



Congressional Budget Office

September 11, 2012

Assessing Effects on the Federal Budget of Policies to Promote Health and Prevent Disease

**Presentation to the
Centers for Disease Control and Prevention**

Linda Bilheimer

Assistant Director for Health, Retirement, and Long-Term Analysis

Assessing the Cost Impact of Health Interventions: Key Concepts

- Costs of Health Care
 - Annual health care spending per capita
 - Lifetime health care spending per capita
- Cost-Effectiveness
 - Return on investment
- Budgetary Impact 
 - Federal government's spending and revenues

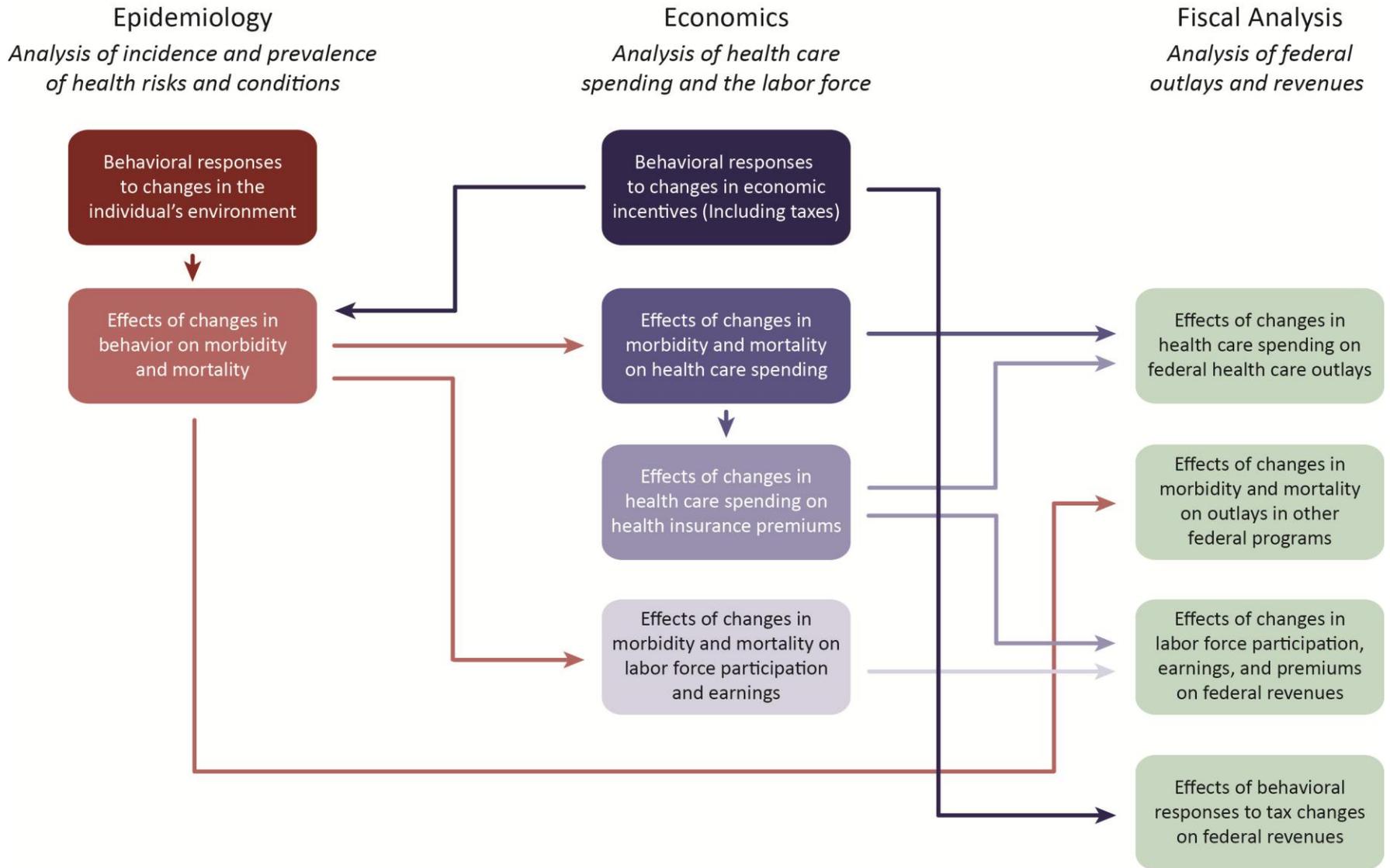
Considerations in Estimating the Budgetary Impact of a Proposed Health Policy

- Baselines for Health Care Spending, Health Risks, and Health Outcomes
- Behavioral Responses to the Policy
- Effects of Behavioral Change on Population Health
- Effects of Population Health Changes on Federal Spending
 - Medicare, Medicaid, Social Security (OASI and DI), Supplemental Security Income, subsidies via exchanges, other federal programs
- Direct and Indirect (Health-related) Revenue Effects
- Strength of the Evidence Base

Types of Health Promotion and Disease Prevention Interventions

- Clinical Preventive Services
- Community-Based Health Promotion
- Laws and Regulations to Limit Risky Behavior
- Personal Financial Incentives to Modify Risky Behavior
- Excise Taxes on Products with Health Risks

