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Budget Model

Summary: PWBM projects that Democratic presidential candidate Bernie Sanders' Social Security reform plan would reduce the program's conventional 75-year imbalance by 2.3 percent of current law taxable payroll, leaving a remaining imbalance equal to 1.2 percent of current law taxable payroll. We project that it would lower GDP by 0.9 percent in 2030 and 1.0 percent in 2050.

Key Points

- Democratic presidential candidate Senator Bernie Sanders has proposed changes to Social Security policy that increase benefits for low earners and increase program income by levying "donut hole" payroll taxes on those with earnings above $250,000 and by dedicating proceeds from a new tax on high investment income to the program.

- The plan would reduce the conventionally-measured long-range imbalance by 2.3 percent of taxable payroll, leaving an imbalance of 1.2 percent of taxable payroll.

- The plan would decrease GDP by 0.9 percent in 2030 and 1.0 percent in 2050 as a result of reduced capital formation due to the increased tax on investment as well as the new type of payroll tax (the "donut hole" tax) which distorts labor supply by more than the standard payroll tax.

Analysis of the Sanders Plan for Social Security

Introduction

Senator Bernie Sanders has proposed changes to the Social Security system as part of his presidential campaign. Similar to Joe Biden's plan (which PWBM analyzed previously), the Sanders plan provides more generous benefits to low earners while increasing taxes for higher-income households, as summarized in Table 1 below.

Table 1: Reforms to Taxes and Benefits in Sanders' Proposal

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Provision	Current Law	Proposed Law
Benefit Provisions		
Special Minimum Benefit	Indexed to CPI-W, full Special Minimum Benefit is $886.40 in 2019 (currently outdated, since wage growth exceeds price growth)	Set Special Minimum Benefit at 125% of Federal Poverty Line ($1,301 in 2019), Grown by the National Averate Wage Index (AWI)
Increase the first PIA bend point	First bend point in 2020 is $960. Average Indexed Monthly Earnings (AIME) up to $960 are replaced at the highest rate, 90%	Phase in a 15-percent increase in the first band point starting from 2025 to 2039
Cost of Living Adjustment (COLA)	CPI- Urban Wage Earners and Clerical Workers (CPI-W)	CPI-Elderly (CPI-E)
Student Benefits (Dependent Child Benefits)	Available for students of eligible workers up to age 18 (or age 19 and full-time student, no higher than grade 12)	Continue benefits for children of disabled, or deceased workers until they attain age 22 if the child is enrolled in high school, college, or vocational school
Tax Provisions		
Payroll Taxes on Wage Earnings Above $250,000 (Donut Hole)	0%. Earnings above taxable-maximum ($132,900 in 2019) are not subject to payroll tax	12.40%
Additional Investment Income Tax	No revenues from investment income tax dedicated to OASI Trust Fund	Apply a separate 6.2-percent tax on investment income payable to OASDI Trust Fund

Changes to Benefits

On benefit increases for career-low-income workers, the Sanders plan has two provisions that are similar to former Vice President Joe Biden's Social Security reform plan. These include:

- *Increase the special minimum benefit*: For long-career workers, benefits are mainly based on average historical earnings. Lower average earnings correspond to lower benefits. To protect the retirement living standards of workers with extremely low earnings, current law places a floor on the benefit level called the "special minimum benefit." This amount is adjusted each year according to the Consumer Price Index, which tends to grow more slowly than wages, and so very few beneficiaries are affected by this provision.

  In 2021, the first year under the Sanders reform, the minimum basic monthly benefit ("primary insurance amount") for newly eligible beneficiaries with 30 or more years of work would be 125 percent of the poverty level for one person as published in 2020 by the department of Health and Human

Services. For beneficiaries becoming newly eligible after 2021, the special minimum benefit would be indexed by growth in the national average wage index (AWI). In 2021 and after, for all newly eligible beneficiaries with fewer than 30 (but at least 10) work years, the basic initial benefit would be reduced by X/20, where X is the number of years short of 30 years of work.

- *Replace the inflation index for calculating cost-of-living benefit adjustments*: Under current Social Security law, once the initial benefit is calculated, the benefit is adjusted each year to keep pace with general price increases in the economy. However, the price index used is the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). That index does not accurately capture annual changes in the general price level of the basket of goods and services that retirees purchase, which includes more health-care-related items and less work-related items such as clothing and transportation.

