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SOCIAL SECURITY: FACTORS AFFECTING THE DECISION OF “WHEN TO BEGIN” BENEFITS

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EXECUTIVE SUMMARY

Social Security benefits are an important part of most retirees' income. This paper examines the factors that affect a person's net Social Security benefit and the decision of when to begin benefits. The findings include:

- Individuals control a number of factors that affect their Social Security benefit. For the base benefit, a person has some control over the number of years in Social Security covered employment as well as the earnings used in calculating the base benefit. For adjustments to the base benefit, a person controls whether a permanent early retirement reduction or delayed retirement credit is applied, if benefits are temporarily reduced by the earnings test, and how other income impacts the net benefit through the income tax on Social Security Benefits.
- Healthy workers should work at least 35 years in covered employment in order to maximize the base benefit. However, any additional years beyond 35 years may not increase a person's Social Security benefits, particularly if an individual works less than full-time.
- When determining when to begin benefits, a worker should consider several threshold factors, including immediate income needs, the availability and size of other retirement assets, and the decision of whether to continue working.
- If there is no immediate need for benefits, it is generally a poor decision to begin early benefit receipt while still working. The combined effects of the *permanent* early retirement reduction, the *temporary* earnings test reduction, the income tax on Social Security benefits, and the payroll tax on earnings can seriously erode net benefits received, even for workers with modest lifetime earnings.
- Break-even life expectancy analysis suggests that people with lower than average life expectancies or high discount rates should begin benefits earlier. Individuals with greater than average life expectancies should defer benefit receipt until at least their full retirement age.



INTRODUCTION

Retirement planning is a complicated process, fraught with uncertainties about how much money will be needed in retirement and the related issues of how much to contribute to retirement savings, how to invest retirement assets, and how to take distributions (draw down) from retirement assets. The consequence of making a poor decision increases the likelihood of inadequate retirement resources, resulting in either a lower standard of living in retirement or a need to delay retirement in order to accumulate additional assets. Fundamental to making sound decisions is understanding how the mixture of Social Security, employer pensions, 401(k) and/or 403(b) assets, Individual Retirement Arrangement (IRA) assets, life insurance, after-tax stocks, bonds, and money market accounts, and housing wealth interact to determine available resources and potential retirement consumption.

This paper examines two sets of factors affecting a person's Social Security benefit and controlled by a worker. The first set of factors affect a worker's base benefit, known as the Primary Insurance Amount (PIA), and include years of coverage in the Social Security system and an individual's history of taxable earnings under the Social Security system. The second set of factors pertain to changes in the primary insurance amount, including early retirement reductions, delayed retirement credits, the earnings test, and the tax on benefits. Taken as a whole, careful planning is required into and through retirement to ensure that an individual maximizes lifetime Social Security benefits.

Many financial planning programs typically take Social Security benefit payments as the foundation for estimating what retirement income will be and what additional saving is needed to provide for a secure retirement. Many programs use the annual projected base benefit provided by the Social Security Administration (SSA). For example, if an 80 percent income replacement rate (IRR) is desired and base projected Social Security benefit provides a 30 percent IRR, then a household would need to save enough to provide for a 50 percent IRR out of other retirement assets. There are two potential problems with this approach. First, the SSA makes a number of simplifying assumptions about future earnings and age of benefit receipt, possibly making the projected benefit a poor benchmark for the actual benefit. Second, using the projected benefit as the Social Security IRR can substantially reduce total retirement income because the method neglects how the benefit receipt decision interacts with other sources of income. In particular, careful consideration of the second set of factors is needed to determine when to begin benefits in order to maximize lifetime Social Security benefits. Making a poor decision can potentially cost a retiree thousands of dollars of retirement income.

For many people, the decision of when to begin benefits is an economic choice that is dependent on when a person wants to retire, what other resources are available for retirement consumption, and how long a person expects to live in retirement. We demonstrate that a person's decision to begin early benefits should include a thorough analysis of other sources of income on net Social Security benefits. In particular, receiving early benefits while working can significantly reduce the net benefit a person receives. If, by contrast, a person retires early and is deciding when to begin benefits, the major factor is the expectation of life expectancy. Individuals with short life expectancy will want to begin benefits as soon as eligible. Those with longer life expectancies may want to delay receipt, especially if other sources of income are available.

PROJECTING SOCIAL SECURITY BENEFITS

The base Social Security benefit is called the Primary Insurance Amount (PIA), which is the monthly income a worker receives if benefits begin at the individual's Social Security Full Retirement Age (FRA). Many basic financial planning programs use these benefits as the foundation upon which rest other retirement saving, investment, and distribution decisions. However, workers have considerable latitude in determining when to begin receipt of Social Security

benefits and the decisions on when to begin and how to take benefits can be one of the most complicated distribution decisions. The consequence of making a poor decision can result in the loss of thousands of dollars of Social Security benefit income over a person's retired life. This section discusses the factors a household should consider when projecting how future Social Security benefits contribute to total retirement income.

FACTORS AFFECTING YOUR BASE SOCIAL SECURITY BENEFIT

A worker's Social Security benefit depends on a number of factors. Some factors affect the calculation of the base benefit (PIA) while other factors are adjustments to the benefit after PIA has been calculated. Prior to age 60, workers should focus on maximizing PIA. Beginning at about age 60, workers should carefully consider the effect of various adjustments to PIA on retirement well-being.

There are three factors a worker controls or influences in the determination of PIA. First is the vesting requirement of the Social Security system. Workers earn up to four credits per year and need 40 credits to be "fully insured", or vested, in the Social Security system.¹ Because of the limit of four credits per year, it takes a minimum of 10 years of work for a person to become vested in the Social Security system. Once fully insured, workers are guaranteed to receive the full Social Security benefit earned over their working life. Table 1 provides a history of Social Security credit values. For 2008, workers earn one credit for each \$1,050 in Social Security covered earnings, achieving the maximum four credits after the first \$4,200 of earnings.²

The second factor is a worker's history of Social Security covered taxable earnings. Earnings are "covered" if the worker has a job where Social Security taxes are withheld.³ Earnings are "taxable" from the first dollar covered earnings up to a maximum taxable level of earnings. The reasoning behind the maximum taxable wage is that Social Security taxes can be considered contributions to a mandatory, publicly-run defined benefit pension system. Under current law, these contributions are 10.6 percent of covered earnings up to the maximum taxable wage, with half remitted by the employer and half contributed from employee earnings. By limiting the amount of contributions (through a limit on taxable wages), there is a limit on the maximum annual benefit any person receives under the system. Table 1 provides an annual history of maximum taxable earnings. As discussed in Richardson (2005), workers may have some discretion in reducing taxable earnings by changing the form of compensation. For example, employer contributions to retirement savings plans are exempt from payroll taxes but employee contributions are fully taxable up to the maximum taxable wage. Workers who opt for employer contributions will reduce their payroll taxes but at the cost of lower future Social Security benefits.