Analyzing Prevention Policy Effects: The Interdisciplinary Challenge

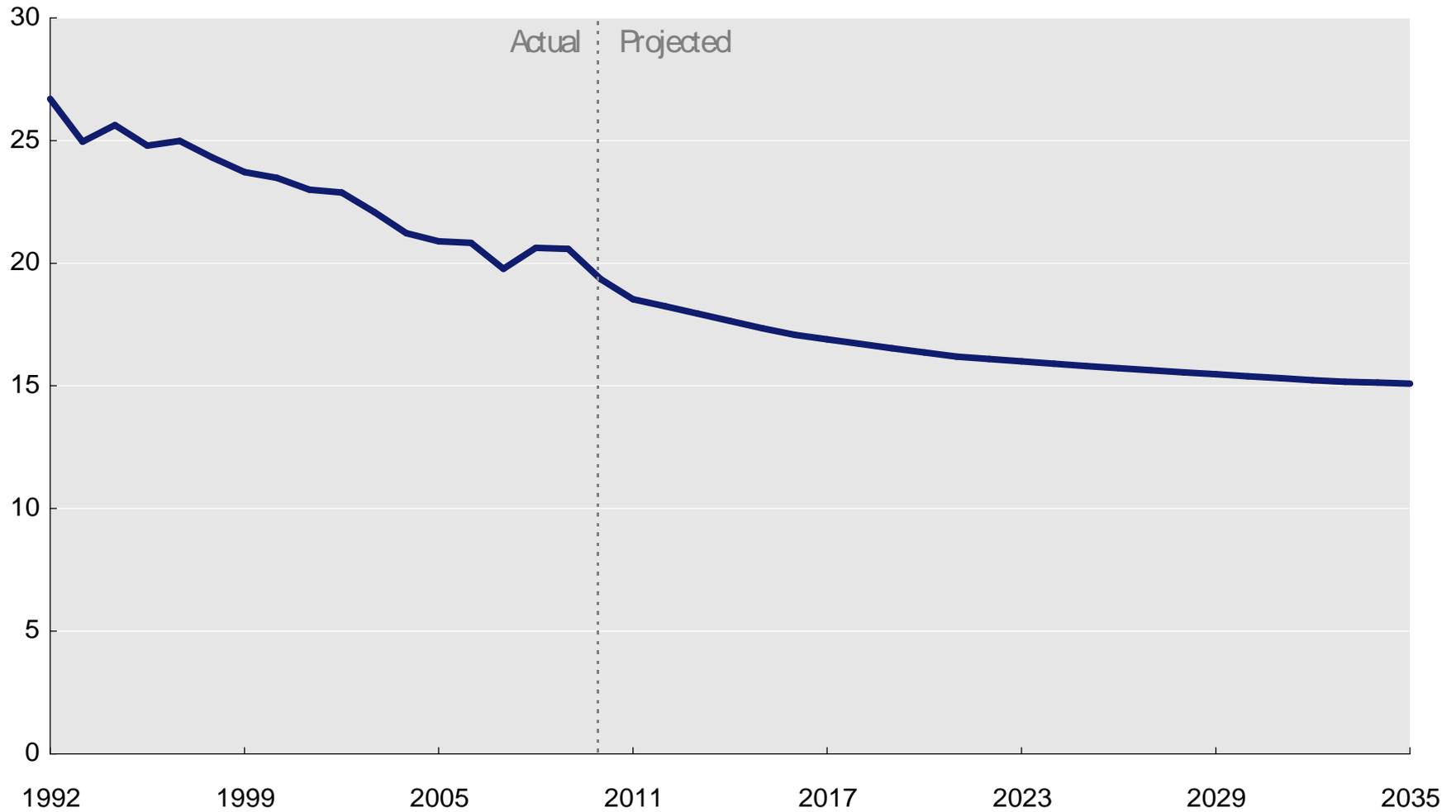


Prepolicy: Epidemiology Questions

- What risk factor (or condition) does the policy target?
- How prevalent is the risk factor?
 - Variation among population subgroups
- What are the effects of the risk factor on health and mortality?
 - Confounding risks
- What are the prevalence projections for 10, 25, 50 years for the risk factor and its health consequences?
 - State and local government policies
 - Employers' behavior
 - Health care system developments
 - Socioeconomic factors
 - Community norms

Baseline Projection: Prevalence of Smoking Through 2035

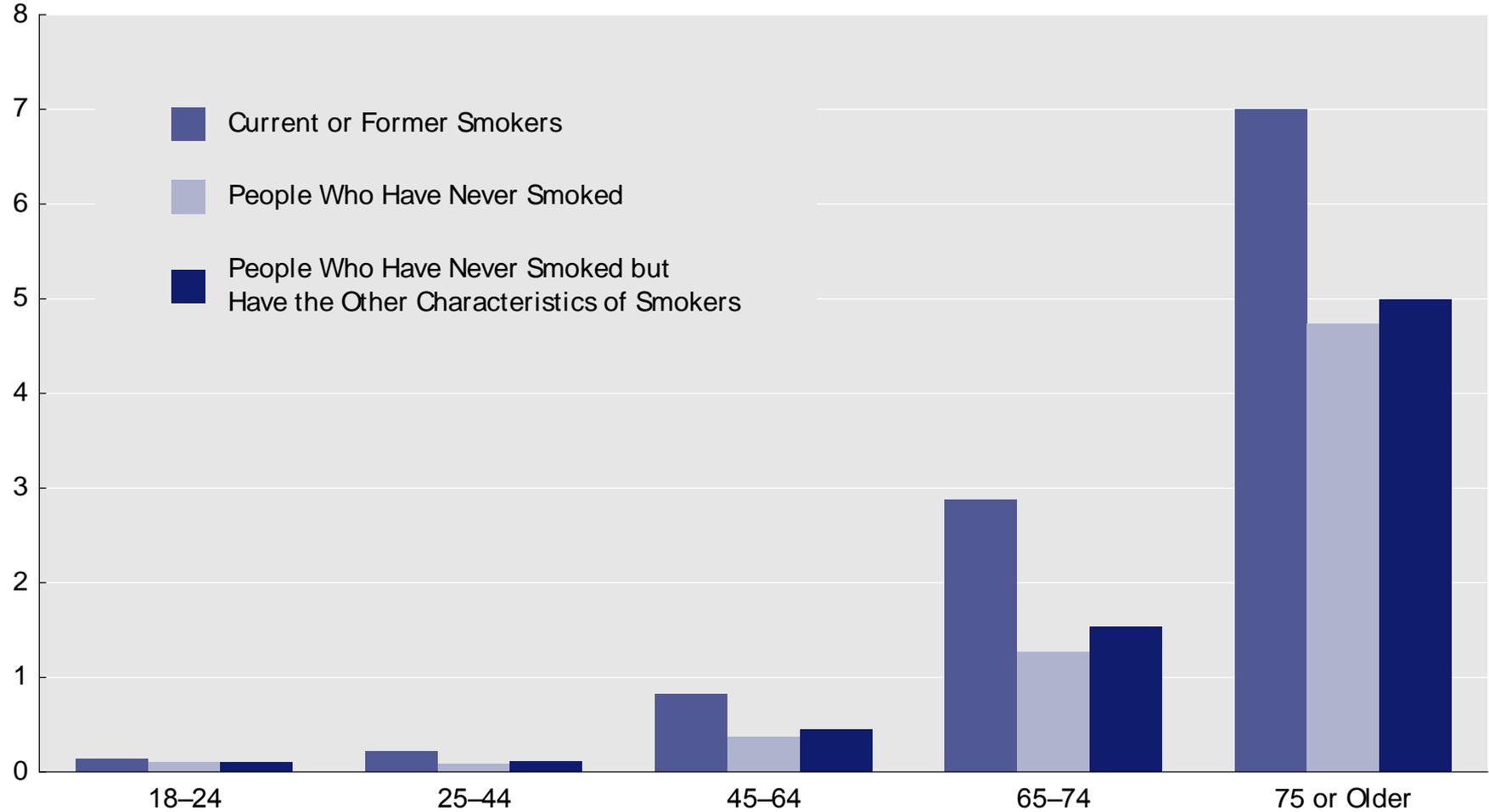
(Percentage of U.S. adults)



Based on data from multiple years of the National Health Interview Survey.

Smoking and Mortality: Probability of Dying in the Next Year

(Percent)



Based on data for 1997 to 2004 from the National Health Interview Survey combined with death certificate records.

