

Can We Afford Social Security When Baby Boomers Retire?

by Virginia P. Reno and Joni Lavery

How affordable are Social Security cash benefits projected to be when baby boomers retire? This Brief examines various measures and finds:

- The number of Social Security beneficiaries per 100 covered workers will increase from 30 in 2005 to 46 in 2030 and to 50 in 2050.
- Social Security benefits will rise from 4.3 percent as a share of the total economy today to 6.1 percent in 2030.
- When baby boomers are retired, the total number of people each worker supports (including workers themselves, children, retirees, and other nonworking adults) will not be as large as it was when the baby boomers were children.
- As a share of the total economy, spending for Social Security benefits when baby boomers are retired will grow less than spending for public education grew when baby boomers were children.
- While baby boomers may have been a surprise when they turned up in record numbers to enroll in kindergarten in the 1950s, their retirement six decades later is not. Policymakers began to plan as early as 1983, when Congress lowered the cost of Social Security benefits for boomers and later generations by raising the age at which unreduced retirement benefits will be paid.
- Workers' wages are projected to grow in real terms (that is, faster than inflation). By 2030, real wages will increase 33 percent. Even if policymakers chose to balance Social Security's finances solely by a tax rate increase, workers' net wages (after paying the higher tax) would still be 28 percent higher than they are today.
- While earnings that are taxed to pay for Social Security represent 38 percent of the total economy, other national income is not taxed for Social Security purposes. Broadening the tax base, reducing scheduled benefits, raising the Social Security tax rate, or allocating other kinds of revenue to Social Security are ways to improve Social Security finances.

Summary

Perhaps the key question is not whether we can afford the population we will have. Rather, it is how Americans will choose to allocate national resources to accommodate an aging population. Many options exist to balance Social Security finances for baby boomers and those who follow.

Baby boomers – Americans born between 1946 and 1964 – will start reaching age 62 in 2008. By 2030, the youngest boomers will turn age 66 and the oldest boomers will reach age 84. Between 2005 and 2030, the share of the population age 65 and older will increase from 13 percent to 20 percent. How will the retirement of this large group of Americans affect Social Security finances? This Brief presents several ways to assess the impact of the baby boomers' retirement on the affordability of Social Security cash benefits. It considers several population dependency ratios, which count the number of people who are supported by others, to provide some insight into the trend in our ability as a nation to afford these benefits. It then considers the projected cost of Social Security in relation to the economic resources expected to be available, both in terms of the entire economy and in terms of the wages of workers whose taxes finance the benefits.

Financing Medicare for baby boomers and those who follow is a much greater challenge than financing Social Security. Like health spending for younger Americans, Medicare spending is projected to rise as the cost and use of medical services rise. Advances in medical practice and technology have enabled people to live longer healthier lives and have generally increased costs (Van de Water and Lavery, 2006). Balancing Medicare finances may involve broader issues about the U.S. health care system. While health care financing is clearly important, this Brief focuses on the affordability of Social Security, which depends largely on changes in the population and the economy and not on trends in medical practice and technology.

Counting People: Who Supports Whom?

The Social Security trustees present two population dependency ratios in their annual report: a *beneficiary-to-covered-worker ratio* (the most commonly used ratio) and *the total age-dependency ratio*. We present a third measure here, a *consumer-to-worker ratio*, which counts everyone workers support. The beneficiary-to-covered-worker ratio suggests a rapid rise in the support burden of Social Security, while the other measures suggest that the support burden will be smaller in the future than it was when baby boomers were children.