  The Sanders plan would increase overall benefits by shifting the index for calculating annual cost-of-living benefit adjustments to the Consumer Price Index for the Elderly (CPI-E), which usually grows faster than the CPI-W index.

However the Sanders plan includes two other changes to Social Security benefits:

- *Increase the first bend point in the Social Security benefit formula*: Under current law, the Social Security benefit formula is progressive. Workers with average indexed monthly earnings (AIME) that are smaller than the first bend point are awarded a 90 percent "replacement rate" (or bend point factor) when calculating basic benefits based on those historical earnings. Workers with AIME higher than the first bend point threshold receive smaller average replacement rates. For example, in 2020, the first $960 in AIME receives a 90 percent replacement rate, additional AIME up to the second bend point ($5,785) receives a 32 percent replacement rate, and any additional AIME beyond that receives a 15 percent replacement rate. These bend points increase each year with growth of average economy-wide wages to keep pace with general growth in living standards.

  Senator Sanders' plan would increase the first bend point above current law—by 1 percent for those newly claiming benefits in 2025, by 2 percent for those newly claiming in 2026, and so on until it is increased by 15 percent for those newly claiming benefits in 2039 and later.

- *Increase benefits for the dependent children of disabled and deceased workers, if those children are still in school*: Under current law, dependent child benefits end when unmarried dependent children of eligible beneficiaries turn age 18. Benefits can continue through age 19 if the child remains in school, and can continue beyond age 19 if the child becomes disabled before age 22.

  Senator Sanders' Social Security plan would continue benefits through age 22 for the dependent children of disabled and deceased beneficiaries, while those children are still in high school, college, or vocational school.

Changes to Taxes

Senator Sanders' plan includes larger increases in payroll and other taxes for boosting Social Security's income. One of these elements is similar to the Biden plan:

- *Introduce a "donut hole" tax increase on high career earners*: Under current law, the 12.4 percent Social Security (OASDI) employer and employee combined payroll tax rate applies to earnings up to the annual taxable maximum level ($137,700 in 2020).

  The Sanders plan increases Social Security taxes by creating a "donut hole" in the payroll tax structure. While earnings immediately above the current taxable maximum would continue to be exempt from Social Security taxes, earnings above $250,000 would be taxed at the 12.4 percent rate, raising more revenue compared to the Biden plan which places the donut hole tax bracket at $400,000. Similar to the Biden plan, the Sanders donut hole tax would not trigger additional benefits.

  At some future date, the donut hole would disappear and all earnings would be subject to full payroll taxes. The reason for this is that the annual taxable maximum level ($137,700 in 2020) would continue to grow with average wage growth, as under current law, while the $250,000 threshold would remain fixed because it is not indexed to wage growth. The donut hole, therefore, disappears once the annual taxable maximum level reaches $250,000. Because of the lower donut hole tax bracket under the Sanders plan, this will happen much earlier compared to the Biden plan.

Senator Sanders' Social Security reform also includes a new tax on capital income:

- *Increase the net investment income tax (NIIT) and dedicate all NIIT revenues to Social Security*: The Affordable Care Act of 2010 (ACA) imposes a net investment income tax (NIIT) of 3.8 percent, which applies to net investment income of $200,000 and above for single filers and $250,000 and above for joint filers.

  The Sanders plan would add 6.2 percent to the NIIT as defined under the ACA, setting the total NIIT at 10 percent. All NIIT revenues would be dedicated to Social Security under the Sanders plan.

Projected Budgetary Effects

PWBM's integrated model platform allows for a holistic analysis of Social Security reforms, including: the direct impact of policy changes on the Social Security program's finances; changes in household decisions including labor supply and retirement savings; indirect effects from interactions with the rest of the federal budget; and the impact on the macroeconomy. The macroeconomic ("dynamic") feedback effects of changes in labor supply and saving affect wages, labor supply, GDP, and even future benefits received under Social Security's wage-indexed formula.

Table 2 shows PWBM's estimates of Social Security's long-range and short-range actuarial *present value balance ratios* under current law and under the Sanders plan. The present-value balance ratio indicates the program's shortfall as a fraction of all future payroll. The numerator of this ratio is the current value of the trust fund plus the present value of projected receipts less payments over each time horizon. This numerator is divided by the present value of taxable payroll to produce the present-value balance ratio.