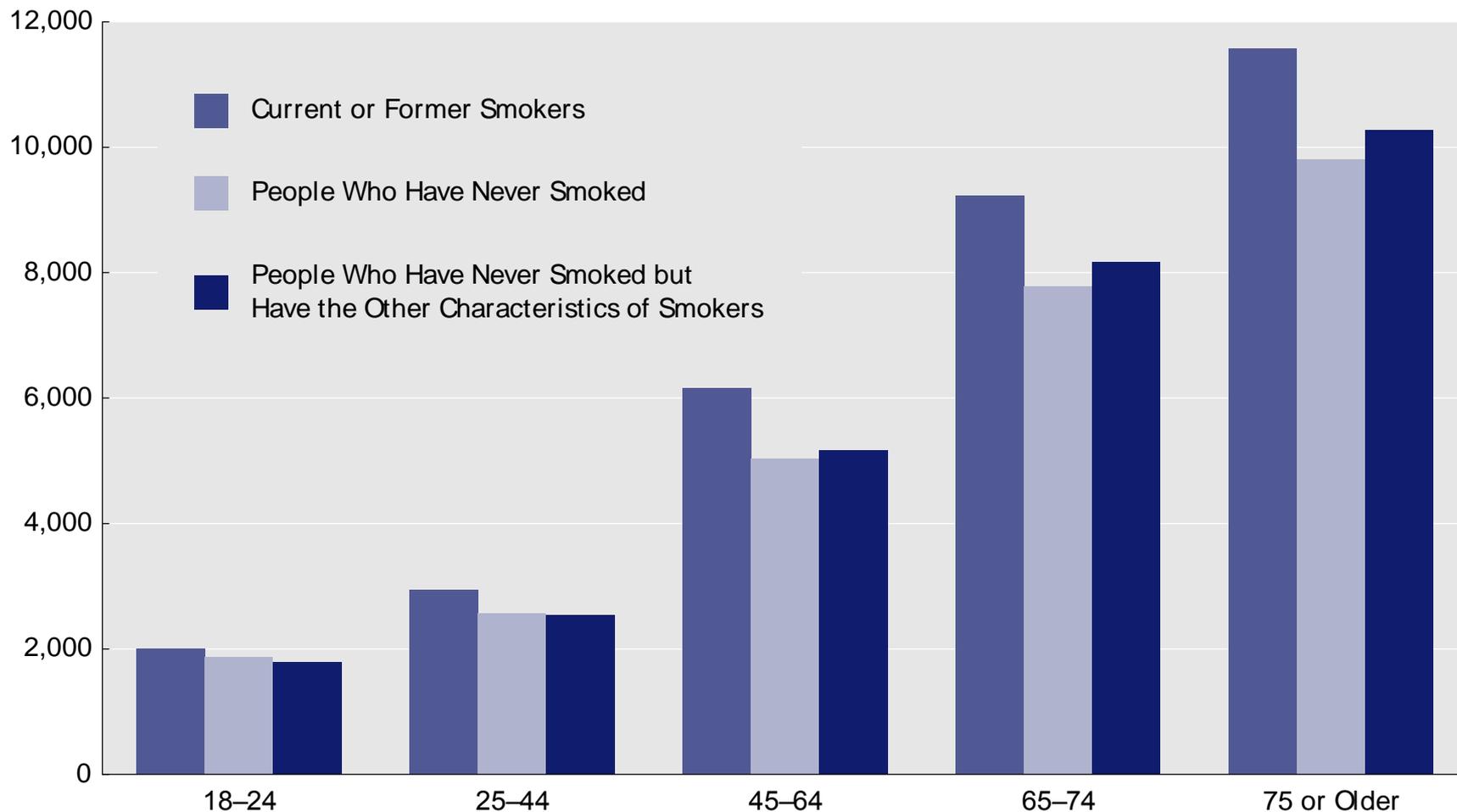
Prepolicy: Questions Linking Epidemiologic, Economic, and Fiscal Outcomes

- How do the health outcomes associated with the targeted risk factor (condition) affect:
 - Annual and lifetime per capita health care spending?
 - Overall and among population subgroups?
 - Health insurance premiums?
 - Taxed and untaxed shares of compensation?
 - Labor force participation?
 - Productivity in the workplace?
 - Participation and spending in government health, disability, and retirement programs?

- What are the projections of those metrics for 10, 25, 50 years?

Smoking and per Capita Health Care Spending

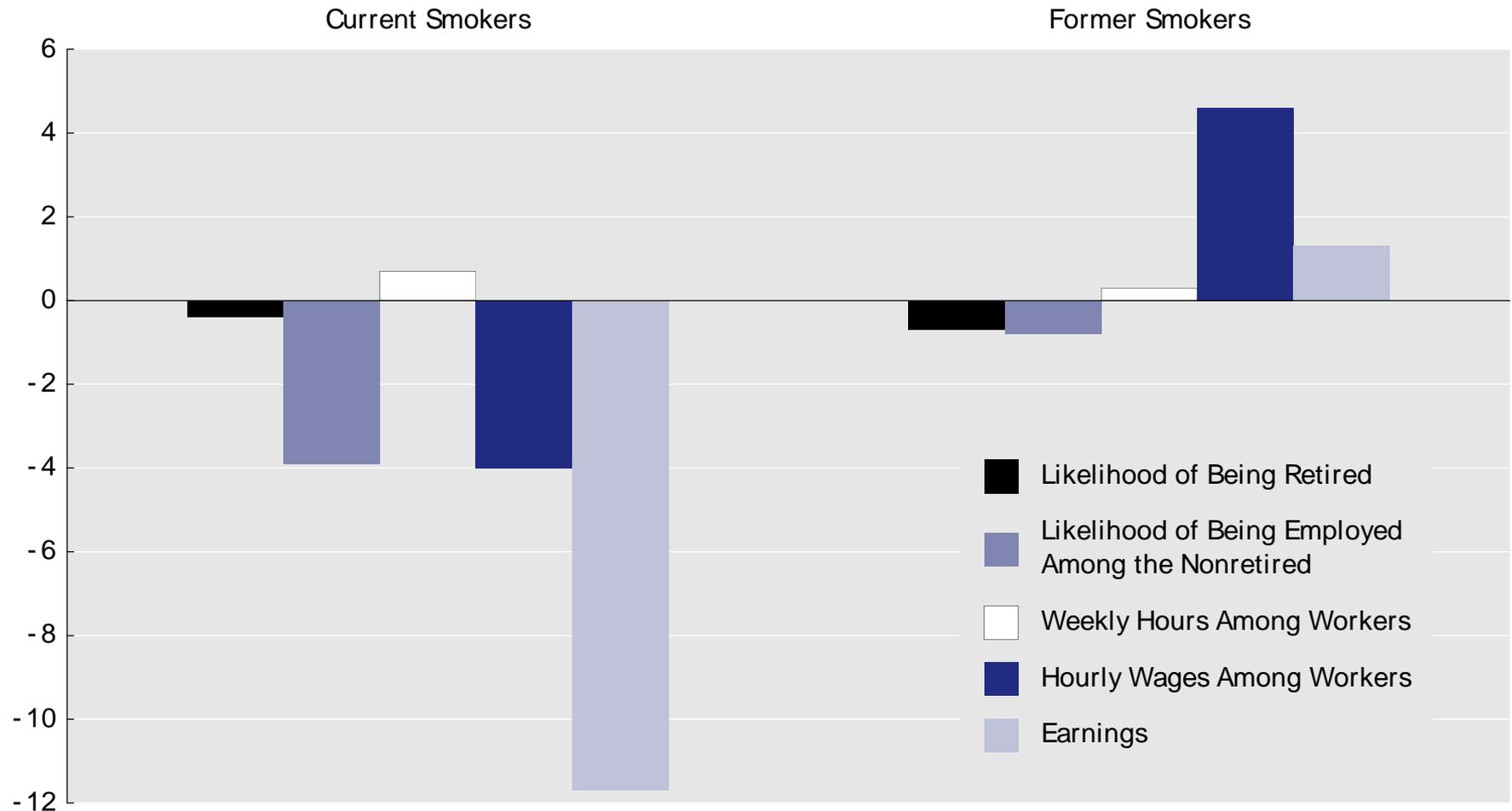
(2008 dollars)



Based on data for 2000 to 2008 from the Medical Expenditure Panel Survey and for 1998 to 2007 from the National Health Interview Survey.

Smoking and Labor Force Outcomes: Comparisons with Nonsmokers with Similar Characteristics

(Percent)



Based on data for 2006 and 2007 from the Census Bureau's Current Population Survey.

Postpolicy: Behavioral Responses and Health Outcomes

- What responses would the policy induce from:
 - Individuals?
 - Variation among population subgroups?
 - State and local governments?
 - Employers?
 - Health care system?
- How would those behavioral responses affect health and longevity:
 - Initially?
 - Over time?
- What behavioral substitutions might occur?
- How sustainable would the responses and effects be?

