 Reports, five states increased their early retirement provisions and three states decreased them.

E. THE WRS

The normal retirement requirement for general employees in the WRS is 65 years of age. However, general employees who are at least 57 years of age and who have at least 30 years of service can retire without an actuarial discount. Also, general employees in the WRS may retire at 55 years of age with an actuarial discount. The amount of actuarial discount for early retirement for general employees in the WRS varies according to the employee’s number of years of service.

CHART 2
NORMAL AND EARLY RETIREMENT REQUIREMENTS

	State	Fund Name	Coverage*	Normal Retirement (Age/Years)	Early Retirement (Age/Years)	Annual Reduction for Early Retirement
1	Alabama	ERS	S, L	62/10	None	
2	Alabama	TRS	T	62/10	None	
3	Alaska	PERS	S, L	60/5; Any 30	55/5	Actuarially determined
4	Alaska	TRS	T	60/8; Any 20	55/8	Actuarially determined
5	Arizona	SRS	S, L, T	65; 62/10; 60/25; 55/30	50/5	Table
6	Arkansas	PERS	S, L	65/5; any/28	55/5; any/25	6% per yr
7	Arkansas	TRS	T	60/5; any/28	Any/25	5% for each yr < 28 yrs/age 60
8	California	PERS	S, L	62/5	50/5	Multiplier varies
9	California	TRS	T	62/5	55/5	6% per yr
10	Colorado	PERA	S, L, T	65/5; 55/R85; any/35	50/25; 55/20; 60/5	Full Actuarial reduction
11	Connecticut	SERS	S	63/25; 65/10	58/10	6% per yr
12	Connecticut	TRS	T	60/20; any/35	Any/25; 55/20; 60/10	3% per yr
13	Delaware	SEPP	S, T	65/10; 60/20; any/30	55/15; any/25	4.8% per yr
14	Florida	FRS	S, L, T	65/8; any/33	Any/8	5% per yr
15	Georgia	ERS	S	60/10; any/30	Any/25	7% per yr
16	Georgia	TRS	T	60/10; any/30	Any/25	7% per yr
17	Hawaii	ERS	S, L, T	65/10; 60/30	55/20	5% per yr
18	Idaho	PERS	S, L, T	65/5	55/5	Table
19	Illinois	SRS	S	67/10; 60/20	62/10	6% per yr
20	Illinois	TRS	T	67/10	62/10	6% per yr
21	Illinois	MRF	L	67/10; 62/35	62/10	6% per yr
22	Indiana	PERF	S, L, T	65/10; 60/15; 55/R85	50/15	5% per yr to 60; 1.2% per yr age 60 to 65
23	Indiana	TRF	S, L, T	65/10; 60/15; 55/R85	50/15	5% per yr to 60; 1.2% per yr age 60 to 65
24	Iowa	PERS	S, L, T	65; 62/20; 55/R88	55/4	6% per yr
25	Kansas	PERS	S, L, T	65/5; 60/30	55/10	35% at age 60; 57.5% at age 55
26	Kentucky	KERS	S	65/5; 57/R87	60/10	6.5% 1st 5 yrs; 4.5% next 5 yrs
27	Kentucky	CERS	L	65/5; 57/R87	60/10	6.5% 1st 5 yrs; 4.5% next 5 yrs
28	Kentucky	TRS	T	60/5; any/27	55/10	6% per yr
29	Louisiana	SERS	S	62/5	Any/20	Table
30	Louisiana	TRSL	T	62/5	Any/20	Table
31	Maine	PERS	S, L, T	65/5	Any/25	6% per yr
32	Maryland	SRPS	S, L, T	65/10; R90	60/15	6% per yr
33	Massachusetts	SERS	S	67/10	60/10	.125% per yr, for each yr before 67
34	Massachusetts	TRS	T	67/10	60/10	.125% per yr, for each yr before 67
35	Michigan	SERS	S	60/10; 55/30	55/15	6% per yr
36	Michigan	MERS	L	60/10; 55/15-30; 50/25 or 30	55/15; 50/25	6-12% per yr
37	Michigan	PSERS	T	60/10; 55/30	55/15	6% per yr
38	Minnesota	MSRS	S	65/5	55/5	2.5% per yr
39	Minnesota	PERA	L	65/5;	55/5	3% per yr
40	Minnesota	TRA	T	66/3	55/3	2.5% per yr
41	Mississippi	PERS	S, L, T	60/8; any/30	None	N/A
42	Missouri	SERS	S	67/10; 55/R90	62/10	6% per yr

43	Missouri	LAGERS	L	60/5; R80 option	55/5	6% per yr
44	Missouri	PSRS	T	60/5; R80; any/30	55/5	Actuarially determined
45	Montana	PERS	S, L	65/5; age 70	55/5	Actuarially determined
46	Montana	TRS	T	60/5; 55/30	55/5	Actuarially determined
47	Nebraska	SERS	S	55	N/A	Cash balance
48	Nebraska	CERS	L	55	N/A	Cash balance
49	Nebraska	SPP	T	65; 55/R85	60/5; any/35	3% per yr
50	Nevada	PERS	S, L, T	65/5; 62/10; any/30	Any/5	6% per yr
51	New Hampshire	NHRS	S, L, T	65/any	60/30	3% per yr
52	New Jersey	PERS	S, L	65/any	Any/30	3% per yr
53	New Jersey	TPAF	T	65/any	Any/30	3% per yr
54	New Mexico	PERA	S, L	65/8; R85/8	None	N/A
55	New Mexico	ERA	T	65/5; any/25	R80	Table
56	New York	ERS	S, L	63/10	55/10	Table
57	New York	TRS	T	63/10	55/10	6.5% per yr
58	North Carolina	TSERS	S, T	65/5; 60/25; any/30	60/5; 50/20	3% to 5% per yr
59	North Carolina	LGERS	L	65/5; 60/25; any/30	60/5; 50/20	3% per yr
60	North Dakota	PERS	S, L	65/any; 60+R90	55/3	8% per yr
61	North Dakota	TRF	T	65/5; R90	55/5	6% per yr
62	Ohio	PERS	S, L	60/5; any/30	57/25	Table
63	Ohio	STRS	T	60/5	Prior to Age 60/5	Withdrawal value
64	Oklahoma	PERS	S, L	65; 60/R90	55/10	6.67% per yr
65	Oklahoma	TRS	T	65/5; R90	60/5	Table
66	Oregon	PERS	S, L, T	65; 58/30	55/5	Full actuarial reduction
67	Pennsylvania	SERS	S	65/3; R92 with 35 yrs	Any/10	Table
68	Pennsylvania	PERS	T	65/3; R92 with 35 yrs	55/25	3% per yr
69	Rhode Island	ERS	S, T	65/30; 64/31; 63/32; 62/33	59/20	7% - 9% a year
70	South Carolina	SCRS	S, L, T	65/8; R90	60/8	5% per yr
71	South Dakota	SRS	S, L, T	65/3	55/3	3% per yr
72	Tennessee	CRS	S, L, T	65/5; R90	60/5; R80	Actuarially red. from norm. to early
73	Texas	ERS	S	65/10	R80/5	5% per yr before 62
74	Texas	TRS	T	65/5; 62/R80	R80/5	5% per yr
75	Texas	MRS	L	60/5; any/20	Varies	Varies
76	Utah	SRS	S, L, T	65/4; any/30	Any/25; 60/20; 62/10	3% per yr
77	Vermont	SRS	S	65/any; R87	55/5	Table
78	Vermont	TRS	T	65/any; R90	55/5	Full actuarial reduction
79	Virginia	SRS	S, L, T	Social Security normal age/5; R90	60/5	Full actuarial reduction
80	Washington	PERS	S, L	65/10	55/10	3% per yr or table
81	Washington	TRS	T	65/10	55/10	3% per yr or table
82	West Virginia	PERS	S, L	60/5; 55/R80;	55/10; 55/20; Any 30	Full actuarial reduction
83	West Virginia	TRS	T	60/5; 55/30; any/35	55/30	Full actuarial reduction
84	Wyoming	WRS	S, L, T	65/4; R85	55/4; any/25	5% per yr
85	Milwaukee	City	L	65; 60/30	N/A	N/A
86	Milwaukee	County	L	64; 55/30	55/15	5% per yr
87	Wisconsin	WRS	S, L, T	65/any; 30/R87	55	Varies by service amount