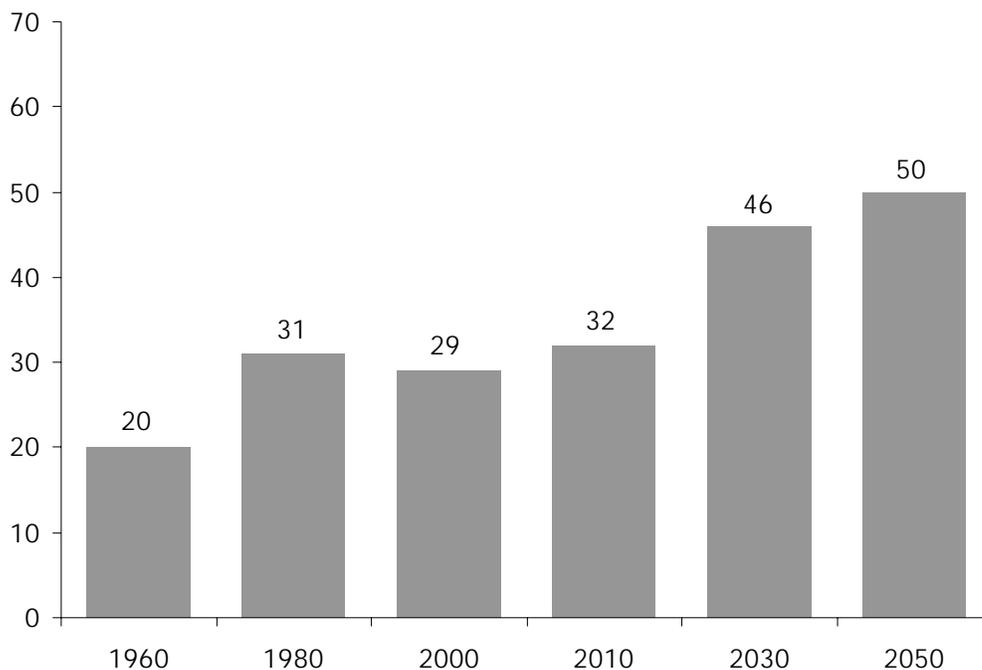
Beneficiary-to-Covered-Worker Ratio. This ratio compares the number of people drawing Social Security benefits to the number of workers paying into the system (covered workers). The beneficiaries include retirees and spouses age 62 and older, widowed spouses age 60 and older (or over age 50 and disabled), disabled workers and their families, and families with eligible children of workers who have died. In all, 48.0 million individuals received benefits as of June 2005, while 158.7 million workers paid into the system sometime during the year. Viewed as a ratio, there were 30 beneficiaries for every 100 workers (Board of Trustees, 2005).

In the first two decades after Social Security was enacted in 1935, the ratio of beneficiaries to workers was very low. Workers began paying into the system in 1937, but it took time for them to gain enough covered work to qualify for Social Security benefits when they retired. Consequently, by 1950, just 6 people drew benefits for every 100 covered workers (Table 1). Until the Social Security system matured, more persons age 65 and older received welfare (or old-age assistance) than received Social Security benefits. By 1960, the majority of older Americans received Social Security benefits and by 1980, almost all

(about nine in ten) received benefits (Grad, 1983). Policy changes also increased the number of beneficiaries. For example, in 1956 and 1960 Congress added benefits for disabled workers and their dependents, which increased the number of eligible persons under age 65. Since 1980, the ratio of beneficiaries to workers has remained fairly stable at about 30 people receiving benefits for each 100 covered workers.

As baby boomers become eligible for retirement benefits, starting in 2008, the number of Social Security beneficiaries will rise. According to the “best estimate” of the Social Security trustees, the beneficiary-to-covered-worker ratio will rise to 46 beneficiaries per 100 workers in 2030 and to 50 beneficiaries per 100 workers in 2050 (Chart 1). The work force is not projected to shrink during this period. In fact, the covered work force will grow from 158.7 million in 2005 to 181.1 million in 2030, while the beneficiary population is expected to grow faster – from 48.0 million in 2005 to 83.5 million in 2030.

Chart 1. Beneficiary-to-Covered-Worker Ratio
Beneficiaries per 100 Covered Workers



