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# A Neglected Aspect of Tax Reform: Improving the Efficiency of Tax Expenditures on Employer-Provided Health Insurance

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## Summary

The House recently passed the Tax Cuts and Jobs Act and now the Senate begins debate on its version of tax reform. Debate on the two bills, as well as its much more concise predecessor, the "united framework" for a comprehensive tax reform, has been centered on the tax reform's potential negative revenue effects and its disparate treatments of taxpayers with different income levels. Relatedly, the search for a replacement of the Affordable Care Act struggled with the delicate balance between containing the growth in government health care spending and maintaining the share of the population that is covered by health insurance. This was evident by the fierce debate on the proposed replacement of the Affordable Care Act, the American Health Care Act of 2017 (AHCA 2017).

A neglected aspect in the Tax Cuts and Jobs Act, as well as in the AHCA 2017, is the tax exclusion of employer-provided health insurance (EPHI). As we demonstrate in this study, considerable efficiency gains remain untapped under the current tax treatment. Indeed, a reform of the tax expenditures on EPHI that replaces the tax exclusion with a system of tax credits can increase tax revenues, as well as restore equal treatment between high-earning and low-earning employees.

Our estimates indicate that such a reform of EPHI could potentially reduce the cumulative federal deficit over the 2018-2027 period by $809 billion. These revenue gains from the EPHI reform are even more significant if one considers the following factors. Revenue gains are achieved when the new tax credit system retains the incentive to buy health insurance coverage and to form employment-based insurance pools and that they are politically feasible because people currently having EPHI as a whole will be as well off under the tax credits as under the tax exclusion.

# A Neglected Aspect of Tax Reform

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## GOP's Tax Reform Plan and Alternative Approaches to Financing It

Following the release of the much-debated "united framework" for a comprehensive tax reform in late September, House Republicans passed their version of their long-waited tax reform bill on November 16: the Tax Cuts and Jobs Act. The House tax bill keeps intact many key provisions envisioned in the united framework which include the following changes to the federal tax codes, among others:

- Reducing the corporate income tax rate to 20%
- Consolidating and reducing individual income tax rates to 12%, 25%, 35%, and 39.6%
- Doubling the standard deduction to $12,200 for individuals and $24,400 for families
- Repealing the personal and dependent exemptions
- Repealing most itemized deductions while leaving those for mortgage interest and charitable giving intact
- Repealing state and local tax deductions with the exception of real estate taxes up to $10,000
- Eliminating the alternative minimum tax (AMT)
- Establishing a new family credit and expanding the child tax credit from $1,000 to $1,600
- Repealing the estate tax by 2024

Overall, the tax bill represents an ambitious pro-growth tax reform featuring massive tax cuts, although attempts to broaden the tax base by closing various loopholes are also evident. On net, the tax reform would reduce federal revenues by $1.4 trillion over the next decade, according to an analysis of the Joint Tax Committee.[1]

There exist a number of alternatives to deal with the estimated revenue loss due to the tax reform, which include:

- Deficit/debt increases
- Economic growth stimulated by the tax reform
- Spending cuts
- Cuts on various tax expenditures

Among them, the most straightforward, "do nothing" approach is to allow the deficits, and hence the debt, to increase. However, there seems to be a consensus against the debt increase option that places the burden of tax cuts entirely on future generations, given that the total federal liabilities were

[1]See the Joint Committee on Taxation's analysis at https://www.jct.gov publication JCX-54-17. A CBO analysis can be found at https://www.cbo.gov/system/files/115th-congress-2017-2018/costestimate/hr1deficitsanddebt.pdf. In addition, the Committee for a Responsible Federal Budget's (2017) estimate of the total revenue loss over the next decade due to the tax reform is $2.2 trillion, whereas Tax Policy Center Staff's (2017) estimate is $2.4 trillion. For the details of these estimates, see Committee for a Responsible Federal Budget, "Big 6 Tax Framework Could Cost $2.2 Trillion", September 27, 2017, http://www.crfb.org/blogs/big-6-tax-framework-could-cost-22-trillion, and Tax Policy Center Staff, "A Preliminary Analysis of the United Framework", September 29, 2017, http://www.taxpolicycenter.org/publications/preliminary-analysis-unified-framework.

already more than $22.8 trillion as of 2016.[2] And the $22.8 trillion debt does not include the accrued, and unfunded, Social Security and Medicare benefits payable to retired Americans. These accrued entitlement benefits by senior citizens satisfy the definition of government liabilities in the Financial Report of the United States Government (FRUSG) – "Liabilities are obligations of the Government resulting from prior actions that will require financial resources" – and should be treated as such. With the addition of those accrued benefits, the debt owed by the federal government rises to $42.6 trillion or 229% of GDP.[3]