The third factor under a worker's control is the number of years in Social Security covered employment. The Social Security benefit formula will use up to 35 years of earnings when calculating a benefit. For workers with less than 35 years, a value of zero is used for earnings in the missing years. For worker with more than 35 years of work, the 35 years with the highest covered, taxable earnings are used. The sum of your high 35 year's wages (indexed for wage growth) is divided by 35 to get career average annual earnings. The career average is then divided by 12 to derive a worker's Average Indexed Monthly Earnings (AIME), and this amount is applied to Social Security's benefit formula for determining a beneficiary's PIA.

There are three factors — the average indexing wage, the annual cost-of living adjustments, and the benefit formula — that workers do not control. The SSA maintains a record of each worker's covered taxable earnings. When a birth cohort (all people born in a particular calendar year) reaches age 60, the taxable earnings for each worker in that

1 A worker can be considered fully insured with less than 40 credits if the shortfall is due to disability or death.

2 The amount of earnings required to earn one credit of coverage changes every year and is indexed to average wage growth in the economy. Prior to 1978, wages were reported on a quarterly basis and a credit was earned for each \$50 of quarterly wages or \$200 yearly wages.

3 While almost all workers are now in covered employment, a small proportion of workers in religious, state and local, agricultural, or railroad jobs are exempt from Social Security.

cohort are indexed to the Social Security average indexing wage for that year⁴. For example, Table 1 shows that \$38,651 is the average indexing wage for 2006, and this is the indexing wage for everyone born in 1946. The purpose of indexing earnings is to make a worker’s early career earnings comparable to later years’ earnings when calculating a worker’s benefit.

Social Security incorporates a progressive benefit formula that is designed to provide a larger replacement rate for *lifetime* low-wage earners relative to *lifetime* high-wage earners. The purpose of the progressive formula is to provide greater retirement insurance for those who lack the resources to save adequately during their working life. This intra-generational transfer is achieved with a benefit formula that uses a marginal income replacement rate of 90 percent for low levels of AIME, 32 percent for moderate levels of AIME, and 15 percent for high levels of AIME. The levels of AIME where the percentages change are called the *bend points* of the benefit formula and are adjusted

Table 1. Social Security Benefit Factors

Year	Earnings Credit	Taxable Maximum	Average Indexing Wage	Year	Earnings Credit	Taxable Maximum	Average Indexing Wage
1951	50	3,600	2,799	1980	290	25,900	12,513
1952	50	3,600	2,973	1981	310	29,700	13,773
1953	50	3,600	3,139	1982	340	32,400	14,531
1954	50	3,600	3,156	1983	370	35,700	15,239
1955	50	4,200	3,301	1984	390	37,800	16,135
1956	50	4,200	3,532	1985	410	39,600	16,823
1957	50	4,200	3,642	1986	440	42,000	17,322
1958	50	4,200	3,674	1987	460	43,800	18,427
1959	50	4,800	3,856	1988	470	45,000	19,334
1960	50	4,800	4,007	1989	500	48,000	20,100
1961	50	4,800	4,087	1990	520	51,300	21,028
1962	50	4,800	4,291	1991	540	53,400	21,812
1963	50	4,800	4,397	1992	570	55,500	22,935
1964	50	4,800	4,576	1993	590	57,600	23,133
1965	50	4,800	4,659	1994	620	60,600	23,754
1966	50	6,600	4,938	1995	630	61,200	24,706
1967	50	6,600	5,213	1996	640	62,700	25,914
1968	50	7,800	5,572	1997	670	65,400	27,426
1969	50	7,800	5,894	1998	700	68,400	28,861
1970	50	7,800	6,186	1999	740	72,600	30,470
1971	50	7,800	6,497	2000	780	76,200	32,155
1972	50	9,000	7,134	2001	830	80,400	32,922
1973	50	10,800	7,580	2002	870	84,900	33,252
1974	50	13,200	8,031	2003	890	87,000	34,065
1975	50	14,100	8,631	2004	900	87,900	35,649
1976	50	15,300	9,226	2005	920	90,000	36,953
1977	50	16,500	9,779	2006	970	94,200	38,651
1978	250	17,700	10,556	2007	1,000	97,500	
1979	260	22,900	11,479	2008	1,050	102,000	

Source: Social Security Administration (2008)

Note: Taxable Maximum amounts for 1937-74 and for 1979-81 were set by statute; all other amounts were determined under automatic adjustment provisions of the Social Security Act.

⁴ The earnings index is constructed by dividing the average wage in the year a worker turns 60 by the average wage in each prior year. Note that for each year after a worker turns age 60, the index is set to one, resulting in a progressively larger indexed wage relative to deflating taxable earnings.

annually using the average wage index. Once the benefit formula has been set for a particular year, the SSA applies an annual cost-of-living adjustment to PIA amounts in order for real benefits to remain roughly constant throughout a retiree’s remaining lifetime.

Note that regardless of the year of actual retirement or benefit receipt, the bend points for a covered worker are determined by the year that worker achieves age 62. For example, in 2008 an age 62 worker will receive 90 percent of the first \$711 in AIME, plus 32 percent of AIME over \$711 and up to \$4,288, plus 15 percent of AIME above \$4,288. These bend points are effective regardless of when the worker begins receiving benefits, although the total amount of PIA will receive an annual cost-of-living adjustment.

Figure 1 demonstrates the progressivity of the benefit formula. Note that while the level of benefits rise, the lifetime replacement rate falls with increases in a worker’s AIME. A worker with a PIA of \$1,052 receives a 53 percent replacement rate on lifetime average indexed annual wages of \$24,000. By comparison, a worker with PIA of \$1,891 has a 38 percent replacement rate on indexed lifetime average annual earnings of \$60,000. The progressive structure is designed to provide greater retirement security for lifetime low earners relative to lifetime high earners by assuming that those with higher earnings have greater ability to save through employer plans or personal saving. For example, if both workers desire an IRR of 80 percent of lifetime earnings, the workers would need other retirement assets sufficient to provide 27 percent and 42 percent income replacement rates respectively, over their expected retired lives.

