

# Cigarette Taxes and the Federal Budget — Report from the CBO

James R. Baumgardner, Ph.D., Linda T. Bilheimer, Ph.D., Mark B. Booth, M.A., William J. Carrington, Ph.D., Noelia J. Duchovny, Ph.D., and Ellen C. Werble, M.S.

The fiscal challenges facing the federal government in coming decades are widely recognized. According to a recent analysis by the Congressional Budget Office (CBO), if current policies continue, the amount of federal debt held by the public would be nearly as large as the annual gross domestic product (GDP) in 10 years and would spiral upward even more rapidly thereafter.<sup>1</sup> Federal spending on health care is a major driver of the projected surge in government borrowing, so an important question is whether federal policies to promote a healthier population would have an appreciable effect on future spending and budget deficits.

also boost total earnings — and thus revenues from income and payroll taxes — if healthier people stayed in the labor force longer and were more productive at work.

To explore these issues, we at the CBO modeled a hypothetical policy for reducing smoking: an increase of 50 cents per pack in the federal excise tax on cigarettes. (The increase would be indexed over time to keep pace with inflation and with growth in average income. Such a policy lies within the range of previous legislative changes to the federal excise tax, currently at \$1.01 per pack.) The CBO's modeling approach entailed following predict-

including variations by age in people's responsiveness to changes in cigarette prices; other characteristics affecting health outcomes that typically differ between smokers and nonsmokers, including age, sex, education level, and various risk-taking behaviors; the timing of improvements in health for people who quit smoking; and the reduction in nonsmokers' exposure to secondhand smoke.

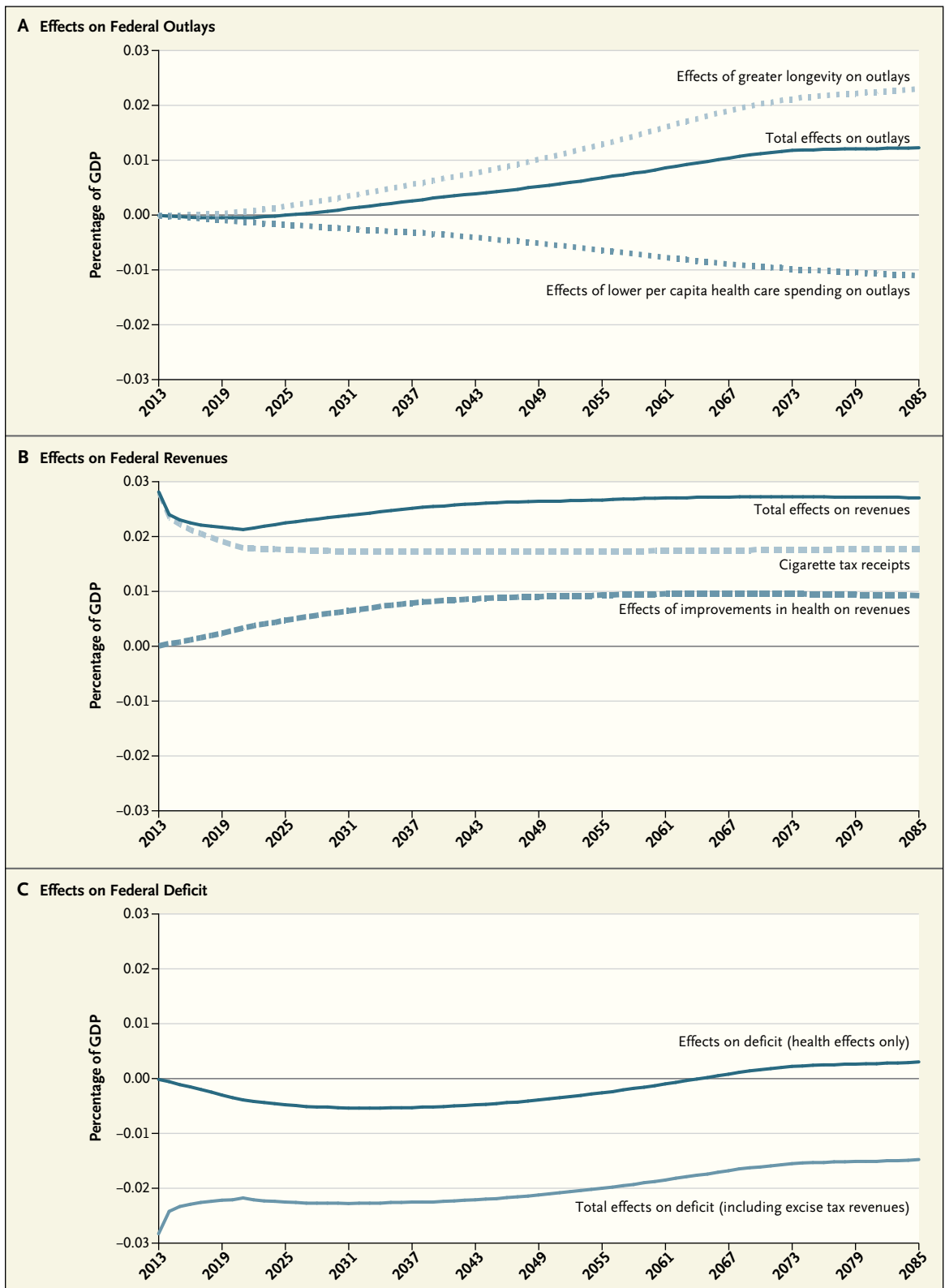
The results of the CBO analysis indicate that by discouraging people from smoking, the higher excise tax would improve the average health status of the population. By 2021, almost 1.4 million adults would be nonsmokers because of the policy — including about 10,000 adults who would not otherwise have survived to that year. The policy's effects on the average health and longevity of the population would grow over time because of several factors — the continuing improvement in health for people who stopped smoking, the decline in the share of the population that took up smoking, and the cumulative effects of lower mortality rates. By 2035, some 63,000 additional adults would be alive because of the higher cigarette tax. And by 2085 (the final year of the analysis), more than 3 million adults would be nonsmokers because of the policy, including about 200,000 who would otherwise have died earlier.

