

## ISSUE BRIEF NO. 3

# SOCIAL SECURITY REFORM: BENCHMARKS FOR ASSESSING FAIRNESS AND BENEFIT ADEQUACY

## INTRODUCTION

This is the third in a series of issue briefs that the Treasury will release on Social Security reform. This brief focuses on ways to assess the fairness of reforms and the adequacy of benefits in a financially sustainable Social Security system.<sup>1</sup> The appropriate level of benefits, degree of progressivity, and distribution across generations of the financial burden associated with achieving a solvent system inherently involve value judgments that must be made in deciding how to reform Social Security. This issue brief provides a practical illustration of how to assess the implications of a potential reform plan along these important dimensions.

The first brief explained that achieving a financially sustainable Social Security system requires that the birth cohorts who will bear the financial consequences of reform must receive benefits whose present value is lower than the present value of the Social Security taxes they pay by more than \$13.6 trillion. (This is the result of earlier birth cohorts having received or been promised benefits that exceed their lifetime contributions by this same amount.) That brief also noted that reform can be fairer to future generations the sooner that it is initiated because the burden of reform will be spread over more people than in the case where reform is delayed. Generational fairness therefore provides an important reason to reform Social Security sooner rather than later.

The second brief introduced a framework for designing and evaluating reform plans that identifies reform options and weighs them with respect to the goals of allocating the burden of Social Security reform fairly and ensuring that total retirement resources inclusive of Social Security benefits will allow individuals to maintain a decent standard of living in retirement. While the second brief offered metrics to help assess fairness and benefit adequacy, it did not opine on what is fair or what represents an adequate level of benefits. As these are value-laden questions, reasonable people may disagree on their answers. Nevertheless, to provide concrete demonstrations of how this framework can be used to design and evaluate Social Security reform plans, this issue brief proposes specific benchmarks for assessing fairness and benefit adequacy. These benchmarks can be interpreted either as targets or simply as reference points to help formulate a target. And importantly, alternative benchmarks or targets can be developed and compared to those presented here.

The framework described in Treasury's second issue brief yields a three-step decision hierarchy for Social Security reform.

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<sup>1</sup> As in earlier briefs, the current brief focuses on potential reforms to the retirement income portion of Social Security, not the disability insurance portion. Hence, the benefit and tax calculations that follow do not include disability benefits and taxes, nor do they include the taxes that are paid on Social Security benefits.

**Decision 1.** Decide how the burden of the changes required to close Social Security’s \$13.6 trillion financing gap should be distributed across generations.

**Decision 2.** For a given allocation across birth cohorts, decide how the burden should be distributed across income groups within each birth cohort.

**Decision 3.** Decide how large the *level* of benefits (and hence taxes) should be.

After these decisions have been made, a set of reforms can be developed that are consistent with them.

As discussed in Treasury’s second issue brief, a critical question is whether contributions to Social Security in excess of benefits paid (attempted pre-funding) are truly set aside to help pay future benefits (in which case *true* pre-funding results). If attempted pre-funding does not result in true pre-funding, then the advantage to future generations from running a Social Security surplus today would be offset by a fiscal policy outside of Social Security that is less fair to future generations. This brief assumes that such attempted pre-funding is in fact real. While there is considerable reason to believe that the current Social Security surplus does not represent true pre-funding, future reforms could usefully include mechanisms aimed at ensuring that true pre-funding occurs. Treasury’s fourth issue brief investigates this topic.

The remainder of this third issue brief discusses these three decisions in sequence, offering benchmarks either to help decide the question or to help assess the choices made by a particular reform plan.

## DECISION 1: DECIDE HOW SOCIAL SECURITY’S ABSOLUTE BURDEN SHOULD BE ALLOCATED ACROSS BIRTH COHORTS SUBJECT TO REFORM

Treasury’s first issue brief demonstrated that Social Security must impose a large burden on birth cohorts that will be subject to reform, cohorts that this brief refers to as the “reform cohorts.” Relative to current-law scheduled benefits and taxes, the reform cohorts must experience some combination of cuts to scheduled benefits and tax increases that are currently estimated to equal \$13.6 trillion in present value (alternatively, 3.5 percent of future taxable payrolls). This, in addition to the fact that Social Security’s current-law scheduled benefits and taxes imply that the reform cohorts are already paying more into the system than they will receive in benefits means that Social Security will impose an absolute burden on reform cohorts that exceeds \$13.6 trillion.

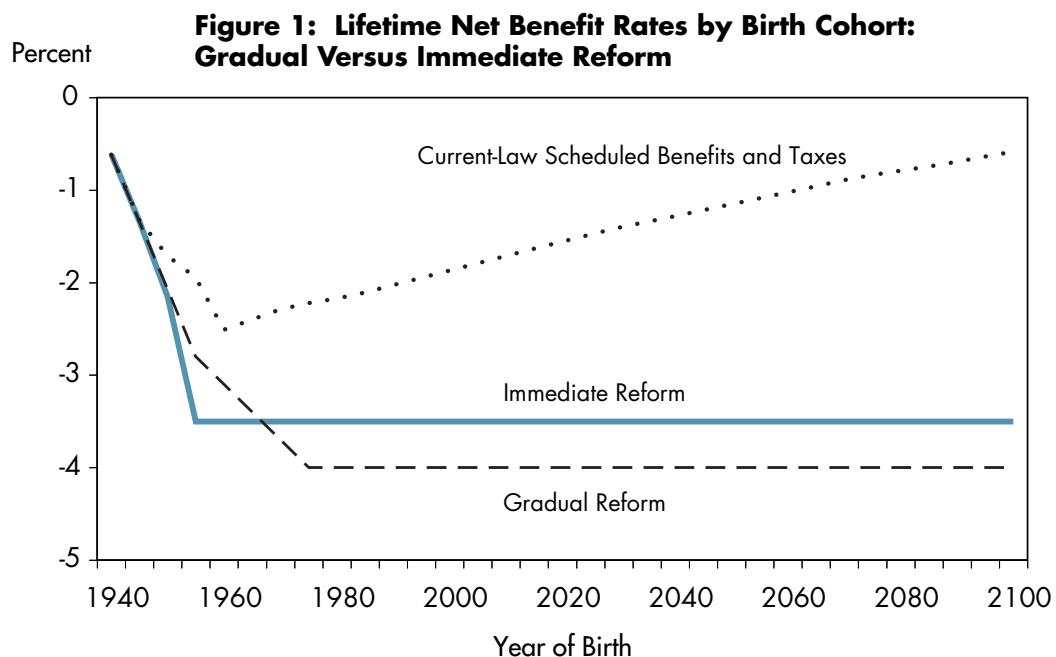
Importantly, reform cohorts are certain to either receive lower benefits or pay higher taxes than under current law *even if no reforms are made*. As pointed out in Treasury’s first issue brief, current law mandates that benefits be scaled back to a level that is consistent with then-current payroll tax income when the trust fund is exhausted. Moreover, even if the program were reformed so as to draw on general revenues, those revenues would derive primarily from taxes paid by the reform cohorts. In short, there is no way to avoid the conclusion that the Social Security program will impose a significant burden on the reform cohorts.

A Social Security reform might be partial in the sense that it explicitly allocates only a portion of the \$13.6 trillion in benefit and tax adjustments that must ultimately be imposed. For example, a reform might be enacted that makes Social Security solvent for 75 years but not beyond. Such a reform is virtually certain to be followed up later with additional measures that close the remaining financing gap through further benefit cuts and/or tax increases. As it can be difficult to assess the fairness of a partial reform without knowing the particulars of the reforms that will follow, this brief focuses on complete reforms that close the entire \$13.6 trillion financing gap.

To help assess the fairness with which a full reform allocates the reduced benefits and higher taxes (the increase in “net taxes”) between and within reform cohorts, Treasury’s second issue brief introduced the concept of the *lifetime net benefit rate*. For an individual, the lifetime net benefit rate is defined as the present value of net lifetime Social Security benefits (benefits less taxes) as a percentage of the present value of the individual’s lifetime wages. The lifetime net benefit rate for a birth cohort is the same as that for an individual except that the numerator (net Social Security benefits) and the denominator (lifetime wages) are sums computed over all members of the birth cohort.