AN EXAMPLE

Consider an individual born in 1946 and who began Social Security covered employment in 1970. Assume the individual had starting pay of \$15,000 and received annual raises of 5 percent. Table 2 shows the history of covered earnings, taxable earnings, and indexed earnings for our worker. Covered earnings are total annual earnings for each year. Taxable earnings are the minimum between covered earnings and the maximum taxable wage for each year. Indexed earnings are the product of taxable earnings and the earnings index for each year. Indexed earnings are used when determining AIME.

Our worker has more than 10 years of covered employment and is fully insured. Because our worker has 39 years of work, the four years of lowest indexed earnings will drop out of the AIME calculation. To calculate AIME, sum the highest 35 years of indexed earnings and then divide that number by 420 (35 years x 12 months). For our age 62 worker, AIME is \$6,347.

The next step is to calculate base PIA at age 62. This amount shows, in 2008 dollars, what our worker will begin receiving in Social Security benefits at FRA. For our worker PIA would be

90% x \$711	= \$ 639.90
+ 32% x (\$4,288 – \$711)	= \$1,144.64
+ 15% x (\$6,347 - \$4,288)	= \$ 308.79
PIA per month	= \$2,093.33

The annual Social Security benefit amount of \$25,120 provides a lifetime IRR of 33 percent and a last year of work IRR of only 26 percent. The last year IRR provides a better measure if a worker is trying to maintain a recent standard of living in retirement. Assuming a standard IRR of 80 percent, our worker would need retirement assets on hand to provide a 54 percent IRR.⁵

5 An 80 percent IRR is consistent with our worker saving 12 percent of salary for retirement and paying 7.65 percent in payroll taxes because neither of these expenses is incurred in retirement.

What is the effect of fewer years of covered employment on AIME, PIA, and the IRR? Assume that our worker spent the first 6 years of professional life in non-covered employment. The worker is still fully insured but now has only 33 years of covered employment. The worker’s AIME falls by \$302 to \$6,045 and PIA falls by about \$45 to \$2,048. As a result, both lifetime and last year IRR falls. Note for our worker, the impact on PIA is not very large because of

Table 2. Indexing a Lifetime of Earnings

Year	Age	Covered Earnings	Taxable Earnings	Index	Indexed Earnings
1970	24	15,000	7,800	6.25	48,734
1971	25	15,750	7,800	5.95	46,403
1972	26	16,538	9,000	5.42	48,763
1973	27	17,364	10,800	5.10	55,069
1974	28	18,233	13,200	4.81	63,531
1975	29	19,144	14,100	4.48	63,143
1976	30	20,101	15,300	4.19	64,094
1977	31	21,107	16,500	3.95	65,213
1978	32	22,162	17,700	3.66	64,809
1979	33	23,270	22,900	3.37	77,104
1980	34	24,433	24,433	3.09	75,470
1981	35	25,655	25,655	2.81	71,996
1982	36	26,938	26,938	2.66	71,651
1983	37	28,285	28,285	2.54	71,739
1984	38	29,699	29,699	2.40	71,144
1985	39	31,184	31,184	2.30	71,648
1986	40	32,743	32,743	2.23	73,062
1987	41	34,380	34,380	2.10	72,116
1988	42	36,099	36,099	2.00	72,167
1989	43	37,904	37,904	1.92	72,890
1990	44	39,799	39,799	1.84	73,155
1991	45	41,789	41,789	1.77	74,053
1992	46	43,879	43,879	1.69	73,946
1993	47	46,073	46,073	1.67	76,981
1994	48	48,376	48,376	1.63	78,718
1995	49	50,795	50,795	1.56	79,468
1996	50	53,335	53,335	1.49	79,551
1997	51	56,002	56,002	1.41	78,923
1998	52	58,802	58,802	1.34	78,748
1999	53	61,742	61,742	1.27	78,321
2000	54	64,829	64,829	1.20	77,927
2001	55	68,071	68,071	1.17	79,917
2002	56	71,474	71,474	1.16	83,080
2003	57	75,048	75,048	1.13	85,152
2004	58	78,800	78,800	1.08	85,438
2005	59	82,740	82,740	1.05	86,543
2006	60	86,877	86,877	1.00	86,877
2007	61	91,221	91,221	1.00	91,221
2008	62	95,782	95,782	1.00	95,782

source: Author calculations

relatively high lifetime earnings. For workers with more modest earnings, the PIA reduction would be 32 cents per dollar reduction in AIME.

What is the effect of additional years of work on AIME, PIA, and the IRR? Table 3 extends the worker’s earnings history to age 65. We consider two scenarios, full time work and phased retirement, under which the worker continues to receive 5 percent raises to a full-time salary. Under phased retirement, our worker is employed at two-thirds time for the first year and one-half time for the last two years. The worker retires and begins receiving benefits on the 66th birthday, the full retirement age for this birth cohort.

Table 3. Additional Years of Work

Year	Age	Full	Phased	Index
2009	63	100,571	67,383	1.00
2010	64	105,600	52,800	1.00
2011	65	110,880	55,440	1.00

source: Author calculations

Under the scenario of full-time employment, our worker replaces a prior year with a current year of earnings for each additional year of work. When the worker retires at age 66 and begins benefits, the three additional years of work increase AIME by about \$301 and annual PIA by around \$541 in 2008 dollars. However, the additional years of work reduce the Social Security IRR, with the lifetime IRR falling slightly from 33 to 32 percent and the final year of work IRR falling from 26 to 23 percent. Over these three years, our worker remits an additional \$16,804 in Social Security benefit taxes out of salary, with total payroll tax contributions (including employer contributions) of about \$48,509.⁶

Under the phased retirement scenario, only one of the three years of additional covered employment count in the AIME calculation because once the worker reduces hours to half time status, current earnings are no longer sufficient to replace a prior year’s earnings. The result is that AIME increases by only \$27 and annual PIA by about \$48 in 2008 dollars. The additional years of work reduce the Social Security lifetime IRR slightly to 32.7 percent. The measure of the last year of work IRR is less meaningful in comparison to full time employment. Note that the worker must still continue paying Social Security taxes even though no additional benefits are earned in the last two years of employment. Over the last three years of employment, our worker remits an additional \$9,308 in Social Security taxes out of salary, and pays \$13,435 in total payroll taxes (including employer contributions).

