

401(k)-style plans can provide millions in retirement funds for state workers

Retirement account funds of a career teacher retiring today if that teacher in 1976 had access to a 401(k)-style plan like the State Universities Retirement System's, or SURS's, current 401(k)-style plan

A 401(k)-style plan like the one SURS provides can grant retirement benefits to state workers that are comparable to the current pension system. For example, if in 1976 a newly hired teacher had been able to enroll in a 401(k)-style plan (with 8% employee and 7% employer contributions) and she received investment returns equal to the Teachers' Retirement System's, or TRS's, average historical or assumed returns or actual historical stock and bond returns, she would retire today with \$1.4 million to \$2.2 million in retirement funds.

Three investment return scenarios are provided below:

1. An assumed 7% annual return, equal to the current assumed returns of TRS
2. An assumed 8.1% annual return, equal to the 30-year actual market return of TRS
3. Returns based on the actual annual returns of the stock and bond markets since 1976. The portfolio is based on a 50/50 split of the S&P 500 and Barclays U.S. Aggregate Bond Index.

401(k)-style plan investment scenario: Teachers' Retirement System's assumed return on investment (7%)

Years of service	Year	Age	Salary ¹	Annual salary increase ²	Employee (8% of salary) and employer (7% of salary) contributions to 401(k)-style plan	TRS's assumed rate of return on investment ³	401(k)-style plan beginning balance	Annual investment income ⁴	401(k)-style plan ending balance
			A	B = (A*15%)			C	D	B+C+D
1	1976	23	\$18,000		\$2,700	7%	\$0	\$95	\$2,795
2	1977	24	\$19,755	9.75%	\$2,963	7%	\$2,795	\$299	\$6,057
3	1978	25	\$21,187	7.25%	\$3,178	7%	\$6,057	\$535	\$9,770
4	1979	26	\$22,617	6.75%	\$3,393	7%	\$9,770	\$803	\$13,966
5	1980	27	\$24,076	6.45%	\$3,611	7%	\$13,966	\$1,104	\$18,681
6	1981	28	\$25,581	6.25%	\$3,837	7%	\$18,681	\$1,442	\$23,960
7	1982	29	\$27,180	6.25%	\$4,077	7%	\$23,960	\$1,820	\$29,857
8	1983	30	\$28,879	6.25%	\$4,332	7%	\$29,857	\$2,242	\$36,430
9	1984	31	\$30,683	6.25%	\$4,603	7%	\$36,430	\$2,711	\$43,744