Because reform cohorts must pay a net tax exceeding \$13.6 trillion, lifetime net benefit rates must be negative on average for reform cohorts—that is, reform cohorts must on average receive benefits whose present value is less than the present value of the taxes they pay into the system. A negative lifetime net benefit rate in most contexts will be referred to as a “lifetime net tax rate.” For example, a *negative* 3 percent lifetime net benefit rate is the same as a *positive* 3 percent lifetime net tax rate.

One candidate for a fair allocation of Social Security’s net taxes across reform cohorts is a reform that imposes the same net tax rate on *all* reform cohorts; such a reform might be viewed as sharing the burden of lower benefits and/or higher taxes equally across generations. For example, suppose the reform cohorts are those born in 1953 and later (that is, those aged 55 or younger in 2008), and that a net tax rate of 3.5 percent on those cohorts is just sufficient to yield \$13.6 trillion in lower benefits and/or higher revenues. (This is merely an illustration; in practice, the Congressional Budget Office and/or Social Security Administration could estimate net benefit rate profiles that would result in permanent solvency.) The lifetime net benefit profile in this case is labeled “Immediate Reform” in Figure 1. Also included in the figure is the lifetime net benefit profile under current-law scheduled benefits and taxes (as well as a third profile showing net benefits under a gradual reform that will be discussed later). It is important to keep in mind that current-law scheduled benefits and taxes cannot actually come to pass; indeed, current projections indicate that only about 75 percent of scheduled benefits would be paid starting in 2041 absent a change in the program, so that current-law scheduled benefits are attainable only with higher taxes. While comparing benefits under a reformed system to those scheduled under current law is misleading in one sense, the lifetime net benefit profile implied by current-law scheduled benefits and taxes still provides a useful benchmark for gauging the relative magnitude of each generation’s required sacrifice.



Source: Department of the Treasury

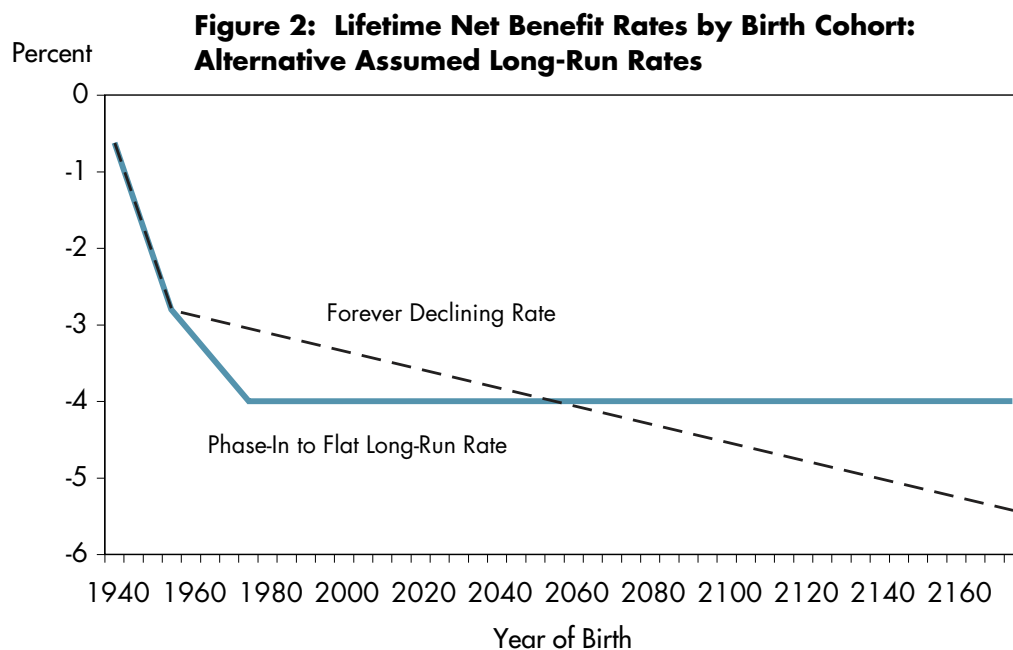
Figure 1 indicates that the immediate reform causes the lifetime net benefit rate to fall to  $-2.1$  percent for the 1950 birth cohort and to  $-3.5$  percent for the 1953 birth cohort. (The chart gives figures for every fifth birth cohort, so the 1953 cohort is not actually shown.) Many people would regard such an abrupt change in Social Security's promises so close to retirement as unfair: The ability to adjust to an unexpected change in Social Security's provisions is more limited the older one is at the time that the change occurs.

For this reason, reform plans typically phase in required benefit cuts and/or tax increases gradually. Figure 1 therefore also gives the lifetime net benefit rate profile associated with a reform that reduces lifetime net benefit rates more gradually before leveling off (the dashed line labeled "Gradual Reform"). What is noteworthy is the relationship between the profiles for immediate and gradual reforms. Relative to the immediate reform, the gradual approach is more generous to cohorts born between 1953 and 1970, and it therefore must be less generous to cohorts born after 1970. Again, because Social Security must levy a net tax on reform cohorts exceeding \$13.6 trillion, the smaller is the burden imposed on early reform cohorts, the greater is the required burden for later reform cohorts. As a result, the eventual long-run lifetime net benefit rate is lower under the gradual phase-in ( $-4.0$  percent) than for the immediate phase-in ( $-3.5$  percent).

If one accepts that it is fair to have a lifetime net benefit rate that eventually levels off and stays constant, then the pertinent question is how fast a reform should be phased in. The gradual reform shown in Figure 1 phases in fully with the 1975 birth cohort, a cohort that is 33 years old at the time the reform is initiated in 2008. Many would regard that as providing sufficient warning. Giving even more warning would place a higher burden on future generations; for example, delaying full phase-in to the 1988 birth cohort (those aged 20 in 2008) would require cohorts in the far future to bear a larger burden than if the full phase-in were to occur with the 1975 birth cohort.

An alternative approach to reform would depart from having a constant lifetime net benefit rate for reform cohorts after a possible phase-in. Specifically, it might be argued that future generations will

benefit from higher real wages that will come about because of productivity growth, and that lifetime net benefit rates should therefore trend downward for successive birth cohorts. (The idea is that Social Security's net taxes should be progressive across birth cohorts as well as within birth cohorts.) This possibility is illustrated by the lifetime net benefit rate profile labeled "Forever Declining Rate" in Figure 2. That profile is equal to the gradual phase-in profile up to the 1955 birth cohort and then commences a more gradual descent that never stops. Relative to the gradual phase-in case, the forever declining case is more generous to birth cohorts born between 1955 and 2055, and is less generous to cohorts born after 2055.



Source: Department of the Treasury

When considering the proposition that Social Security's net taxes should be progressive across birth cohorts as well as within birth cohorts, it is worth noting that the ethics of imposing progressive taxes between birth cohorts is different than the ethics of imposing progressive taxes within birth cohorts. In the latter case, everyone affected by the policy has direct political representation. In the former case, current generations decide that future generations will contribute disproportionately to making Social Security solvent, but those future generations have no direct influence on the decision. This is the case as well with a partial reform (such as a plan that only attains 75-year solvency), since this puts a larger share of the reform burden on future cohorts.

Work incentive considerations are also important when considering how to allocate Social Security's net taxes across generations. Social Security's net taxes discourage work effort. The work disincentive effects of raising a given amount of tax revenue generally will be smallest if everyone faces the same tax rate rather than if tax rates differ, and this result applies to people living at different times as well as to people living at the same time.<sup>2</sup> Hence, taxing different generations at different rates generally has greater work disincentive effects than taxing all generations at the same rate. This consideration argues for a flat lifetime net benefit rate in the long run, rather than one that forever declines (and therefore results in work disincentives that grow larger for future generations). If it were believed that a forever-declining net benefit rate is fairer than one that eventually flattens out, then deciding the speed at which the net benefit rate should decline involves a familiar tradeoff between equity and efficiency. No such tradeoff is required if the eventually flat profile for the net benefit rate is viewed as fairest.

In this framework, the relevant decisions are: (1) at what rate should reforms be phased in so as to give people sufficient time to adjust their saving and retirement plans; and, (2) at what rate should lifetime net benefit rates decline because of expected increases in the real wages of successive birth cohorts. The precise tradeoffs involved can be estimated. For example, if it were decided that the long-run lifetime net tax rate should be flat, one could estimate the tradeoff between phase-in speed and the eventual level of the lifetime net benefit rate.