Postpolicy: Economic Outcomes

- How would the health and longevity outcomes affect:
 - Annual and lifetime per capita health care spending?
 - Variation among population subgroups?
 - Health insurance premiums?
 - Taxed versus untaxed compensation?
 - Labor force participation?
 - Productivity in the workplace?

Postpolicy: Fiscal Outcomes

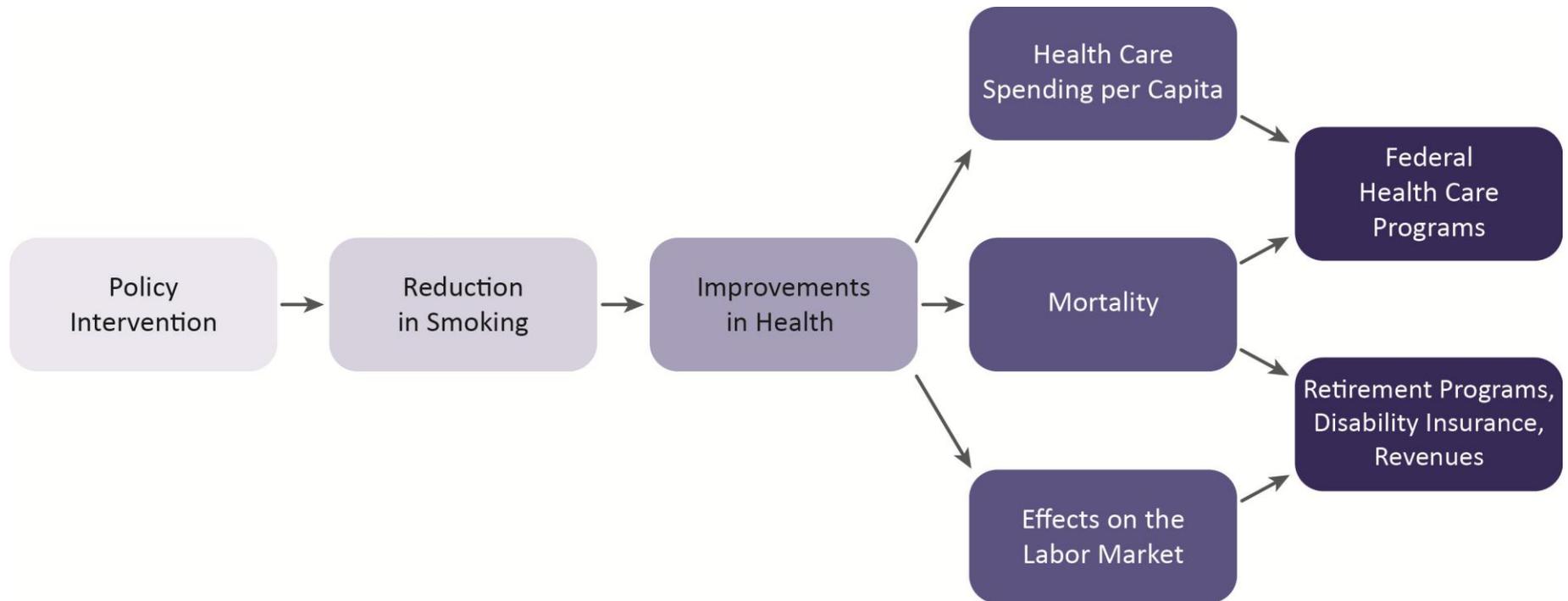
- How would health, longevity, and associated economic outcomes affect:
 - Participation and spending in federal programs?
 - Medicare
 - Medicaid and exchange subsidies
 - Social security (OASI and DI)
 - Other federal health and retirement programs
 - Federal revenues?
 - Changes in earnings
 - Changes in the mix of compensation

Goal of CBO's Smoking Project

- Assess the Full Budgetary Consequences of an Increase in the Federal Excise Tax on Cigarettes
 - Consider a 50-cent increase (Indexed for inflation and growth in income)
 - Focus primarily on changes in federal outlays and revenues resulting from changes in health because of the policy
 - Estimate effects for the 10-year “budget window” and the longer term

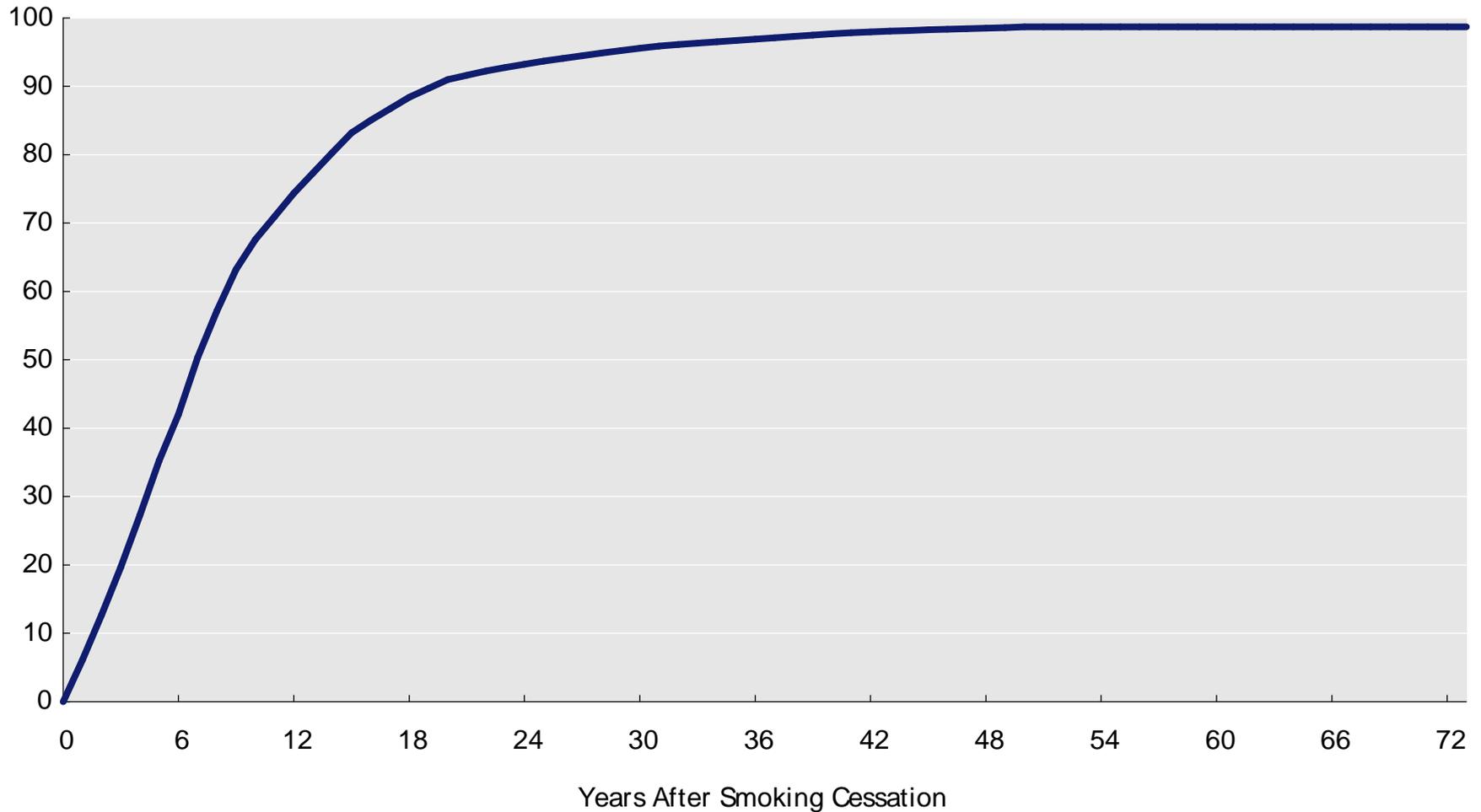
- Caveats
 - Policymakers’ decisions depend on other considerations besides the budget
 - Other policies to improve health would probably have different budgetary effects
 - Strength of evidence was a factor in selecting this case study of a prevention policy