10	1985	32	\$32,601	6.25%	\$4,890	7%	\$43,744	\$3,233	\$51,868
11	1986	33	\$34,313	5.25%	\$5,147	7%	\$51,868	\$3,811	\$60,825
12	1987	34	\$36,114	5.25%	\$5,417	7%	\$60,825	\$4,447	\$70,690
13	1988	35	\$38,010	5.25%	\$5,702	7%	\$70,690	\$5,148	\$81,539
14	1989	36	\$40,006	5.25%	\$6,001	7%	\$81,539	\$5,918	\$93,458
15	1990	37	\$42,106	5.25%	\$6,316	7%	\$93,458	\$6,763	\$106,537
16	1991	38	\$43,895	4.25%	\$6,584	7%	\$106,537	\$7,688	\$120,809
17	1992	39	\$45,761	4.25%	\$6,864	7%	\$120,809	\$8,697	\$136,370
18	1993	40	\$47,706	4.25%	\$7,156	7%	\$136,370	\$9,796	\$153,322
19	1994	41	\$49,733	4.25%	\$7,460	7%	\$153,322	\$10,994	\$171,776
20	1995	42	\$51,847	4.25%	\$7,777	7%	\$171,776	\$12,297	\$191,850
21	1996	43	\$53,532	3.25%	\$8,030	7%	\$191,850	\$13,711	\$213,590
22	1997	44	\$55,272	3.25%	\$8,291	7%	\$213,590	\$15,241	\$237,122
23	1998	45	\$57,068	3.25%	\$8,560	7%	\$237,122	\$16,898	\$262,581
24	1999	46	\$58,923	3.25%	\$8,838	7%	\$262,581	\$18,690	\$290,109
25	2000	47	\$60,838	3.25%	\$9,126	7%	\$290,109	\$20,627	\$319,862
26	2001	48	\$62,815	3.25%	\$9,422	7%	\$319,862	\$22,720	\$352,004
27	2002	49	\$64,857	3.25%	\$9,728	7%	\$352,004	\$24,981	\$386,713
28	2003	50	\$66,964	3.25%	\$10,045	7%	\$386,713	\$27,422	\$424,180
29	2004	51	\$69,141	3.25%	\$10,371	7%	\$424,180	\$30,056	\$464,606
30	2005	52	\$71,388	3.25%	\$10,708	7%	\$464,606	\$32,897	\$508,212
31	2006	53	\$73,708	3.25%	\$11,056	7%	\$508,212	\$35,962	\$555,230
32	2007	54	\$76,103	3.25%	\$11,416	7%	\$555,230	\$39,266	\$605,911
33	2008	55	\$78,577	3.25%	\$11,787	7%	\$605,911	\$42,826	\$660,524
34	2009	56	\$81,131	3.25%	\$12,170	7%	\$660,524	\$46,663	\$719,356
35	2010	57	\$83,767	3.25%	\$12,565	7%	\$719,356	\$50,795	\$782,716
36	2011	58	\$86,490	3.25%	\$12,973	7%	\$782,716	\$55,244	\$850,933
37	2012	59	\$89,301	3.25%	\$13,395	7%	\$850,933	\$60,034	\$924,362
38	2013	60	\$92,203	3.25%	\$13,830	7%	\$924,362	\$65,189	\$1,003,382
39	2014	61	\$95,199	3.25%	\$14,280	7%	\$1,003,382	\$70,737	\$1,088,399
40	2015	62	\$98,293	3.25%	\$14,744	7%	\$1,088,399	\$76,704	\$1,179,847
41	2016	63	\$101,488	3.25%	\$15,223	7%	\$1,179,847	\$83,122	\$1,278,192
42	2017	64	\$104,786	3.25%	\$15,718	7%	\$1,278,192	\$90,024	\$1,383,934