This simple example highlights some of the key questions that workers may have as they near retirement. When should I begin receiving Social Security benefits? What is the value of an additional year of work? Should I work and receive Social Security benefits? At a minimum, any analysis needs to consider the value of additional benefits over the retired life relative to additional taxes and foregone benefits during additional working years. Consider that each additional dollar of total covered earnings adds at most about 0.25 cents in AIME. When applied to the progressive benefit formula, the marginal effect on PIA is as large as one-fifth of a penny and as small as one-twenty-fifth of a cent, but the tax effect is 10.6 cents per dollar.⁷ This trade-off provides a strong incentive to leave covered employment after 35 years.⁸

6 Total contributions are \$33,607 for Social Security, \$5,707 for Disability insurance, and \$9,194 for Medicare Part A.

7 These numbers come from the definition of AIME and the bend points. Each dollar of total earnings added to the calculation is worth at $1/(35 \times 12) = 0.0024$ of AIME. This small amount generates either 90 percent, 32 percent, or 15 percent in additional PIA.

8 This negative work incentive leads some to advocate that the high 35 rule should be modified to include additional years of work. For a discussion of different dimensions of the effect, see Favreault and Steuerle (2008), Johnson, et al (2007), Sandell, et al (1999), and Steuerle and Spiro (1999).

FACTORS AFFECTING YOUR NET SOCIAL SECURITY BENEFIT

Once PIA is determined, a worker controls three factors that can affect the net benefit received from Social Security. First, the earnings test applies to workers who have significant labor earnings, are under their Social Security full retirement age (FRA), and are receiving benefits. It temporarily reduces the monthly benefit received until the worker reaches FRA. Second, there are adjustments to the benefit based on the age benefits are first received. The early retirement reduction applies to workers who begin receiving benefits before their FRA and permanently reduces the monthly benefit a person receives. The delayed retirement credit applies to a person who waits until after FRA to begin receiving benefits. The credit permanently increases the monthly benefit a person receives. Third is the tax on benefits, which is a form of means testing for benefits, reduces the net annual benefit a beneficiary receives by subjecting up to 85 percent of benefits to income tax.

The first two factors depend on when a worker begins taking benefits relative to FRA. There are three key periods of benefit receipt eligibility – (1) full retirement age, (2) early retirement, and (3) delayed retirement. The FRA for Social Security is the age at which a worker is eligible for a full Social Security benefit. For many years, age 65 was the full retirement age for each birth cohort.⁹ However, for workers born in 1938 or later, the full retirement age increases gradually, reaching a maximum of age 67 for workers born after 1959. Table 4 shows the full retirement age for different birth cohorts. Under current law, the earliest age a non-disabled worker may begin collecting Social Security benefits is age 62.¹⁰ Early retirement is defined as the period between age 62 and full retirement age. Similarly, delayed retirement refers to benefit receipt after full retirement age. Under current law, delayed retirement is defined as the period between full retirement age and age 70.¹¹

If benefits start earlier than full retirement age, then your *monthly* benefit is reduced, and if you delay receipt of retirement benefits your *monthly* benefit is increased, relative to the *monthly* benefit you receive at full retirement age. The adjustments to your monthly benefit are designed to keep your total *lifetime* benefit roughly equal. For example, consider a single worker who receives \$1,000 per month beginning at age 65 and who dies at age 80. Assuming no inflationary adjustments and an annual discount rate of 6 percent, the present value of this stream of payments is approximately \$118,500. If the worker starts taking benefits at age 62, then there are 36 extra payments over the retiree’s lifetime and the monthly benefit must be reduced by about \$102 for the worker to receive the same expected lifetime benefit. If the worker waits to age 70 to begin benefits, then there are 60 fewer payments and the monthly benefit must be increased by about \$316 to receive the same discounted lifetime benefit.

Table 4. Social Security Full Retirement Ages

Year of Birth	Full Retirement Age
1937 or earlier	65
1938	65 and 2 months
1939	65 and 4 months
1940	65 and 6 months
1941	65 and 8 months
1942	65 and 10 months
1943–1954	66
1955	66 and 2 months
1956	66 and 4 months
1957	66 and 6 months
1958	66 and 8 months
1959	66 and 10 months
1960 and later	67

Source: Social Security Administration

Note: Persons born on January 1 of any year should refer to the full retirement age for the previous year.

Table 5. Social Security Delayed Retirement Factors

Year of Birth	Yearly Rate of Increase
1930	4.50%
1931-1932	5.00%
1933-1934	5.50%
1935-1936	6.00%
1937-1938	6.50%
1939-1940	7.00%
1941-1942	7.50%
1943 or later	8.00%

Source: Social Security Administration

9 This increase in normal retirement age began effecting worker benefits in 2003.

10 The amendments to the Social Security Act require a worker must be 62 for an entire month before receiving benefits. For those born on the first of the month, benefits begin in that month. For everyone else, benefits begin no earlier than 62 years and 1 month.

11 While you can delay benefit receipt beyond age 70, no further increases in monthly benefits are granted after that time.

SSA adjustment factors are used to determine the actual change in a worker’s benefit relative to the FRA benefit. These adjustment factors take into account an implicit discount rate, unisex mortality rates, and other actuarial adjustment factors. Table 5 shows the delayed retirement credits used by the SSA. The delayed retirement credit is cohort specific, with later cohorts receiving a larger percentage increase for each month of deferred receipt.

Table 6 shows the early reduction factors (including spousal adjustments) used by the SSA in determining the permanently reduced benefit adjustment to a worker’s PIA. Note that the same monthly reduction factor is used for each cohort but that the cumulative effect is larger for later cohorts.

The total penalty for taking early benefits at age 62 is greater for younger cohorts because of the increase in the full retirement age. The deduction for those born prior to 1938 will be 20 percent and for those born in 1960 and after will be 30 percent. Because the maximum monthly benefit is attained by delaying benefits to age 70, the relative generosity of the delayed benefit is also reduced relative to the increase in the FRA for younger cohorts. Figure 2 shows that the oldest cohort and early baby boomers receive an age 70 benefit increase of about 32 percent relative to FRA. By contrast, those born in 1960 and later receive only about a 24 percent increase. Because the change in benefits is permanent and there are cohort specific effects, it is important for each worker to calculate benefit receipt relative to their own birth year.

Another factor impacting net benefits is the earnings test, which affects workers who are below their FRA and whose earned income exceeds a minimum exempt level. Unlike the early retirement reduction, the earnings test *temporarily* reduces a worker’s net benefit because it only applies until the month a worker reaches their FRA. There are two threshold exemption amounts for the earnings test.¹² The lower level applies to workers who will not attain their FRA in the current year. The higher level applies to workers who reach their FRA in the current year. For those subject to the lower level, benefits are reduced one dollar for every two dollars of income above the lower exempt level. For workers subject to the higher threshold, benefits are reduced one dollar for every three dollars above the higher exempt level. Table 7 provides a recent history of the exemption levels for the earnings test.