CBO's General Analytic Approach



Health Response Lag for Smokers Who Quit: Rate of Improvement Toward Health Status of Nonsmokers with Similar Characteristics

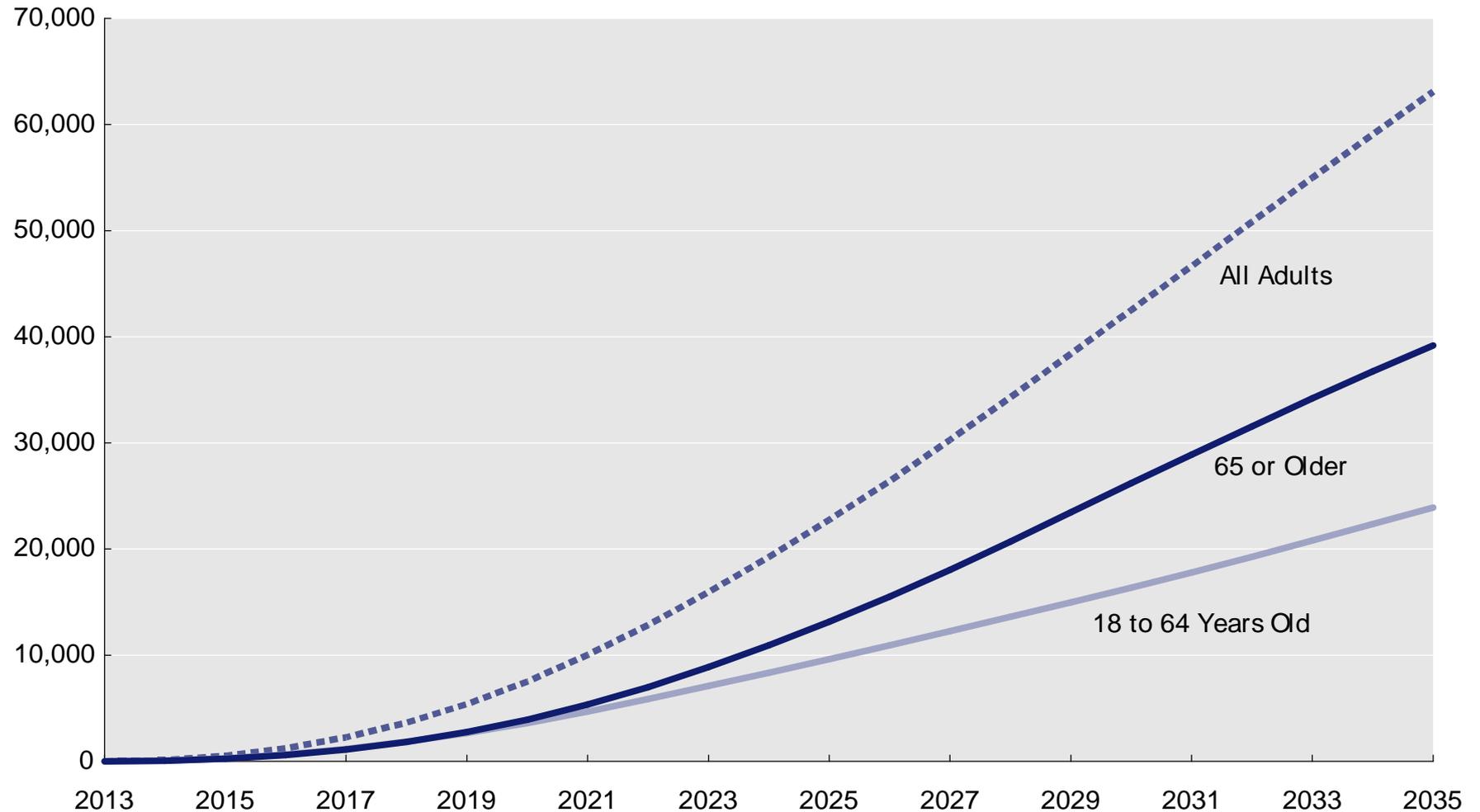
(Percent)



Based on data in a report from 2007 by the International Agency for Research on Cancer and reports from 1990 and 2004 by the Surgeon General.

Increase in the Population Because of the Policy

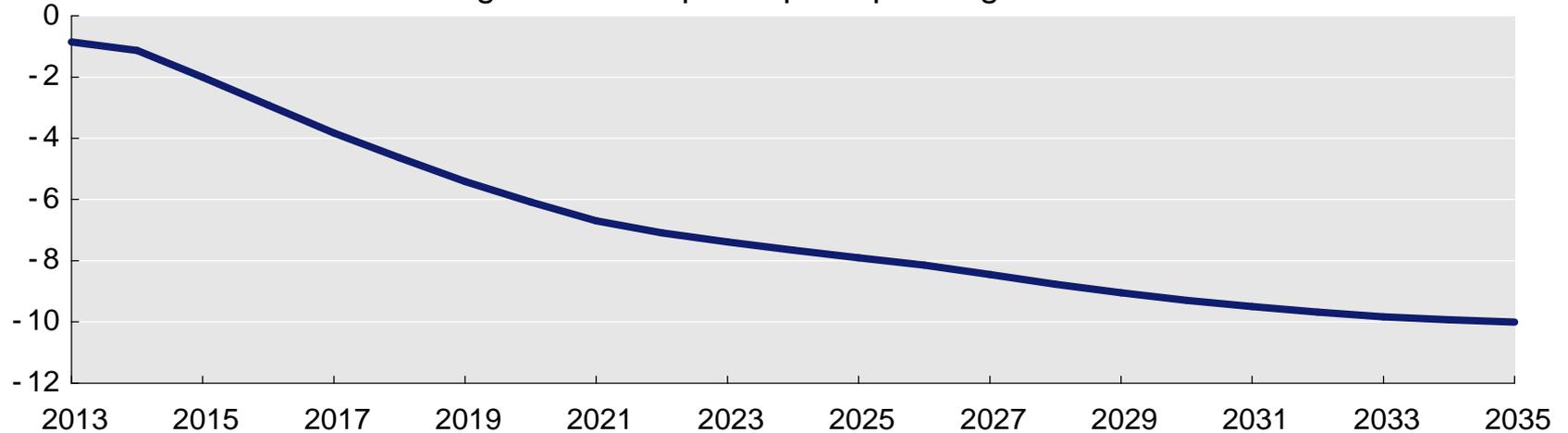
(Number of additional people)



