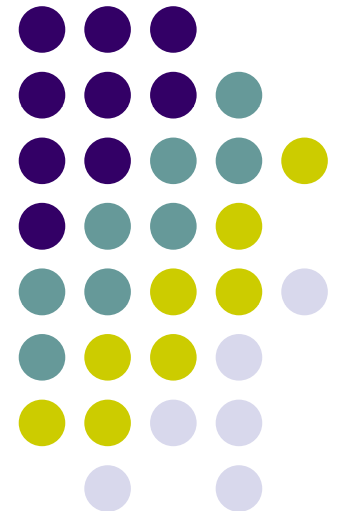


Benefit Adequacy Study

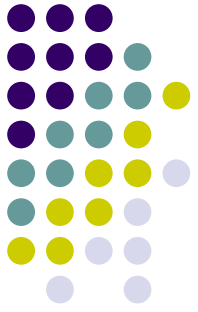
Presentation to

Legislative Commission on Pensions & Retirement

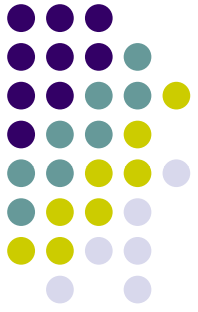
December 18, 2008



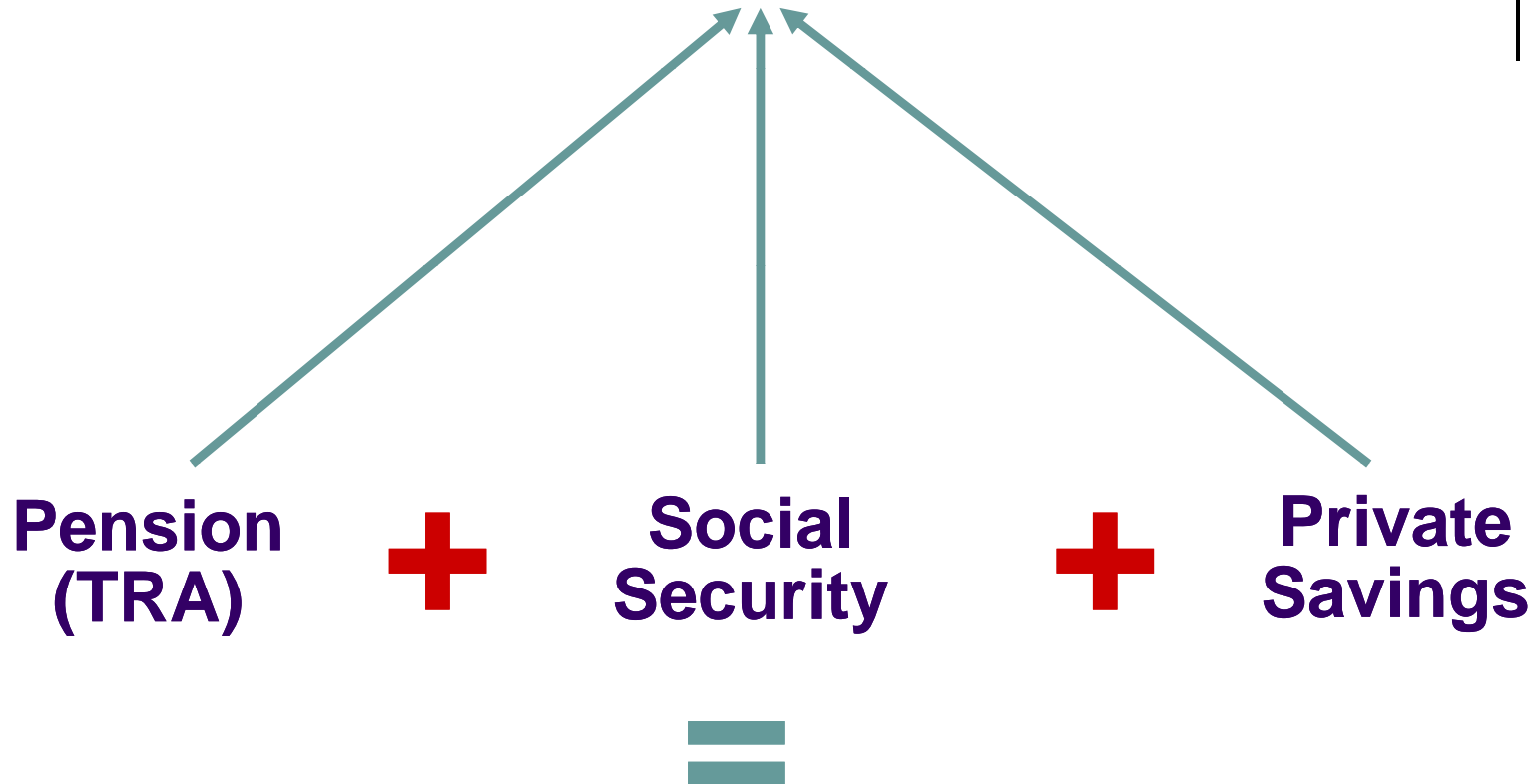
Study Highlights



- Minnesota public plans combined with Social Security and modest personal savings provide a satisfactory level of income for public employees with 30 years of service, retiring at full benefit retirements ages 65 and 66.
- However, those retiring early at age 62 or earlier find adequacy harder to attain. Personal savings must be relatively high (4% to 14% of working income) for early retirees to maintain their pre-retirement living standards.
- Post-89 hires retiring at early ages will have much lower replacement rates than pre-89 retirees and therefore their savings levels need to be even higher.



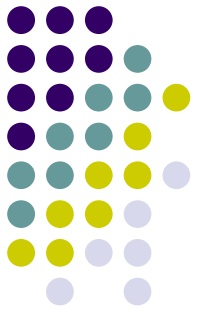
3-Legged Stool



**Target Replacement Rate: 80% to 90+%*
of pre-retirement income.**

*Source: CalSTRS 2004

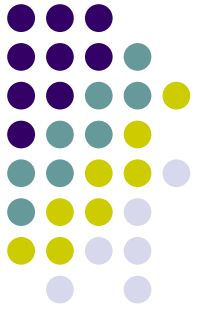
Benefit Adequacy Study — Assumptions



Goal: Achieve target replacement rate of 80% to 90+%

- Career of 30 years of service
- Retire at normal retirement age (NRA) – age 65 for pre-1989 hires and age 66 for post-1989 hires
- Also tested adequacy at earlier retirement age – age 62
- Test at three final year salary levels:
 - \$30,000 (High-5 = \$28,303)
 - \$50,000 (High-5 = \$47,171)
 - \$80,000 (High-5 = \$75,474)
- Straight-life plan selected (no survivor option)

Benefit Adequacy Study — Assumptions (continued)



Goal: Achieve target replacement rate of 80% to 90+%

