

Study Tip

The scenario described in Example 6 is common for people who have defined benefit retirement plans. The question is whether you should retire sooner and receive a smaller monthly income for a greater number of years, or retire later and receive a greater monthly income for a fewer number of years.

There are two basic types of retirement plans: (1) defined contribution plans and (2) defined benefit plans. Examples 3, 4, and 5 describe the first type. The following example describes the second type.

EXAMPLE 6 Analyzing a Defined Benefit Plan

You are 55 years old and have worked for a government municipality for 30 years. Your defined benefit retirement plan will pay you 2% of your average income for the last 3 years for each year you have worked. Your average annual income during the past 3 years is \$85,000. This will increase by 2% each year. Suppose you live to age 85. At what age should you retire to receive the greatest retirement income?

SOLUTION

Use a spreadsheet to analyze the possibilities.

	A	B	C	D	E	F
	Age at Retirement	Years Worked	Years of Retirement	Average Working Income	Annual Retirement Income	Total Retirement Income
1						
2	55	30	30	\$85,000	\$51,000	\$1,530,000
3	56	31	29	\$86,700	\$53,754	\$1,558,866
4	57	32	28	\$88,434	\$56,598	\$1,584,737
5	58	33	27	\$90,203	\$59,534	\$1,607,412
	59	34	26	\$92,007	\$62,565	\$1,626,679
	60	35	25	\$93,847	\$65,693	\$1,642,320
	61	36	24	\$95,724	\$68,921	\$1,654,107
	62	37	23	\$97,638	\$72,252	\$1,661,804
	63	38	22	\$99,591	\$75,689	\$1,665,162
	64	39	21	\$101,583	\$79,235	\$1,663,927
	65	40	20	\$103,615	\$82,892	\$1,657,832
	66	41	19	\$105,687	\$86,663	\$1,646,601
	67	42	18	\$107,801	\$90,552	\$1,629,944
	68	43	17	\$109,957	\$94,563	\$1,607,565
	69	44	16	\$112,156	\$98,697	\$1,579,152
	70	45	15	\$114,399	\$102,959	\$1,544,384
	71	46	14	\$116,687	\$107,352	\$1,502,926
	72	47	13	\$119,021	\$111,879	\$1,454,431

From the spreadsheet, you can see that for each year you postpone retirement, your annual retirement income increases. However, the *total* amount of retirement income you will receive peaks at a retirement age of 63 years old.

In the United States, it is still true that most municipal workers, such as law enforcement employees and firefighters, have defined benefit retirement plans.

✓ Checkpoint

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According to the U.S. Bureau of Labor Statistics, only 20% of employees working for private companies have defined benefit retirement plans. In government jobs, however, defined benefit plan coverage is about 4 times greater—about 79%. Why do you think this is true?