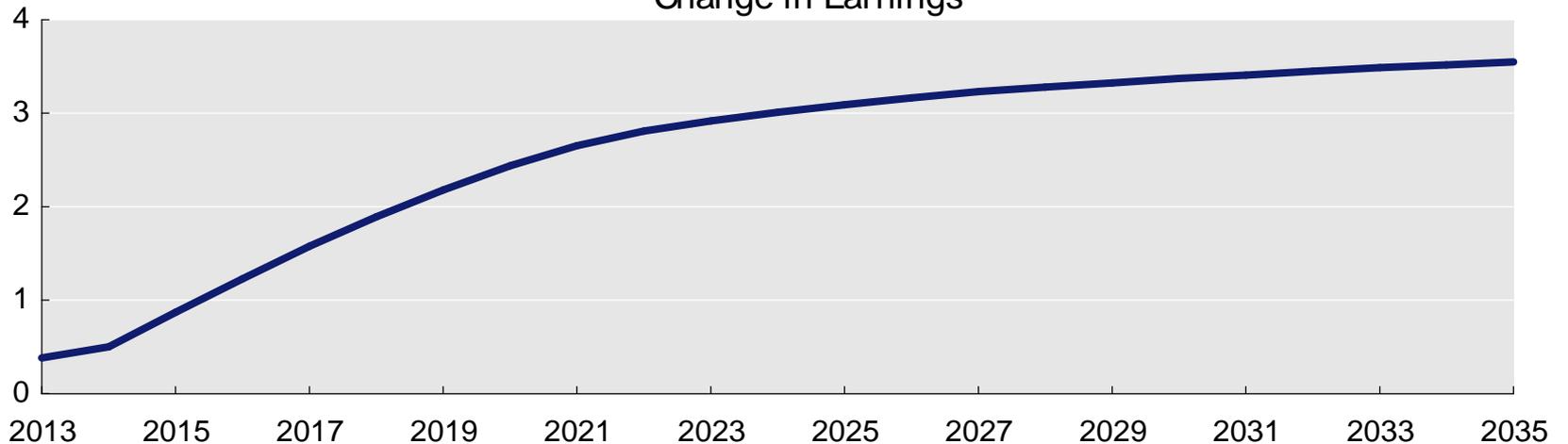
Average Changes in Health Care Spending and Earnings for Adults Affected by the Policy

(Percent)