The most optimistic, and also "do nothing" approach is to rely on the faster economic growth stimulated by the tax cuts to pay for themselves. Reducing business and individual income taxes encourage investment, job creation and labor supply, facilitating increased economic growth. As a result, the tax revenue may actually increase at lower tax rates due to a larger tax base. Indeed, one criticism of most existing estimates of the revenue loss due to the proposed tax reform is that they are based on a scoring method assuming that the tax cuts do not affect the overall level of economic activity. A recent study incorporating the feedback effects of the proposed tax reform on the economy finds that the proposed tax reform is essentially revenue neutral.[4] Of course, the required GDP growth rate that would make the tax cuts revenue neutral may fail to materialize, as some have argued.[5]

The third approach to financing the tax cuts in the proposed tax reform is to cut federal government spending, especially in the area of health care. In 2015, the U.S. spent $9,450 per person on health care, more than any other country in the world. By comparison, Switzerland (the country with the 2nd highest per-capita health care spending) spent $6,930 per person, and the OECD countries on average spent $3,740 per person. About half of the $9,450 per-capita health care spending in the U.S. was publicly financed. On the per-capita basis, all levels of government in the U.S. combined spent more on health care than any other OECD government, other than those in Norway and Switzerland.[6]

The growth in health care spending and in the share that is paid for by government tells a more revealing story. Health care spending in the U.S. as a percent of GDP has grown from 5% in 1960 to about 18% today and it is forecast to reach 25% in 2044.[7] In addition, federal spending on health care programs rose from 2.0% of GDP in 1985 to 5.3% in 2015, and is projected to grow to 8.9% in 2046.[8]

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[2] The official federal liabilities include the debt held by the public ($14.2 trillion), federal employee and veteran benefits ($7.2 trillion), and the other liabilities ($1.3 trillion). See "Financial Report of the United States Government, Fiscal Year 2016", Department of the Treasury, 2016.

[3] See Liqun Liu, Andrew J. Rettenmaier and Thomas R. Saving, "Federal Liabilities: 2017 Update", PERC Study No. 1702, June 2017, http://perc.tamu.edu/perc/Publication/policybrief/report_05_2017_no2.pdf.

[4] Seth G. Benzell, Laurence J. Kotlikoff and Guillermo Lagarda, "Simulating the Republican 'United Framework' Tax Plan", October 17, 2017, https://www.kotlikoff.net/sites/default/files/Simulating%20the%20Unified%20Framework%20Tax%20Reform%20Plan_0.pdf

[5] See, for example, Committee for a Responsible Federal Budget, "How Fast Can America Grow?" May 18, 2017, http://www.crfb.org/papers/how-fast-can-america-grow

[6] "Health Spending", in *Society at a Glance 2016: OECD Social Indicators*, OECD Publishing, Paris.

[7] Liqun Liu, Andrew J. Rettenmaier and Thomas R. Saving, "Health Care Spending in the United States: What is Next?" PERC Study No. 1608, December 2016.

[8] "The 2016 Long-Term Budget Outlook," Congressional Budget Office, July 2016. Major federal health care programs consist of Medicare, Medicaid, the Children's Health Insurance Program (CHIP), and subsidies for health insurance purchased through the marketplaces established under the Affordable Care Act (ACA).

Both total spending and government spending on health care have been growing faster than GDP, which is unsustainable in the long run. Therefore, limiting the growth in total health care spending in general, and in the government spending in particular, is a major goal of health care reform as manifested in American Health Care Act of 2017 (AHCA 2017). We have previously explored various measures to cut government spending on health care.[9] However, actually implementing these spending-cut measures may meet strong political resistance as evidenced by the failure of AHCA 2017 to pass Congress earlier this year.

The fourth approach to financing the tax cuts is to reduce government tax expenditures by closing various loopholes. A tax expenditure is a government spending program through the tax code by allowing exemptions, deductions or credits to select groups or specific activities. For example, the personal and dependent exemptions in the federal individual income tax are a tax expenditure, without which the federal tax revenue would be higher. Indeed, various measures of reducing tax expenditures have already been employed in the tax reform plan, including repealing the personal and dependent exemptions, repealing most itemized deductions and repealing state and local tax deductions. However, as cutting direct government spending in health care or other areas, cutting tax expenditures further may meet strong political resistance, which is believed to be the reason for that itemized deductions for mortgage interest and charitable giving are kept intact in the House tax bill.

Nevertheless, there is a major tax expenditure that has been largely neglected in the discussion of tax reform. This is the exclusion of employer-provided health insurance (EPHI) purchases from an individual's taxable income that is subject to income and payroll taxes. In this study, we propose a reform of the tax treatment of EPHI that converts the tax exclusion to a system of tax credits with the following features: (i) receiving a tax credit depends on having health insurance coverage so that the number of people covered through EPHI will not decrease; (ii) the conversion is utility-preserving in the sense that as a whole the population covered by EPHI are as well-off under the tax credits as under the tax exclusion; and (iii) the tax expenditures on EPHI are significantly reduced.