*Coverage: S = State; L = Local; T = Teachers; x/y = Age/Service

Figure 3. 2015 Normal Retirement "X Years & Out" Provisions

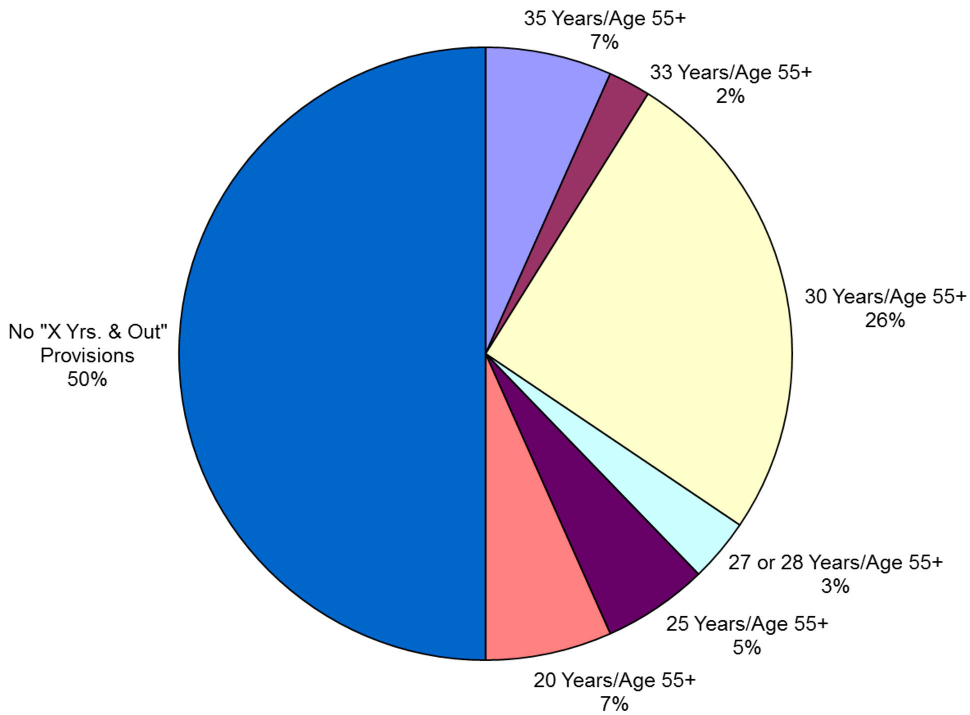


Figure 4. 2015 Normal Retirement "Rule of Y" Provisions

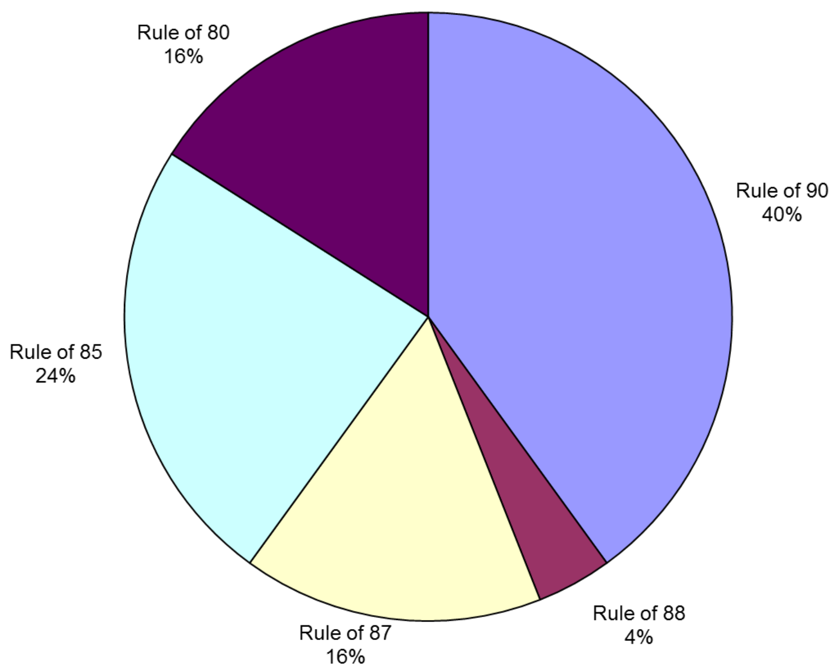
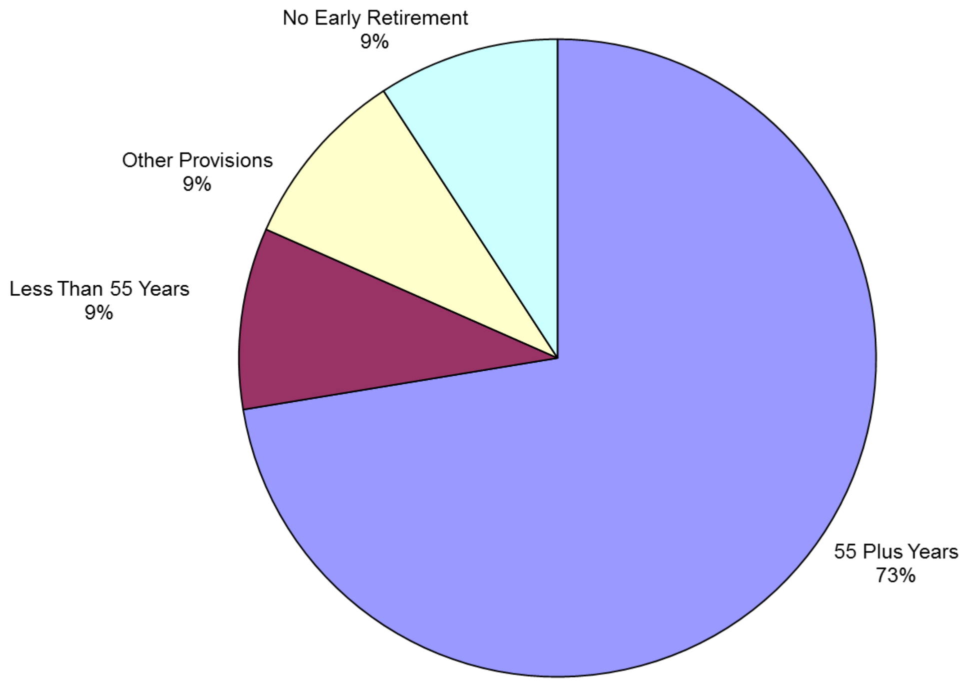


Figure 5. 2015 Early Retirement Provisions



PART III
CONTRIBUTION RATES AND VESTING REQUIREMENTS

A. INTRODUCTION

Chart 3, on pages 21 and 22, shows the employee contribution rate, the employer contribution rate, and the vesting period for each of the 87 plans in the report. The contribution rates are shown as a percentage of salary.

B. EMPLOYEE CONTRIBUTIONS

Large private sector corporations that provide defined benefit pension plans frequently do not require employee contributions to the primary plan, but frequently also provide supplemental profit-sharing or savings plans that allow employees to contribute to the plan and receive an employer "match" to some or all of the contribution. Conversely, most public employee pension plans at least nominally require employees to contribute a certain percentage of their salary to the plan, although some public employee pension plans provide for employer "pick-up" of the employee contribution. In addition, secondary savings plans for public employees, such as Section 457 deferred compensation plans, are funded totally from employee contributions with no employer match.

In plans where amounts designated as employee contributions for accounting purposes are paid by the employer, there are financial advantages to both the employer and the employee if, instead of granting compensation increases, an employer pays the employee contribution to the retirement plan. Compensation payments are subject to old age, survivors and disability insurance payments (Social Security), and Medicare payments while contributions to a retirement plan are not. In addition, the practice may be attractive to employers because employer pick-up of retirement contributions is not added into employee base wages, reducing the amount of future percentage-based salary increases.

The column in Chart 3 entitled "Employee Contribution" shows the employee contribution rates, expressed as a percentage of payroll, for the 87 plans covered in the report. These requirements are compared with employee contributions in the 2012 Report in the following table:

Employee Contribution Rates	2012	2015
5% or less	23 plans	23 plans
More than 5%	53 plans	58 plans
Rate varies (usually by age or employee classification)	7 plans	5 plans
Plan is noncontributory	4 plans	1 plans
TOTAL	87 plans	87 plans

See Figure 6, *2015 Employee Contribution Rates*, for a graphical representation.

C. EMPLOYER CONTRIBUTIONS

As has been noted in previous reports, the employer contribution information in Chart 3 is less reliable than other information found in this report. Employer contributions often vary between categories of employees and change significantly from year to year, particularly if investment returns from pension funds are volatile. In addition, employer costs are often designated under several categories reflecting normal costs, amortization, administrative costs, and unfunded post-retirement increases and the designation of these costs may vary from plan to plan. The employer contribution rates shown in Chart 3 are derived from actuarial reports and, where these were not available, by information received from plan administrators. Where possible, the normal cost rate is stated exclusive of accrued liabilities. The statutory rate is used when the employer normal cost is not available. Medical and other nonpension costs are generally not included in "employer contributions."

In addition, the employer contributions reported in Chart 3 are intended to reflect actual contributions made by the employer. In some plans covered by the report, employers may have paid contributions to the retirement plans at rates less than those that were determined by actuarial valuation as necessary to fully fund the pension plan.

D. VESTING

The term "vesting" refers to an employee's right, after satisfying some minimum service requirement, to receive some pension benefits regardless of whether the employee remains in a job covered by the pension plan. Vesting requirements for the plans included in the 2015 Report are displayed in the last column of Chart 3. The following table shows the changes that have occurred between 2012 and 2015 in the plans covered by the report:

	2012	**2015**
Immediate or >1 year vesting	1 plan	2 plans
Vesting after 3 years	5 plans	7 plans
Vesting after 4 years	5 plans	4 plans
Vesting after 5 years	45 plans	41 plans
Vesting after 6 years	1 plan	0 plans
Vesting after 8 years	3 plans	6 plans
Vesting after 10 years	26 plans	26 plans
Graded or varying	1 plan	1 plan
TOTAL	87 plans	87 plans

In 2015, a total of 54 plans, or 62% of the 87 plans in the report, require five or less years of service to vest. This is a decrease of two plans since the 2012 Report. The number of plans that require 10 years of service to vest remained the same between 2012 and 2015. See Figure 7, *2012 Vesting Rates*, for a graphical representation.

E. TRENDS

The long-term trend in public employee pension plan vesting is generally biased toward vesting periods of five years or less. Longer vesting periods have increased slightly, particularly those vesting after eight years. Thirty-two of the 87 plans covered in the 2015 Report had vesting requirements that were greater than five years. Employee contribution rates were increased in 24 plans and decreased for 10 plans between the 2012 and 2015 Reports. Employer contribution rates (employer normal cost rates) generally fluctuate with investment returns. It is important to note that many of the reported employer normal cost rates are separated from existing accrued liabilities. If accrued liabilities were included, many of these rates would be significantly higher.

F. THE WRS

No vesting period was required for employees in the WRS prior to 2011. Employees who began work on or after July 1, 2011 must accrue five years of creditable service to be vested in the WRS. The employee contribution rate for general employees for 2015 increased slightly to 6.8%. Employees and employers split the annual actuarial cost of maintaining the retirement trust fund by splitting the full cost into equal contributions. Thus, the employer contribution rate for 2015 was also 6.8%.