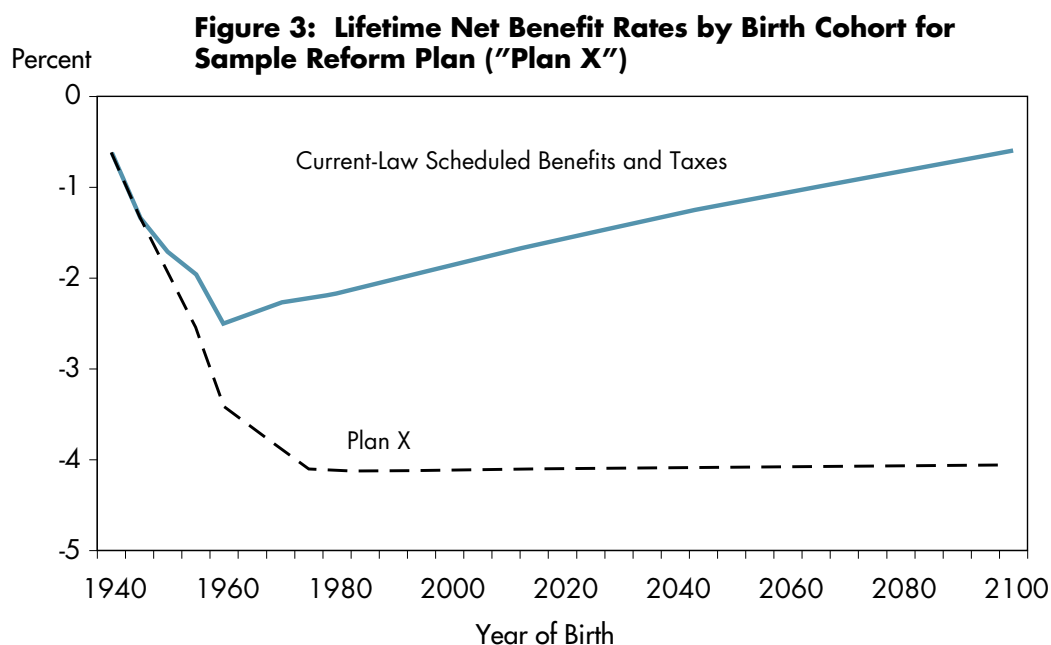
As fairness is subjective, there are no right or wrong answers to these questions. A common framework is useful, however, to quantify the tradeoffs involved.

## AN EXAMPLE

Figure 3 gives estimates of the lifetime net benefit rate by birth cohort for an illustrative reform that reduces the lifetime net benefit gradually before leveling off and staying constant thereafter (again, this is an illustration, not a policy recommendation). The reform is simple and has two components. The first component involves a gradual benefit reduction (compared to promised benefits) for the 1947 to 1972 birth cohorts (those aged 62 between 2009 and 2036) so that the real benefit levels for a person at a given point in the relative distribution of lifetime wages would stay roughly constant for successive birth cohorts, rather than growing with the average level of real wages people earn.<sup>3</sup> The second component, which applies to cohorts born in 1973 and later, keeps the benefit formula the same as for the 1972 birth cohort except that benefits are reduced proportionately in accordance with changes in life expectancy; this results in a constant lifetime net benefit rate even though people applying for benefits at the normal retirement age are receiving benefits for longer and longer periods of time. (The second component is often referred to as "longevity indexing.") In formulating this plan, an informed guess was made that starting longevity indexing with the 1973 birth cohort would result in a permanently solvent system; this is only a guess, though, which is another reason why this example should be viewed as illustrative only.

2 If some individuals' work effort (either within a cohort or across cohorts) were relatively less sensitive to taxes, imposing higher taxes on this group would enhance efficiency. It is unlikely, though, that such individuals could in practice be identified, or that doing so would be desirable on other grounds.

3 Such benefit cuts are often referred to as "price indexing" of benefits, but this policy would not actually price-index the individual components of the benefit formula. Under such a policy, all aspects of current law that rely on wage indexation are unchanged except for the final PIA computation. What *does* change is that benefits are set equal to current-law benefits multiplied by the ratio of economy-wide average real wages in the year reform is initiated to economy-wide average real wages in the year the individual turns 62. Current projections are that economy-wide average real wages will grow at about 1.1 percent per year; thus, in this case price indexing reduces benefits from current-law levels by 1.1 percent for the first birth cohort affected, by 2.2 percent for the second birth cohort affected, and so on.



Source: Department of the Treasury

This reform, which will be referred to as Plan X, is merely an example, and Treasury does not endorse or reject it. Indeed, as will be seen, this plan arguably has some undesirable features.

Figure 3 shows that the Plan X lifetime net benefit rate is the same as current-law scheduled benefits and taxes for cohorts born prior to 1947, and commences a slow and steady decline both absolutely and relative to current-law scheduled benefits and taxes for subsequent birth cohorts, reaching  $-4.1$  percent for the 1972 birth cohort and then remaining roughly constant. Thus, under this plan, cohorts born after 1972 will pay about four percent of their taxable wages to honor the promises made by Social Security to current and past retirees.

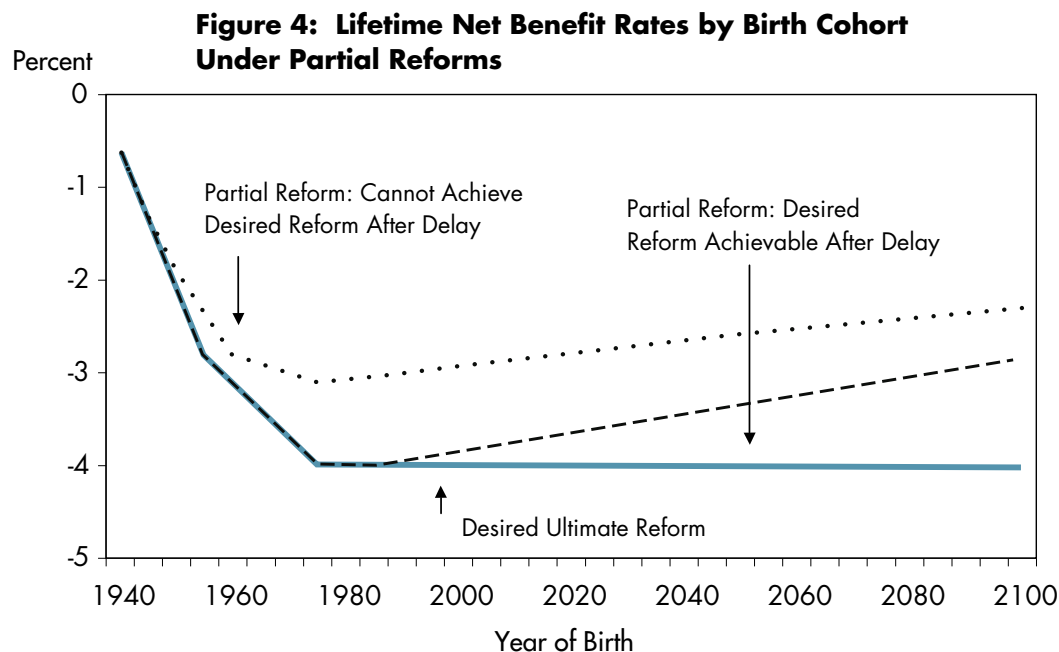
The Plan X lifetime net benefit rate profile accords with the flat long-run benchmark shown in Figures 1 and 2. Assuming that is the desired result, the next question that arises is whether the program changes should be phased in more rapidly. If the plan were announced in 2008, the first cohort to be subject to the long-run lifetime net benefit rate would be 36 years old at the time the plan was announced. Would it be fair to subject 40-year-olds in 2008 to the full reform? If so, the program changes could be phased in faster, in which case the long-run lifetime net benefit rate that makes Social Security permanently solvent would be higher (that is, less negative) than  $-4.1$  percent.

## PARTIAL REFORMS AND INTERGENERATIONAL FAIRNESS

Treasury's first issue brief emphasized the importance of reforming Social Security sooner rather than later so that the burden of reform can be distributed as fairly as possible across generations. The longer reform is delayed, the fewer the generations that will share the burden of reform and hence the larger the burden that must be imposed on the generations that do contribute toward making Social Security permanently solvent.