## Tax Exclusion on Employer-Provided Health Insurance

Most people under 65 – about 155 million in 2016 – have private insurance through an employer as an employee or a family member of an employee. This dominant form of insurance provision for the under 65 population is referred to as employer-provided health insurance (EPHI). According to longstanding current tax law, both employer and individual contributions to the purchase of employer-provided health insurance are excluded from an individual's taxable income.

The tax exclusion is the main reason for the market dominance of EPHI for people under 65. It is also credited for abating the "adverse selection" problem by encouraging the formation of employment-based insurance communities. At the same time, this tax exclusion has been criticized on several counts. By allowing the purchase of health insurance with pre-tax dollars it favors consumption of health insurance (covered health care) over other consumption (including out-of-pocket or uncovered health care). Moreover, because the health insurance subsidy is tied to marginal tax rates, high income workers disproportionately benefit. Finally, the tax exclusion discriminates against those self-employed or who are employed by firms that do not have health insurance as a fringe benefit.

[9] Liqun Liu, Andrew J. Rettenmaier and Thomas R. Saving, "Health Care Spending in the United States: What is Next?" PERC Study No. 1608, December 2016.

It has been proposed that the current health insurance tax exclusion be replaced with a tax credit that requires the purchase of health insurance.[10] Such tax credits, even if restricted to individuals with EPHI, would eliminate the greater benefit the current system bestows on higher earners. Giving low-income workers a sufficient, fixed-amount tax credit is even more relevant considering that it better serves the purpose of encouraging health insurance coverage for low-income workers and their families who pay little or no taxes. More importantly, it is argued that such an incremental reform from tax exclusion to tax credits would generate efficiency gains by eliminating the distortion in the price of health insurance relative to other consumption.

In this study, we focus on the revenue loss caused by the tax exclusion on EPHI. The tax exclusion, essentially a health insurance price subsidy, has resulted in a federal government revenue loss (tax expenditure) of $279 billion in 2017. Without the tax exclusion, the over 155 million people with EPHI would have collectively paid the additional $279 billion in income and payroll taxes, if they maintained the same level of income.

The revenue loss due to the tax exclusion is expected to grow over time. Table 1 summarizes a recent CBO estimate of the next 10 years' tax expenditures under the tax exclusion on EPHI.[11]

Table 1. Tax Expenditures from Tax Exclusion on Employer-Provided Health Insurance
(in billions of current dollars by fiscal year)

| 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | Total (2018-2027) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 279 | 297 | 314 | 329 | 345 | 365 | 385 | 407 | 428 | 451 | 475 | 3,796 |

**Source: estimates of tax expenditures from, "Federal Subsidies for Health Insurance Coverage for People Under Age 65: 2017 to 2027," Congressional Budget Office, September 2017**

## Replacing the Tax Exclusion on Employer-Provided Health Insurance with Tax Credits

The argument for the tax exclusion on EPHI is based on the supposition that some individuals would underinvest in such insurance because current legislation requires that they be treated independent of ability or willingness to pay. As such, they create moral hazard that impact the rest of the population.

As the numbers in Table 1 indicate, however, the EPHI tax exclusion provides incentive to purchase health insurance through one's employer at considerable revenue costs to the government. The tax exclusion encourages people to buy more comprehensive, hence more expensive, insurance policies, because such insurance can be purchased with pre-tax dollars. Moreover, the tax exclusion treats high-income individuals – who face higher marginal tax rates – more favorably.

[10] For example, see Mark V. Pauly and John C. Goodman, "Tax Credits for Health Insurance and Medical Savings Accounts", *Health Affairs,* 14 (1995) 126-139; and Liqun Liu, Andrew J. Rettenmaier and Thomas R. Saving, "The Welfare Gain from Replacing the Health Insurance Tax Exclusion with Lump-Sum Tax Credits," *International Journal of Health Care Finance and Economics*, 11 (2011) 101-113.

[11] "Federal Subsidies for Health Insurance Coverage for People under Age 65: 2017 to 2027," Congressional Budget Office, September 2017.

Thus, a superior way of accounting for the moral hazard issue would be to replace the tax exclusion with refundable tax credits. The size of the tax credits would be unrelated to the level of premiums paid. Because the size of the tax credit is unrelated to the level of coverage, the system of tax credits does not favor more comprehensive insurance policies. Further, receiving a tax credit would require the purchase of insurance coverage, retaining the incentive to buy health insurance that the tax exclusion provided. In fact, the incentive for low income workers to purchase health insurance would be much stronger under the system of tax credits than under the tax exclusion because low income workers receive little subsidy from the tax exclusion.