CHART 3
CONTRIBUTION AND VESTING REQUIREMENTS

	State	Fund Name	Social Security	Employee Contribution	Employer Normal Cost or Statutory Contribution	Vesting Period
1	Alabama	ERS	Yes	7.50%	0.37%	10 years
2	Alabama	TRS	Yes	6.00%	0.81%	10 years
3	Alaska	PERS	No	6.75%	2.94%	5 years
4	Alaska	TRS	No	8.65%	2.22%	8 years
5	Arizona	SRS	Yes	11.34%	11.34%	Immediate
6	Arkansas	PERS	Yes	5.00%	6.84%	5 years
7	Arkansas	TRS	Yes	6.00%	11.76%	5 years
8	California	PERS	Yes	5-10%	7.70%	5 years
9	California	TRS	No	8.00%	8.25%	5 years
10	Colorado	PERA	No	8.00%	2.88%	5 years
11	Connecticut	SERS	Yes	2.00%	8.00%	10 years
12	Connecticut	TRS	No	6.00%	9.73%	10 years
13	Delaware	SEPP	Yes	5.00% above $6,000	6.66%	10 years
14	Florida	FRS	Yes	5.56%	2.84%	8 years
15	Georgia	ERS	Yes	1.25%	5.99%	10 years
16	Georgia	TRS	Yes	6.00%	6.84%	10 years
17	Hawaii	ERS	Yes	8.00%	6.02%	5 years
18	Idaho	PERS	Yes	6.79%	7.35%	5 years
19	Illinois	SRS	Yes	4.00%	14.70%	6 Months
20	Illinois	TRS	No	9.40%	8.27%	10 years
21	Illinois	MRF	Yes	4.50%	6.64%	10 years
22	Indiana	PERF	Yes	3.00%	3.85%	10 years
23	Indiana	TRF	Yes	3.00%	5.45%	10 years
24	Iowa	PERS	Yes	5.95%	8.93%	4 years
25	Kansas	PERS	Yes	6.00%	8.31%	5 years
26	Kentucky	KERS	Yes	5.00%	2.96%	5 years
27	Kentucky	CERS	Yes	5.00%	3.05%	5 years
28	Kentucky	TRS	No	9.11%	16.11%	5 years
29	Louisiana	SERS	No	8.00%	4.00%	5 years
30	Louisiana	TRSL	No	8.00%	4.17%	5 years
31	Maine	PERS	No	7.65%	3.95%	5 years
32	Maryland	SRPS	Yes	6.72% (avg.)	5.25%	10 years
33	Massachusetts	SERS	No	9.00%	4.30%	10 years
34	Massachusetts	TRS	No	9.00%	2.90%	10 years
35	Michigan	SERS	Yes	4.00%	3.38%	10 years
36	Michigan	MERS	Yes	Varies by plan (0 to 10.00%)	Varies by plan	5 to 10 years
37	Michigan	PSERS	Yes	4.00%	3.60%	10 years
38	Minnesota	MSRS	Yes	5.50%	5.50%	5 years
39	Minnesota	PERA	Yes	7.50%	7.50%	3 years
40	Minnesota	TRA	Yes	7.50%	7.70%	3 years
41	Mississippi	PERS	Yes	9.00%	2.13%	8 years
42	Missouri	SERS	Yes	4.00%	6.67%	10 years
43	Missouri	LAGERS	Yes	4.00%	9.40%	5 years
44	Missouri	PSRS	No	5.49%	5.49%	5 years
45	Montana	PERS	Yes	7.90%	8.27%	5 years
46	Montana	TRS	Yes	8.15%	1.06%	5 years

47	Nebraska	SERS	Yes	4.80%	7.49%	3 years
48	Nebraska	CERS	Yes	4.50%	6.75%	3 years
49	Nebraska	SPP	Yes	9.78%	9.88%	5 years
50	Nevada	PERS	No	17.83%	16.87%	5 years
51	New Hampshire	NHRS	Yes	7.67%	12.43%[1]	10 years
52	New Jersey	PERS	Yes	7.50%	2.02-2.93%	10 years
53	New Jersey	TPAF	Yes	7.06%	3.45%	10 years
54	New Mexico	PERA	Yes	8.92%	16.99%	8 years
55	New Mexico	ERA	Yes	10.70%	2.28%	5 years
56	New York	ERS	Yes	3.00% to 6.00%	12.8%[1]	10 years
57	New York	TRS	Yes	3.00% to 6.00%	11.31%	10 years
58	North Carolina	TSERS	Yes	6.00%	5.21%	5 years
59	North Carolina	LGERS	Yes	6.00%	6.39%	5 years
60	North Dakota	PERS	Yes	6.00%	5.37%	3 years
61	North Dakota	TRF	Yes	11.75%	7.75%	3 years
62	Ohio	PERS	No	9.79%	3.38%	5 years
63	Ohio	STRS	No	12.67%	-1.54%	5 years
64	Oklahoma	PERS	Yes	3.50%	9.52%	8 years
65	Oklahoma	TRS	Yes	7.00%	6.93%	5 years
66	Oregon	PERS	Yes	None	15.38%	5 years
67	Pennsylvania	SERS	Yes	6.25%	4.52%	10 years
68	Pennsylvania	PERS	Yes	7.52%	8.31%	10 years
69	Rhode Island	ERS	Yes	3.75%	4.21% (4.25% teachers)	5 years
70	South Carolina	SCRS	Yes	8.19%	9.83%	8 years
71	South Dakota	SRS	Yes	6.00%	4.45%	3 years
72	Tennessee	CRS	Yes	5%	0.95%	5 years
73	Texas	ERS	Yes	9.50%	2.77%	5 years
74	Texas	TRS	No	7.70%	2.33%	5 years
75	Texas	MRS	Yes	5.00, 6.00, or 7.00%	8.41%	5 years
76	Utah	SRS	Yes	6.00%	5.12%[2]	4 years
77	Vermont	SRS	Yes	5.10%	2.93%	5 years
78	Vermont	TRS	Yes	6.00%	1.35%	5 years
79	Virginia	SRS	Yes	4.00%	4.90%[2]	5 years
80	Washington	PERS	Yes	7.92%	8.03%	10 years
81	Washington	TRS	Yes	7.48%	8.25%	10 years
82	West Virginia	PERS	Yes	4.50%	5.60%	5 years
83	West Virginia	TRS	Yes	6.00%	4.50%	5 years
84	Wyoming	WRS	Yes	8.25%	3.71%	4 years
85	Milwaukee	City	Yes	4.00%	8.48%	4 years
86	Milwaukee	County	Yes	4.00%	8.90%	5 years
87	Wisconsin	WRS	Yes	6.80%	6.80%	5 years

[1]Average of all S/L contributions.
[2]Average of S/T contributions.

Figure 6. 2015 Employee Contribution Rates

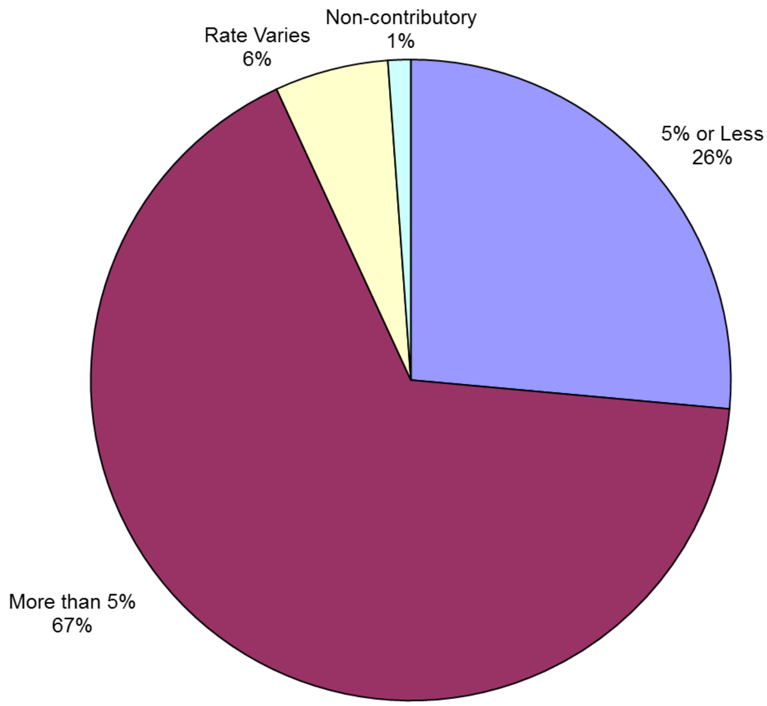
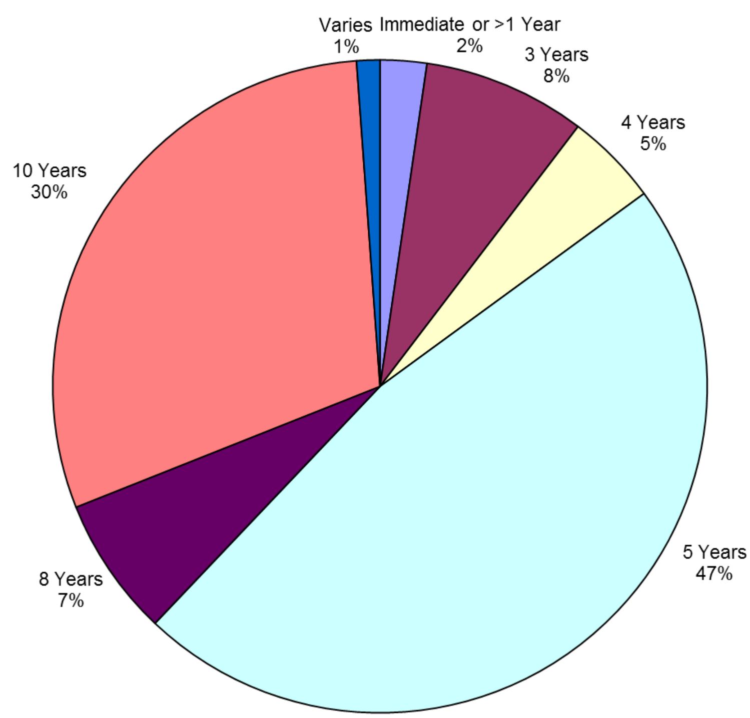


Figure 7. 2015 Vesting Rates



PART IV
RETIREMENT BENEFIT CALCULATIONS

A. INTRODUCTION

Chart 4, on pages 27 and 28, shows the retirement benefit formulas in effect for 2012 for each of the plans. The formulas are those used to calculate the benefits of general employees and teachers and may not apply to other categories of employees. For example, elected officials and employees who are classified as "protective employees" generally have higher formula benefit multipliers and earlier normal retirement dates.