A similar point can be made with respect to reforms that close only part of Social Security's financial imbalance, for example, the 75-year actuarial deficit. While such partial reforms would delay the trust fund's insolvency date, they must ultimately be followed up with additional reforms that make Social Security

permanently solvent (lower benefits and/or higher taxes). This two- (or more) stage approach to achieving solvency can have implications for the distribution of the reform burden across generations. This point is illustrated in Figure 4, which starts with a full reform that has a lifetime net benefit rate profile shown by the solid line in the figure. If the partial reform implies a profile that starts on the solid line and continues on the dashed line, then the partial reform phases in as quickly as the full reform and there is time to implement a follow-on reform that achieves the desired ultimate outcome. But if the partial reform phases in more slowly than the full reform (following the dotted line in the figure), this means that by postponing full reform there will be an additional, larger burden on future cohorts relative to the outcome with the full reform.



Source: Department of the Treasury

It is quite likely that a partial reform—a reform that closes just the 75-year financial shortfall, for example—would phase in less rapidly than a full reform and would therefore result in an unfair burden being imposed on future generations. This can be seen by considering what might motivate a partial reform. In particular, if it were motivated by a desire to push off difficult or unpopular decisions into the future while downplaying the fact that the reform is partial, then the reform would almost certainly be too generous to the early birth cohorts (whose political clout is strongest), and too harsh toward future generations.

Alternatively, if the partial reform were motivated by the belief that Social Security's finances in the distant future are too uncertain to plan for, then at best the reform attempts to allocate a too-small burden fairly, which again implies a reform that is too generous to early birth cohorts (and too punitive to future cohorts). Moreover, this concern over the uncertainty of infinite-horizon projections misses an important point regarding the nature of Social Security's long-run imbalance. As explained in Treasury's first issue brief, the system's infinite-horizon financial imbalance is more than accounted for by scheduled benefits and taxes for people aged 16 and above in 2007. Hence, the difference between Social Security's estimated infinite-horizon imbalance and its estimated 75-year imbalance is not due to speculative projections of the far-distant future. Instead, the difference obtains because the 75-year projections include relatively more of the taxes paid than the benefits received by the individuals who are included in the 75-year calculation.



## DECISION 2: FOR A GIVEN ALLOCATION OF SOCIAL SECURITY'S NET LIFETIME BENEFITS ACROSS BIRTH COHORTS, DECIDE HOW TO ALLOCATE THEM ACROSS INCOME GROUPS *WITHIN* BIRTH COHORTS

Once a decision is made as to how Social Security's net lifetime benefits should be distributed across reform cohorts, the natural next question is how they should be distributed across income groups *within* birth cohorts. More precisely, how should the lifetime net benefit rate differ across income groups within a birth cohort?

A natural place to begin thinking about this question is with reference to current-law scheduled benefits and taxes. (Although those benefits and taxes will certainly not come to pass, a reform could match the same pattern of *relative* net benefit rates by income level as would occur under current-law scheduled benefits and taxes.) Treasury's second issue brief reported estimates of the lifetime net benefit rate profile by birth cohort for each of four composite workers whose wages were denoted as low, average, high, and very high. Those estimates showed that current-law scheduled benefits and taxes are progressive for wage levels below the maximum taxable amount; that is, in this range of lifetime wage levels, the lifetime net benefit rate is higher the lower are lifetime wages. For wages above the taxable maximum, the lifetime net benefit rate rises with lifetime earnings, implying that Social Security is regressive in that earnings range.

Under the current-law Social Security program and many proposed reforms, progressivity derives almost entirely from how the program treats each individual worker as opposed to how it treats households. Each worker's primary benefit is computed as if the person had been single all their life, and "auxiliary" benefits for relatively low-earning spouses and survivors are proportional to that primary benefit. Only Social Security's primary benefits are explicitly linked to wage income. Hence, this section develops a progressivity benchmark for Social Security's primary benefits; that is, benefits paid to a worker if he or she were unmarried. Issues concerning how Social Security treats married couples vis-à-vis unmarried individuals are discussed in Box 1.

### BOX 1

#### THE SOCIAL SECURITY MARRIAGE BENEFIT

While this series of issue briefs does not explicitly discuss reform of Social Security's spouse's and survivors' benefits, this is not meant to suggest that those benefits are unimportant or that they cannot be improved. Indeed, an important question that Social Security reform must address is the extent to which the program should continue to give relatively advantageous terms to married couples with unequal earnings. Those advantageous terms are illustrated in the table below for seven hypothetical couples with unequal earnings, all from the 1965 birth cohort. The first four columns of figures are for one-earner couples, and the last three are for two-earner couples. For each couple, the first row of figures gives the lifetime net benefit rate applying to the couple and the second row gives the lifetime net benefit rate that would apply if the couple were instead two single individuals. The difference in those lifetime net benefit rates is the marriage benefit as a percent of lifetime earnings, the last row of figures. All estimates are for current-law scheduled benefits and taxes.

Lifetime Net Tax Rates for Married Couples with Unequal Earnings (Current-Law Scheduled Benefits and Taxes, 1965 Birth Cohort*)							
Item	Steady Earnings Level, Percent of Average, Primary/Secondary**						
	45/0	100/0	160/0	240/0	100/45	160/100	240/160
Lifetime Net Tax Rate							
Actual	-6.5	-2.0	0.1	2.2	1.1	3.1	3.8
If Two Singles	1.2	3.7	4.8	6.0	1.9	3.6	4.4
Marriage Benefit, Percent of Lifetime Earnings	7.7	5.7	4.8	3.8	0.8	0.4	0.6
*Survivors' benefits other than to elderly spouses are not included in the calculations. One-earner couples benefit from the spouse's benefit (equal to 50 percent of the primary earner's benefit) and the widow's benefit (equal to 100 percent of the primary earner's benefit). The two-earner couples shown benefit only from the widow's benefit.							
**Calculations assume the primary earner is male and the secondary earner is female. (A specific assumption is required because mortality probabilities are gender specific.)							

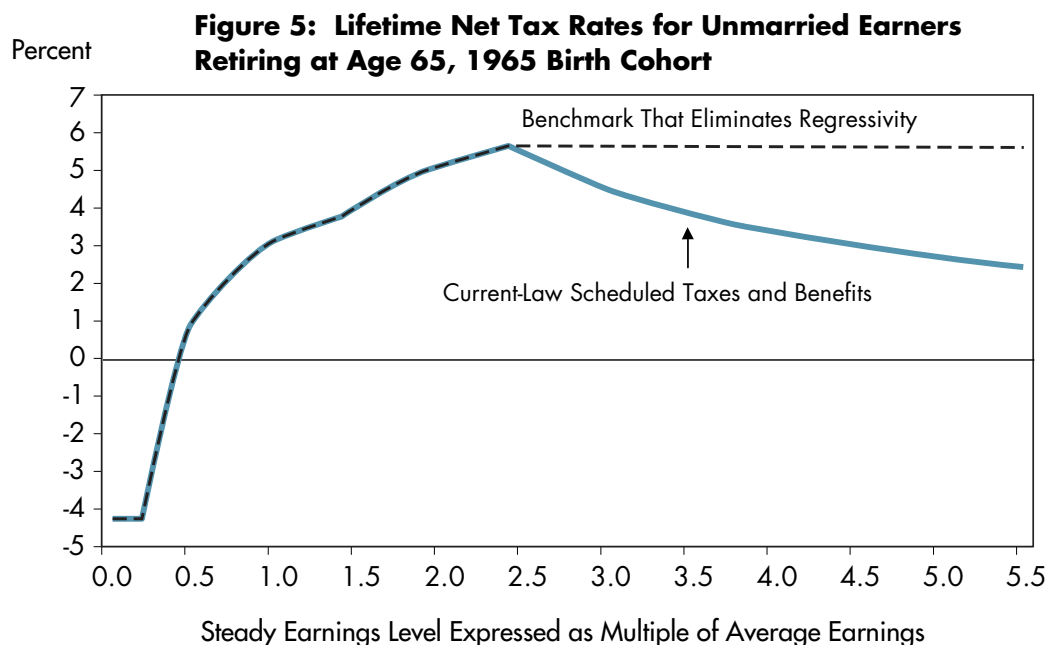
The table shows that the marriage benefit is large for one-earner couples, and more modest for two-earner couples with unequal earnings. First, consider the one-earner couples. One-earner couples benefit from the fact that individuals can collect benefits based on their own earnings, or they can elect to receive a spouse's benefit equal to 50 percent of their spouse's primary benefit. In addition, individuals can elect to receive a widow's or widower's benefit equal to 100 percent of the primary earner's benefit in lieu of their own retirement benefit. So a stay-at-home spouse receives a retirement benefit half as large as the primary earner while the primary earner is alive, and 100 percent as large as the primary earner after the primary earner dies. A non-working single person, in contrast, would receive no Social Security benefits. This is the source of the marriage benefit, which ranges from 3.8 percent to 7.7 percent of household lifetime earnings for the one-earner couples depicted in the table. While the absolute size of this marriage benefit rises with the earnings level of the primary earner, the marriage benefit as a share of lifetime wages falls with the earnings level. (The estimates in the table do not include marriage benefits deriving from survivors' benefits for children and young dependent spouses.)