The tax credit must be large enough to compensate those giving up the EPHI benefit if it is to survive a public outcry. The question then is: how much does the government have to pay in tax credits to succeed in replacing the existing tax exclusion? One natural criterion is that the tax credits should be utility-preserving: people covered through EPHI should be better off or at least indifferent between the tax credits and the tax exclusion. When this criterion is satisfied, people currently covered through EPHI with the tax exclusion would have no reason to object to transitioning to a system of tax credits. On this basis the reform of replacing the tax exclusion with compensating tax credits would be politically feasible.

We refer to a utility-preserving tax credit as a compensating tax credit. Since the tax expenditure each person receives under the current tax exclusion system depends on his or her marginal tax rate (tax bracket) and the premium payment he or she incurs, it seems that we would want to calculate the compensating tax credit for each tax bracket and add the results (weighted by the number of workers in each tax bracket) across all tax brackets. However, there are two problems associated with this individualized approach. First, there are no reliable bracket-level estimates of relevant behavioral parameters, especially for the compensated health insurance demand elasticity. Second, under the individualized approach, the compensating tax credit would increase with one's income, because a high-income individual has both a higher marginal tax rate and a higher health insurance demand, assuming normality for health insurance. However, the proposed equity-concerned reform explicitly intends to correct this "reversed redistribution" problem so that, unlike under the tax exclusion, high-income individuals do not receive larger subsidies than low-income individuals under a system of tax credits.

Therefore, we follow the tradition in public finance and calculate the aggregate tax credit that is utility-preserving for the population covered through EPHI as a whole. The aggregate compensating tax credit (CTC) is a portion of the total tax expenditure from the tax exclusion on EPHI, because, given the choice, one would always prefer receiving a lump-sum subsidy (tax credit) than receiving the same amount through a price subsidy (tax exclusion). In Appendix B, we give the ratio of the aggregate CTC to the total tax expenditure on the tax exclusion, which depends on the (weighted) average marginal tax rate on labor income, and on the compensated health insurance demand elasticity. The compensated health insurance demand elasticity is the ratio of the percent change in the demand for health insurance to the percent change in the price of insurance when the price is changed in the margin. The word "compensated" means utility-preserving in the aggregate sense. Using the parameter values estimated in Appendix A, the following ratio is obtained in Appendix B:

$$\frac{\text{the aggregate compensating tax credit}}{\text{the total tax expenditure on the tax exclusion}} = 61.7\%$$

Applying this ratio to the estimated tax expenditure numbers in Table 1, we have the corresponding annual aggregate compensating tax credits as summarized in Table 2 below.

## Table 2. Compensating Tax Credits for Employer-Provided Health Insurance

(in billions of current dollars by fiscal year)

| 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | Total (2018-2027) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 172 | 183 | 194 | 203 | 213 | 225 | 238 | 251 | 264 | 278 | 293 | 2,342 |

**Source: estimates of tax expenditures from, "Federal Subsidies for Health Insurance Coverage for People Under Age 65: 2017 to 2027," Congressional Budget Office, September 2017. See Appendix A and B for discussion of parameter values and for the point estimate of the ratio of compensating tax credits to the total tax expenditures.**

Take 2017 for example. The tax expenditure for the tax exclusion on EPHI is expected to be $279 billion, and the aggregate compensating tax credit that would keep the 155 million plus people with EPHI as a whole as well off is 61.7% of $279 billion, or $172 billion.

## The Budget Effect of Replacing the Tax Exclusion with the Tax Credits

As we have seen, in 2017, the tax expenditure due to the EPHI tax exclusion is expected to be $279 billion. Our estimate of the aggregate compensating tax credit under an alternative system of tax credits is $172 billion. But does this mean an EPHI reform that replaces the tax exclusion with the compensating tax credits would have generated a net revenue gain of $279 - $172 = $107 billion (38.4% of the $279 billion tax expenditure under the tax exclusion) in 2017?

In general, the answer is "no". The tax exclusion reduces the effective marginal tax rate on labor compensation since the insurance component of compensation is not taxed. With the removal of the tax exclusion all labor compensation is taxed, increasing the effective marginal tax rate on labor income and causing labor supply and hence labor income to fall. The reduction in labor income means that only a portion of the $279 billion tax expenditure under the tax exclusion will be recovered by the removal of the tax exclusion.

Rather than a 38.4% net revenue gain, our best point estimate of the net revenue gain, as a percent of the tax expenditure on the tax exclusion, from a compensated removal of the tax exclusion, is 21.3%.[12]

Applying the 21.3% to the annual tax expenditures given in Table 1, the annual deficit reductions for 2017 and the next 10 years are given in Table 3 below.