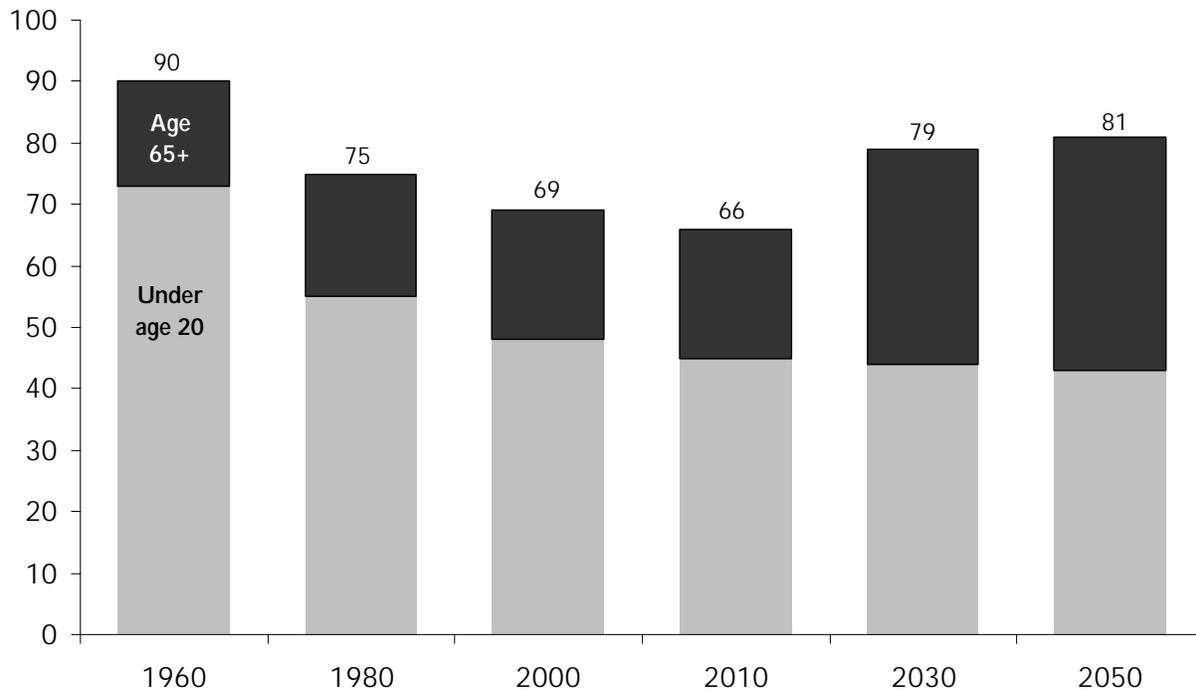
Source: Table 1.

A shortcoming of the beneficiary-to-covered-worker ratio is that it does not take into account people other than Social Security recipients who rely to some degree on workers. The second dependency ratio reported by the trustees counts children, too.

Total Age-Dependency Ratio. The total age-dependency ratio is based solely on age. It counts the number of people who are under age 20 and those age 65 and older in relation to everyone else – the so-called working-age population of 20- to 64-year olds. It tells a different story about the relative burdens of dependents in the past, present, and future. By this measure, the support burden was larger in 1960, when baby boomers were children, than it is now or will be in the future.

The combined number of “dependents” (children under age 20 and adults age 65 and older) was 90 per 100 working-age adults in 1960 (Chart 2). The ratio fell to 69 dependents per 100 working-age persons in 2000 and is projected to decline further, to 66 dependents per 100 working-aged adults in 2010. As baby boomers pass age 65, this ratio will rise to 79 dependents per 100 working aged adults in 2030 and remain at about that level through 2050 (Board of Trustees, 2005).

Chart 2. Total Age-Dependency Ratio
Persons Under Age 20 and Over 65 per 100 Persons Age 20-64



Source: Table 1.

Critics of this measure point out that the total age-dependency ratio does not tell the whole story because the federal government spends less for children than it spends for older Americans. While this is true, federal spending is an incomplete measure of the total support burden for children. Much of public spending on children is for education, and those funds come largely from state and local budgets rather than the federal budget. Furthermore, most support of children in the United States is provided informally from parents to children within households. In contrast, more of the support of older adults is financed by taxes workers pay rather than by within-family transfers or shared living arrangements with aging relatives.

A limitation of the total age-dependency ratio is that it does not take account of people’s actual work status. Not everyone age 20-64 is in paid employment, and not everyone younger than 20 or beyond his or her 65th birthday is out of the work force.

Consumer-to-Worker Support Ratio. The consumer-to-worker support ratio compares the number of consumers of all ages to the number of workers of all ages. It reflects the idea that the economic burden of supporting the consumption of everyone in society, at any point in time, is borne by paid workers at that time. In other words, workers must produce what everyone (including themselves) consumes. Workers’ support of others comes in many forms: among family members within a household, between relatives in separate households, and through formal arrangements, such as Social Security, Medicare, Medicaid, public education and other systems.