In terms of the policy's effect on the budget, lower health care spending per capita would push down federal spending, but increased longevity would have the opposite effect (see top graph). Throughout the first decade of the

***By discouraging people from smoking, the higher excise tax would improve the average health status of the population . . . . [L]ower health care spending per capita would push down federal spending, but increased longevity would have the opposite effect.***

Such policies could affect the federal budget by changing people's behavior in ways that would result in improvements in health and associated changes in health care spending, life expectancy, and earnings. Specifically, better health would tend to reduce the federal government's annual health care spending per capita. On the other hand, since a smaller proportion of Americans would die prematurely, the number of people receiving federal health care and retirement benefits would increase. But better health could

ed cohorts of smokers and people who would have been smokers in the absence of the policy and comparing their expected mortality rates, expected annual per capita spending for their health care, and their projected earnings under current law and under the policy.<sup>2</sup> (Other researchers have also developed models to gauge the effects of reduced smoking rates, but the CBO study attempts to capture the effects on a wide range of federal programs and revenue sources.<sup>3-5</sup>) The analysis took many factors into account,



Effects on Federal Outlays (Top Graph), Revenues (Middle Graph), and the Deficit (Bottom Graph) of the Illustrative Increase in the Cigarette Tax.

Data are from the Congressional Budget Office.<sup>2</sup>

policy, reduced health care expenditures (primarily for Medicare and Medicaid) would mean that the federal government would spend less than it would have otherwise. The reduction in federal outlays would total \$730 million over the period between 2013 and 2021. During the second decade, however, the effects on longevity would begin to dominate and federal spending would be higher than it would have been otherwise — an effect that would continue through 2085. The two principal drivers of that increase in spending would be Social Security and Medicare. Improvements in longevity from a reduction in smoking tend to have their greatest effect on the size of the elderly population and thus tend to boost spending on programs aimed at that population. Spending for Medicaid, by contrast, would be reduced throughout the period of the projection — a reflection of the wider age range of that program's beneficiaries.

The policy would also affect revenues (see middle graph). Most directly, the additional cigarette tax receipts would represent about 0.018% of GDP in most years through 2085. In addition, improvements in health would lead to higher income-tax and payroll-tax receipts from people who worked longer or were more productive at work, increasing revenues by about \$700 million, or 0.003% of GDP, in 2021. Over time, that revenue increase would continue to grow, eventually reaching about 0.01% of GDP.

Focusing only on the policy's health-related effects, our analysis shows three phases of budgetary impact. For approximately

the first 15 years, the primary deficit (the difference between spending and revenues, excluding interest payments on the debt) would be smaller than it would otherwise be, because of both lower outlays and higher revenues from income and payroll taxes (see bottom graph). Outlays would be lower in that initial phase because decreases in per capita health care spending would outweigh the costs of greater longevity. From about the middle of the second decade onward, however, the effects of increased longevity would outweigh decreases in per capita health care spending, and outlays would rise; but until about the mid-2060s, that growth in outlays would be more than offset by the increase in tax revenues from higher earnings. The largest deficit reduction from the health-related effects — about 0.005% of GDP annually — would occur from about 2030 to 2035. After the mid-2060s, the deficit would be larger than otherwise because the higher outlays would outweigh the health-related revenue increase.

Incorporating the additional cigarette-tax receipts, which are large compared with the health-related budgetary effects, would lead to a net reduction in the primary deficit in every year through 2085. The net deficit reduction from the policy would range from 0.022% of GDP in 2021 to 0.023% in 2035 and 0.015% in 2085. Such reductions are small relative to the size of projected deficits. For example, the CBO projects that if current policies continue, the primary deficit would exceed 7% of GDP in 2035.

Other policies aimed at improving the health of the popula-

tion might have larger or smaller effects on health, health care spending, longevity, and earnings than the hypothetical increase in the cigarette tax that the CBO analyzed. In general, reductions in the deficit resulting from lower health care spending per capita and higher earnings (and any revenues collected if the policy involved levying a tax) would be combined with increases in the deficit resulting from greater longevity; the net impact on the deficit would depend on the magnitude of the various effects.

Consequences for the federal budget are only one factor that lawmakers may consider when developing policies to promote health. Others factors include effects on people's health and well-being, views about the appropriate role of government in influencing behavior, the burdens that policies might impose on people in various circumstances, and effects on the budgets of state and local governments.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

From the Congressional Budget Office, Washington, DC.

1. The 2012 long-term budget outlook. Washington, DC: Congressional Budget Office, June 2012.
2. Raising the excise tax on cigarettes: effects on health and the federal budget. Washington, DC: Congressional Budget Office, June 2012.
3. Goldman DP, Cutler DM, Shang B, Joyce GF. The value of elderly disease prevention. *Forum for Health Economics & Policy*, 2006; 9(2):1.
4. Bearman P, Neckerman KM, Wright L, eds. *After tobacco: what would happen if Americans stopped smoking?* New York: Columbia University Press, 2011:256-89.
5. Kahn R, Robertson RM, Smith R, Eddy D. The impact of prevention on reducing the burden of cardiovascular disease. *Circulation* 2008;118:576-85.

DOI: 10.1056/NEJMp1210319

Copyright © 2012 Massachusetts Medical Society.