## Table 3. Deficit Reduction from Replacing the EPHI Tax Exclusion with Tax Credits

(in billions of current dollars by fiscal year)

| 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | Total (2018-2027) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 59 | 63 | 67 | 70 | 73 | 78 | 82 | 87 | 91 | 96 | 101 | 809 |

**Source: estimates of tax expenditures from, "Federal Subsidies for Health Insurance Coverage for People Under Age 65: 2017 to 2027," Congressional Budget Office, September 2017. See Appendix A and B for discussion of parameter values and for the point estimate of the ratio of the deficit reduction attributable to the reform to the total tax expenditures.**

[12] Appendix B presents the details of this calculation.

Two main points can be made here. First, an EPHI reform that replaces the tax exclusion with the compensating tax credits would have reduced the 2017 deficit by $59 billion, which is a smaller amount than the difference ($107 billion) between the tax expenditure on the tax exclusion and the would-be aggregate compensating tax credit in that year. This $59 billion is only a portion of $107 billion because employees who have EPHI would reduce their labor-supply (and hence their earnings) after the reform due to the higher effective marginal tax rate on earnings. Second, and more importantly, the cumulative deficit reduction over the next 10 years (2018-2027) would be $809 billion. For a consistent comparison, the cumulative deficit reduction for the years 2017-2026 is $767 billion, significantly greater than the estimated $119 billion cumulative deficit reduction over the same period due to the American Health Care Act of 2017 (AHCA 2017).[13] From a deficit reduction point of view, reform of EPHI would have a much larger beneficial budget effect than AHCA 2017.[14] A comparison between the reform of tax expenditures on EPHI and AHCA 2017 follows.

## Comparing the Reform of EPHI with the AHCA 2017

To appreciate the significance of the reform of tax expenditures on EPHI, we compare it to the proposed AHCA 2017 introduced earlier this year, a major bill that is aimed at repealing and replacing the Affordable Care Act. As noted, the CBO scoring of AHCA 2017 estimated that the bill would reduce the cumulative federal deficit over the 2017-2026 period by $119 billion. Moreover, CBO estimated that premiums for single policyholders in the non- group market would on average be 10% lower under AHCA 2017 than under current law, primarily because insurance policies would provide fewer benefits. However, the deficit and premium reductions come at the expense of more people being uninsured -- 14 million more in 2018 and 23 million more in 2026.

In contrast, our calculations indicate that reforming EPHI by replacing the tax exclusion with the compensating tax credits would reduce the cumulative federal deficit over the 2017-2026 period by $767 billion, with no increase in the number of uninsured because obtaining tax credits hinges on buying health insurance. Moreover, the reform would be politically feasible because the tax credits are meant to be utility-preserving, on average. The last point is important because AHCA 2017 failed to pass Congress precisely due to its lack of political support.

One indication that the Affordable Care Act is missing the mark is the ever-increasing health insurance premiums since its inception. The average individual insurance premiums more than doubled from $2,784 per year in 2013 to $5,712 in 2017 on Healthcare.gov. From 2016 to 2017 alone, insurers were expected to raise the premiums for plans offered on HealthCare.gov by an average of 22%.[15] Some

[13] "Congressional Budget Office Cost Estimate: H.R. 1628 – American Health Care Act of 2017, as passed by the House of Representatives on May 4, 2017," Congressional Budget Office, May 24, 2017. The $119 billion deficit reduction is the net result of a $1,111 billion spending cut and a $992 billion tax cut.

[14] If alternatively, labor supply is more elastic with an elasticity of 0.4, the top end of the range discussed in the Appendix, and the compensated health insurance demand elasticity remains at -1.35, the deficit reduction from the reform as a percent of the total tax exclusion is lowered to 15.6%. The resulting 10-year cumulative reduction for the years 2017-2026 is lower at $562 billion. Further, using the lower end of the health insurance demand elasticity of -0.7 and the baseline labor supply elasticity of 0.3 produces a 2.8% deficit reduction as a percent of the total tax exclusion or $102 billion for the years 2017-2026.

[15] "Individual Market Premium Changes: 2013-2017," *ASPE Data Point* May 23, 2017, Department of Health and Human Services.

of the recent growth in premiums is attributable to general health care cost growth, but various subsidies and mandates (community rating and benefits requirements) introduced by ACA play a more significant role in premium increases. As a sign of further premium growth in the future, many insurance companies are leaving the individual markets. The average number of insurers participating in the marketplace in states that use HealthCare.gov was 5.4 per state in 2016, but this number will be 3.9 per state in 2017. Indeed, according to the Kaiser Family Foundation, Alabama, Alaska, Oklahoma, South Carolina and Wyoming will each have only a single company left offering plans through the marketplace.[16] Dramatic and continuing increases in health insurance premiums have made people realize that insurance plans made available under the Affordable Care Act may be ultimately unaffordable, leading to the initial push for AHCA 2017.