Change in Annual per Capita Spending on Health Care

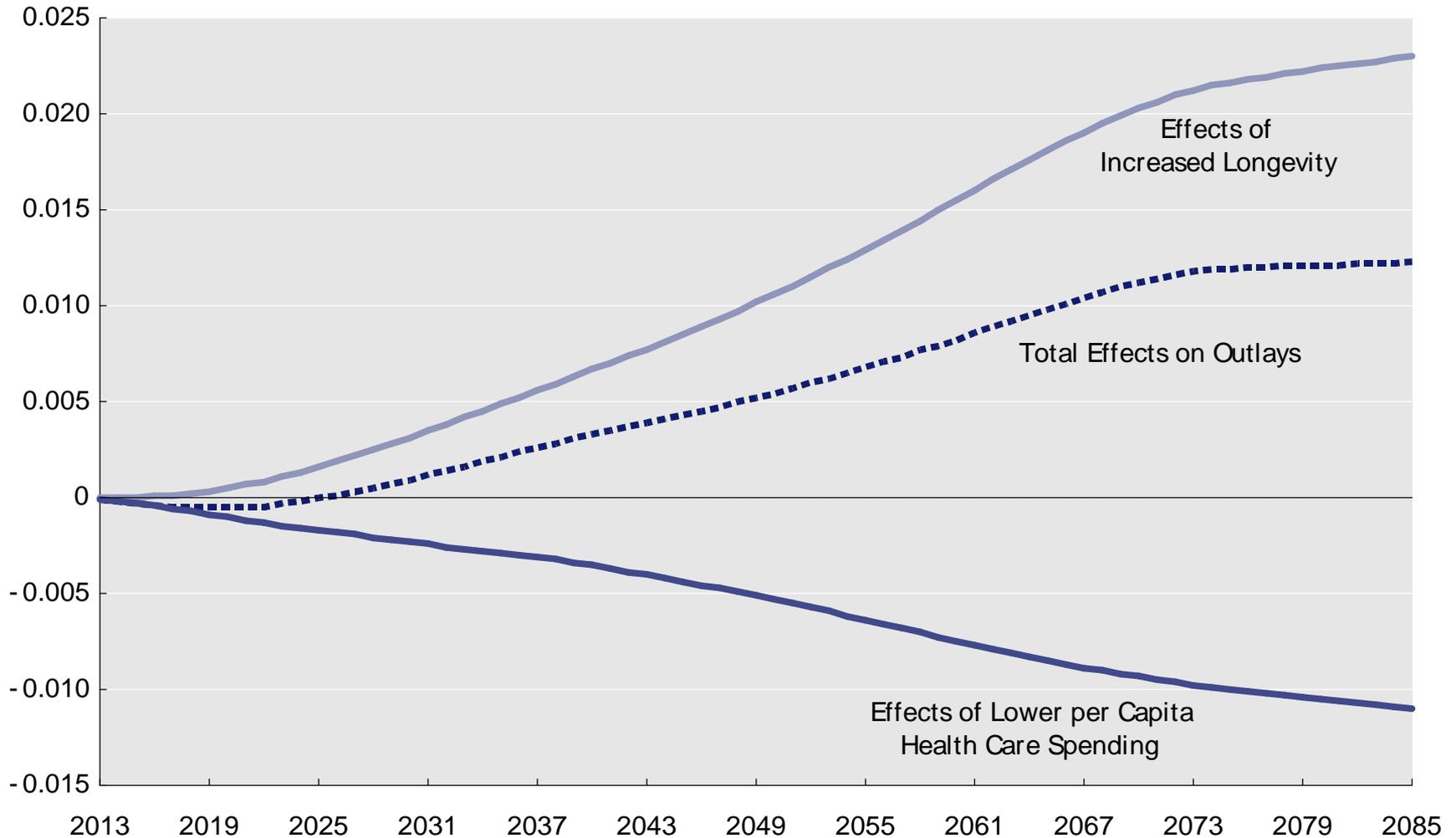


Change in Earnings



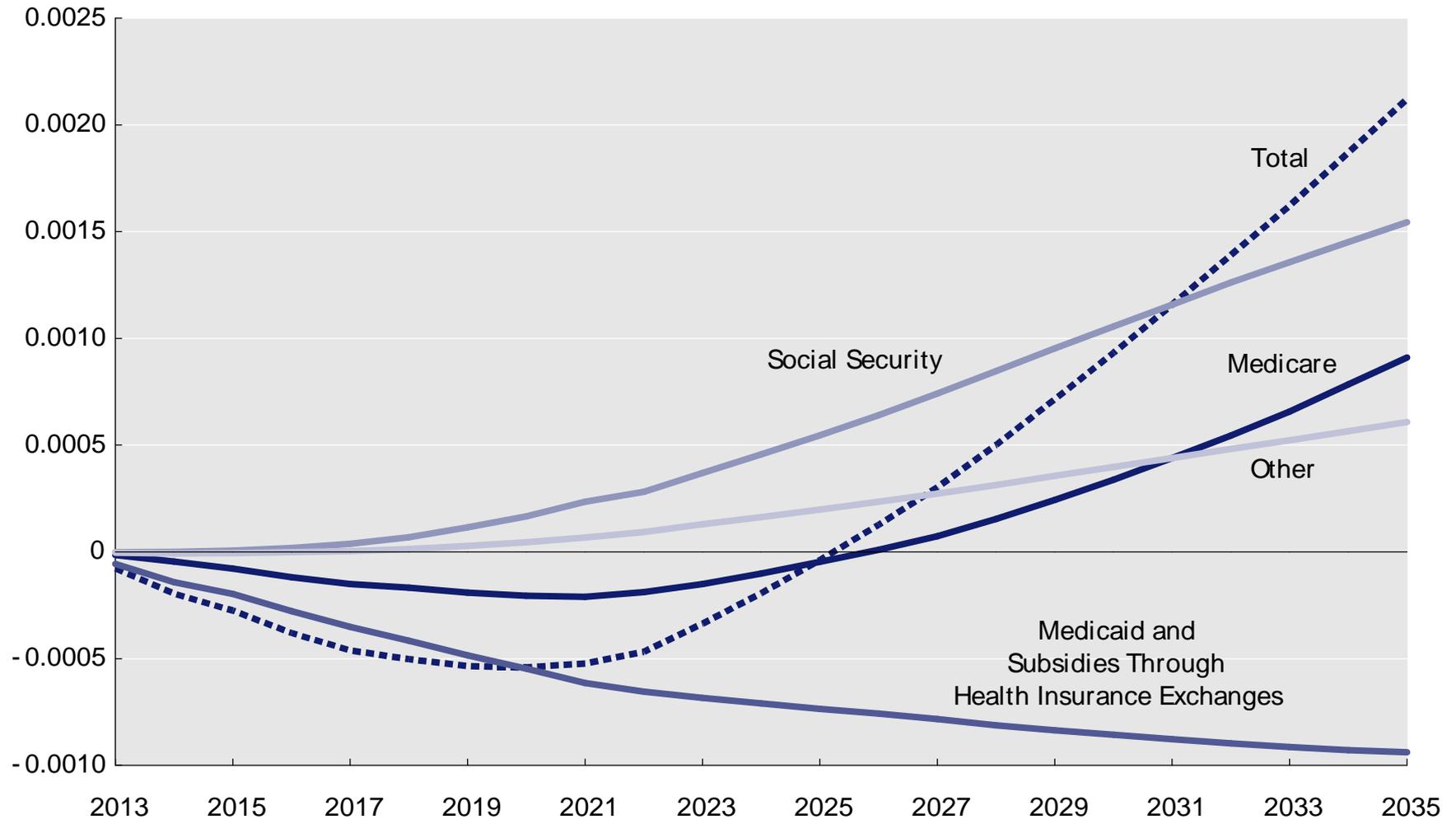
Effects on Federal Outlays of Increased Longevity and Lower per Capita Health Care Spending

(Percentage of GDP)



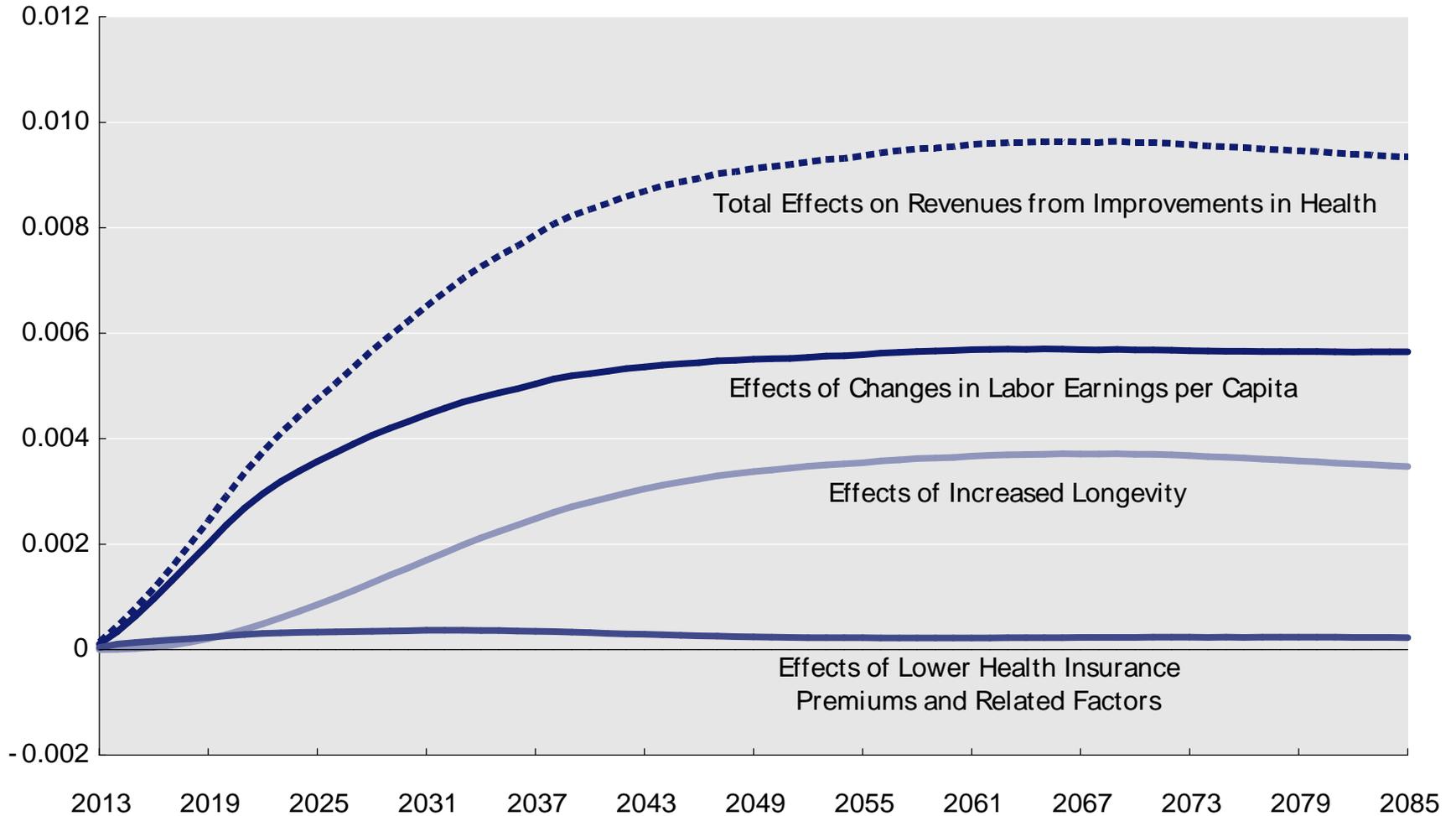
Effects on Federal Outlays, by Program

(Percentage of GDP)