Two-earner couples with unequal earnings receive more modest marriage benefits. All the two-earner couples shown in the table receive initial retirement benefits based on their own earnings. Hence, all of the marriage benefit derives from the ability of the low-earning spouse to collect higher benefits if and when he or she survives the high-earning spouse.

Social Security's spouse's benefits also reduce work incentives. To the extent that a secondary earner might receive the spouse's benefits in lieu of a benefit based on his or her own earnings, the primary earner's marginal net tax rate is reduced and the secondary earner's marginal net tax rate is increased. To see this, consider a couple that is certain to receive a spouse's benefit. Then each additional dollar of primary earnings results in additional accruals of the spouse's benefit, implying a reduced marginal tax rate for the primary earner. By contrast, each additional dollar of secondary earnings results in no additional benefit accruals, implying an increased marginal net tax rate for the secondary earner. Because secondary earners tend to be more responsive to taxes than primary earners when deciding how much to work, the spouse's benefit tends on average to reduce work incentives.

When thinking about Social Security's marriage benefit, it is critical to recognize that Social Security is essentially a zero-sum transfer program: The more generous Social Security is to one-earner couples, for example, the less generous it must be to others on average.

Figure 5 shows how Social Security's lifetime net tax rate for unmarried workers varies with lifetime wages for the 1965 birth cohort. That cohort is one of the first cohorts for which the normal retirement age is 67 and the current 10.6 percent OASI tax rate applies for nearly all of their working life. The figure shows lifetime net tax rates rather than lifetime net benefit rates because progressivity is most naturally discussed in the context of net taxes rather than net benefits. The net lifetime tax rates are computed under the assumption that a worker's wages are proportional to economy-wide average wages in every year between the ages of 22 and 64, and that retirement occurs at age 65.



Source: Department of the Treasury

The figure shows that the average lifetime net tax rate (the solid line) rises with lifetime wages up to the taxable maximum level (about 2.4 times average wages) and then declines. This rate starts at  $-4.3$  percent for wages between zero and 0.2 times average wages (implying a wage subsidy for workers at the very bottom of the earnings distribution), then steadily rises, reaching zero percent at about 0.4 times average wages and peaking at a net tax rate of 5.6 percent at 2.4 times average wages. In this income range, Social Security is progressive because lifetime net tax rates are rising with wages. But the lifetime net tax rate falls as wages rise beyond 2.4 times average wages. As was explained in Treasury's second issue brief, this occurs because wages above the maximum taxable earnings level (2.4 times average wages) have no effect on Social Security taxes paid or benefits received. Hence, Social Security's *absolute* lifetime net tax stays constant as earnings rise above maximum taxable earnings, implying that lifetime net taxes as a *share* of lifetime wages (*i.e.*, the lifetime net tax rate) fall with wages as wages exceed the taxable maximum level. In effect, the absolute lifetime net tax that Social Security assesses is capped because the tax base is capped.

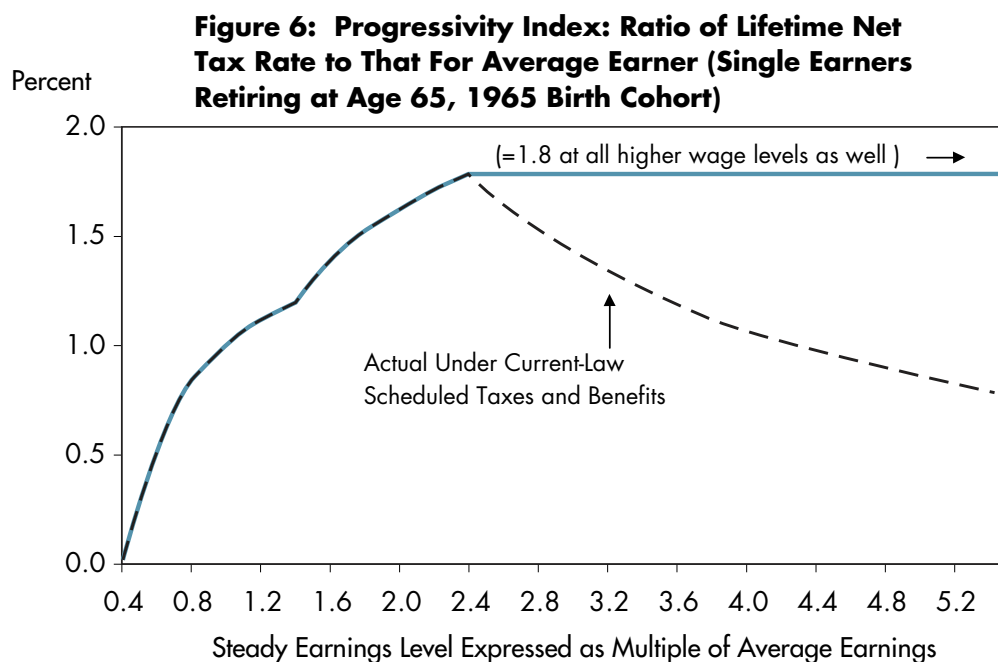
Treasury's first issue brief explained that imposing additional net taxes on cohorts subject to reform is necessary in order to service a debt exceeding \$13.6 trillion that was incurred by earlier generations. One way to examine the progressivity of a plan to service that debt is to use a benchmark that eliminates the system's historic regressivity above the cap on taxable wages (as measured by net benefit rates). Specifically, this reference point assumes the lifetime net tax rate is the same as current-law scheduled benefits and taxes up to what a steady earner's wages equal to 2.4 times average wages would be, and is then flat at higher wage levels (see the dashed line in Figure 5).

To develop a progressivity benchmark against which to assess reforms, it is useful to imagine how one would match the progressivity of the benchmark lifetime net tax rate profile shown in Figure 5 (the dashed line) if the amount of lifetime net taxes collected from the cohort had to be higher than what is implied under current-law scheduled benefits and taxes. For example, the 1965 birth cohort faces an overall lifetime net tax rate of 3.3 percent under current-law scheduled benefits and taxes. Suppose it were decided to double that rate to 6.6 percent through benefit cuts and/or tax increases. How could this be done while maintaining the same degree of progressivity? One possibility would be to double the lifetime net tax rate

at all earnings levels. But that strategy would also double the wage subsidy given to workers with steady earnings less than 0.4 times average wages. If the subsidy to low earners was already at a level that society deemed appropriate if it were possible to maintain current-law scheduled benefits and taxes, it would not make sense to boost it further when other members of the cohort were being made to bear a larger lifetime net tax burden.

Hence, the proposed progressivity benchmark assumes that workers receiving subsidies under current-law scheduled benefits and taxes are held harmless by reform, and that all other workers' lifetime net tax rates are proportional to those under current-law scheduled benefits and taxes. In this benchmark, the relative lifetime net tax burdens at different earnings levels for persons who pay positive lifetime net taxes do not vary with the amount of total lifetime net taxes paid by the cohort. Again, this is merely one of many possible benchmarks (albeit a relatively straightforward and intuitive one). For example, an alternative would be to compute a summary measure of within-cohort progressivity, and then attempt to apportion the cohort's net tax burden so as to preserve this measured degree of progressivity.

The upshot of this reasoning is the benchmark progressivity index profile shown in Figure 6. It is the benchmark lifetime net tax rate schedule shown in Figure 5 for earnings above 0.4 times average wages divided by the lifetime net tax rate for workers with average wages. For example, the lifetime net tax rates in Figure 5 for wages equal to 1.0 times average wages and 1.4 times average wages are 3.15 percent and 3.76 percent; hence, the progressivity index at 1.4 times average wages shown in Figure 6 equals 1.2 (computed as 3.76 divided by 3.15). If a reform yields a progressivity index profile that is identical to the one shown in Figure 6, then it is maintaining the same relative lifetime net tax burdens at different earnings levels (for persons paying positive lifetime net taxes) as do current-law scheduled benefits and taxes for the 1965 birth cohort.