An additional benefit from replacing the tax exclusion of EPHI with tax credits is the sizable reductions in insurance premiums that can be achieved. The tax exclusion on EPHI artificially lowers the price of health insurance (i.e., covered health care) relative to that of other consumption (including the out-of-pocket or uncovered health care). As a result, individuals and firms have incentive to add to current coverage any expenditure that can be considered health care, leading to overly comprehensive insurance policies. Thus, another main consequence of the tax exclusion is excessive health care expenditures and the insurance premiums necessary to pay for these expenditures. Therefore, a reform that removes the tax exclusion is expected to reduce the level of premiums by eliminating the health insurance price subsidy and the reason for excess covered health care.

Using the parameter values estimated in Appendix A, the total post-reform premium payment (i.e., the total post-reform covered health care expenditures) as a percent of the total pre-reform premium payment (i.e., the total pre-reform covered health care expenditures) is 23.4%.[17]

However, that reforming of the tax expenditures on EPHI would cause insurance premiums (i.e., covered health care expenditures) to fall by 76.6% may seem implausible. The validity of this estimate hinges on whether the chosen values for the weighted average marginal tax rate of all taxes falling on labor income (36.2%) and the compensated health insurance demand elasticity (-1.35) are reasonable. As we discuss in Appendix A, a 36.2% value for the weighted average marginal labor income tax rate is justifiable. And the average value of previous estimates of the compensated health insurance demand elasticity is - 1.35. Using a less elastic health insurance demand would imply a smaller reduction in health insurance spending due to the reform. For example, if the compensated health insurance demand elasticity is only - 0.7, health insurance spending would fall by only 39.9% after the reform.

To understand why health insurance spending tends to be very sensitive to price, it is important to recognize that healthcare spending consists of insurance spending (i.e., covered spending) and out-of-pocket spending (i.e., uncovered spending). With the tax exclusion price subsidies on health insurance, workers substitute away from out-of-pocket spending to insurance spending for any given level of total healthcare spending. Without price subsidies, workers would prefund less healthcare spending in the form of insurance premium. Basically, the large price elasticity (absolute value) of health insurance spending is the result of out-of-pocket spending being a close substitute for health insurance spending. The important point here is that health care consumers will substitute between out-of-pocket spending

[16] "2017 Premium Changes and Insurer Participation in the Affordable Care Act's Health Insurance Marketplaces," The Henry J. Kaiser Family Foundation, October 24, 2016.
[17] Appendix B contains the details of this calculation.

and insured against health care spending. Our estimates of the changes in spending on health insurance purchases do not imply that total health care consumption will exhibit the same proportional changes.[18]

## Implications of the Tax Credits for Health Care Reform in General

We have demonstrated that there exist significant benefits from replacing the EPHI tax exclusion with the compensating tax credits from both a tax reform perspective and a health care reform perspective. Here, we want to point out some additional positive implications of the EPHI reform for health care reform in general.

First, as is revealed by the debate on AHCA 2017, there often exists a hard tradeoff between government spending, premiums, and insurance coverage – one has to endure a higher level of government spending/deficit and larger insurance premiums on health care, in order to achieve a higher level of insurance coverage. In contrast, by removing the price distortion caused by the tax exclusion on EPHI, one can lower the level of government spending/deficit and also reduce insurance premiums, while maintaining the level of insurance coverage.

So the first implication of the lesson learned from the EPHI reform is to find and remove the price distortions in other aspects of the health care system. Sensible health insurance designs optimally balance moral hazard costs and risk-sharing benefits. Tools used by insurance companies to maintain such a delicate balance include copayments, deductibles, benefits caps, and so on. If government subsidies and regulations/mandates take the form of reductions in, or even eliminations of, deductibles, copayments and/or benefit caps, excessive utilization of health care would lead to increases in both premiums and government spending. We should make use of the cost-control mechanisms used by insurance companies for government health care programs such as Medicare, Medicaid and CHIP, increasing consumers' direct role in financing the care they receive by bringing more market forces to bear on limiting growth in health care spending.

Second, compared to the reform in AHCA 2017, the proposed EPHI reform would generate a much higher level of government savings. Specifically, the EPHI reform would generate a cumulative deficit cut of $767 billion – compared to $119 billion under AHCA 2017 – over the period 2017 to 2026. This amount of saved money could be used to provide incentive to buy insurance in the form of tax credits, for those self-employed and all others under 65 who are not covered by EPHI. Using savings from the EPHI reform to expand health insurance coverage to more people would not only help stabilize the fragile individual insurance market, it would also eliminate the favoritism bestowed on employees and their families that are covered through EPHI.