In addition, many of the plans in the report have different "tiers" of formula benefits that apply to employees depending upon when they were hired. In Chart 4, the data presented for each plan refers to the ***most recent*** category of newly hired employees.

As is shown in Chart 4, all but seven of the current plans in the report are "defined benefit plans" in which an employee's retirement benefits are generally calculated by multiplying the employee's number of years of service by a "formula multiplier" and multiplying the product of this calculation by the employee's final average salary:

Years of Service x Formula Multiplier x Final Average Salary = Retirement Annuity

In effect, the formula multiplier is the annualized percentage of the final average salary that an employee earns as a retirement annuity for each year of service.

Some of the defined benefit plans in the report also include "money purchase" elements. The remaining plans are defined contribution or cash balance plans where the value of contributions plus interest equals the retirement benefit.

B. "BASIC" PLANS IN WHICH EMPLOYEES ARE NOT COVERED BY SOCIAL SECURITY

Employees of 17 of the 87 plans are not covered by Social Security (see Chart 1). The plans in which employees are not covered by Social Security frequently have a higher formula multiplier to compensate for the lack of Social Security coverage. The 17 plans in which employees are not covered by Social Security generally have formula multipliers ranging between 2% and 2.5% for each year of service.

C. "COORDINATED" PLANS IN WHICH EMPLOYEES ARE COVERED BY SOCIAL SECURITY

Seventy of the 87 plans in this report are "coordinated" with the Social Security system, meaning that employees earn Social Security benefits for their employment. There are a wide range of formula multipliers in effect for these 70 plans, which sometimes vary by number of years of service, by date of employment, or by age at retirement. For 2015, the formula multiplier for the coordinated plans that are not money purchase plans, defined contribution plans, or plans in which the employer determines the formula multiplier generally fall into a range between 1% and 2.5%. This number may actually be somewhat higher because a number of plans increase their multiplier rates following a certain number of years of service, generally 15, 25, or 30 years, or have other returns (defined contribution or money purchase) associated with the core multiplier.

The formula benefits for 2015, as shown in Chart 4, are summarized and compared with the data found in the 2012 Report in the following table:

Formula Multiplier	2012	2015
1.0% to 1.3%	1 plan	0 plans
Over 1.3% to 1.5%	1 plan	5 plans
Over 1.5% to 1.7%	22 plans	19 plans
Over 1.7% to 1.9%	11 plans	8 plans
Over 1.9% to 2.1%	21 plans	17 plans
Over 2.1%	4 plans	4 plans
Employer determined (varies)	2 plans	6 plans
Formula benefit plus money purchase	4 plans	6 plans
Cash balance or money purchase plan	4 plans	5 plans
TOTAL	70 plans	70 plans

See Figure 8, *2015 Formula Multipliers*, for a graphical representation.

D. FINAL AVERAGE SALARY

Defined benefit plans base the amount of a retirement annuity on the employee's "final average salary." The final average salary is generally the employee's highest earnings over a specified number of years or months, which are sometimes required to be consecutive years or months. Typically, an employee's highest salary will be the amount of salary he or she earned immediately prior to retirement.

Since the 2012 Report, six plans have increased the number of years required to calculate final average salary. The most common method is now to use a five-year average, which may require calculation of consecutive years or of years that fall within a given period. (For example, the five highest years within a 10-year period.) Forty-four of the 87 plans in the report use a five-year final average salary. The next most prevalent calculation of final average salary is a three-year period--26 of the 87 plans used a three-year period in 2015. See Figure 9, *2015 Final Average Salary Period*, for a graphical representation.

E. LIMITATIONS ON BENEFITS

The last column of Chart 4 shows the plans that have established a limit on the amount of pension benefits that may be received by a retiree. This limitation may be expressed as a maximum percentage of final average salary, as a maximum number of years that may be credited, or as a maximum percentage of highest salary. The majority of plans surveyed in the report indicate no maximum benefit limitation. They are followed by those with a limit of 100% of final average salary.

F. TRENDS

The current trend continues toward lower multipliers. Between 2012 and 2015, nine plans decreased their formula multipliers and three plans increased their multipliers. As noted in Section D., there has been a slight increase in the number of years required to calculate final average salary figures. Plan caps are moderately trending toward lower limits with a number of states adopting maximums for new employees in the last few years.

G. THE WRS

The WRS is primarily a defined benefit plan. However, it also has a "money purchase" feature that computes an employee's retirement benefits by the amount of an annuity that can be purchased with moneys in the employee’s retirement account. The employee receives the higher of either the formula-based defined benefit annuity or the money purchase annuity.

The formula multiplier for general employees in the WRS is 1.6%. Final average salary under the WRS is an average of the three highest years of an employee’s salary. Annuities for general employees are capped at 70% of final average salary.

CHART 4
FINAL AVERAGE SALARY PERIODS-FORMULAS-LIMITATIONS

	State	Fund Name	FAS Period[1]	Formula Multiplier	Limitation
1	Alabama	ERS	5 H/10	1.65%	80%
2	Alabama	TRS	5 H/10	1.65%	80%
3	Alaska	PERS	5 HC	2.0% (1st 10 yrs); 2.25% (next 10 yrs); 2.5% (rem. yrs)	None
4	Alaska	TRS	3 H	2.0% (1st 20 yrs); 2.5% (rem. yrs)	None
5	Arizona	SRS	5 HC	2.1% (1st 20 yrs); 2.15% (next 5); 2.2% (next 5); 2.3% 30+ yrs	80% FAS
6	Arkansas	PERS	3 H	2% + .5% for yrs of service over 28 yrs	100% FAS
7	Arkansas	TRS	3 H	2.15%	120% of final salary
8	California	PERS	3 H	2% at 62; 2.1% at 63+	None
9	California	TRS	1 H	2% at 62; 2.1% at 63+	120% Of SS wage base
10	Colorado	PERA	4 H	2.5%	100% FAS
11	Connecticut	SERS	5 H (130% cap)	1.33% + .5% over Social Security breakpoint; 1.625% 35+ yr	None
12	Connecticut	TRS	3 H	2%	75% FAS
13	Delaware	SEPP	3 H	1.85%	None
14	Florida	FRS	8 H	1.6% to 1.68% (age and yrs of service)	100% FAS
15	Georgia	ERS	2 HC	2%	None
16	Georgia	TRS	2 HC	2%	40 yrs max
17	Hawaii	ERS	5 H	1.75%	None
18	Idaho	PERS	3 1/2 HC	2%	100% FAS
19	Illinois	SRS	Last 8	1.67%	May not exceed $106,800+CPI
20	Illinois	TRS	8 HC/10	1.67/1st 10; 1.9/10 to 20; 2.1/20 to 30; 2.3/30+	75% FAS
21	Illinois	MRF	8 HC/10	1.67% (1st 15 yrs); 2% (added yrs)	75% FAS
22	Indiana	PERF	5 H	1.1% + money purchase annuity	None
23	Indiana	TRF	5 H	1.1% + money purchase annuity	None
24	Iowa	PERS	5 H	2% (1st 30 yrs); 1% (next 5 yrs)	65% FAS
25	Kansas	PERS	5 H	1.85%	None
26	Kentucky	KERS	N/A	All contributions + interest credits	None
27	Kentucky	CERS	N/A	All contributions + interest credits	None
28	Kentucky	TRS	5 H; 3 H w/27 yr	1.7-3% depending on yrs service	None
29	Louisiana	SERS	3 HC	2.5%	100% FAS
30	Louisiana	TRSL	5 HC	2.5%	100% FAS
31	Maine	PERS	3 H	2%	None
32	Maryland	SRPS	5 H	1.5%	100% FAS
33	Massachusetts	SERS	5 HC	.5 to 2.5% (age-related)	80% FAS
34	Massachusetts	TRS	5 HC	.5% to 2.5% (age-related)	80% FAS
35	Michigan	SERS	3 HC	1.5%	None
36	Michigan	MERS	5/3 HC	1.0% to 2.5% (employer option)	80% FAS
37	Michigan	PSERS	5 HC	1.5%	None
38	Minnesota	MSRS	5 HC	1.7%	None
39	Minnesota	PERA	5 HC	1.9%	None
40	Minnesota	TRA	5 HC	1.7%	None
41	Mississippi	PERS	4 H	2% (1st 30 yrs); 2.5% (added yrs)	None
42	Missouri	SERS	3 HC	1.7% (and .8% to age 62 if R90 met)	None
43	Missouri	LAGERS	5 HC	1-2.5% (varies by employer option)	None
44	Missouri	PSRS	3 HC	1.61-2.41%	None[2]
45	Montana	PERS	5 HC	1.7% to 1.85%	None