- Note: Social Security benefits are higher (as a percentage of pre-retirement income) for lower wage-earners
- Pre-retirement assumptions:
 - Investment earnings on savings assumed to be 7 % per year during work career
 - Wage growth prior to retirement assumed to be 4.5% per year and during high-5 calculation it is assumed to be 3%
- Post retirement assumptions:
 - Investment earnings on savings assumed to be 4% per year



Benefit Adequacy Study - TRA

Salary at Retirement TRA Benefit Social Security TRA + Social Sec. Replacement Ratio Monthly Gap (to 90%) Lump Sum Needed* at Retirement Pre-retirement** Savings Rate Needed

Tier I Before 1989 — Social Security's Full Retirement Age is 66

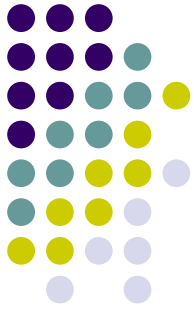
Age 62	\$30,000	\$1,127	\$876	\$2,003	80.1%	\$247	\$47,948	3.25%	
	30 years TRA	\$50,000	\$1,879	\$1,254	\$3,133	75.2%	\$617	\$119,965	4.88%
	35 Social Security	\$80,000	\$3,006	\$1,533	\$4,539	68.1%	\$1,461	\$283,986	7.22%
Age 65	\$30,000	\$1,245	\$1,090	\$2,335	93.4%	(\$85)	\$0	0.00%	
	30 years TRA	\$50,000	\$2,076	\$1,560	\$3,636	87.2%	\$114	\$20,705	0.77%
	35 Social Security	\$80,000	\$3,321	\$1,908	\$5,229	78.4%	\$771	\$139,474	3.54%

Tier II After 1989 — Social Security's Full Retirement Age is 67

Age 62	\$30,000	\$1,077	\$818	\$1,895	75.8%	\$355	\$69,105	4.68%	
	30 years TRA	\$50,000	\$1,794	\$1,170	\$2,964	71.1%	\$786	\$152,762	6.21%
	35 Social Security	\$80,000	\$2,871	\$1,431	\$4,302	64.5%	\$1,698	\$330,161	8.39%
Age 66	\$30,000	\$1,330	\$1,090	\$2,420	96.8%	(\$170)	\$0	0.00%	
	30 years TRA	\$50,000	\$2,217	\$1,560	\$3,777	90.6%	(\$27)	\$0	0.00%
	35 Social Security	\$80,000	\$3,547	\$1,908	\$5,455	81.8%	\$545	\$98,523	2.50%

*Assumes a 4% rate of return. ** Assumes a 7% rate of return.