Third, replacing the current tax exclusion with a system of tax credits would considerably reduce premiums, making insurance policies more economical. Given that the insurance policies enjoyed by workers and their dependents through EPHI drive the expectations about the type of insurance extended to Medicare and Medicaid beneficiaries, spending on these two government programs would be expected to fall in similar magnitudes.

[18] If individuals reduce health insurance purchases by buying less comprehensive coverage and consequently spend more out-of-pocket on health care, the question arises about the deductibility of the out-of-pocket spending because it may counteract some of the savings we estimate. One component of the House version of the Tax Cuts and Jobs Act, however, is the repeal of the deduction for medical expenditures.

## Conclusion

Debate on the House's recently passed Tax Cuts and Jobs Act and the upcoming debate on the Senate's version of tax reform have been centered on the tax reform's potential negative revenue effects and its disparate treatments of different income levels with the higher income tax payers benefiting more than lower income tax payers. Relatedly, the search for a replacement of the Affordable Care Act struggled with the delicate balance between containing the growth in government health care spending and maintaining the share of population that is covered by health insurance, as evident by the fierce debate on the proposed replacement of the ACA, the American Health Care Act of 2017 (AHCA 2017).

A neglected aspect in the Tax Cuts and Jobs Act, as well as in the AHCA 2017, is the tax exclusion of employer-provided health insurance (EPHI). As we demonstrate in this study, considerable efficiency gains remain untapped under the current tax treatment. Indeed, a reform of the tax expenditures on EPHI that replaces the tax exclusion with a system of tax credits can increase tax revenues, as well as restore equal treatment between high-earning and low-earning employees.

Our estimates indicate that such a reform of EPHI could potentially reduce the cumulative federal deficit over the 2018-2027 period by $809 billion. These revenue gains from the EPHI reform are even more significant if one considers that they are achieved when the new tax credit system retains the incentive to buy health insurance coverage and to form employment-based insurance pools. They are also politically feasible because people who currently have EPHI as a whole will be as well off under the tax credits as under the tax exclusion.

The success of reforming EPHI by replacing the tax exclusion with the compensating tax credits lies in the removal of the government-created distortion that makes the price of health insurance artificially low relative to the price of other consumption. There are many similar distortions in government health care programs such as Medicare, Medicaid and CHIP, in the form of subsidies or mandates on deductibles, copayments and benefit caps. These subsidies or mandates distort consumer choices and undermine the economic tools used by insurance companies to control costs, and therefore should be replaced in favor of non-distorting tax credits.

## Appendix A: Discussion of Parameter Values

We discussed elsewhere the values of the parameters relevant for the evaluation of the EPHI reform that replaces the tax exclusion with tax credits.[19] We briefly review that discussion here for completeness.

The weighted average marginal tax rate of all taxes falling on labor income (t)

To calculate the weighted-average marginal tax rate of all taxes falling on labor income *t*, we begin with the weighted-average marginal tax rate on labor income from the federal income tax. We use an average of the marginal tax rates of 20.15%. Since state income taxes yield about 20% as much revenue as the federal income tax and have much the same tax base, we assume they increase the marginal tax rate on labor income by 20% of the federal marginal rate, or 4.03%. We treat sales and excise taxes as a uniform levy on labor income (and other income) at a rate of 4.4%, their percentage of national income. All these direct and indirect levies on labor income yield a combined marginal labor income tax rate of 28.58% (20.15+4.03+4.4).

Note that this point estimate of the tax on labor income is based on the weighted average of existing federal marginal tax rates and estimates of the state and local income and sales taxes. The current House and Senate bills adjust the marginal tax rates and these changes, if enacted, will affect the weighted average federal marginal tax rate on labor income.

In addition, the various components of federal payroll taxes – Hospitalization Insurance (HI), Old-Age and Survivor Insurance (OASI), and Disability Insurance (DI) – must be added to the above marginal tax rate. Although these taxes are paid half by the employer and half by the employee, it is widely believed that the entire burden of all of these taxes is borne by the labor. The HI tax rate is currently 2.9% and is treated as a pure tax because future Medicare benefits are unrelated to taxes paid. The OASI tax is currently 10.6%, and the DI tax rate is 1.8%; however, because OASI benefits and disability benefits are related to past earnings and taxes, only part of each of these taxes represents a pure tax. Based on previous calculations, we have estimated that the pure OASI tax is 6.43%, rather than the statutory 10.6%, and pure DI tax rate is 1.09% rather than the statutory 1.8% rate.[20] Adding these components to the 28.58% rate yields a 39% rate. The final step in reaching *t* is the conversion of our 39 percent as a rate to be applied to the full marginal product of labor. The observed pretax market wage rate is short of the marginal product of labor because the employer pays half of the OASI, HI and DI taxes. Denoting the pretax market wage rate as $w^*$ and the marginal product of labor as $\overline{w}$, we have $\overline{w} = w^* + w^*(0.106 + 0.029 + 0.018)/2 = 1.0765\, w^*$. Therefore, $t = 0.39/1.0765 = 0.362$. or 36.2%.