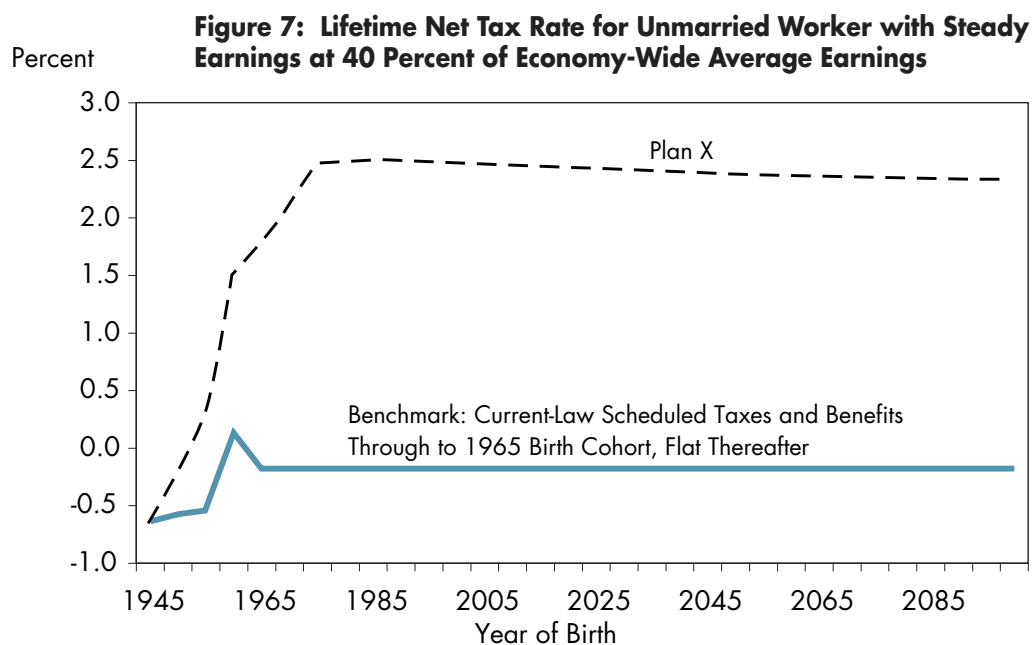


Source: Department of the Treasury

To summarize, the full progressivity benchmark has two elements. First, the benchmark assumes that the lifetime net tax rate for workers born in 1965 or earlier with lifetime wages less than 0.4 times average wages is equal to what obtains under current-law scheduled benefits and taxes; for later birth cohorts, the net tax rate for these workers is held fixed at its level for the 1965 birth cohort. Second, the benchmark assumes that relative lifetime net tax rates for workers with lifetime wages above 0.4 times average wages are as given by the solid line in Figure 6.

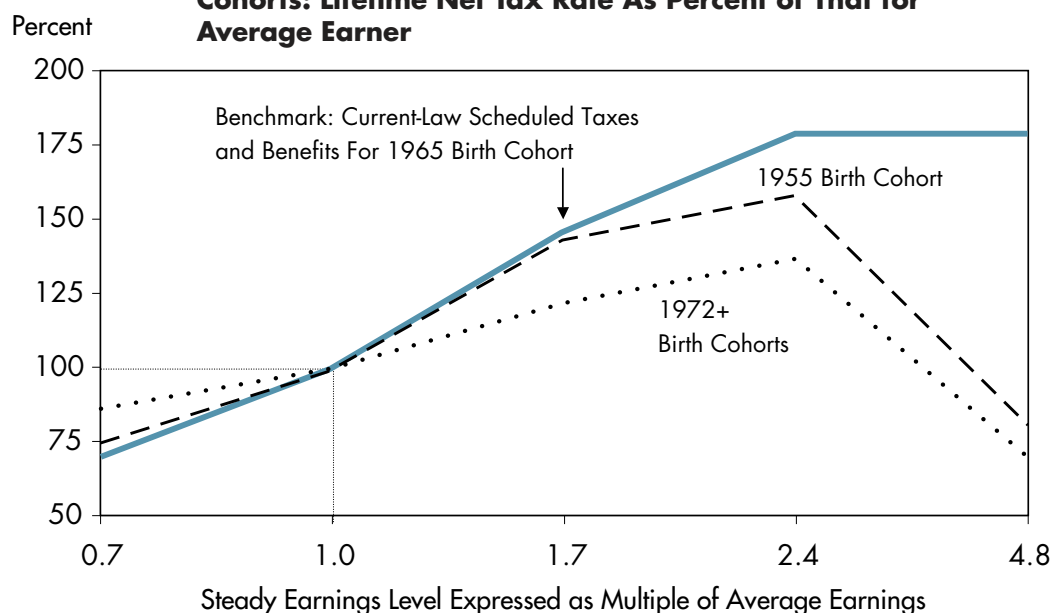
## AN EXAMPLE

Figures 7 and 8 assess progressivity under Plan X. First, Figure 7 compares the lifetime net tax rate under Plan X for workers whose wages equal 0.4 times average wages with the benchmark that keeps this rate the same as current-law scheduled benefits and taxes up to the 1965 birth cohort and then holds it constant for later cohorts. Plan X raises the lifetime net tax rate rapidly for these workers; starting from a  $-0.64$  percent lifetime net tax rate for the 1945 birth cohort, the same rate as under the benchmark, the lifetime net tax rate rises to 1.5 percent for the 1960 birth cohort and 2.5 percent for the 1975 birth cohort. For later birth cohorts, the lifetime net tax rate trends down slightly because longevity indexing is approximate.



Source: Department of the Treasury

**Figure 8: Plan X Progressivity Index For Selected Birth Cohorts: Lifetime Net Tax Rate As Percent of That for Average Earner**



Source: Department of the Treasury

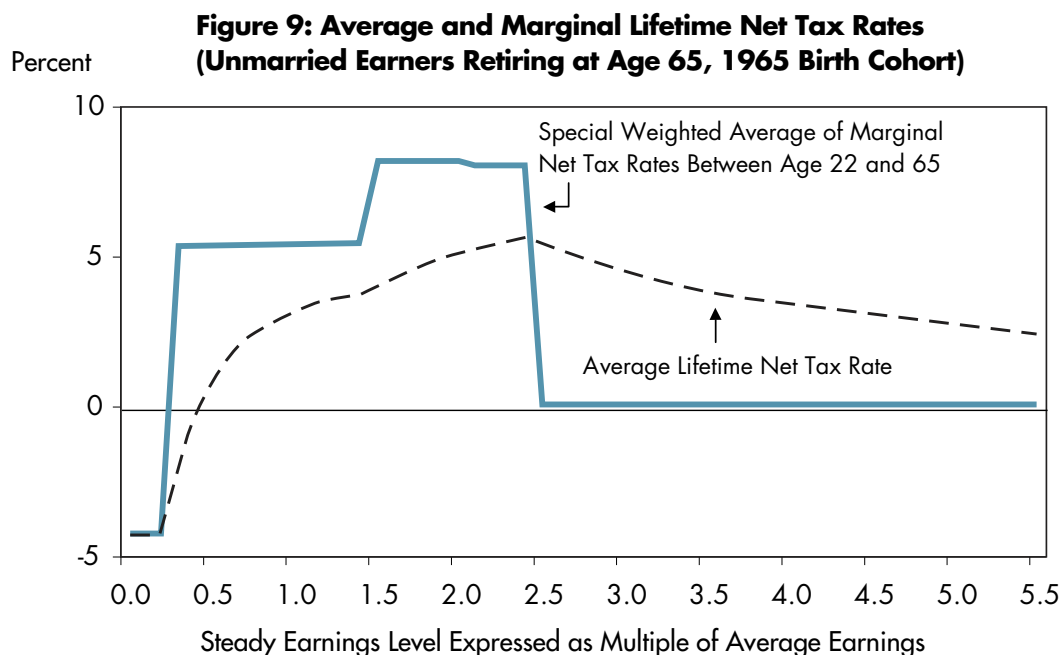
Figure 8 shows how the degree of progressivity changes across selected birth cohorts for those earning more than 0.4 times average wages. (The profile for the 1972 birth cohort also applies to later birth cohorts.) Recall that Plan X had two components. The first component essentially amounts to a proportionate reduction in the present value of lifetime benefits for cohorts born between 1947 and 1972. These benefit reductions cause Social Security to become increasingly less progressive for successive birth cohorts. For lower-wage workers, who have a relatively high ratio of lifetime benefits to lifetime wages, a proportionate reduction in the present value of benefits will have a relatively large effect on the lifetime net tax rate they face. In addition, because Plan X continues to base benefits and payroll taxes on earnings up to the current-law taxable maximum—again, roughly 2.4 times average wages—the plan actually becomes regressive (like current law) for earnings above this level.