The consumer-to-worker support ratio shows the number of consumers of all ages who are supported by each 100 paid workers of all ages. The consumers include: the workers themselves; dependent children (those under age 20 who are not in paid employment); retired adults (those age 65 and older who are not working); and people aged 20-64 who are not in paid jobs, including those who are homemakers, students, disabled persons, early retirees and others who are unemployed.

Chart 3. Consumer-to-Worker Support Ratio
Persons Supported by Each 100 Workers



Source: Table 1.

By this measure, the total support burden on workers will never be as high as it was when baby boomers were children (Chart 3). In 1960, every 100 workers supported 268 consumers. The support burden fell to 225 consumers per 100 workers in 1980 when all but the youngest boomers had reached adulthood. By 2000, the support burden reached a low of 201 consumers for each 100 workers. The total support burden is projected to grow modestly when all surviving baby boomers are retired. According to the Office of

the Chief Actuary of Social Security, the support burden will reach 214 consumers per 100 workers in 2030 and remain at about that level through 2050. These burdens in the future are below those experienced in 1980 and far below the levels in 1950, 1960, and 1970, when baby boomers were children.

The composition of the population supported by workers has changed and will continue to change in the future. When baby boomers were children, they were a large source of the support burden – almost as numerous as workers themselves. Also, many working-age women were out of the work force taking care of children. As baby boomers became adults, they had smaller families, and more women entered and remained in the labor force. Today, many households have two earners instead of only one, as was often the case when the baby boomers were children.

In the future, more non-working consumers will be retirees. Persons age 65 and older and out of the work force will rise from 21 per 100 workers in 2000 to 34 per 100 workers in 2030, and to 37 per 100 workers in 2050. Partly offsetting that growth is a modest decline in the number of dependent children per 100 workers.

The changing composition of the non-working population will alter the form and size of support between generations because, as already noted, workers typically support their children directly by sharing living quarters and paying directly for their children's consumption. In contrast, workers now generally support the consumption of retirees through Social Security rather than by making direct payments or sharing living quarters with aging parents.

Any measure of the support burden that counts only people does not portray the economic resources that will be available to support workers and everyone else. The next two sections look at the cost of Social Security benefits in relation to the overall economy and in relation to the earnings of workers who pay for Social Security benefits.

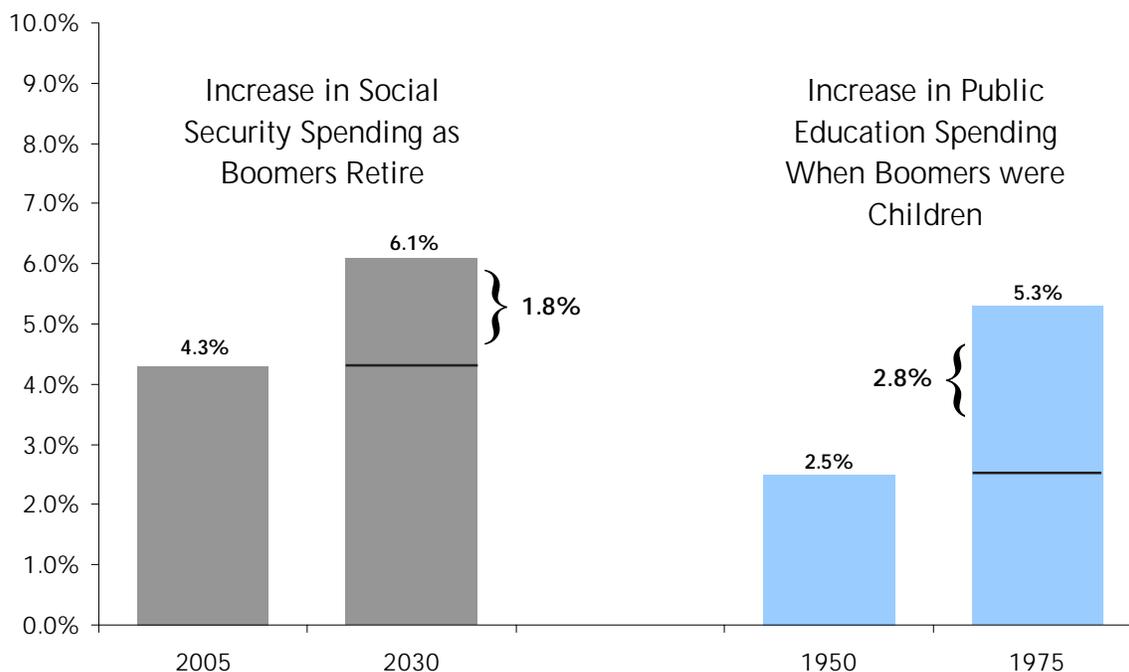
How Will Social Security Change as a Share of the Economy?