PWBM projects that, on a conventional basis, the Sanders plan reduces the program's *long-range* (75-year) imbalance (as measured by the present value balance ratio) from -3.55 percent of taxable payroll to -1.22

percent—a 2.33 percentage point reduction in the deficit. As also shown in Table 2, the Social Security actuaries' estimate of the Sanders plan reduction in Social Security's funding shortfall is slightly smaller -2.22 percent of taxable payroll. On a dynamic basis, taking account of behavioral feedback effects to the reforms, the Sanders plan reduces the program's *short-range* (30-year) imbalance from -2.25 percent of taxable payroll to -0.40 percent—a 1.85 percentage point reduction in the deficit.

Table 2: Estimated OASDI Financial Effects of the Sanders Plan Relative to Current Law

Percentage Points

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	Long Range OASDI Actuarial Present Value Balance Ratio		**Short Range OASDI Actuarial Present Value Balance Ratio**
	SSA Actuaries	**PWBM**	**PWBM**
	Estimates (2018-2092)	**Conventional (Static) Estimates (2020-2094)**	**Dynamic Estimates (2020-2050)**
Current Law	-2.84	-3.55	-2.25
Effect of proposed changes	*2.22*	*2.33*	*1.85*
Proposed Law	-0.62	-1.22	-0.40

Note: The OASDI actuarial present value balance ratio is the actuarial balance as a percent of current law taxable payroll. See here for a discussion of current law and current policy. SSA Actuaries' estimates are based on the intermediate assumptions of the 2018 OASDI Trustees Report. Consistent with our previous dynamic analysis and the empirical evidence, the dynamic projections above assume that the U.S. economy is 40 percent open and 60 percent closed. Specifically, 40 percent of new government debt is purchased by foreigners.

Figure 1 shows dynamic estimates of Social Security's short-range balance ratio on an annual basis, under current law and the Sanders proposal. This ratio is the difference between annual costs (including all benefit expenditures) and revenues (excluding interest income), divided by annual taxable payroll under current law.

Figure 1: Social Security's Annual Non-Interest Income Balance as a Share of Taxable Payroll, Short Range (2019-2049) Dynamic Estimates

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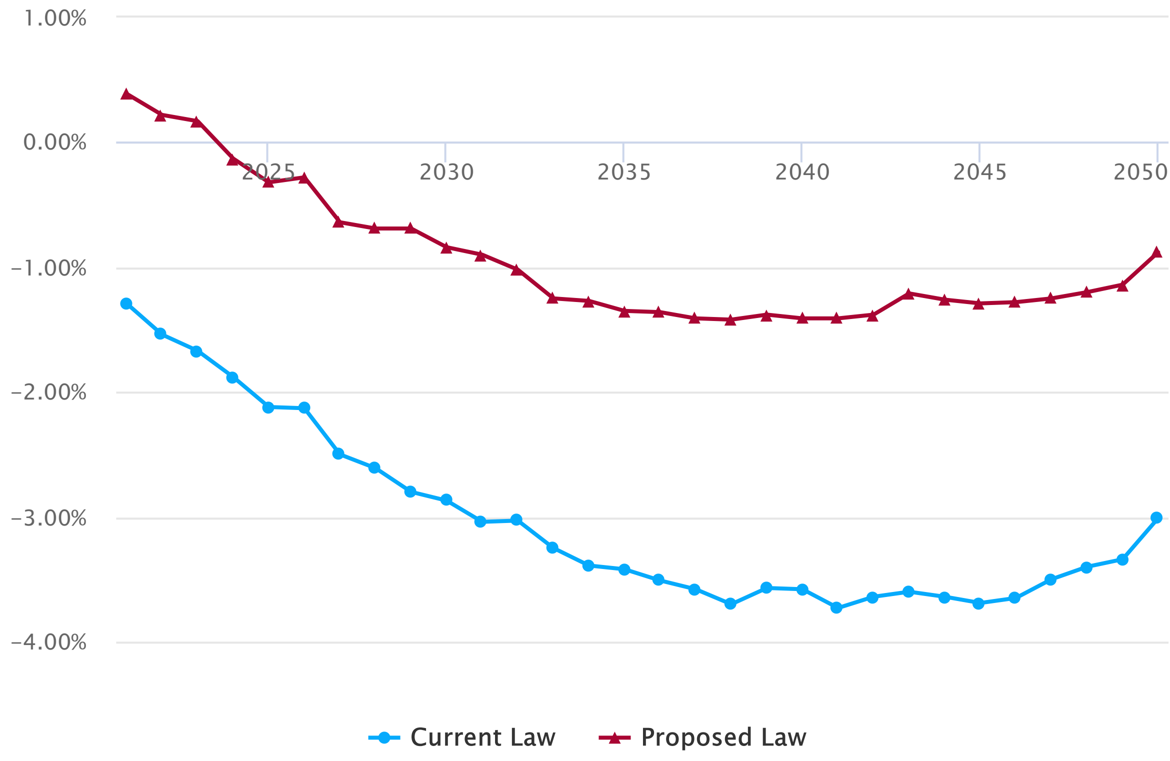