The second component of Plan X, longevity indexing for cohorts born after 1972, keeps benefits from becoming more generous as people live longer. This component of the plan has no effect on Social Security's progressivity under the assumption that longevity is not related to income.<sup>4</sup> Thus, the profile is the same for all cohorts born after 1972.

## PROGRESSIVITY AND INCENTIVES TO WORK

An informed choice of how progressive to make Social Security must also address concerns about work incentives. In general, for a given amount of revenue raised, more progressive taxes carry larger work disincentive effects. Hence, the choice of how progressive to make Social Security involves a tradeoff between possible distributional objectives and the cost of reduced work incentives.

<sup>4</sup> In practice, progressivity *would* be affected, since disparities in longevity between higher and lower earners appear to be increasing.



Source: Department of the Treasury

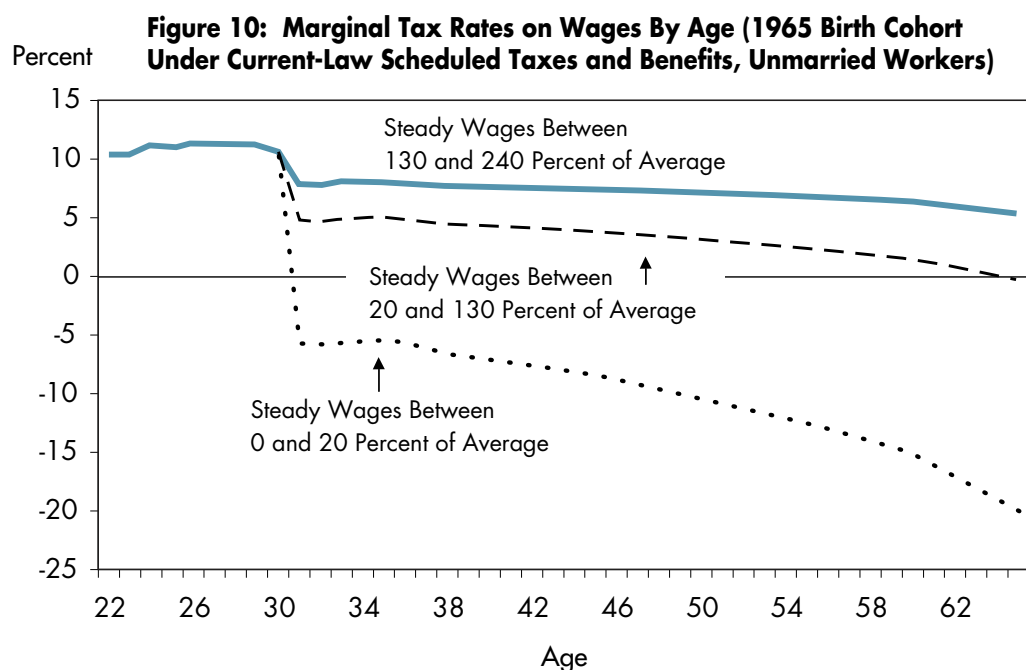
Figure 9 helps explain the effect Social Security’s progressivity has on work incentives. The figure reproduces the lifetime net tax rate schedule under current-law scheduled benefits and taxes from Figure 5 (the dashed line), and shows the associated “marginal lifetime net tax rate” schedule (the solid line). The marginal lifetime net tax rate is defined as the change in lifetime net taxes that results from a small change in the steady earnings level, divided by the change in lifetime wages. It can be thought of as the increase in lifetime net taxes that results from a one-dollar increase in wages—the marginal net tax rate—in a typical work year.<sup>5</sup>

The degree to which Social Security discourages work effort is determined by marginal net tax rates. For example, a member of the 1965 birth cohort with steady earnings equal to 1.5 times average wages faces an 8.2 percent marginal lifetime net tax rate. This means that in a typical work year this earner pays 8.2 cents net Social Security tax on an additional dollar of earnings—a 10.6 cent gross tax that is offset at the margin by additional benefits with a value of 2.4 cents. Economic theory suggests that, when a person decides on whether and how much to work, what matters is this marginal net tax rate.<sup>6</sup>

Figure 9 demonstrates that the marginal lifetime net tax rate is higher than the (average) lifetime net tax rate at wage levels where the average rate is rising—that is, where the tax rate schedule is progressive. This is a basic arithmetic fact—an average can be rising only if the marginal addition is above the current average. Hence, the more progressive is Social Security, the higher are its marginal net tax rates and the degree to which it discourages work effort.

5 Because increasing the steady wage level increases earnings by a small multiple of the average wages in each year of work, the marginal lifetime net tax rate is a particular weighted average of the marginal net tax rates on earnings in the various years of working life. Specifically, if average real wages are growing at rate  $g$  and the real discount factor for computing net taxes and lifetime wages is  $r$ , and if the marginal net tax rate at age  $a$  is denoted  $MTR_a$ , then the marginal lifetime net tax rate is  $\sum_{a=22}^{65} w_a MTR_a$  where the weights satisfy  $\sum_{a=22}^{65} w_a = 1$  and are given by  $w_a = [(1+g)/(1+r)]^{a-22} \sum_{i=22}^{65} [(1+g)/(1+r)]_{i-22}$ .

6 This assumes that the individual actually expects to receive the future benefit.



Source: Department of the Treasury

The marginal lifetime net tax rate shown in Figure 9 is a measure of the marginal net tax rate a worker faces in a typical work year. As shown in Figure 10, marginal net tax rates actually vary over an individual's working life. The figure displays three schedules, each applying to the 1965 birth cohort and to different parts of the lifetime wage distribution. All workers face marginal net tax rates equal to the gross payroll tax between ages 22 and 30 because work in those years does not affect benefits (only 35 years of earnings matter for the determination of benefits).<sup>7</sup> Beginning at age 31, earnings do count toward the benefit computation and the marginal net tax rate is less than the gross payroll tax rate. Because of the progressivity of the benefit formula, the marginal net tax rates are negative for the lowest earners (these workers pay negative lifetime taxes) and are positive and progressively larger (a positive and growing net tax rate) for the two higher-earning categories shown.

To conclude, it is important to recognize that Social Security's progressivity comes at the cost of higher marginal net tax rates and reduced work incentives. As with Decision 1, which dealt with intergenerational fairness, any decision about progressivity is intrinsically a value judgment. But it should take this tradeoff into account.

<sup>7</sup> For the steady earners considered in Figure 10, it would not matter which of the 39 earnings years between ages 22 and 60 are included for purposes of computing benefits. The figure assumes that the first nine years are excluded (which would be the case if earnings in these years were slightly below a steady earner's). Note that these calculations involve steady earners, so a given individual will reasonably expect to eventually have 40 quarters of creditable earnings (and so will be eligible for Social Security benefits).



## DECISION 3: DECIDE HOW LARGE BENEFITS (AND THE TAXES TO SUPPORT THEM) SHOULD BE

Treasury's second issue brief explained that so long as true pre-funding occurs and its implications are understood by workers, the question of how the Social Security reform burden should be allocated across and within birth cohorts is a separate question from how large to make benefits. This is due to the fact that Social Security's payroll taxes on cohorts subject to reform can be divided into two components, net taxes that finance the more than \$13.6 trillion in net lifetime benefits paid to early birth cohorts not subject to reform, and forced savings that determine the level of benefits.

Whether a higher benefit level (higher forced saving) reduces work incentives depends on whether the forced savings are truly set aside to help pay future benefits, and whether individuals understand that the forced saving component of their payroll taxes will eventually be returned to them in the form of benefits. These issues were discussed extensively in Treasury's second issue brief.