Gross domestic product (GDP) measures the value of all goods and services produced in the national economy that are available for everyone's consumption. How will Social Security cash benefit spending rise as a share of the entire economy when baby boomers retire?

In 2005, Social Security benefits amounted to 4.3 percent of GDP. Benefits are scheduled to rise to 6.1 percent of GDP by 2030, when all of the baby boomers will have passed their 65th birthdays (Board of Trustees, 2005). How can we put this increase in perspective?

A view from history suggests that a 1.8-percentage-point increase in the share of the economy spent for Social Security is considerably less than the increase in spending for public education that occurred when baby boomers were children (Chart 4). In the early 1950s, boomers showed up in record numbers to enroll in kindergarten, then in elementary school, high school, and college. Between 1950 and 1975, the share of the economy devoted to public education rose from 2.5 percent to 5.3 percent of GDP – a 2.8-percentage point increase over 25 years (Social Security Administration, 1991).

Chart 4. Spending as a Percent of Gross Domestic Product (GDP)



Sources: 2005 Trustees' Report, page 171; and the Annual Statistical Supplement to the Social Security Bulletin, 1991, page 101.

The rapid increase in births that brought the baby boom came as a surprise. Local officials had to adapt quickly to cope with the surge in school enrollment. Today the retirement of the baby boom is far from a surprise. In fact, the anticipated cost of the baby boom's retirement influenced Social Security legislation enacted more than 20 years ago.

The Social Security amendments of 1983 raised the age at which full retirement benefits are paid from 65 to 67 and implemented the change gradually for those retiring between about 2000 and 2025. This change will slow the growth in benefits paid to baby boomers and subsequent retirees. For example, when the full benefit age is 67, early retirement benefits claimed at age 62 will be reduced by 30 percent (instead of 20 percent as in prior law), while benefits claimed at 65 will be reduced by 13.3 percent (instead of being unreduced as in prior law).

This reduction in future retirement benefits helps explain why Social Security spending is not projected to rise as rapidly as the simple beneficiary-to-worker ratio might otherwise suggest. Retirees' monthly benefits will rise somewhat more slowly than the earnings of workers, and the taxable earnings of workers are projected to rise somewhat more slowly than the economy generally. Thus, while the beneficiary-to-worker ratio will rise from about 30 to 46 recipients per 100 workers by 2030, the share of the total economic pie for Social Security will rise more slowly.

When persons age 65 and older are a larger share of the population, it is reasonable to expect that they will consume a proportionately larger share of the economy's goods and services than do today's retirees. The only way in which a larger older population will not consume proportionately more of the nation's goods and services is to make them worse off relative to everyone else than are today's retirees.

Social Security Spending in Relation to Average Earnings of Workers

Paying for Social Security benefits is not shared by everyone. Rather, the benefits are financed largely by Social Security taxes on workers' earnings. Employees and employers each pay 6.2 percent of workers' earnings, up to a cap (\$94,200 in 2006; the earnings cap increases each year by the increase in average wages). In addition, upper income Social Security beneficiaries pay income taxes on part of their Social Security benefits, and some of this income tax revenue is dedicated to the Social Security trust funds. Earnings subject to Social Security taxes represented about 38 percent of GDP in 2005 (Board of Trustees, 2005).