46	Montana	TRS	5 HC	1.85%	None
47	Nebraska	SERS		Cash balance	None
48	Nebraska	CERS		Cash balance	None
49	Nebraska	SPP	5 H	2%	None
50	Nevada	PERS	3 HC	2.5%	75% FAS
51	New Hampshire	NHRS	5 H	1.52%	85% or $120,000
52	New Jersey	PERS	5 HC	1.67%	None
53	New Jersey	TPAF	5 HC	1.67%	None
54	New Mexico	PERA	5 HC	2.5%	90% FAS
55	New Mexico	ERA	5 HC	2.35%	None
56	New York	ERS	5 HC (10% cap)	1.67% (under 20 yrs); 1.75% @ 20 yrs; 2% (over 20 yrs)	None
57	New York	TRS	5 HC	1.67% (under 25 yrs); 1.75% @ 20 yrs; 35% + 2.5% (20+ yrs)	None
58	North Carolina	TSERS	4 HC	1.82%	None
59	North Carolina	LGERS	4 HC	1.85%	None
60	North Dakota	PERS	3 H/last 15	2%	None
61	North Dakota	TRF	5 H	2%	None
62	Ohio	PERS	3 H	2.2% (1st 35 yrs); 2.5% (added yrs)	100% FAS
63	Ohio	STRS	3 H	1% + Value of Defined Contribution Acct	None
64	Oklahoma	PERS	3 H/10	2%	100% FAS
65	Oklahoma	TRS	5 H	2%	None
66	Oregon	PERS	3 H	1.50%	None
67	Pennsylvania	SERS	3 H	2-2.5%	100% high yr
68	Pennsylvania	PERS	5 HC	2-2.5%	100% FAS
69	Rhode Island	ERS	5 HC	1-2%	75% - 80% FAS
70	South Carolina	SCRS	5 HC	1.82%	None
71	South Dakota	SRS	3 HC/10	1.55%	None
72	Tennessee	CRS	5 HC	1.0% + defined contrib. benefit	90% FAS
73	Texas	ERS	5 H	2.3%	100% AMC
74	Texas	TRS	5 H	2.3%	None
75	Texas	MRS	N/A	Money purchase	None
76	Utah	SRS	5 HC	2%	None
77	Vermont	SRS	3 HC	1.67%	60% FAS
78	Vermont	TRS	3 HC	1.67% 1st 20 yrs; 2% 20+ yrs	60% FAS
79	Virginia	SRS	5 HC	1% + defined contribution return	Member's contributions + interest
80	Washington	PERS	5 HC	1% + defined contribution return	None
81	Washington	TRS	5 HC	1% + defined contribution return	None
82	West Virginia	PERS	3 HC/Last 15	2%	None
83	West Virginia	TRS	5 H/Last 15	2%	None
84	Wyoming	WRS	5 HC	2%	None
85	Milwaukee	City	3 H	1.6%	70% FAS
86	Milwaukee	County	3 HC	1.6%	80% FAS
87	Wisconsin	WRS	3 H	1.6%	70% FAS

[1]FAS = final average salary H = highest HC = highest consecutive

[2]Future COLA increases may not exceed 80% of original benefit

Figure 8. 2015 Formula Multipliers

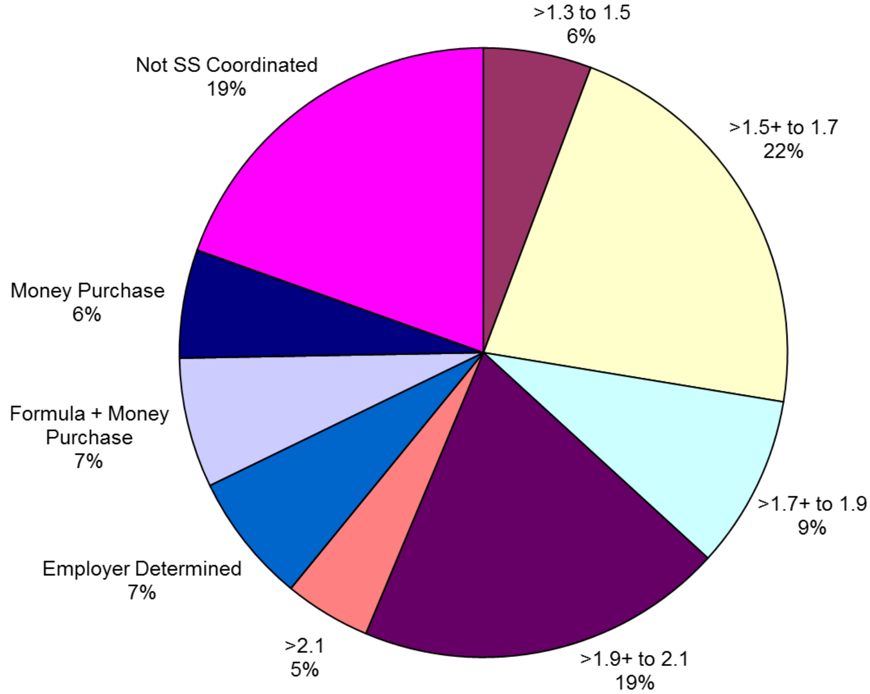
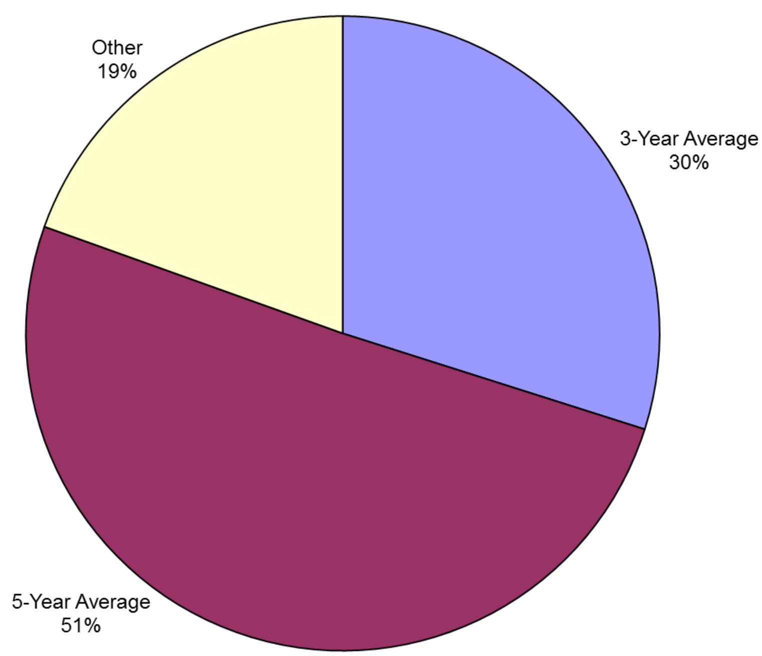


Figure 9. 2015 Final Average Salary Period



PART V
POST-RETIREMENT ANNUITY INCREASES AND TAXES

A. INTRODUCTION

Chart 5, on pages 33 and 34, shows the provisions of each plan for increasing retirement annuities after an employee has retired. Chart 5 also shows how annuity payments from each plan are treated under that state's income tax laws. In addition, benefit adjustments in the Social Security program over the last 10 years and income taxation of Social Security benefits are also discussed in this part.

B. SOCIAL SECURITY

Pension designers are concerned with the adequacy of benefits at the time of retirement and also with the continuing purchasing power of those benefits during retirement as affected by inflation. Since 1975, Social Security benefits have been automatically adjusted each year by the percentage increase in the consumer price index (CPI). The increases in Social Security benefits for each of the last 10 years are shown below and displayed in Figure 10, *Social Security CPI % Adjustments 2000 to 2017*:

CPI Year	Date on Which First Payable	Percentage Increase
2000	1/1/2001	3.5%
2001	1/1/2002	2.6%
2002	1/1/2003	1.4%
2003	1/1/2004	2.1%
2004	1/1/2005	2.7%
2005	1/1/2006	4.1%
2006	1/1/2007	3.3%
2007	1/1/2008	2.3%
2008	1/1/2009	5.8%
2009	1/1/2010	0.0%
2010	1/1/2011	0.0%
2011	1/1/2012	3.6%
2012	1/1/2013	1.7%
2013	1/1/2014	1.5%
2014	1/1/2015	1.5%
2015	1/1/2016	1.7%
2016	1/1/2017	0.0%
2017	1/1/2018	0.3%

For those employees in the 70 of the 87 plans in this report (80%) that are also covered by the Social Security program, the portion of their total retirement income that is received from Social Security automatically keeps pace with inflation.

Under federal law, up to 50% of Social Security benefits are subject to income taxation if the taxpayer's adjusted gross income is between $25,000 and $34,000 for single taxpayers or between

$32,000 and $44,000 for married taxpayers filing a joint income tax return. If a taxpayer's income exceeds these levels, then 85% of his or her Social Security benefits are subject to federal income taxation.

State income taxation of Social Security benefits varies. Thirty-seven states exempt Social Security benefits from income taxation, or have no personal income tax or very limited income tax that does not affect Social Security payments. Thirteen states impose income taxes on some portion of Social Security benefits.

C. POST-RETIREMENT ANNUITY COST-OF-LIVING ADJUSTMENTS

Most of the plans in this report have provisions for post-retirement annuity adjustments to protect the purchasing power of annuities against inflation. The provisions of each of the plans are described in the fourth column of Chart 5. The following table summarizes and compares the post-retirement annuity adjustment provisions found in the 2012 Report against those found in the 2016 Report:

	2012	2015
Adjustments indexed to CPI	30 plans	37 plans
Automatic percentage increase	24 plans	19 plans
Investment surplus	5 plans	3 plans
Ad hoc (any increase must be authorized by Legislature or a decision-making board) or money purchase	21 plans	24 plans
No increase	7 plans	4 plans
TOTAL	87 plans	87 plans

Note that, as shown in Chart 5, many of the plans in which post-retirement annuity increases are indexed to the CPI also include a cap on the total percentage adjustment that may be made within any given year. Also, many of the plans in which post-retirement annuity increases are indexed to the CPI or are automatic include provisions for additional annuity adjustments if there are investment surpluses in the retirement fund. Twenty-four of the 87 plans are either money purchase plans or provide post-retirement annuity increases only on an "ad hoc" basis, where either the Legislature or a decision-making board determines whether, and when, a post-retirement annuity increase is granted. See Figure 11, *2015 Cost-of-Living Adjustments*, for a graphical representation.

D. STATE INCOME TAXATION OF ANNUITIES

The last column of Chart 5 shows the treatment of pension benefits under each of the plans by the state income tax laws in effect in that state. In 18 of the 87 plans, pension benefits are subject to state income taxation and no specific amount of retirement benefits is tax exempt. In 18 of the 87 plans, pension benefits are totally exempt from state income taxation. Eleven of the plans are in states with no income taxation.