The earnings test can substantially reduce benefits received. As an example, consider a worker who turned 65 on June 1, 2008, has an FRA of 66, and receives Social Security benefits. Suppose the worker makes \$40,000 per year. In 2008, the worker will lose up to \$13,220 in benefits due to the earnings test because the worker has \$26,440 in earnings

Table 6. Early Retirement Reductions at Age 62

Year of birth	Number of reduction months	Primary Annual Percent reduction	Spousal Annual Percent reduction
1937 or earlier	36	20.00%	25.00%
1938	38	20.83%	25.83%
1939	40	21.67%	26.67%
1940	42	22.50%	27.50%
1941	44	23.33%	28.33%
1942	46	24.17%	29.17%
1943-1954	48	25.00%	30.00%
1955	50	25.83%	30.83%
1956	52	26.67%	31.67%
1957	54	27.50%	32.50%
1958	56	28.33%	33.33%
1959	58	29.17%	34.17%
1960 and later	60	30.00%	35.00%

source: Social Security Administration

Notes:

The percentage reduction for the primary benefit is 5/9 of 1% per month for the first 36 months and 5/12 of 1% for each additional month.

The percentage reduction for the spousal benefit is 25/36 of 1% per month for the first 36 months and 5/12 of 1% for each additional month.

12 Similar to the bend points for PIA, the exemption amount changes every year based on increases in the average wage index.

above the lower threshold. In 2009, the worker will forfeit up to \$773, depending on when the income is earned, because earnings are \$2,320 above the higher threshold.

The third factor affecting net benefits is the income tax on benefits, which is a Social Security means-testing program that is administered through the tax system.

Enacted into law in 1984, the provision subjects up to 50 percent of a household's benefits to income tax, with the tax collected returned to the Social Security Trust funds.

In 1994, the base was expanded to subject up to 85 percent of benefits to taxation, with the additional tax revenue sent to the Medicare Trust Fund. Unlike the earnings test, the tax on benefits is not indexed, meaning that over time an increasing number of beneficiaries have

their benefits reduced through this program.¹³ The total reduction in benefits can be substantial. For example, an individual in the 25 percent marginal tax bracket may have their net benefit reduced by over one-fifth (21.25 percent) due to means testing. The effect of the tax on benefits is most pronounced if there are substantial labor earnings or traditional retirement plan distributions. Other types of income, such as distributions from Roth accounts, can mitigate the effect of the tax on benefits.

To summarize, a worker influences three factors that determine PIA and three factors that affect net benefits. Lifetime retirement planning requires careful consideration of these factors when building assets for a secure retirement. The next section explores how these factors affect the decision of when to begin benefits.

DECIDING WHEN TO BEGIN BENEFITS

After a lifetime of contributing to the Social Security system, many households feel entitled to Social Security benefits that represent a reasonable return on their basis.¹⁴ However, a person must first consider some threshold issues when deciding when to begin benefits. First is the question of need. In the case of disability, involuntary unemployment, or other catastrophic event, a person may have substantial need for benefit income. If this is the case, then the need for immediate income supersedes any other economic considerations. Second is the question of total resources. Does a person have other sources of income, earned or unearned, that would help maintain an adequate living standard without Social Security or will Social Security be needed to supplement other income? Is continued work and benefit receipt a viable option? Should a retiree receive benefits even if the income is not needed? For these questions, the primary decision on when to begin benefits is an economic one.

This section provides insights into how to analyze the benefit receipt question. In general, an individual should begin benefit receipt earlier, the shorter their life expectancy. There is an important exception to this strategy. If a person has significant earnings and starts benefit receipt prior to FRA, then the combination of the early retirement reduction, the earnings test, and the tax on benefits can severely reduce the net benefit a household receives in those years, making benefit receipt a poor decision.

Table 7. Earnings Test Exemption Thresholds

Year	Lower Level	Higher Level
2000	\$10,080	\$17,000
2001	\$10,680	\$25,000
2002	\$11,280	\$30,000
2003	\$11,520	\$30,720
2004	\$11,640	\$31,080
2005	\$12,000	\$31,800
2006	\$12,480	\$33,240
2007	\$12,960	\$34,440
2008	\$13,560	\$36,120
2009	\$14,160	\$37,680

source: Social Security Administration

¹³ A full discussion of the effect of the tax on benefits is beyond the scope of this paper. See Mahaney and Carlson (2008) for a recent discussion of the issues.

¹⁴ There are a number of ways to calculate this return. See for example, Geanakoplos, Mitchell, and Zeldes (1999) for a discussion.

SHOULD YOU BEGIN EARLY BENEFITS WHILE WORKING?

In the absence of immediate need, it is generally a poor decision for a worker with substantial earnings to also receive early Social Security benefits. This decision is particularly punitive because there are three reductions to Social Security benefits — the permanent early retirement reduction, the temporary earnings test, and the tax on benefits. In addition, a worker must continue to remit payroll taxes, often without any increase in future benefits. Combined, the reductions can substantially reduce the net annual benefit received, and in some instances completely eliminate the value of the benefits in the current year.

Continuing the example from the previous section, consider the decision of our worker to begin receiving benefits at age 62 while still in full time employment. Because of the early retirement reduction, the annual PIA benefit of \$25,120 is reduced by 25 percent to \$18,840. The reduced benefit is then subject to the earnings test — with a reduction of \$1 for every \$2 of income over the lower income threshold of \$13,560. Given that our worker earns \$95,782, the earnings test completely eliminates our worker’s Social Security benefit! Would our worker be any better off with phased retirement? For this example the answer is no because our worker earns more than \$51,220, which is two times the reduced benefit plus the lower threshold amount.

Even at substantially lower income levels, the impact on working and receiving benefits before FRA can be substantial. Consider an age 62 worker earning \$20,000 and who receives benefits of \$13,200 in 2008. The combined effects of the early retirement reduction and the earnings test reduces benefits to \$6,680, for a net benefit reduction of about 49 percent of PIA before any tax on benefits. Given the thresholds for the tax on benefits, there is no reduction to disposable income for this worker. However, there is the burden of the payroll tax, which reduces earned income by \$1,530. As previously noted, this tax is paid even if earnings do not provide an increase in future benefits. Including payroll taxes, benefits have been reduced by a total of \$8,050, a 61 percent reduction in Social Security benefits and a 24 percent reduction in income.