Treasury's second issue brief introduced the benefit replacement rate as a metric for assessing the adequacy of Social Security benefits. The benefit replacement rate measures the extent to which Social Security benefits alone would allow individuals to sustain their living standards in retirement in the event that the individual entered retirement with no other source of income and with no net worth, including equity in homes and other durables. A replacement rate of 60 percent, for example, indicates that such an individual could on average consume 60 percent as much per year in retirement as he or she did while working.<sup>8</sup>

The benchmark for assessing benefit adequacy that will be considered here is benefit replacement rates by earnings level under current-law scheduled benefits and taxes for the 1965 birth cohort. As with the other benchmarks, this is a reference point, not necessarily a target outcome; indeed, some might object to it on the grounds that maintaining the benchmark benefit levels would require higher revenues relative to current law. (In addition, the benchmark assumes the same degree of reliance in the future on Social Security benefits to finance retirement; it might be desirable instead to have Americans save more on their own.) Nevertheless, this benchmark is useful for assessing the impact of any proposed benefit changes.

### AN EXAMPLE

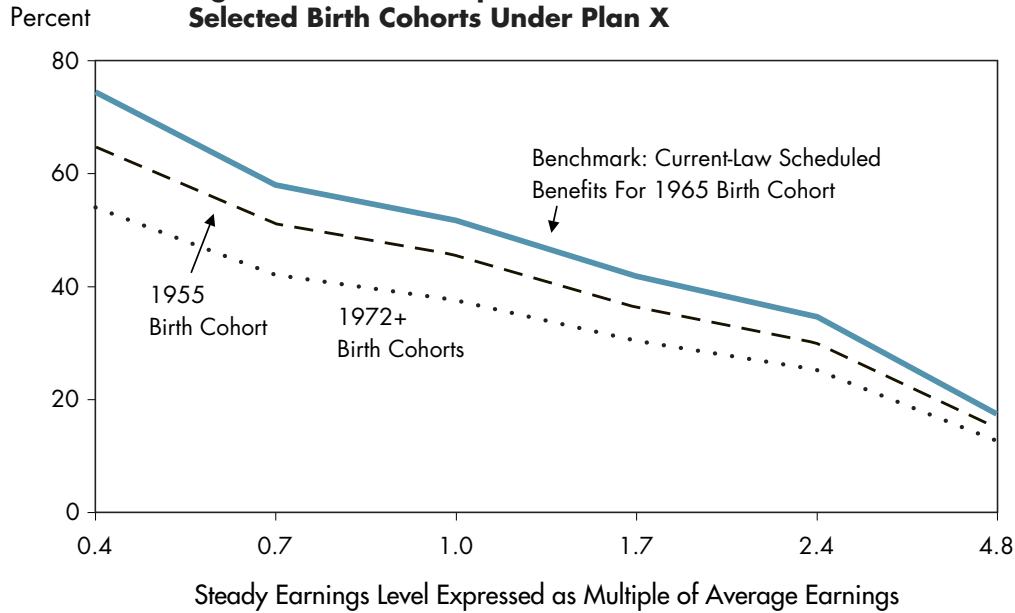
Figure 11 compares benefit replacement rates under Plan X with the benchmark. The figure assumes that people work an additional year for each two years' increase in life expectancy beginning in 2008.<sup>9</sup> Despite the assumed increase in work, benefit replacement rates fall continuously for successive birth cohorts (the replacement rate profiles shift down relative to the benchmark) as benefits are reduced for the 1947 to 1972 birth cohorts under the first component of the plan. Then, when longevity indexing takes effect (for the post-1972 cohorts), benefit replacement rates remain about constant as the effect on the replacement rate of longevity indexing of benefits is offset by the assumed increases in the age at which people choose to retire.

Figure 11 illustrates an important fact: For benefit replacement rates to remain at levels scheduled under current law, additional revenues must be brought into the system. Because Plan X brings in no new revenues, benefit replacement rates necessarily fall relative to the benchmark. This is true despite the assumption that people work longer as life expectancies increase. Again, Plan X is intended to serve only as an illustration; it is not a policy recommendation.

8 Specifically, the measure uses the constant level of real consumption that would be possible between the ages of 21 and 65 if all pre-tax wages earned during those years were consumed. This measure overstates possible lifetime consumption inasmuch as some wage income is taxed.

9 The benchmark assumption that people work one additional year for every two years of additional life expectancy implies that the portion of life spent in retirement would continue to rise as life expectancy increases.

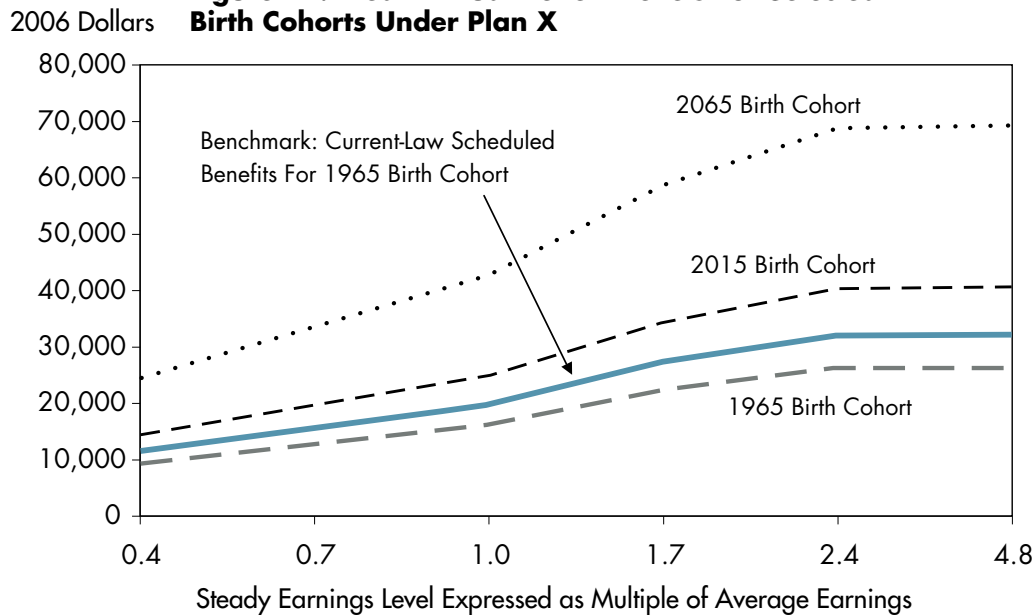
**Figure 11: Benefit Replacement Rates For Selected Birth Cohorts Under Plan X**



Source: Department of the Treasury

It is important to understand that while benefit replacement rates fall for successive birth cohorts under Plan X, absolute real benefit levels nevertheless rise for successive birth cohorts if people work longer as they live longer. This is shown in Figure 12, which compares Plan X absolute real benefit levels with those for the 1965 birth cohort under current-law scheduled benefits and taxes. Plan X's benefit levels start out lower than the benchmark, but a slow increase in the age at which people choose to retire steadily boosts real benefits, causing them to surpass the benchmark starting with roughly the 1995 birth cohort.

**Figure 12: Real Annual Benefit Levels For Selected Birth Cohorts Under Plan X**



Source: Department of the Treasury

If it is decided that it is sufficient to have real benefit levels stay constant for successive birth cohorts while cohorts' lifetime earnings become ever larger as a result of increasing real wage levels, then implicit in that decision is the belief that as real wage levels increase, individuals should rely on sources outside of Social Security for an increasing share of their retirement income needs.<sup>10</sup>

## CONCLUSION

This third issue brief provides specific benchmarks for assessing the fairness and benefit adequacy of a Social Security reform proposal, thus demonstrating that the framework for designing and evaluating reform plans that was introduced in Treasury's second issue brief can be used in a practical way. (Importantly—and as was discussed in the second brief—the framework is useful for evaluating fairness only if near-term Social Security contributions in excess of benefits paid are truly set aside to help finance future benefits.)

What one considers fair, and what amount of benefits one deems sufficient to provide adequate resources for retirement, will necessarily involve value judgments. Nevertheless, decisions about these questions can be usefully informed by quantitative benchmarks. The benchmarks discussed here can be interpreted either as targets or simply as reference points that can be used to help formulate a target; in either case, the hope is that others will propose their own benchmarks or targets and a dialogue among policy makers and concerned citizens can develop that is informed by a common framework.

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<sup>10</sup> Relatedly, if attempted pre-funding is not real, then it is questionable whether constant replacement rates should be maintained in the traditional portion of the program, since an absence of true pre-funding will imply that higher benefits for one generation will come from imposing greater costs on future cohorts. Allowing replacement rates to decline in that portion of the program would require individuals to rely more and more on other sources of retirement income (either savings outside of Social Security or a funded component within the program).