Note: Consistent with our previous dynamic analysis and the empirical evidence, the dynamic projections above assume that the U.S. economy is 40 percent open and 60 percent closed. Specifically, 40 percent of new government debt is purchased by foreigners.

Projected Economic Effects

The Sanders Social Security reform proposals are similar in spirit to the Biden plan as both include similar tax and benefit increase measures. The Sanders plan, however, is more aggressive on both counts, proposing larger benefit increases for low earners and steeper tax increases on high-earners and the rich. As summarized in Table 3 and explained in greater detail below, PWBM projects that the Sanders plan will reduce GDP by 0.9 percent in 2030 and by 1.0 percent by 2050.

First, a large share of the Sanders plan benefit increases accrue to households who have little retirement savings to offset. However, to the extent that the plan's benefit increases accrue to households who supplement retirement resources with personal savings, those households save less for retirement and work less or retire a bit earlier.

Second, the new donut hole tax distorts labor supply decisions by more than the current payroll tax. As we explained previously, the current payroll tax does not distort labor supply by as much as non-Social Security taxes. The reason is that payroll taxes are linked to expected future benefits. Put differently, part of the current law payroll tax for the average worker is more similar to a "contribution" than a tax. Any tax distortions that occur arise from imperfect linkages between payroll taxes and expected future benefits due to inter-generational ("pay-as-you-go" financing) and intra-generational redistribution (progressive benefits).

The donut hole tax increase does not trigger a corresponding increase in future benefits. It is, therefore, fully distorting to labor supply because of its lack of "contribution-benefit" linkage. Moreover, a well-established principle in the field of public economics is that these labor supply distortions increase in proportion to the *square* of the tax rate. Hence, a new tax on top of existing taxes distorts labor supply decisions by more than the new tax relative to no taxes. The additional 12.4 percent tax in the Sanders plan is levied on households who already face the highest combined statutory federal-state-local income and payroll tax rates.

The Sanders plan has two economic effects in the long term that are mutually opposing. The Sanders plan's more aggressive revenue increase effectively reduces government debt under the unified surplus measure. But the larger donut hole provision (starting at $250,000 compared with $400,000 under the Biden plan) and the higher NIIT rate fall on those with high investment returns, precisely those who contribute the most to national saving. These measures therefore also reduce national saving by more than under the Biden plan. Normally, debt reduction has a salutary effect on the economy from reducing capital crowd-out, which boosts capital formation. Under the Sanders plan, although revenue increases and debt reduction are larger, the disincentive effects of higher taxes on saving and labor supply are also larger. On balance, the latter effects dominate and generate a larger reduction in GDP over the long term (compared to the Biden plan).

In total, we project that by 2050 these effects cause the capital stock to decline by 1.9 percent (reducing wages) and labor income to decline by 1.0 percent. Together, this leads to our projected GDP reduction of 1.0 percent by 2050 under the Sanders Social Security plan.

Table 3: Effects on Key Macroeconomic Variables Relative to Current Law in Year Shown

Percent Change from Baseline

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Year	GDP	Labor Income	Hours Worked	Capital Service
2021	-0.7	-0.7	-0.1	-0.1
2030	-0.9	-0.9	-0.1	-1.2
2040	-1.0	-1.0	-0.1	-1.6
2050	-1.0	-1.0	0.0	-1.9

Note: Consistent with our previous dynamic analysis and the empirical evidence, the dynamic projections above assume that the U.S. economy is 40 percent open and 60 percent closed. Specifically, 40 percent of new government debt is purchased by foreigners.

Victoria Osorio, John Ricco, and Sophie Shin conducted this analysis under the direction of Efraim Berkovich, Richard Prisinzano, and Kent Smetters. Jagadeesh Gokhale contributed to the report, and Mariko Paulson prepared it for the PWBM website. Calculations are based on PWBM's model that is developed and maintained by PWBM staff.