Source: Teachers' Retirement System, "Actuarial Report 2016," Illinois Policy Institute calculations

1 Ending salary based on actual TRS member salary data, see below

2 Annual raises based on "Salary Increase Rates" actuarial table, see below

3 As of fiscal year 2016

4 Investment returns are based on an even distribution of employee and employer contributions over the course of a year

401(k)-style plan investment scenario: Teachers' Retirement System's 30-year average actual market return (8.1%)

Years of service	Year	Age	Salary ¹	Annual salary increase ²	Employee (8% of salary) and employer (7% of salary) contributions to 401(k)-style plan	TRS's 30-year average market return on investment ³	401(k)-style plan beginning balance	Annual investment income ⁴	401(k)-style plan ending balance
A			B = (A*15%)				C	D	B+C+D
1	1976	23	\$18,000		\$2,700	8.1%	\$0	\$109	\$2,809
2	1977	24	\$19,755	9.75%	\$2,963	8.1%	\$2,809	\$348	\$6,120
3	1978	25	\$21,187	7.25%	\$3,178	8.1%	\$6,120	\$624	\$9,923
4	1979	26	\$22,617	6.75%	\$3,393	8.1%	\$9,923	\$941	\$14,256
5	1980	27	\$24,076	6.45%	\$3,611	8.1%	\$14,256	\$1,301	\$19,169
6	1981	28	\$25,581	6.25%	\$3,837	8.1%	\$19,169	\$1,708	\$24,714
7	1982	29	\$27,180	6.25%	\$4,077	8.1%	\$24,714	\$2,167	\$30,958
8	1983	30	\$28,879	6.25%	\$4,332	8.1%	\$30,958	\$2,683	\$37,973
9	1984	31	\$30,683	6.25%	\$4,603	8.1%	\$37,973	\$3,262	\$45,838
10	1985	32	\$32,601	6.25%	\$4,890	8.1%	\$45,838	\$3,911	\$54,639
11	1986	33	\$34,313	5.25%	\$5,147	8.1%	\$54,639	\$4,634	\$64,420
12	1987	34	\$36,114	5.25%	\$5,417	8.1%	\$64,420	\$5,437	\$75,274
13	1988	35	\$38,010	5.25%	\$5,702	8.1%	\$75,274	\$6,328	\$87,304
14	1989	36	\$40,006	5.25%	\$6,001	8.1%	\$87,304	\$7,315	\$100,619
15	1990	37	\$42,106	5.25%	\$6,316	8.1%	\$100,619	\$8,406	\$115,341
16	1991	38	\$43,895	4.25%	\$6,584	8.1%	\$115,341	\$9,609	\$131,535
17	1992	39	\$45,761	4.25%	\$6,864	8.1%	\$131,535	\$10,932	\$149,331
18	1993	40	\$47,706	4.25%	\$7,156	8.1%	\$149,331	\$12,386	\$168,873
19	1994	41	\$49,733	4.25%	\$7,460	8.1%	\$168,873	\$13,981	\$190,314
20	1995	42	\$51,847	4.25%	\$7,777	8.1%	\$190,314	\$15,730	\$213,821
21	1996	43	\$53,532	3.25%	\$8,030	8.1%	\$213,821	\$17,645	\$239,496
22	1997	44	\$55,272	3.25%	\$8,291	8.1%	\$239,496	\$19,735	\$267,521
23	1998	45	\$57,068	3.25%	\$8,560	8.1%	\$267,521	\$22,016	\$298,097
24	1999	46	\$58,923	3.25%	\$8,838	8.1%	\$298,097	\$24,504	\$331,440
25	2000	47	\$60,838	3.25%	\$9,126	8.1%	\$331,440	\$27,216	\$367,782
26	2001	48	\$62,815	3.25%	\$9,422	8.1%	\$367,782	\$30,172	\$407,376
27	2002	49	\$64,857	3.25%	\$9,728	8.1%	\$407,376	\$33,391	\$450,496
28	2003	50	\$66,964	3.25%	\$10,045	8.1%	\$450,496	\$36,897	\$497,437
29	2004	51	\$69,141	3.25%	\$10,371	8.1%	\$497,437	\$40,712	\$548,521
30	2005	52	\$71,388	3.25%	\$10,708	8.1%	\$548,521	\$44,864	\$604,093
31	2006	53	\$73,708	3.25%	\$11,056	8.1%	\$604,093	\$49,379	\$664,528
32	2007	54	\$76,103	3.25%	\$11,416	8.1%	\$664,528	\$54,289	\$730,233
33	2008	55	\$78,577	3.25%	\$11,787	8.1%	\$730,233	\$59,626	\$801,646
34	2009	56	\$81,131	3.25%	\$12,170	8.1%	\$801,646	\$65,426	\$879,242
35	2010	57	\$83,767	3.25%	\$12,565	8.1%	\$879,242	\$71,727	\$963,534
36	2011	58	\$86,490	3.25%	\$12,973	8.1%	\$963,534	\$78,572	\$1,055,079
37	2012	59	\$89,301	3.25%	\$13,395	8.1%	\$1,055,079	\$86,004	\$1,154,478
38	2013	60	\$92,203	3.25%	\$13,830	8.1%	\$1,154,478	\$94,073	\$1,262,382
39	2014	61	\$95,199	3.25%	\$14,280	8.1%	\$1,262,382	\$102,831	\$1,379,493
40	2015	62	\$98,293	3.25%	\$14,744	8.1%	\$1,379,493	\$112,336	\$1,506,573
41	2016	63	\$101,488	3.25%	\$15,223	8.1%	\$1,506,573	\$122,649	\$1,644,445
42	2017	64	\$104,786	3.25%	\$15,718	8.1%	\$1,644,445	\$133,837	\$1,793,999