The compensated health insurance demand elasticity ( $\varepsilon_p^x$ )

As surveyed in Phelps (1992, pp. 300-302), the range of estimates for $\varepsilon_p^x$ in the literature is very large, ranging from -0.2 (less elastic) to -2.0 (more elastic) depending on the data source. In general,

[19] Liqun Liu, Andrew J. Rettenmaier and Thomas R. Saving, "The Welfare Gain from Replacing the Health Insurance Tax Exclusion with Lump-Sum Tax Credits," *International Journal of Health Care Finance and Economics*, 11 (2011) 101-113.

[20] Liqun Liu and Andrew J. Rettenmaier, "The Excess Burden of the Social Security Payroll Tax," *Public Finance Review* 32 (2004), 631-650.

aggregate data indicate more elastic demands for health insurance. Because the aggregate demand for health insurance is the concern of this study and because health insurance is a narrowly defined consumption category and has uninsured health care (i.e., out-of-pocket health care) as a close substitute, the values of $\varepsilon_p^x$ should reflect a quite elastic health insurance demand. In the end, we consider the range for $\varepsilon_p^x$ between -0.7 and -2.0, following Parry (2002).[21]

The compensated labor supply elasticity ( $\varepsilon_w^L$ )

Similarly, the range for estimates of the compensated labor supply elasticity $\varepsilon_w^L$ is also large, depending on worker characteristics (gender, age and marital status, among other things). Again, the relevant labor supply elasticity here should be a weighted-average across all labor force participants. Following Browning (1987), we consider the range for $\varepsilon_w^L$ between 0.2 and 0.4.[22]

## Appendix B: Best Point Estimates of the Three Critical Ratios in Reforming EPHI

Also in Liu, Rettenmaier and Saving (2011), we derived three critical ratios relevant for the evaluation of the EPHI reform that replaces the tax exclusion on EPHI with tax credits.

First, the aggregate compensating tax credit as a percent of the total tax expenditure on the tax exclusion is

$$\frac{\text{the aggregate compensating tax credit}}{\text{the total tax expenditure on the tax exclusion}} = 1 + \frac{t}{2(1-t)}\varepsilon_p^x,$$

which decreases both in *t* and in the absolute value of $\varepsilon_p^x$.

Second, the deficit reduction from the reform as a percent of the total tax expenditure on the tax exclusion is

$$\frac{\text{the deficit reduction from the reform}}{\text{the total tax expenditure on the tax exclusion}} = \frac{t}{1-t}\left(-\frac{1}{2}\varepsilon_p^x - \varepsilon_w^L\right),$$

which increases in *t* (assuming that the terms inside the parentheses yield a positive value) and in the absolute value of $\varepsilon_p^x$, but decreases in $\varepsilon_w^L$.

[21] Charles E. Phelps, *Health Economics*, New York: Harper Collins, 1992. Ian W. H. Parry, "Tax Deductions and the Marginal Welfare Cost of Taxation," *International Tax and Public Finance* 9 (2002), 531-552.
[22] Edgar K. Browning, "On the Marginal Welfare Cost of Taxation," *American Economic Review* 77 (1987), 11-23.

Third, the total post-reform premium payment as a percent of the total pre-reform premium payment is

$$\frac{\text{the total post-reform premium payment}}{\text{the total pre-reform premium payment}} = 1 + \frac{t}{1-t}\varepsilon_p^x,$$

which decreases both in *t* and in the absolute value of $\varepsilon_p^x$.

As discussed in Appendix A, our estimate of t is 36.2%, whereas the estimates of $\varepsilon_p^x$ and $\varepsilon_w^L$ fall in the ranges [-0.7, -2.0] and [0.2, 0.4], respectively. So our best point estimates of $\varepsilon_p^x$ and $\varepsilon_w^L$ are respectively -1.35 and 0.3. Using t = 36.2%, $\varepsilon_p^x$ = -1.35 and $\varepsilon_w^L$ = 0.3, we have the best point estimates of the three critical ratios in reforming EPHI as follows:

$$\frac{\text{the aggregate compensating tax credit}}{\text{the total tax expenditure on the tax exclusion}} = 61.7\%$$

$$\frac{\text{the deficit reduction from the reform}}{\text{the total tax expenditure on the tax exclusion}} = 21.3\%$$

$$\frac{\text{the total post-reform premium payment}}{\text{the total pre-reform premium payment}} = 23.4\%$$