PENN WHARTON
UNIVERSITY of PENNSYLVANIA
Budget Model

Dynamic Distributional Analysis of the Biden Platform

Summary: PWBM uses dynamic distributional analysis to evaluate the effects of the Biden platform on different age and income groups. We find that working-age individuals in the bottom 40 percent of taxable income benefit the most due to expanded health insurance, increases in housing subsidies, and lower cost of prescriptions in the Biden platform, while young, high-income individuals and wealthy retirees see net losses due to tax increases and lower returns on their savings.

Introduction

In its previous analysis of the Biden platform, PWBM finds that over the 10-year budget window 2021 – 2030, the Biden platform would raise $3.375 trillion in additional tax revenue and increase spending by $5.37 trillion. Including macroeconomic and health effects, by 2050 the Biden platform would decrease the federal debt by 6.1 percent and increase GDP by 0.8 percent relative to current law.

Although GDP increases relative to current law, different types of individuals are affected differently by different components of the Biden platform. Under a conventional distributional analysis, households with adjusted gross income (AGI) of $400,000 per year or less would not see their taxes increase directly but would see lower investment returns and wages as a result of corporate tax increases. These households would see an average decrease in after-tax income of 0.9 percent under the Biden tax plan, compared to a decrease of 17.7 percent for those households with AGI above $400,000 (the top 1.5 percent).

Furthermore, the Biden platform calls for an expansion of spending on programs that benefit lower income households. For example, Biden has committed to a total of $650 billion in new housing spending over ten years, most of which goes toward Section 8 housing vouchers that provide housing assistance for low income households. Motivated by these differences across households, we evaluate the lifetime, dynamic effects of the entire platform across people of different ages and incomes.

Dynamic Distributional Analysis: Equivalent Variation

To provide a measure that characterizes the Biden platform's effects on the economic wellbeing of a variety of people, PWBM conducts dynamic distributional analysis using its dynamic model. We calculate the equivalent variation, defined in Nishiyama and Smetters (2005, 2014), which summarizes the lifetime effects of policy proposals on the wellbeing of a wide variety of people across generations, including people entering the labor force in the future.[1] The equivalent variation captures welfare effects from macroeconomic changes, the insurance value of new policies, and changes in "implicit debt" as Medicare and Social Security obligations change.

In Table 1, we show the equivalent variation produced by the Biden platform by age (at 10-year intervals) and by quintile of taxable income in the first year of the simulation.[2] As described in PWBM's earlier dynamic distributional analysis of the Social Security 2100 Act, the equivalent variation for a policy reform is the one-time payment or charge to a person that makes that person indifferent between living in a world where the policy is enacted and a world with no policy changes. A positive equivalent variation means that the person would be better off under the policy reform; a negative equivalent variation means that the person would be worse off under the policy reform.

Table 1. Equivalent Variation for the Biden Platform

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Age at start of simulation	Adjusted Gross Income (Percentile) 0 to 20	20 to 40	40 to 60	60 to 80	80 to 100
-20	$78,092	$64,494	-$4,275	-$87,623	-$341,069
-10	$75,871	$57,480	$19,564	-$90,742	-$360,490
0	$68,241	$48,373	$14,479	-$102,143	-$353,891
10	$66,556	$37,490	$12,175	-$94,580	-$319,858
20	$67,684	$60,423	$14,586	-$83,361	-$281,302
30	$84,655	$72,348	$56,348	$10,558	-$134,381
40	$80,313	$61,485	$70,584	$48,988	-$47,417
50	$62,352	$47,949	$58,265	$40,311	-$48,375
60	$29,089	$29,147	-$6,249	$11,827	-$56,095
70	$24,951	$6,916	-$43,203	-$155,430	-$553,164
80	$19,154	$3,298	-$8,978	-$55,007	-$217,456

-7... -500k -250k 0 25...

Note: Consistent with our previous dynamic analysis and the empirical evidence, the 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.

In the left column of Table 1, we show that people in the bottom 20 percent of taxable income exhibit a strong economic preference for the Biden platform compared to current law. The equivalent variation for a working-age person falls between about $30,000 and $85,000. People in this income group across all ages benefit significantly from improved access to healthcare. Furthermore, these people also receive significant benefits from an anticipated lifetime increase in transfers such as housing subsidies as well as lower expenses from a drop in prescription drug costs. The benefits these people receive from these spending programs far outweigh any effects on their after-tax incomes from macroeconomic or tax changes from the Biden platform.

The individuals in the second column of Table 1, in the bracket between 20 and 40 percent of taxable income, have economic preferences similar to those in the bottom 20 percent of taxable income. The Biden platform's tax and macroeconomic changes have a small effect on them over their lives, however, the tax and economic effects are more than offset by improved access to healthcare, additional housing subsidies, and lower prescription drug costs. In general, however, the effects of the transfers are smaller on average because the transfers decrease with income. Therefore, people in the bracket between 20 to 40 percent of taxable income generally have a lower equivalent variation for most ages compared to people in the bottom 20 percent of taxable income.

By contrast, the right column of Table 1 shows that individuals in the top 20 percent of taxable income are better off under current tax and spending laws than under the Biden platform. Many of those in the top 20 percent of taxable income are subject to significantly higher payroll, capital gains, and ordinary income tax rates.

Specifically, the provision to extend Social Security taxes to income over $400,000 per year will mainly affect young and highly productive people. They will pay higher Social Security taxes over their lifetimes. The equivalent variation for future top-earners not yet in the workforce is below -$300,000, indicating that the typical person in this group is economically better off under current tax and spending laws.

Older people in the top 20 percent by taxable income mainly end up with lower after-tax returns on their savings under the Biden platform. For example, a 70-year-old individual in this income bracket has an average equivalent variation below -$500,000. The average 70-year-old individual in the top 20 percent of taxable income receives a large share of his income from an average of $12 million in savings. Changes in corporate tax in the Biden platform lowers the return to capital, which leads to lower income on their savings. Therefore, higher taxes and lower income on their savings makes these individuals economically worse off under the Biden platform.

Conclusion

Overall, this analysis shows that, if passed, the Biden platform would generate changes in wellbeing that are not equally shared across all types of people. Working-age people with below-average taxable income benefit from the plan's additional healthcare and housing benefits. Although the conventional distributional analysis shows that these individuals' after-tax income goes down, the dynamic distributional analysis shows that these individuals benefit from the Biden platform over their lifetimes. Higher income retirees, however, are worse off under the Biden platform: They anticipate higher taxes, and they would see their lifetime consumption decrease.

This analysis was conducted by Marcos Dinerstein, Yan He, Jon Huntley, Minh Quach, and Felix Reichling under the direction of Efraim Berkovich. Prepared for the website by Mariko Paulson.

1. Nishiyama, Shinichi and Kent Smetters. “Consumption Taxes, Risk Sharing and Economic Efficiency.” Journal of Political Economy 113, 5 (October 2005): 1088 – 1115. Nishiyama, Shinichi, and Kent Smetters. "Analyzing fiscal policies in a heterogeneous-agent overlapping-generations economy." In Handbook of Computational Economics, vol. 3, pp. 117-160. Elsevier, 2014. ↩

2. For individuals not yet in the labor force (ages 20 and below at the start of the simulation), we instead use taxable income in the year when they turn 21 years old and enter the labor force. ↩