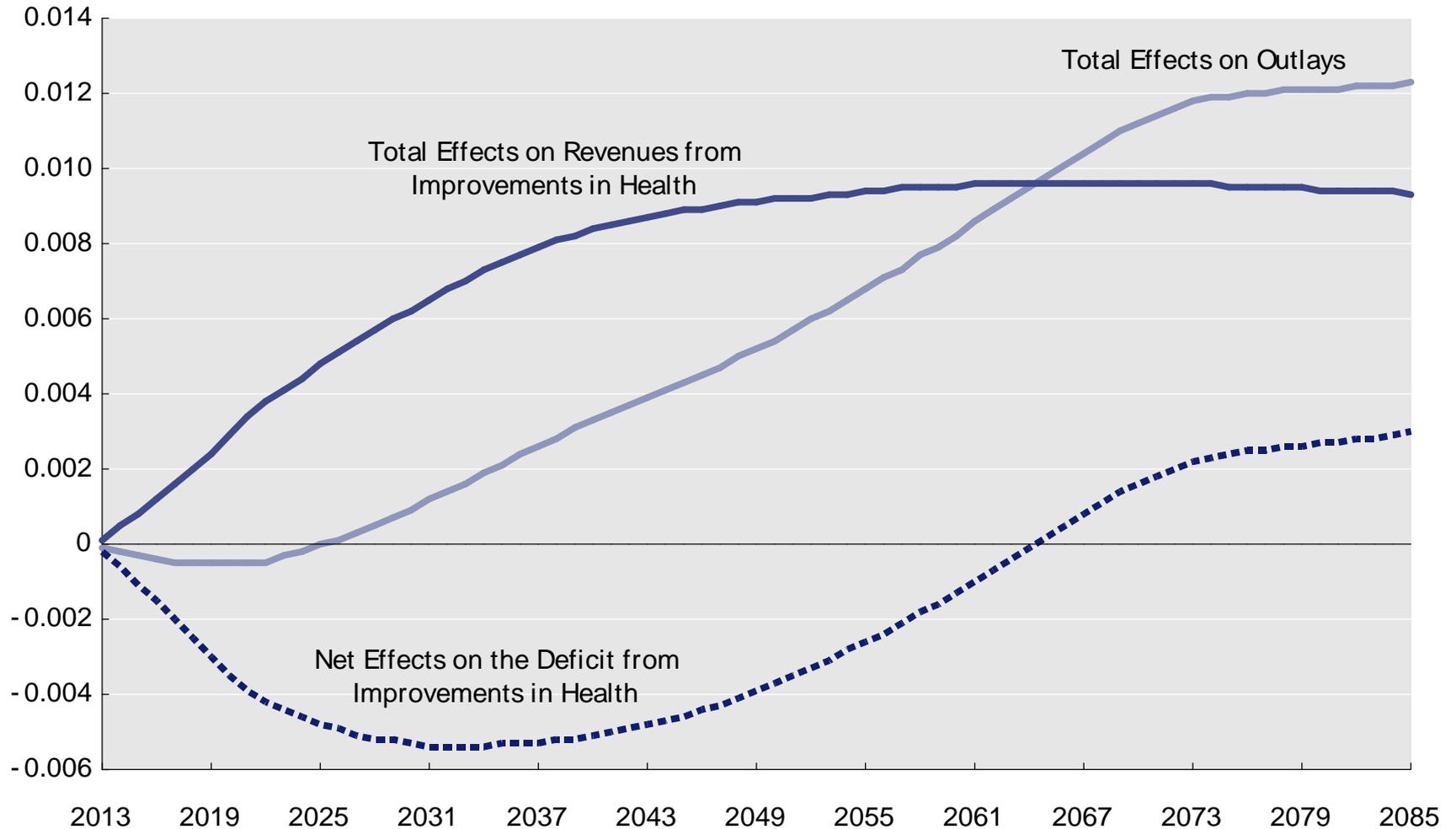
Health-Related Effects on Federal Revenues

(Percentage of GDP)



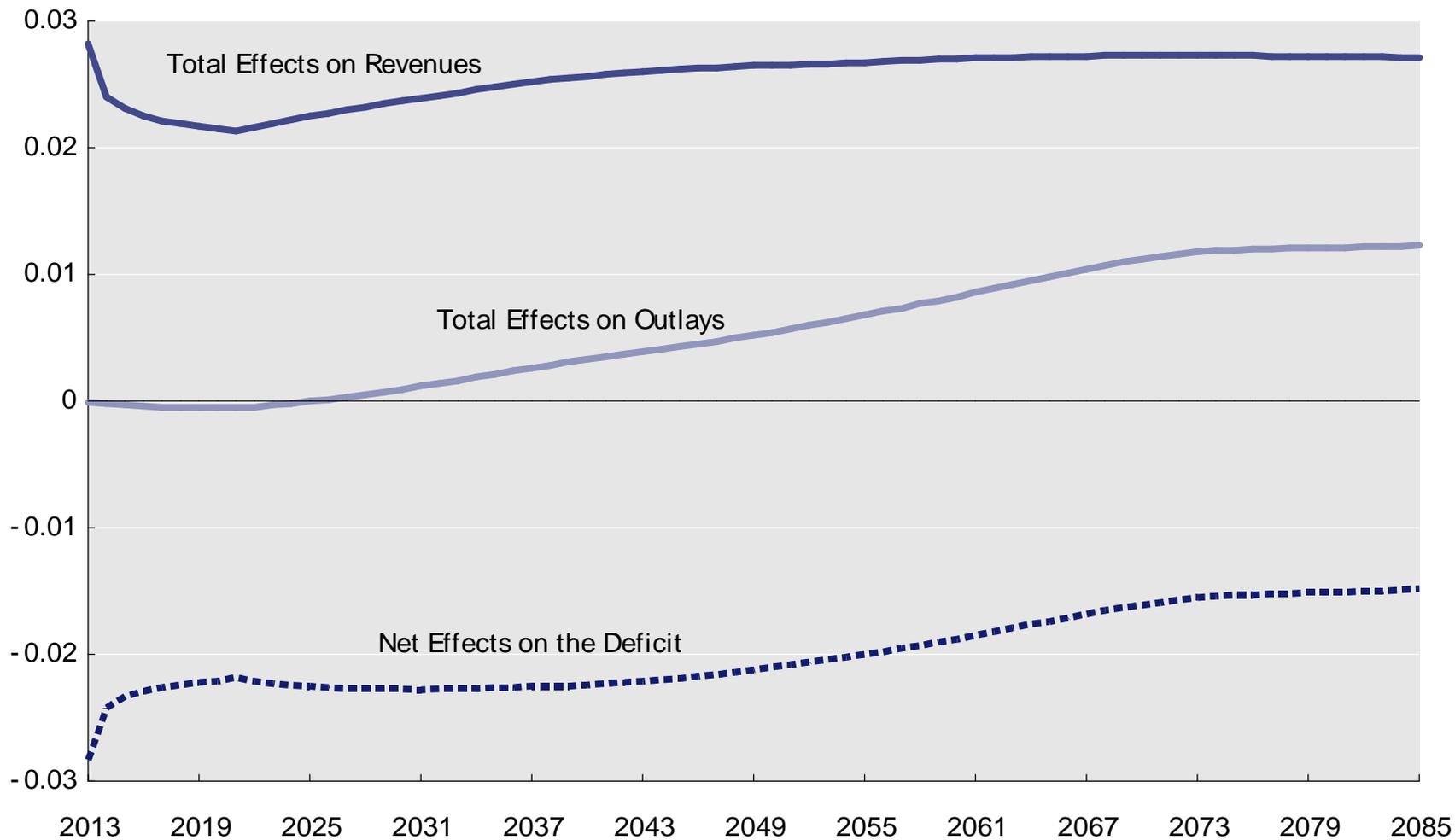
Health-Related Effects on Revenues, Outlays, and the Deficit

(Percentage of GDP)



Overall Budgetary Effects of the Policy

(Percentage of GDP)



Main Conclusions of the Smoking Study

- Changes in federal spending from improved health would be relatively small.
- Federal spending would be lower in the first decade but begin rising in the second or third decade.
- Better health would raise revenues on an ongoing basis
- Combined, those health effects would produce very small declines in the deficit for about five decades
- The largest budgetary effects would come from excise tax receipts, dominating health effects for at least 75 years

For further information, see Congressional Budget Office, *Raising the Excise Tax on Cigarettes: Effects on Health and the Federal Budget* (June 2012), www.cbo.gov/publication/43319

Implications for Future Analyses

- Analyzing the budgetary effects of prevention policies requires analysis at the intersection of epidemiology, economics, and fiscal analysis.
- Despite a broad body of information on smoking, multiple data gaps exist, resulting in considerable challenges for estimating effects of smoking cessation policies.
- For other potential prevention policies, data and research evidence are less extensive, making budgetary estimates even more difficult and speculative.

Acknowledgments

- Many CBO analysts, past and present, contributed to the smoking study.
- Major contributors include:
 - Jim Baumgardner
 - Mark Booth
 - Will Carrington
 - Noelia Duchovny
 - Ellen Werble