Types of income that are not taxed and not counted for Social Security benefits include:

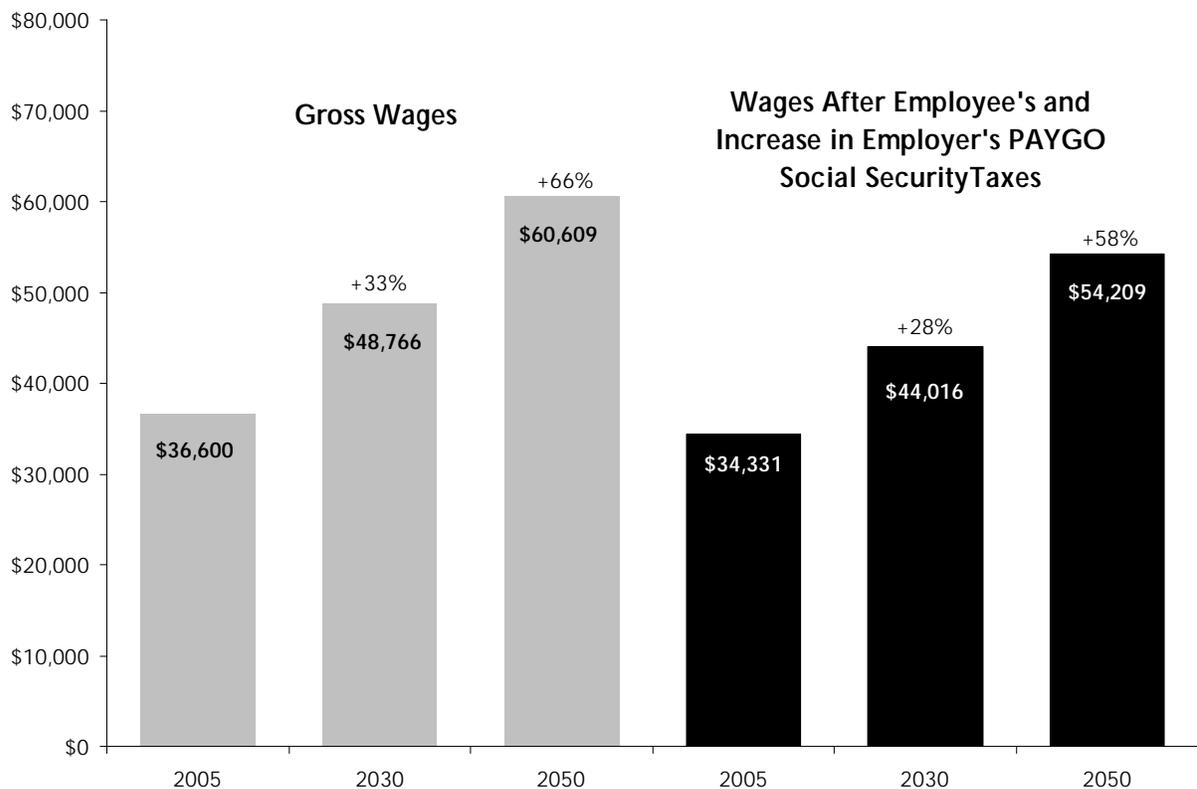
- Workers' earnings above the Social Security tax base, \$94,200 in 2006;
- Earnings of workers who are not covered by Social Security, mainly employees of state and local government entities that have chosen not to participate in Social Security (about 25 percent of all state and local government employees);
- Employer's contributions to workers' health insurance premiums, pensions, and most other employee benefits, including 401(k) employer matching funds;
- Workers' contributions to certain types of tax exempt or tax deferred accounts, such as flexible spending accounts for medical care, child care, or work expenses (although workers' contributions to 401(k) accounts are subject to Social Security taxes);
- Income from assets, such as interest on investments, stock dividends, rental income from real estate, and so forth; and
- Finally, increases in the value of property (capital gains), transfers of assets (such as gifts and bequests), and private and public transfer payments (such as private pensions and most social insurance benefits) are also not taxed to pay for Social Security.

Broadening the tax base or allocating other kinds of revenue to Social Security are among ways to improve Social Security finances. If the base is not broadened, if no other revenues are used, and if benefits are not lowered, then the pay-as-you-go Social Security tax rate on workers' earnings would need to rise. At the same time, workers' earnings are also projected to rise. How does the projected rise in Social Security cost relate to projected growth in taxable wages of workers?

In 2005, the average worker made about \$36,600. By 2030, the average worker will earn \$48,766 in 2005 dollars, or about 33 percent more in real terms (that is, after adjusting for inflation), according to the trustees (Table 2 and the left side of Chart 5).