Gross benefit	=	\$13,200
Early reduction = 25% x Gross benefit	=	- 3,300
Permanently reduced benefit	=	9,900
Earnings test = 50% x (20,000 - 13,560)	=	- 3,220
Payroll tax = 7.65% x 20,000	=	- 1,560
Current year net benefits	=	\$ 5,150

While some of the effects of these reductions lessens as worker nears the FRA, it is generally recommended that, if possible, a worker waits until the year of FRA to begin benefits. For example, if our worker were age 66, then the only reduction is from the payroll tax, which represents a 4.7 percent reduction in income.

Assuming no immediate need for benefits, the worker would be better off utilizing other sources of income for consumption — by either working more or using other available assets. For example, if our worker retires at age 62 and draws \$20,000 of retirement assets, then income is \$29,900, with only the early retirement reduction effecting income. Alternatively, the worker could reduce the draw on assets to \$15,220 and maintain the same living standard as working.

WHEN TO BEGIN BENEFITS: USING BREAK-EVEN LIFE EXPECTANCY ANALYSIS

When considering when to begin receiving benefits, one objective should be to maximize lifetime benefits received from the Social Security system. If there were no adjustments to the monthly benefit for early or delayed benefit receipt, then the best strategy is to simply begin benefit receipt at the earliest possible date. Given the modifications to PIA from the early retirement reduction and delayed retirement credit, analysis is required to determine the best age to begin receiving benefits. A standard method for evaluating this objective is “break even life expectancy”, which

estimates if the additional benefits received from taking early benefits are sufficient to offset the benefits that are forfeited by not waiting until FRA or later. The break-even age is defined as the age when the lifetime present value of delaying benefit receipt is equal to the present value of early benefits. If life expectancy is greater than the break-even age, then it is better to delay benefit receipt. The advantage of break even analysis is that it provides insights into how long a person must live in order for delaying benefits to result in greater lifetime Social Security wealth.

Consider the decision of a worker with FRA of 65, who is considering whether to retire at age 62 or continue working to age 65 or older. If the worker is in poor health and does not expect to reach FRA, then benefits should begin immediately. If the worker has longer life expectancy, then delaying retirement might provide the greatest lifetime benefit. Figure 3 shows the present value streams (for \$1,000 of benefits) of retiring and beginning benefit receipt at ages 62, 65, and 70, assuming a one percent real discount rate. The break even life expectancy is 77 when comparing delaying retirement from age 62 until FRA and about 82.5 for delaying until age 70. Interpreted differently, it takes about 12 years for our worker to be better off by waiting until FRA relative to receiving benefits at age 62.

Table 8. Number of Years to Break-Even Age for Early Social Security Benefits

NRA	Beginning Age	Real Discount Rate			
		0%	2%	4%	6%
66	62	16.0	18.3	22.2	30.6
	63	15.0	17.2	20.6	27.8
	64	15.0	17.4	21.3	29.9
	65	15.0	17.6	21.9	32.5
67	62	16.7	19.0	23.0	31.7
	63	16.0	18.3	22.2	30.6
	64	15.0	17.2	20.6	27.8
	65	15.0	17.4	21.3	29.9
	66	15.0	17.6	21.9	32.5

source: author calculations

There are three important dimensions to consider. First, the results are specific to FRA cohort. As demonstrated by Figure 4, a similar analysis for a worker with FRA of 67 results in approximate break even ages of 78 and 81, respectively, for retirement at age 67 and age 70. Second, the present value of benefits should incorporate the effects of the earnings test and the tax on benefits. As noted in the previous section, these effects are specific to each household’s financial situation as they transition into benefit eligibility. As a rule, the effect of the earnings test will be to lower the break-even age for delaying benefits. The effect of the tax on benefits will depend on the way that other assets are drawn down during retirement.

Table 9. Remaining Life Expectancy at Various Ages

Age	2007 Social Security Table		2008 TIAA Mortality Table	
	Male	Female	Male	Female
62	18.9	21.9	24.6	27.4
63	18.1	21.1	23.7	26.5
64	17.4	20.3	22.9	25.6
65	16.7	19.5	22.1	24.8
66	16.0	18.7	21.3	23.9

sources: Social Security Administration and TIAA-CREF

Third, the choice of discount rate can have a significant impact on the break even dates. As a rule, a higher discount rate increases the break even age, all else equal. Table 8 shows the number of years to attain break-even life expectancy for workers with an FRA of age 66 or age 67. The break-even age increases substantially with increases in the discount rate. This is expected, since progressively higher discount rates imply that a person places progressively less value on future benefits. The table also highlights the strong incentive to begin benefits as a worker nears FRA. For example, it would take a worker with a FRA of 66 and a 2 percent real discount rate 17.6 years to break even on the foregone benefits of waiting one year to begin benefits.

What benchmark should an individual use to compare these break-even years with average remaining life-expectancy? Table 9 shows that the answer depends on a person’s belief of where they fall within the population distribution. The

Social Security table is applicable to the general population, showing remaining average life expectancies for various ages. The Social Security mortality statistics suggest that males with an FRA of 67 and average life expectancy should delay benefit receipt to at least age 66 if they have a discount rate of 2 percent or less. For males with higher discount rates or shorter than average life expectancies, the likely decision is to start benefits at earlier ages.

Annuitant mortality statistics, such as those provided by the 2008 TIAA mortality table, provide an alternative benchmark to population statistics. The substantial difference between the two tables is because the annuitant mortality tables generally reflect life expectancies associated with individuals who are in the upper part of the socioeconomic distribution. These individuals tend to work in jobs that are physically less stressful, take better care of themselves, and have better access to health care. Because only healthy individuals typically select a life annuity, annuitant mortality statistics reflect the greater life expectancies associated with healthier individuals. The TIAA Mortality table suggests that males with an FRA of 67 and a discount rate of 4 percent should delay benefits until at least age 66 if they have a discount rate of 4 percent or less.

There are a number of other factors that will influence the decision of when to begin benefits. First, how risk averse is the beneficiary? For our analysis, increasing risk aversion is similar to increasing the discount rate. Second, will the benefits be consumed or invested? For workers with adequate retirement savings (or other sources of income), it may be wise to begin benefits earlier and put the Social Security benefits into an investment account. For example, Muskian (2006) demonstrates that the strategy of investing benefits generally increases the break-even age significantly beyond average life expectancy, even if a beneficiary continues to work. A final consideration is spousal rights. Under current law, a spouse has a right to receive a Social Security benefits equal to the maximum of either their own benefit or 50 percent of their spouse's benefit.¹⁵ For those electing 50 percent of the spouse's benefit, the decision also depends on whether the spouse is alive, deceased, or disabled. Littell et al (2004) conclude that deferral of benefits until FRA appears optimal more often for spouses of surviving workers than for surviving spouses. Using IRS single life mortality factors, they conclude that a healthy spouse with full life expectancy is better off deferring benefits until FRA if the discount rate is less than 6 percent.