Caution must be used in interpreting the information in the last column of Chart 5. In many of the states in which pension income is fully taxable, other provisions of state income tax laws may ameliorate or completely eliminate the effect of the state income tax laws on retirees. For example, some state income tax laws have a level of exemptions, deductions, or tax credits that substantially reduce or eliminate state income taxation for persons at certain income levels. In addition, some of these exemptions, deductions, or tax credits may be increased for taxpayers who have reached a certain age. In these states, the level of income taxation on retirees may be equal to or less than that in states where public employee pension income is exempt from state income taxation.

E. TRENDS

Most of the plans in this report have adopted provisions in which retirement annuities are annually increased, either by a set percentage or in response to changes in the CPI. These provisions were mostly adopted in the 1970s and 1980s in response to the high inflation that occurred in those years. Recent trends show an increase in the number of states basing cost-of-living adjustments (COLAs) on changes in CPI and a decrease in automatic annual COLA increases.

F. THE WRS

Retirees in the WRS whose annuities are paid from the "core" fund receive annual annuity adjustments tied to whether reserve surpluses in the fund, as adjusted by a formula, are sufficient to generate an increase. In addition, the annual adjustment may result in a reduction of annuities if investment losses are severe, particularly if investment losses occur over a number of consecutive years. However, annuities paid from the "core" fund may not be reduced below the level initially paid to a retiree. For annuities paid in 2015, the annuity adjustment in the core fund was 0.5%.

WRS retirement benefits are subject to state income taxation except for certain payments made with respect to persons who were employees prior to 1964 or who had retired prior to 1964. Income from Social Security is exempt from Wisconsin income taxes. In addition, up to $5,000 per year of income from qualified retirement plans is exempt from Wisconsin income taxes for taxpayers with an adjusted gross income of $15,000 or less ($30,000 for married joint filers) who are 65 or older.

CHART 5
POST-RETIREMENT INCREASES AND STATE TAX PROVISIONS

	State	Fund Name	Social Security	Annual Post-Retirement Increases	State Taxation of PERS Benefits
1	Alabama	ERS	Yes	Ad hoc	Benefits exempt
2	Alabama	TRS	Yes	Ad hoc	Benefits exempt
3	Alaska	PERS	No	50-75% of CPI	No income tax
4	Alaska	TRS	No	50-75% of CPI	No income tax
5	Arizona	SRS	Yes	Excess earnings - 4% cap	Exempt to $2,500
6	Arkansas	PERS	Yes	3%	Exempt to $6,000
7	Arkansas	TRS	Yes	3%	Exempt to $6,000
8	California	PERS	Yes	2% max based on CPI	Benefits taxable
9	California	TRS	No	2%	Benefits taxable
10	Colorado	PERA	No	2%; Lesser of 2% or CPI-W, if neg. return	Exempt to $20,000/$24,000
11	Connecticut	SERS	Yes	60% of CPI up to 6%, 2.0% min; 7.5% max	Benefits taxable
12	Connecticut	TRS	No	1-5% Max. based on Soc. Sec. benefit adj.	Benefits taxable
13	Delaware	SEPP	Yes	Ad hoc	Exempt to $12,500
14	Florida	FRS	Yes	None	No income tax
15	Georgia	ERS	Yes	Ad hoc	Exempt to $35,000/$60,000
16	Georgia	TRS	Yes	1.5% max in any 6 mo. Period, based on CPI	Exempt to $35,000/$60,000
17	Hawaii	ERS	Yes	1.5%	Benefits exempt
18	Idaho	PERS	Yes	CPI - 1% minimum to 6% max	Benefits taxable
19	Illinois	SRS	Yes	3% or 1/2 of CPI	Benefits exempt
20	Illinois	TRS	No	3% or 1/2 of CPI	Benefits exempt
21	Illinois	MRF	Yes	3% or 1/2 of CPI	Benefits exempt
22	Indiana	PERF	Yes	Ad hoc	Benefits taxable
23	Indiana	TRF	Yes	Ad hoc	Benefits taxable
24	Iowa	PERS	Yes	Excess earnings - CPI; 3% cap	Exempt to $6,000/$12,000
25	Kansas	PERS	Yes	None	Benefits exempt
26	Kentucky	KERS	Yes	Ad hoc	Exempt to $41,110
27	Kentucky	CERS	Yes	Ad hoc	Exempt to $41,110
28	Kentucky	TRS	No	1.5%	Exempt to $41,110
29	Louisiana	SERS	No	Ad Hoc	Exempt to $6000/$12,000
30	Louisiana	TRSL	No	Ad Hoc	Exempt to $6000/$12,000
31	Maine	PERS	No	CPI - 3% cap	Exempt to $10,000
32	Maryland	SRPS	Yes	CPI - 3% cap	Exempt to $27,100
33	Massachusetts	SERS	No	CPI - on 1st $13,000-conditional, 3% cap	Benefits exempt
34	Massachusetts	TRS	No	CPI - on 1st $13,000-conditional, 3% cap	Benefits exempt
35	Michigan	SERS	Yes	3%	Benefits exempt
36	Michigan	MERS	Yes	Varies depending on employer agreement	Benefits exempt
37	Michigan	PSERS	Yes	Investment earnings in excess of 8%	Benefits exempt
38	Minnesota	MSRS	Yes	2% - 2.5%	Benefits taxable
39	Minnesota	PERA	Yes	1% - 2.5%	Benefits taxable
40	Minnesota	TRA	Yes	2% - 2.5%	Benefits taxable
41	Mississippi	PERS	Yes	3%	Benefits exempt
42	Missouri	SERS	Yes	80% CPI - 5% cap	Exempt to $36,976

43	Missouri	LAGERS	Yes	CPI - 4% cap	Exempt to $36,976
44	Missouri	PSRS	No	CPI - 2% or 5% cap	Exempt to $36,976
45	Montana	PERS	Yes	1.5%	Exempt to $3,600/$7,200 married
46	Montana	TRS	Yes	1.5%	Exempt to $3,600/$7,200 married
47	Nebraska	SERS	Yes	2.5% Annuity option	Benefits taxable
48	Nebraska	CERS	Yes	2.5% Annuity option	Benefits taxable
49	Nebraska	SPP	Yes	CPI - 1.0% cap	Benefits taxable
50	Nevada	PERS	No	CPI - 2 to 4% max	No income tax
51	New Hampshire	NHRS	Yes	Ad hoc	Benefits exempt
52	New Jersey	PERS	Yes	None	Exempt to $15,000/$20,000
53	New Jersey	TPAF	Yes	None	Exempt to $15,000/$20,000
54	New Mexico	PERA	Yes	2.0%	Exempt to $2500
55	New Mexico	ERA	Yes	50% of CPI - 2% min; 4% cap	Exempt to $2500
56	New York	ERS	Yes	50% of CPI, max 3% on 1st $18,000	Benefits exempt
57	New York	TRS	Yes	50% of CPI, max 3% on 1st $18,000	Benefits exempt
58	North Carolina	TSERS	Yes	Ad hoc	Exclusion min. $4,000
59	North Carolina	LGERS	Yes	Ad hoc	Exclusion min. $4,000
60	North Dakota	PERS	Yes	Ad hoc	Up to $5000 excluded
61	North Dakota	TRF	Yes	Ad hoc	Up to $5000 excluded
62	Ohio	PERS	No	CPI - 3% cap	Benefits taxable ($50 credit)
63	Ohio	STRS	No	CPI - 2% cap	Benefits taxable ($50 credit)
64	Oklahoma	PERS	Yes	Ad hoc	Exclude up to $10,000
65	Oklahoma	TRS	Yes	Ad hoc	Exclude up to $10,000
66	Oregon	PERS	Yes	1.25% on 1st $60,000 + .15% on $60,000+	Benefits taxable
67	Pennsylvania	SERS	Yes	Ad hoc	Benefits exempt
68	Pennsylvania	PERS	Yes	Ad hoc	Benefits exempt
69	Rhode Island	ERS	Yes	CPI - 3% cap	Benefits taxable
70	South Carolina	SCRS	Yes	Lesser of 1% or $500	$15,000 deduction
71	South Dakota	SRS	Yes	2.1% to 3.1% based on CPI	No income tax
72	Tennessee	CRS	Yes	CPI - 3% cap	Exempt to $26,200/$37,000
73	Texas	ERS	Yes	Ad hoc	No income tax
74	Texas	TRS	No	Ad hoc	No income tax
75	Texas	MRS	Yes	Up to 70% of CPI (employer option)	No income tax
76	Utah	SRS	Yes	CPI - 4% cap	tax credit up to $450/$900
77	Vermont	SRS	Yes	CPI - 5% cap	Benefits taxable
78	Vermont	TRS	Yes	50% of CPI - 5% cap	Benefits taxable
79	Virginia	SRS	Yes	CPI - 3% cap	Deduction up to $12,000
80	Washington	PERS	Yes	CPI - 3% cap	No income tax
81	Washington	TRS	Yes	CPI - 3% cap	No income tax
82	West Virginia	PERS	Yes	Ad hoc	Exempt to $2,000; Exclusions for $8000/$16000
83	West Virginia	TRS	Yes	Ad hoc	Exempt to $2,000; Exclusions for $8000/$16000
84	Wyoming	WRS	Yes	Ad hoc	No income tax
85	Milwaukee	City	Yes	Varies	Limited exemptions
86	Milwaukee	County	Yes	2%	Limited exemptions
87	Wisconsin	WRS	Yes	Investment earnings; reductions possible	Limited exemptions