What would happen to those wages if Social Security taxes were raised enough in the future to pay for projected benefits in present law? While no one has proposed to balance Social Security solely by raising the Social Security tax rate (see Reno and Lavery, 2005), this scenario shows what would happen to workers' earnings after deducting higher Social Security taxes. The pay-as-you-go tax rate for workers and employers, each, would rise to nearly 8.0 percent in 2030 (7.97 percent) and to nearly 8.4 percent (8.38 percent) in 2050.¹ Today, the net pay of an average earner, after paying 6.2 percent of earnings for Social Security, is about \$34,331. By 2030, the similar net pay, after deducting the employee share of rising Social Security taxes, would be about \$44,879, or 31 percent more in real wages.

Chart 5. Wage Levels in the Future: Average Wages of Workers After Adjustment for Inflation and Percent Increase over 2005



Source: Table 2.

If one assumes that workers ultimately pay the employer's share of any increase in Social Security taxes (through slower growth in wages), then one should consider future wages after deducting both the worker's share and the increase in the employer share. Under this scenario, net real wages would be about \$44,016 in 2030, or about 28 percent more than in 2005, as shown in the right side of Chart 5.

In brief, while Social Security spending is projected to rise as the population ages, workers of the future would still have higher net real wages, even under the unlikely scenario that Social Security were balanced solely by raising the tax rate on workers.

Social Security and Medicare Spending in Relation to Workers' Earnings

So far this brief has focused only on meeting the cost of Social Security for future retirees. In a more extensive study, Thompson (2005) considered the impact of financing both Social Security and Medicare on the future well-being of workers and retirees. He found that future workers fare better than future retirees under current policy. In particular, an average worker's wages would rise by 31 percent in real terms between 2003 and 2030, after taking account of projected wage growth, workers' higher out-of-pocket health care spending, and workers' higher income taxes to pay for Medicare's doctor bills and drug benefits under parts B and D of the program. At the same time, an average retiree's net Social Security income would rise by just 10 percent after taking account of the increase in the Social Security retirement age, rising income taxes on part of Social Security benefits, rising premiums for parts B and D of Medicare and rising out-of-pocket health spending.

Thompson concludes that if the pay-as-you-go cost of Social Security and Medicare were met solely by an increase in the payroll taxes on workers wages, then the average worker in 2030 would still fare somewhat better than the average retiree, assuming that the worker bore both the employer and the employee increase in the taxes. In this case, the worker's real net wages would rise by 21 percent, while the retiree's real net monthly Social Security income would rise by 10 percent (Thompson, 2005).

Conclusion

Important questions for policymakers remain about how the gains of economic growth, the cost of a larger older population, and the rising cost of health care will be equitably shared among retirees, workers who pay Social Security taxes, and people with significant resources that are not subject to Social Security taxes. How the economic pie will be shared as Americans adapt to a larger older population remains an important question for public policy. There are many options to balance Social Security's finances, and a variety of those policy choices are described in NASI Brief No. 18, *Options to Balance Social Security Funds Over the Next 75 Years*, (Reno and Lavery, 2005).

Table 1. Three Measures of Population Dependency Ratios, 1950–2050

| Features of ratios | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 | 2010 | 2030 | 2050 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Beneficiary-to-Worker Ratio | | | | | | | | | |
| Beneficiaries per 100 covered workers | 6 | 20 | 27 | 31 | 30 | 29 | 32 | 46 | 50 |
| Total Age-Dependency Ratio | | | | | | | | | |
| Persons under 20 and over 65 per 100 persons age 20-64 – total | 72 | 90 | 90 | 75 | 70 | 69 | 66 | 79 | 81 |
| Under age 20 | 58 | 73 | 72 | 55 | 49 | 48 | 45 | 44 | 43 |
| Age 65 and older | 14 | 17 | 18 | 20 | 21 | 21 | 21 | 35 | 38 |
| Consumer-to-Worker Support Ratio | | | | | | | | | |
| Persons supported by each 100 workers–total | 251.5 | 267.7 | 253.0 | 224.6 | 207.5 | 200.9 | 202.6 | 214.1 | 216.2 |
| Workers themselves | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Non-workers | 151.5 | 167.7 | 153.0 | 124.6 | 107.5 | 100.9 | 102.6 | 114.1 | 116.2 |
| Under 20 (children) | 80.8 | 98.7 | 89.4 | 64.6 | 55.0 | 52.5 | 50.2 | 48.7 | 47.4 |
| Age 65 and older (retired) | 14.4 | 18.6 | 20.2 | 21.5 | 21.8 | 21.1 | 20.7 | 33.7 | 36.7 |
| Age 20-64, women | 48.9 | 43.6 | 36.3 | 28.5 | 21.3 | 18.2 | 20.3 | 19.6 | 19.7 |
| Age 20-64, men | 7.4 | 6.8 | 7.1 | 10.0 | 9.4 | 9.1 | 11.4 | 12.1 | 12.5 |