CONCLUSIONS

Social Security benefits are an important component of almost everyone's retirement Security. This paper examined the factors that affect a person's net benefit and the decision of when to begin benefits. We demonstrated that healthy workers should work the maximum of 35 years in covered employment, but that additional years of work may not increase Social Security benefits. When determining when to begin benefits, a worker should consider several threshold factors, including need, other retirement assets, and the decision of whether to continue working while collecting benefits. We demonstrate that in the case of no immediate need for benefits income, it is generally a poor decision to begin early benefit receipt while still working and receiving even moderate labor income. Using break even life expectancy analysis, we find that workers with lower than average life expectancies should begin benefits earlier, while those with greater average life expectancies should defer benefit receipt until at least FRA. Overall, it is important for workers to consider the effect of these choices on their retirement well-being, and ensure that consideration of Social Security benefit factors are part of the retirement planning process.

¹⁵ This right extends to ex-spouses married at least 10 years.

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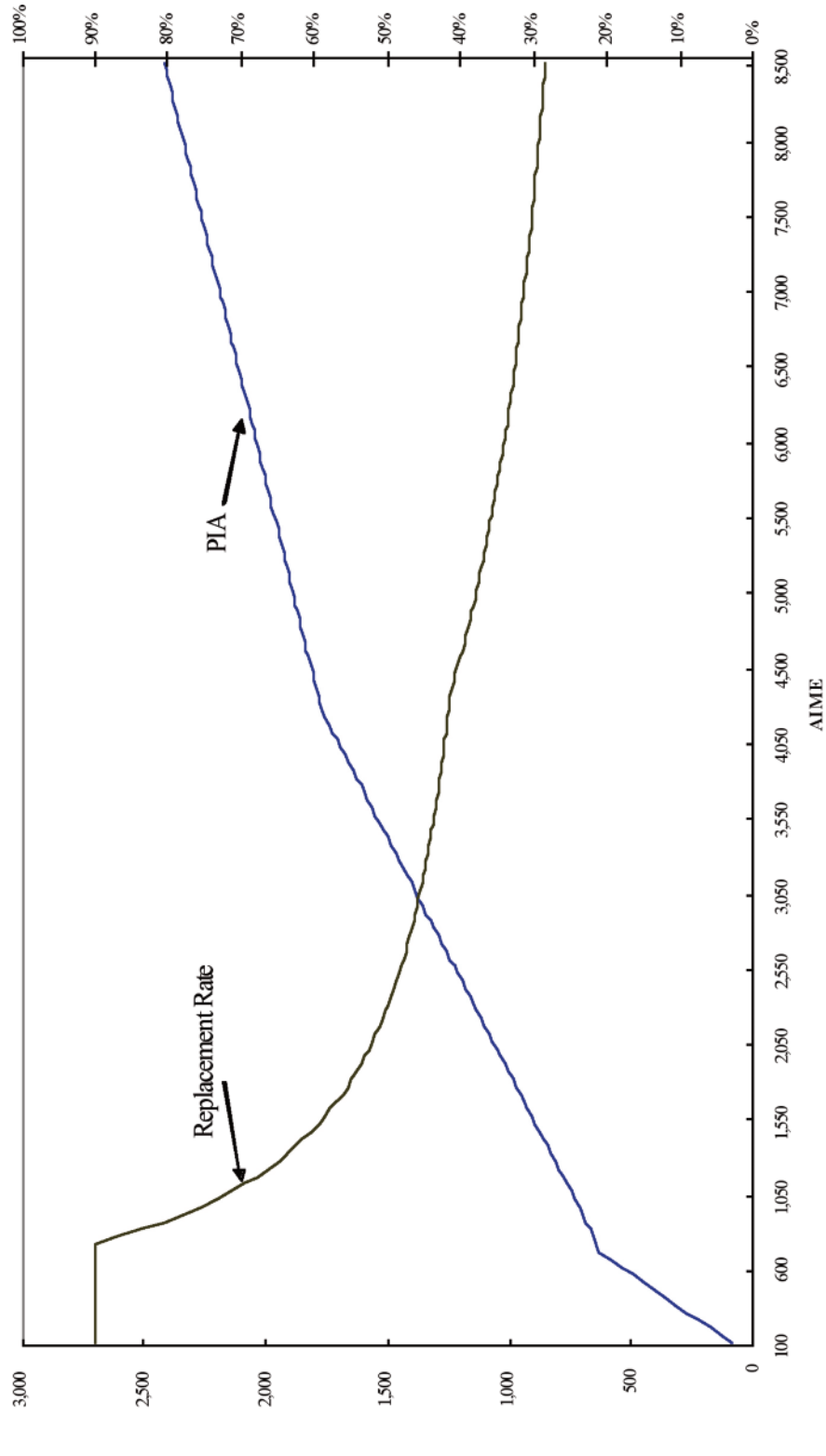
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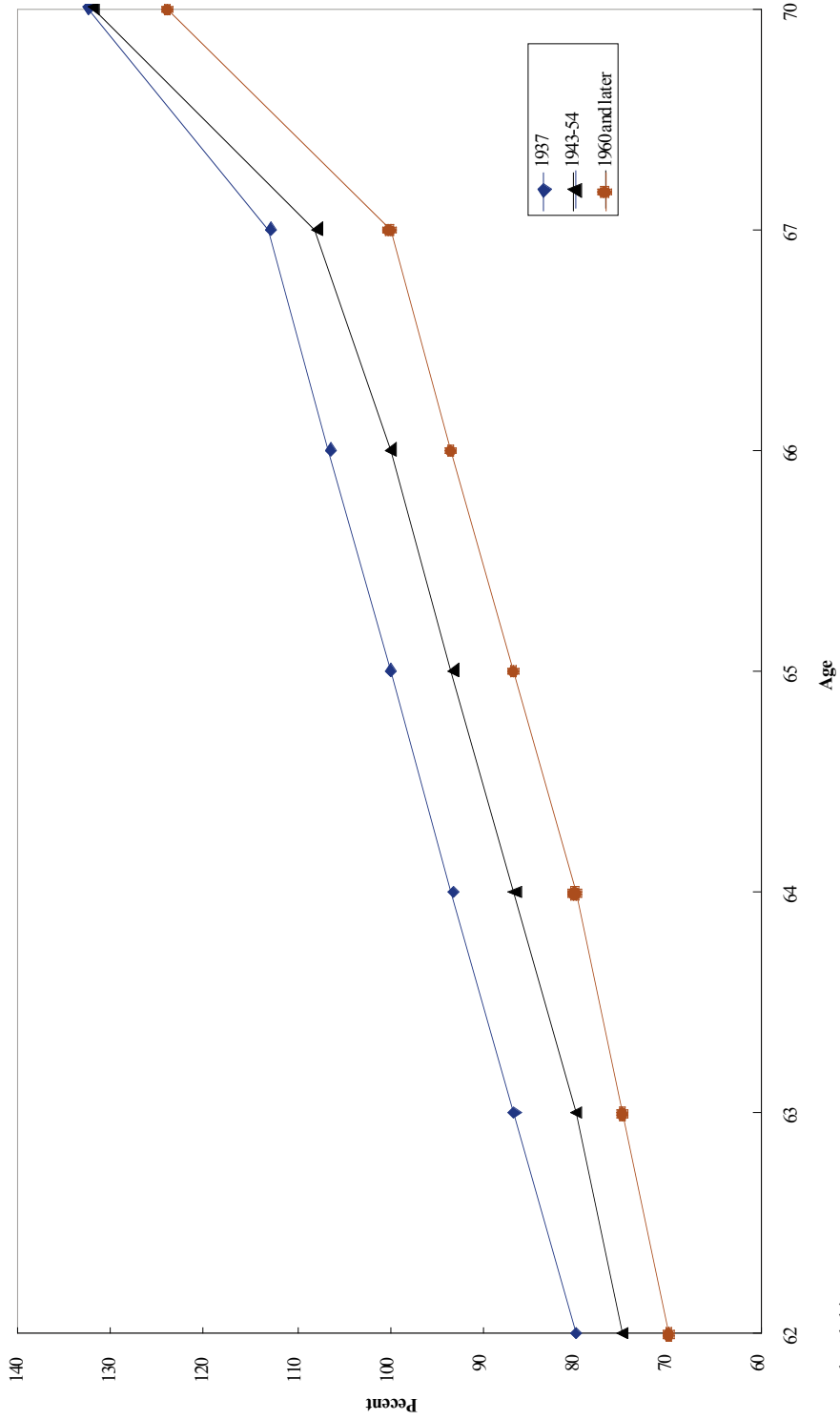
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Figure 1. PIA and Replacement Rates for 2008