Source: Teachers' Retirement System, "Actuarial Report 2016," Illinois Policy Institute calculations

1 Ending salary based on actual TRS member salary data, see below

2 Annual raises based on "Salary Increase Rates" actuarial table, see below

3 As of fiscal year 2016

4 Investment returns are based on an even distribution of employee and employer contributions over the course of a year

401(k)-style plan investment scenario: 50/50 investment portfolio of S&P 500 and Barclays U.S. Aggregate Bond Index (10%)¹

Years of service	Year	Age	Salary ²	Annual salary increase ³	Employee (8% of salary) and employer (7% of salary) contributions to 401(k)-style plan	S&P 500 returns, including dividends	Barclays U.S. aggregate bond returns ⁴	Return on 50/50 investment portfolio in S&P 500 and bonds	401(k)-style plan beginning balance	Annual investment income ⁵	401(k)-style plan ending balance
					A						
1	1976	23	\$18,000		\$2,700	24.2%	3.8%	14.0%	\$0	\$189	\$2,889
2	1977	24	\$19,755	9.75%	\$2,963	-7.8%	3.8%	-2.0%	\$2,889	-\$87	\$5,765
3	1978	25	\$21,187	7.25%	\$3,178	6.4%	3.8%	5.1%	\$5,765	\$375	\$9,319
4	1979	26	\$22,617	6.75%	\$3,393	18.7%	3.8%	11.2%	\$9,319	\$1,239	\$13,950
5	1980	27	\$24,076	6.45%	\$3,611	32.8%	2.7%	17.7%	\$13,950	\$2,794	\$20,356
6	1981	28	\$25,581	6.25%	\$3,837	-5.3%	6.3%	0.5%	\$20,356	\$104	\$24,296
7	1982	29	\$27,180	6.25%	\$4,077	21.2%	32.7%	26.9%	\$24,296	\$7,093	\$35,467
8	1983	30	\$28,879	6.25%	\$4,332	23.1%	8.2%	15.7%	\$35,467	\$5,893	\$45,692
9	1984	31	\$30,683	6.25%	\$4,603	6.0%	15.2%	10.6%	\$45,692	\$5,066	\$55,360
10	1985	32	\$32,601	6.25%	\$4,890	32.2%	22.1%	27.2%	\$55,360	\$15,714	\$75,964
11	1986	33	\$34,313	5.25%	\$5,147	19.1%	15.3%	17.2%	\$75,964	\$13,493	\$94,604
12	1987	34	\$36,114	5.25%	\$5,417	5.7%	2.8%	4.2%	\$94,604	\$4,107	\$104,128
13	1988	35	\$38,010	5.25%	\$5,702	16.6%	7.9%	12.3%	\$104,128	\$13,121	\$122,950
14	1989	36	\$40,006	5.25%	\$6,001	32.0%	14.5%	23.3%	\$122,950	\$29,302	\$158,254
15	1990	37	\$42,106	5.25%	\$6,316	-3.4%	9.0%	2.8%	\$158,254	\$4,471	\$169,041
16	1991	38	\$43,895	4.25%	\$6,584	31.0%	16.0%	23.5%	\$169,041	\$40,455	\$216,080
17	1992	39	\$45,761	4.25%	\$6,864	7.6%	7.4%	7.5%	\$216,080	\$16,463	\$239,408