Source: Office of the Chief Actuary, Social Security Administration based on demographic projections in the 2005 trustees report. Consumer-Support-Ratios are unpublished tabulations prepared for NASI, and are based on the non-institutionalized population of the United States, which is not the same as the total Social Security area population used for the other two ratios. The other two ratios are presented on pages 47 and 77, respectively, of the 2005 trustees report.

Table 2. Wage Growth and Social Security Contribution Rate Selected years, 2005-2050

| Year (and age of baby boomers ^a) | Average annual wage | | Tax Rate | Average wages after paying Social Security tax | | | |
|--|---------------------|-----------------------------|--|--|-----------------------------|---|-----------------------------|
| | In 2005 dollars | Percent increase since 2005 | Employee-employer pay-go tax rate ^b (percent) | Employee share of tax | | Employee's share of tax, plus the increase in the employer's share ^c | |
| | | | | In 2005 dollars | Percent increase since 2005 | In 2005 dollars | Percent increase since 2005 |
| 2005 (ages 41-59) | \$36,600 | | 6.20% | \$34,331 | | | |
| 2030 (ages 66-84) | \$48,766 | 33% | 7.97% | \$44,879 | 31% | \$44,016 | 28% |
| 2050 (ages 86-104) | \$60,609 | 66% | 8.38% | \$55,530 | 62% | \$54,209 | 58% |

^a"Baby Boomers" are defined as those born during 1946-1964

^bCurrent law tax rate in 2005 and rate needed to fund benefits on a pay-go basis thereafter. The pay-go rate shown is for the employee and the employer, each, after considering the projected revenues from taxation of Social Security benefits.

^cFor example, in 2030, gross average wages (\$48,766) are reduced by 9.74 percent (the employee share of the tax, 7.97 percent, plus the increase in the employer's share, which is 1.77 [i.e. 7.97 - 6.2 = 1.77]).

Endnotes

¹ We define “pay-as-you-go tax rate” as the tax on covered wages paid by workers and employers that would just balance Social Security finances each year, after taking account of revenues from income taxes on Social Security benefits that are earmarked for Social Security. (This calculation does not take account of interest income and the Social Security reserves that will be available to help finance Social Security until the reserves are depleted, which was projected to occur in 2041 in the 2005 report of the Social Security trustees.)

References

Board of Trustees. *2005 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds*. Washington, DC: Social Security Administration.

Grad, Susan. 1983. *Income of the Population 55 and Over, 1980*. U.S. Department of Health and Human Services, Social Security Administration, Office of Policy, Office of Research, Evaluation, and Statistics. Washington, DC: U.S. Government Printing Office.

Reno and Lavery. 2005. *Options to Balance Social Security Funds Over the Next 75 Years*. NASI Social Security Brief No. 18. Washington, DC: National Academy of Social Insurance.

Social Security Administration. 1991. *Annual Statistical Supplement to the Social Security Bulletin, 1991*. Office of Policy, Office of Research, Evaluation, and Statistics. Washington, DC: Social Security Administration.

Thompson, Lawrence H. 2005. “Paying for Retirement: Sharing the Gain.” In Ghilarducci, Teresa, Van Doorn Ooms, John L. Palmer and Catherine Hill, eds. *In Search of Retirement Security: The Changing Mix of Social Insurance, Employee Benefits, and Individual Responsibility*. (Based on papers delivered at the National Academy of Social Insurance’s 16th Annual Conference.) New York, NY: The Century Foundation.

Van de Water, Paul N. and Joni Lavery. 2006. *Medicare Finances: Findings of the 2006 Trustees’ Report*, NASI Medicare Brief No. 13. Washington, DC: National Academy of Social Insurance.



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