Source: author calculation.

Figure 2. Benefit as a Percent of PIA by Birth Year



Source: author calculation

Figure 3. Break even Life Expectancy
Full Retirement Age of 65

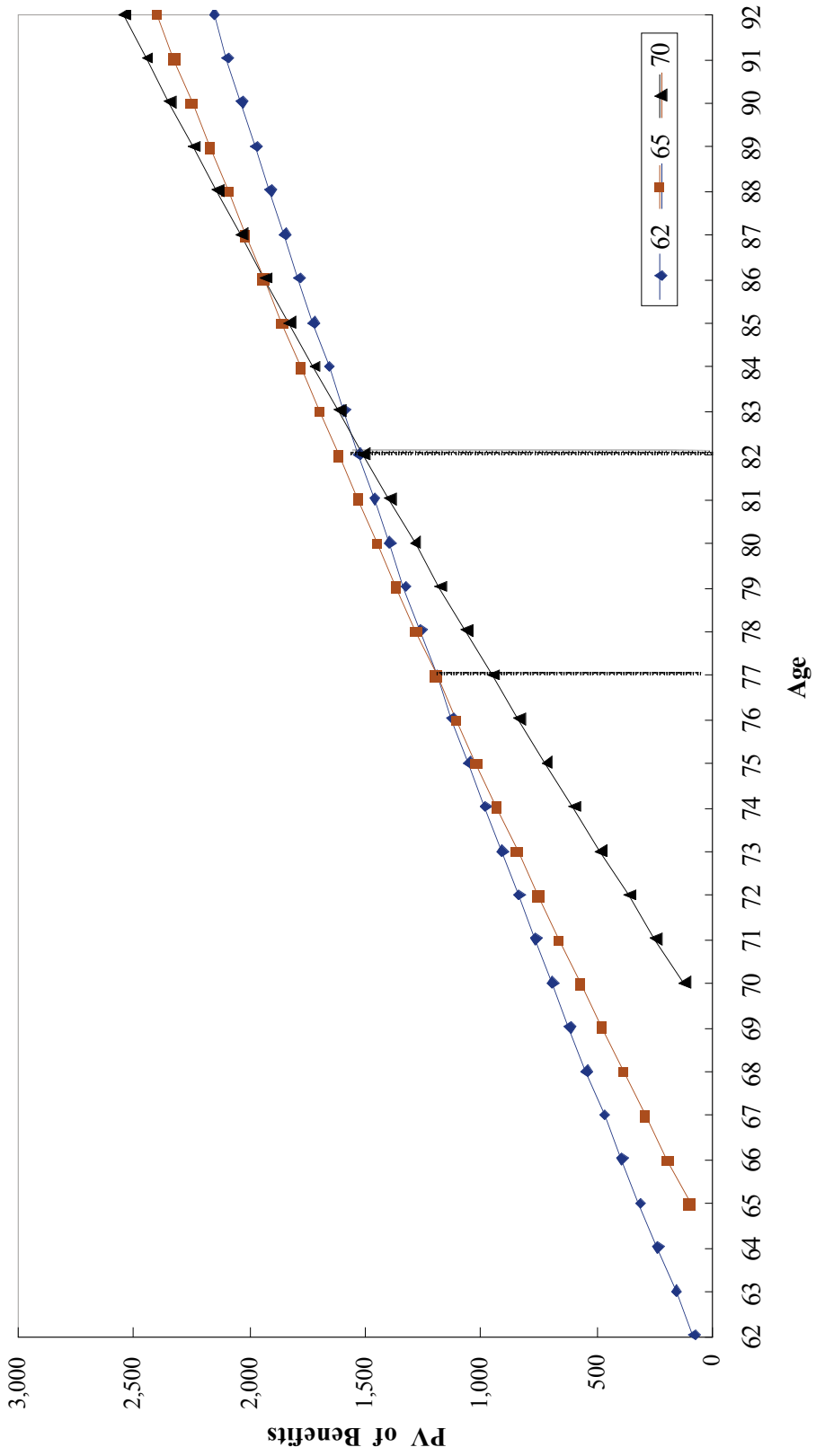


Figure 4. Break Even Life Expectancy Ages
Full Retirement Age of 67