18	1993	40	\$47,706	4.25%	\$7,156	10.2%	9.8%	10.0%	\$239,408	\$24,201	\$270,765
19	1994	41	\$49,733	4.25%	\$7,460	1.2%	-2.9%	-0.9%	\$270,765	-\$2,374	\$275,851
20	1995	42	\$51,847	4.25%	\$7,777	38.0%	18.5%	28.2%	\$275,851	\$78,998	\$362,626
21	1996	43	\$53,532	3.25%	\$8,030	23.1%	3.6%	13.4%	\$362,626	\$48,947	\$419,602
22	1997	44	\$55,272	3.25%	\$8,291	33.7%	9.6%	21.7%	\$419,602	\$91,763	\$519,656
23	1998	45	\$57,068	3.25%	\$8,560	28.7%	8.7%	18.7%	\$519,656	\$98,055	\$626,270
24	1999	46	\$58,923	3.25%	\$8,838	21.1%	-0.8%	10.1%	\$626,270	\$63,983	\$699,092
25	2000	47	\$60,838	3.25%	\$9,126	-9.1%	11.6%	1.3%	\$699,092	\$8,866	\$717,084
26	2001	48	\$62,815	3.25%	\$9,422	-12.0%	8.4%	-1.8%	\$717,084	-\$12,812	\$713,694
27	2002	49	\$64,857	3.25%	\$9,728	-22.3%	10.3%	-6.0%	\$713,694	-\$43,149	\$680,273
28	2003	50	\$66,964	3.25%	\$10,045	28.7%	4.1%	16.4%	\$680,273	\$112,457	\$802,775
29	2004	51	\$69,141	3.25%	\$10,371	10.8%	4.3%	7.6%	\$802,775	\$61,243	\$874,390
30	2005	52	\$71,388	3.25%	\$10,708	4.8%	2.4%	3.6%	\$874,390	\$31,759	\$916,856
31	2006	53	\$73,708	3.25%	\$11,056	15.7%	4.3%	10.0%	\$916,856	\$92,561	\$1,020,474
32	2007	54	\$76,103	3.25%	\$11,416	5.5%	7.0%	6.2%	\$1,020,474	\$63,777	\$1,095,667
33	2008	55	\$78,577	3.25%	\$11,787	-37.2%	5.2%	-16.0%	\$1,095,667	-\$176,139	\$931,314
34	2009	56	\$81,131	3.25%	\$12,170	27.1%	5.9%	16.5%	\$931,314	\$154,858	\$1,098,342
35	2010	57	\$83,767	3.25%	\$12,565	14.9%	6.5%	10.7%	\$1,098,342	\$118,250	\$1,229,157
36	2011	58	\$86,490	3.25%	\$12,973	2.1%	7.8%	5.0%	\$1,229,157	\$61,226	\$1,303,356
37	2012	59	\$89,301	3.25%	\$13,395	15.9%	4.2%	10.1%	\$1,303,356	\$131,660	\$1,448,412
38	2013	60	\$92,203	3.25%	\$13,830	32.4%	-2.0%	15.2%	\$1,448,412	\$221,282	\$1,683,525
39	2014	61	\$95,199	3.25%	\$14,280	13.8%	6.0%	9.9%	\$1,683,525	\$167,207	\$1,865,011
40	2015	62	\$98,293	3.25%	\$14,744	1.3%	0.6%	0.9%	\$1,865,011	\$17,413	\$1,897,168
41	2016	63	\$101,488	3.25%	\$15,223	11.9%	2.7%	7.3%	\$1,897,168	\$138,763	\$2,051,155
42	2017	64	\$104,786	3.25%	\$15,718	8.0%	0.9%	4.4%	\$2,051,155	\$91,317	\$2,158,190

Source: Teachers' Retirement System, "Actuarial Report 2016"; Morningstar (Barclays U.S. Aggregate Bond Index), MarketWatch.com (S&P 500 annual historical returns)