Figure 10. Social Security CPI % Adjustments 2000 to 2017

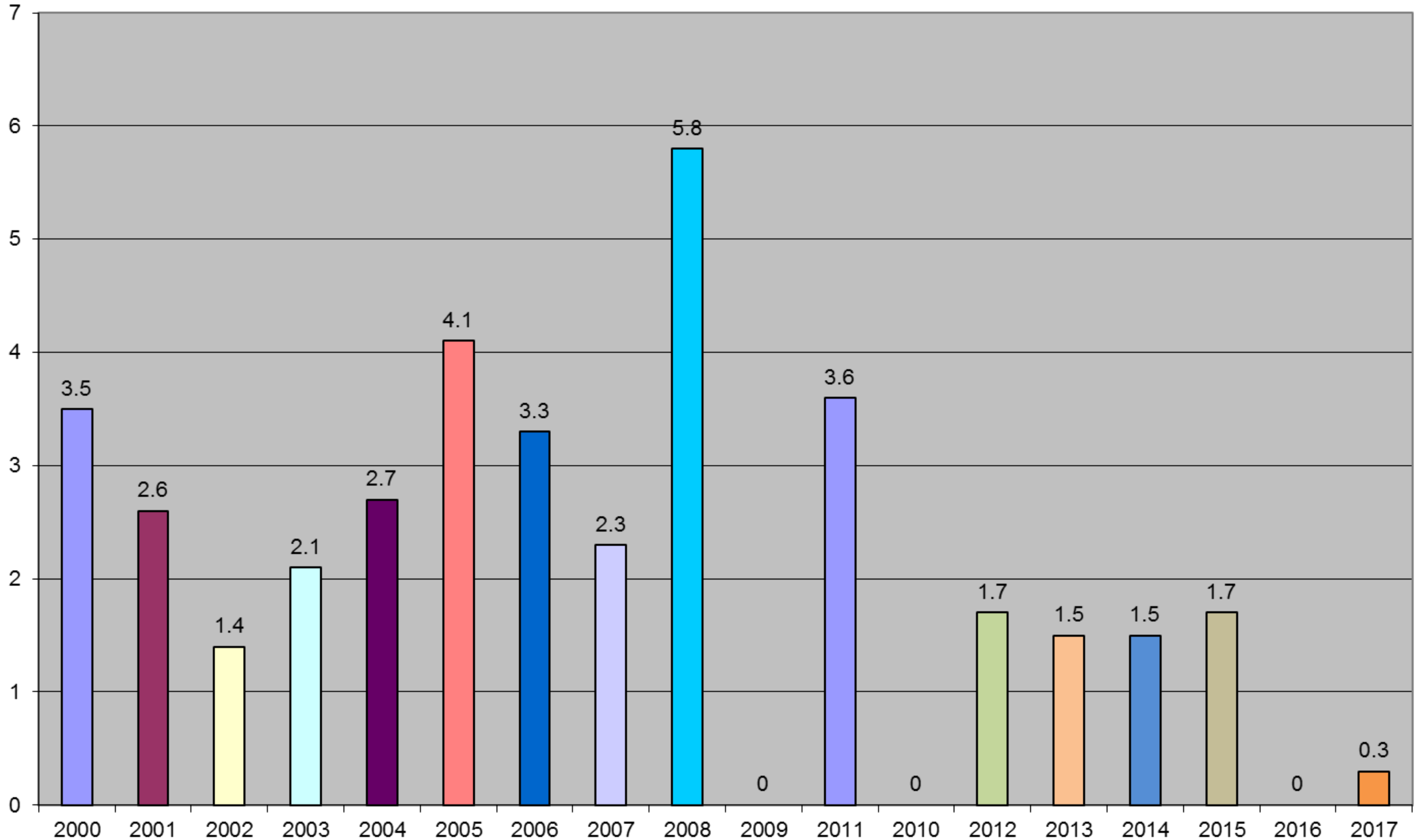
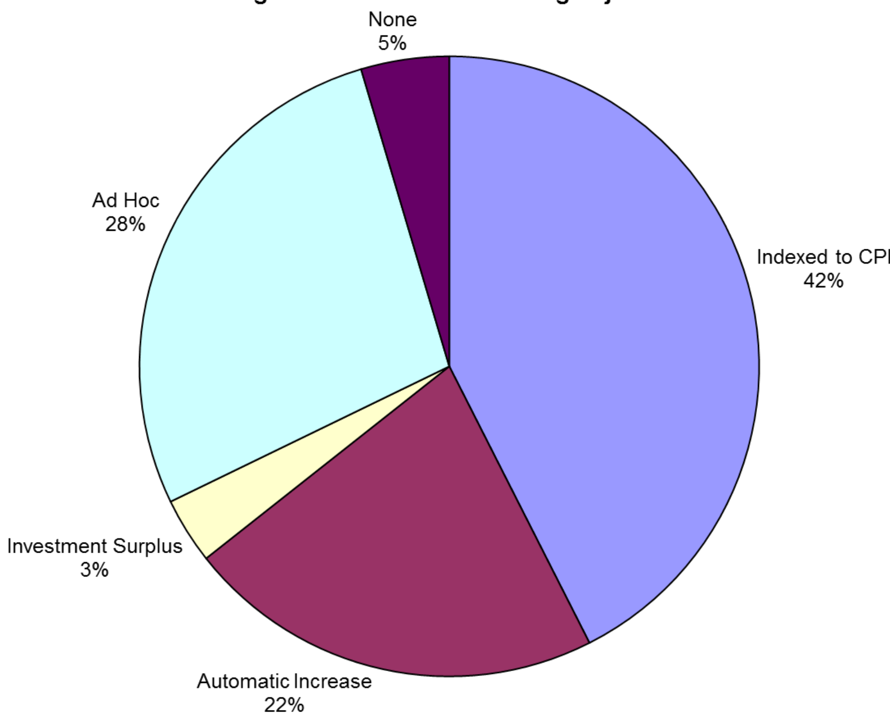


Figure 11. 2015 Cost of Living Adjustments



PART VI
ACTUARIAL AND ACCOUNTING INFORMATION

A. INTRODUCTION

Chart 6, on pages 39 and 40, provides selected actuarial and accounting information about each of the plans in the report. This part of the report discusses the actuarial method used by each of the plans, provides the interest assumption, wage inflation assumption, and economic spread for each of the plans, and provides the Governmental Accounting Standards Board (GASB) 25 funding ratio for each of the plans in 2015.

B. ACTUARIAL METHODS

The third column in Chart 6 lists the actuarial methods used by each of the 87 plans. An actuarial method is a procedure for determining the present value of pension benefits that will be paid in the future and allocating that value and the cost of the benefits to specific time periods. There are a number of accepted actuarial methods that presumably will reach the goal of fully funding all pension obligations as they become due, but they allocate costs in different ways during the period of employment of participants in the plan.

Seventy-five, or 86%, of the 87 plans use the entry age actuarial method; eight, or 9%, of the 87 plans use the unit credit method; four, or 5%, of the 87 plans use the aggregate cost method or other methods.

C. INTEREST ASSUMPTION

The interest assumption, which is also sometimes referred to as the "earnings assumption," is one of the key economic assumptions in determining the level of contribution rates. The fourth column in Chart 6 provides the interest assumption for each of the 87 plans in the report. This information is compared with previous reports in the following table:

Interest Assumption	2006	2008	2010	2012	2015
From 5% to 7%	1 plan	1 plan	4 plans	4 plans	6 plans
Over 7% to 8%	61 plans	63 plans	65 plans	72 plans	78 plans
Over 8%	23 plans	21 plans	16 plans	8 plans	3 plans
Not determined or not applicable	0 plans	2 plans	2 plans	3 plans	0 plans
TOTAL	85 plans	87 plans	87 plans	87 plans	87 plans

See Figure 12, *2015 Plan Interest Assumptions*, for a graphical representation of current data.

D. ECONOMIC SPREAD

Another key economic assumption in pension planning is the assumption of the wage inflation rate or general salary increases in excess of those provided for merit or seniority. The difference between the wage inflation assumption and the interest assumption is often referred to as the "economic spread," which is the assumed real rate of return on invested assets above the wage inflation rate. The fifth and sixth columns of Chart 6 show the wage inflation assumptions and the resultant economic spread for each of the plans in the report.

E. FUNDING RATIO

Until 1995, the GASB required public pension plans to disclose the "pension benefit obligation," which is a measure of the present value of pension benefits, adjusted for the affects of projected salary increases. The pension benefits were estimated only on service earned by employees up to the date of the estimate.

GASB 25, issued in November 1994, requires that, beginning with periods after June 15, 1996, funding disclosures be based upon regular actuarial valuations. Included in the requirements under GASB 25 is a "schedule funding progress that reports the actuarial value of assets, the actuarial accrued liability and the relationship between the two over time…."

The following table summarizes the funding ratios for each of the plans in the 2015 Report and compares them with the 2012, 2010, 2008, and 2006 Reports.

Funding Ratio	2006	2008	2010	2012	2015
More than 100%	7 plans	10 plans	4 plans	0 plans	3 plans
90% to 100%	21 plans	19 plans	11 plans	11 plans	11 plans
80%, but less than 90%	20 plans	18 plans	23 plans	17 plans	15 plans
70%, but less than 80%	17 plans	24 plans	16 plans	18 plans	22 plans
60%, but less than 70%	11 plans	6 plans	17 plans	21 plans	23 plans
50%, but less than 60%	3 plans	6 plans	7 plans	12 plans	9 plans
Less than 50%	3 plans	2 plans	7 plans	5 plans	4 plans
Not determined	3 plans	2 plans	2 plans	3 plans	0 plans
TOTAL	85 plans	87 plans	87 plans	87 plans	87 plans

See Figure 13, *2015 Plan Funding Ratios*, for a graphical representation of current data.

F. TRENDS

Funding ratios of more than 100% have generally decreased since the 2006 Report. Seven plans had funding ratios in excess of 100% in 2006. Three plans have a funding ratio in excess of 100% in 2015. Overall funding has also decreased. 32% of the plans studied had funding ratios of 90% or more in 2006. In 2015, that percentage was 26%.

The entry age method remains the predominant method used by the plans studied.

G. THE WRS

The actuarial method used by the WRS is entry age. The interest assumption for unretired employees remains 7.2% and the "economic spread" is currently 4.0%.