Benefit Adequacy Study - MSRS



Salary at Retirement MSRS Benefit Social Security MSRS + Social Sec. Replacement Ratio Monthly Gap (to 90%) Lump Sum Needed* at Retirement Pre-retirement** Savings Rate Needed

Tier I Before 1989 — Social Security's Full Retirement Age is 66

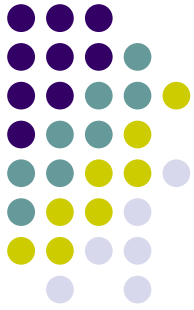
Age 62	\$30,000	\$1,085	\$876	\$1,961	78.4%	\$289	\$50,698	3.77%
	30 years MSRS \$50,000	\$1,808	\$1,254	\$3,062	73.5%	\$688	\$120,668	5.35%
	35 Social Security \$80,000	\$2,893	\$1,533	\$4,426	66.4%	\$1,574	\$276,031	7.69%
Age 65	\$30,000	\$1,203	\$1,090	\$2,293	91.7%	(\$43)	\$0	0.00%
	30 years MSRS \$50,000	\$2,005	\$1,560	\$3,565	85.6%	\$185	\$30,531	1.36%
	35 Social Security \$80,000	\$3,208	\$1,908	\$5,115	76.7%	\$885	\$145,992	4.07%

Tier II After 1989 — Social Security's Full Retirement Age is 67

Age 62	\$30,000	\$933	\$818	\$1,751	70.0%	\$499	\$87,593	6.31%
	30 years MSRS \$50,000	\$1,556	\$1,170	\$2,726	65.4%	\$1,024	\$179,564	8.01%
	35 Social Security \$80,000	\$2,489	\$1,431	\$3,920	58.8%	\$2,080	\$364,837	10.17%
Age 66	\$30,000	\$1,203	\$1,090	\$2,293	91.7%	(\$43)	\$0	0.0%
	30 years MSRS \$50,000	\$2,005	\$1,560	\$3,565	85.6%	\$185	\$29,549	1.32%
	35 Social Security \$80,000	\$3,208	\$1,908	\$5,116	76.7%	\$884	\$141,078	3.93%

*Assumes a 4% rate of return. ** Assumes a 7% rate of return. 7

Benefit Adequacy Study - PERA



Salary at Retirement PERA Benefit Social Security PERA + Social Sec. Replacement Ratio Monthly Gap (to 90%) Lump Sum Needed* at Retirement Pre-retirement** Savings Rate Needed

Tier I Before 1989 — Social Security's Full Retirement Age is 66

Age 62	\$30,000	\$1,085	\$876	\$1,961	78.4%	\$289	\$50,698	3.77%	
	30 years PERA	\$50,000	\$1,808	\$1,254	\$3,062	73.5%	\$688	\$120,668	5.35%
	35 Social Security	\$80,000	\$2,893	\$1,533	\$4,426	66.4%	\$1,574	\$276,031	7.69%

Age 65	\$30,000	\$1,203	\$1,090	\$2,293	91.7%	(\$43)	\$0	0.00%	
	30 years PERA	\$50,000	\$2,005	\$1,560	\$3,565	85.6%	\$185	\$30,531	1.36%
	35 Social Security	\$80,000	\$3,208	\$1,908	\$5,115	76.7%	\$885	\$145,992	4.07%

Tier II After 1989 — Social Security's Full Retirement Age is 67

Age 62	\$30,000	\$911	\$818	\$1,729	69.1%	\$521	\$91,433	6.80%	
	30 years PERA	\$50,000	\$1,519	\$1,170	\$2,689	64.5%	\$1,061	\$186,139	8.25%
	35 Social Security	\$80,000	\$2,430	\$1,431	\$3,860	57.9%	\$2,140	\$375,251	10.46%

Age 66	\$30,000	\$1,203	\$1,090	\$2,293	91.7%	(\$43)	\$0	0.0%	
	30 years PERA	\$50,000	\$2,005	\$1,560	\$3,565	85.6%	\$185	\$29,549	1.32%
	35 Social Security	\$80,000	\$3,208	\$1,908	\$5,116	76.7%	\$884	\$141,078	3.93%

*Assumes a 4% rate of return. ** Assumes a 7% rate of return.