1 Average annual return of the 50/50 stock and bond portfolio over 42 years

2 Ending salary based on actual TRS member salary data, see below

3 Annual raises based on "Salary Increase Rates" actuarial table, see below

4 Bond rates of return for 1976-1979 not available, most recent 10-year average rate of return used (3.8%)

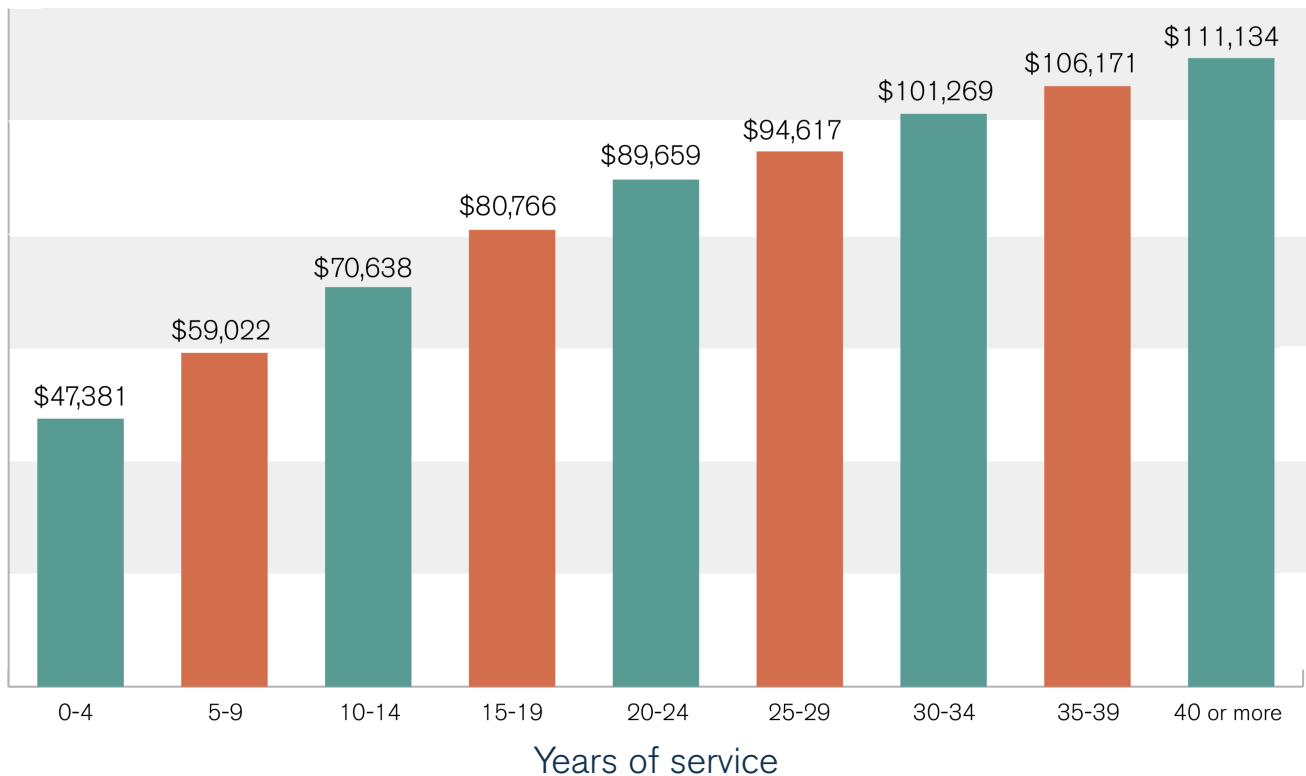
5 Investment returns are based on an even distribution of employee and employer contributions over the course of a year

Salary increase rates for Teachers' Retirement System members

Service	Rate
1	9.25%
2	7.25%
3	6.75%
4	6.45%
5	6.25%
10	5.25%
15	4.25%
20 and above	3.25%

Source: TRS's "Actuarial Report 2016," page 98

Teachers' Retirement System member salaries by years of service



Source: TRS's "Actuarial Report 2016," page 35