For 2015, the funding ratio for the WRS was 99.97%.

CHART 6
ACTUARIAL AND ACCOUNTING PROVISIONS

	State	Fund Name	Actuarial Method	Interest Assumption	Wage Inflation[1]	Economic Spread	Funded Ratio
1	Alabama	ERS	Entry age	8.00%	3.00%	5.00%	67.15%
2	Alabama	TRS	Entry age	8.00%	3.00%	5.00%	67.50%
3	Alaska	PERS	Entry age	8.00%	3.12%	4.88%	78.00%
4	Alaska	TRS	Entry age	8.00%	3.12%	4.88%	83.00%
5	Arizona	SRS	Unit credit	8.00%	3.00%	5.00%	77.50%
6	Arkansas	PERS	Entry age	7.50%	3.25%	4.25%	79.00%
7	Arkansas	TRS	Entry age	8.00%	3.25%	4.75%	80.00%
8	California	PERS	Entry age	7.50%	3.00%	4.50%	72.10%
9	California	TRS	Entry age	7.50%	3.00%	4.50%	68.50%
10	Colorado	PERA	Entry age	7.50%	2.80%	4.70%	70.16%
11	Connecticut	SERS	Unit credit	8.00%	3.00%	5.00%	43.30%
12	Connecticut	TRS	Entry age	8.50%	3.00%	5.50%	59.00%
13	Delaware	SEPP	Entry age	7.20%	3.00%	4.20%	91.60%
14	Florida	FRS	Entry age	7.65%	2.60%	5.05%	86.50%
15	Georgia	ERS	Entry age	7.50%	3.25%	4.25%	74.10%
16	Georgia	TRS	Entry age	7.50%	3.25%	4.25%	79.10%
17	Hawaii	ERS	Entry age	7.65%	3.00%	4.65%	62.20%
18	Idaho	PERS	Entry age	7.50%	3.25%	4.25%	90.00%
19	Illinois	SRS	Unit credit	7.25%	3.00%	4.25%	36.18%
20	Illinois	TRS	Unit credit	7.50%	3.00%	4.50%	42.00%
21	Illinois	MRF	Entry age	7.50%	3.50%	4.00%	88.40%
22	Indiana	PERF	Entry age	6.75%	2.25%	4.50%	78.60%
23	Indiana	TRF	Entry age	6.75%	2.25%	4.50%	92.50%
24	Iowa	PERS	Entry age	7.50%	3.00%	4.50%	82.70%
25	Kansas	PERS	Entry age	8.00%	3.00%	5.00%	67.00%
26	Kentucky	KERS	Entry age	7.50%	3.25%	4.25%	19.00%
27	Kentucky	CERS	Entry age	7.50%	3.25%	4.25%	60.30%
28	Kentucky	TRS	Entry age	7.50%	4.00%	3.50%	55.30%
29	Louisiana	SERS	Entry age	7.75%	3.00%	4.75%	62.10%
30	Louisiana	TRSL	Entry age	7.75%	2.50%	5.75%	60.90%
31	Maine	PERS	Entry age	7.25%	3.50%	3.75%	88.10%
32	Maryland	SRPS	Entry age	7.55%	3.20%	4.35%	69.66%
33	Massachusetts	SERS	Entry age	7.75%	3.50%	4.25%	67.50%
34	Massachusetts	TRS	Entry age	7.75%	3.50%	4.25%	54.30%
35	Michigan	SERS	Entry age	8.00%	3.50%	4.50%	64.20%
36	Michigan	MERS	Entry age	8.00%	4.50%	3.50%	78.00%
37	Michigan	PSERS	Entry age	8.00%	3.50%	4.50%	60.50%
38	Minnesota	MSRS	Entry age	8.00%	3.50%	4.50%	85.72%
39	Minnesota	PERA	Entry age	8.00%	3.50%	4.50%	79.87%
40	Minnesota	TRA	Entry age	8.44%	3.75%	4.69%	77.05%
41	Mississippi	PERS	Entry age	7.75%	3.75%	4.00%	60.40%
42	Missouri	SERS	Entry age	8.00%	3.00%	5.00%	75.00%
43	Missouri	LAGERS	Entry age	7.25%	3.50%	3.75%	94.40%
44	Missouri	PSRS	Entry age	8.00%	3.75%	4.25%	86.80%
45	Montana	PERS	Entry age	7.75%	4.00%	3.75%	76.10%
46	Montana	TRS	Entry age	7.75%	4.00%	3.75%	67.46%
47	Nebraska	SERS	Entry age	7.75%	3.25%	4.50%	102.52%
48	Nebraska	CERS	Entry age	7.75%	3.25%	4.50%	102.36%

49	Nebraska	SPP	Entry age	8.00%	3.25%	4.75%	88.01%
50	Nevada	PERS	Entry age	8.00%	3.50%	4.50%	71.50%
51	New Hampshire	NHRS	Entry age	7.75%	3.75%	4.00%	60.70%
52	New Jersey	PERS	Unit credit	7.90%	4.00%	3.90%	59.50%
53	New Jersey	TPAF	Unit credit	7.90%	3.33%	4.57%	51.10%
54	New Mexico	PERA	Entry age	7.75%	3.50%	4.25%	74.90%
55	New Mexico	ERA	Entry age	7.75%	3.75%	4.00%	63.70%
56	New York	ERS	Aggregate	7.00%	3.80%	3.20%	83.60%
57	New York	TRS	Aggregate	7.50%	2.50%	5.00%	94.20%
58	North Carolina	TSERS	Entry age	7.25%	3.00%	4.25%	95.60%
59	North Carolina	LGERS	Entry age	7.25%	3.00%	4.25%	99.80%
60	North Dakota	PERS	Entry age	8.00%	4.50%	3.50%	68.60%
61	North Dakota	TRF	Entry age	7.75%	3.25%	4.25%	61.60%
62	Ohio	PERS	Entry age	8.00%	3.75%	4.25%	82.40%
63	Ohio	STRS	Entry age	7.75%	3.50%	4.25%	69.30%
64	Oklahoma	PERS	Entry age	7.50%	4.00%	3.50%	96.00%
65	Oklahoma	TRS	Entry age	8.00%	3.75%	4.25%	66.60%
66	Oregon	PERS	Unit credit	7.50%	3.50%	4.00%	66.00%
67	Pennsylvania	SERS	Entry age	7.50%	3.05%	4.45%	58.00%
68	Pennsylvania	PERS	Entry age	7.50%	3.00%	4.50%	60.60%
69	Rhode Island	ERS	Entry age	7.50%	3.50%	4.00%	57.70%
70	South Carolina	SCRS	Entry age	7.50%	2.75%	4.75%	62.00%
71	South Dakota	SRS	Entry age	7.25%	3.25%	4.00%	100.00%
72	Tennessee	CRS	Entry age	7.50%	3.00%	4.50%	116.60%
73	Texas	ERS	Entry age	8.00%	3.50%	4.50%	76.30%
74	Texas	TRS	Entry age	8.00%	3.50%	4.50%	80.20%
75	Texas	MRS	Entry age	6.75%	3.00%	3.75%	85.80%
76	Utah	SRS	Entry age	7.50%	3.25%	4.25%	85.50%
77	Vermont	SRS	Entry age	7.95%	3.25%	4.70%	75.10%
78	Vermont	TRS	Entry age	7.95%	3.25%	4.70%	58.60%
79	Virginia	SRS	Entry age	7.00%	3.00%	4.00%	73.30%
80	Washington	PERS	Hybrid	7.70%	3.75%	3.95%	73.00%
81	Washington	TRS	Hybrid	7.70%	3.75%	3.95%	78.00%
82	West Virginia	PERS	Entry age	7.50%	3.00%	4.50%	83.10%
83	West Virginia	TRS	Entry age	7.50%	3.00%	4.50%	57.90%
84	Wyoming	WRS	Entry age	7.75%	4.25%	3.50%	79.71%
85	Milwaukee	City	Unit credit	8.25%	3.00%	5.25%	94.80%
86	Milwaukee	County	Entry age	8.00%	3.00%	5.00%	78.10%
87	Wisconsin	WRS	Entry age-FIL	7.20%	3.20%	4.00%	99.97%

[1]Where no specific wage inflation or payroll growth figure was given, the price inflation assumption was used

Figure 12. 2015 Plan Interest Assumptions

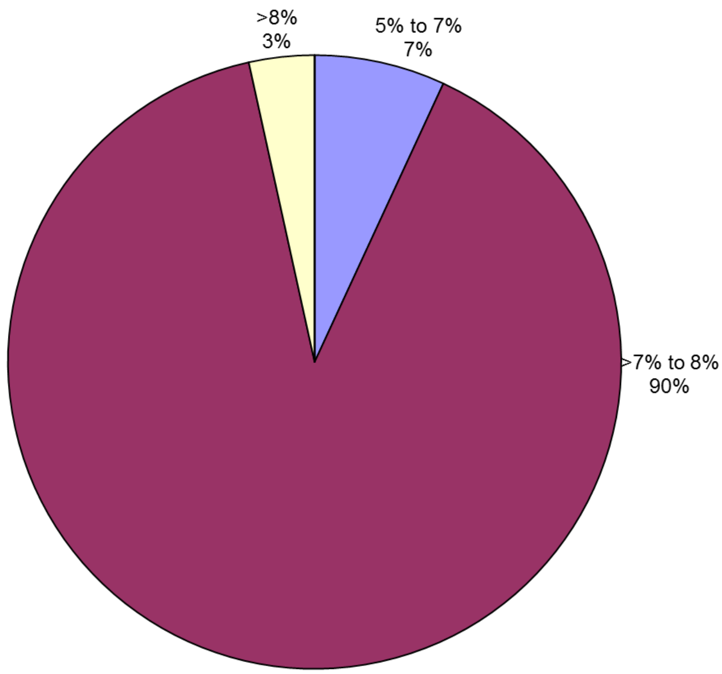


Figure 13. 2015 Plan Funding Ratios