

The Costs and Benefits of the Clean Air Act Amendments of 1990 on the U.S. Economy

By

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**Senior Vice President and Chief Economist
American Council for Capital Formation**

Before the

Subcommittee on Clean Energy and Nuclear Safety

And

Subcommittee on Children's Health and Environmental Responsibility

Senate Committee on Environment and Public Works

U.S. Senate

June 8, 2011

Executive Summary

EPA's estimate of \$2 trillion in CAAA benefits is flawed: The "economic value " calculation is based on (1) surveys that ask individuals what they would be "willing to pay" ("stated" WTP) for a small increase in life expectancy and (2) the wage differential between occupations of different riskiness such as a commercial fishermen compared to an office worker ("revealed" WTP). The academic surveys of WTP used by EPA have no link to overall economic activity and do not address how (or if) WTP affects the components of GDP (consumption, investment, government spending and net exports).

EPA's Macroeconomic Model Results Show that CAAA Slows GDP Growth : In sharp contrast to EPA's \$2 trillion estimate of the "economic value" of the CAAA described above, EPA's own simulations with its macroeconomic model shows that the CAAA has significant negative impacts on U.S. GDP growth over the 2010- 2020 period (see Figure 1). GDP declines by \$79 billion in 2010 and by \$110 billion in 2020 relative to the baseline forecast. In other words, the already implemented CAAA regulations have real, quantifiable costs to the economy.

The Link between Economic Growth and Mortality Rate Decline in the U.S.: Many scholars have documented the role between economic growth and declines in the U.S. mortality rate. Professor M. Harvey Brenner of Johns Hopkins University concludes that "Economic growth, cumulatively over at least a decade, has been the central factor in mortality rate decline in the US over the 20th century".

Restoring Strong U.S. Job and GDP Growth: Dramatic reductions in gross private domestic investment since the last quarter of 2007 are by far the largest contributor to the nation's slow GDP growth. In recent years relationship between investment spending and employment has been that each \$1 billion dollar decrease in investment is associated with a loss of 15,500 jobs in the U.S. Conversely, each billion dollar increase in investment is associated with 15,500 additional jobs.

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Introduction

Chairman Carper, Ranking Member Barrasso, Chairman Udall and Ranking Member Alexander and members of the Subcommittees, my name is Margo Thorning, senior vice president and chief economist, American Council for Capital Formation (ACCF),* Washington, D.C. I am pleased to present this testimony on the costs and benefits Clean Air Act Amendments of 1990 on the U.S. economy.

The American Council for Capital Formation represents a broad cross-section of the American business community, including the manufacturing and financial sectors, Fortune 500 companies and smaller firms, investors, and associations from all sectors of the economy. Our distinguished board of directors includes cabinet members of prior Democratic and Republican administrations, former Members of Congress, prominent business leaders, and public finance and environmental policy experts. The ACCF is celebrating over 30 years of leadership in advocating tax, regulatory, environmental, and trade policies to increase U.S. economic growth and environmental quality.

The Subcommittee Chairmen and Committee members are to be commended for their focus on how the Clean Air Act Amendments of 1990 (CAAA) are impacting health and the U.S. economy. Given the continuing weakness of the U.S. economy, stubbornly high unemployment rate and sluggish investment spending, a careful examination of whether EPA's calculation of \$2 trillion in annual benefits of the CAAA is real should be a key issue. Also important is the question of whether the actual economic and health benefits from the CAAA are greater than the costs.

* *The mission of the American Council for Capital Formation is to promote economic growth through sound tax, environmental, and trade policies. For more information about the Council or for copies of this testimony, please contact the ACCF, 1750 K Street, N.W., Suite 400, Washington, D.C. 20006-2302; telephone: 202.293.5811; fax: 202.785.8165; e-mail: info@accf.org; website: www.accf.org*

Background

The U.S. Environmental Protection Agency's report "The Benefits and Costs of the Clean Air Act from 1990 to 2020"¹ states that the economic value of the Act's air quality improvements will "reach almost \$2 trillion for the year, a value which vastly exceeds the cost of efforts to comply with the requirements of the 1990 Clean Air Act Amendments." The EPA report goes on to state that "Even if one were to adopt the extreme assumption that air pollution has no effect on premature mortality—or that avoiding such effects has no value—the benefits of reduced non-fatal health effects and visibility improvements alone are more than twice the total cost of compliance with 1990 Clean Air Act Amendment requirements."²

My testimony will examine whether EPA's estimate of \$2 trillion in benefits in 2020 is based on sound economic modeling and whether the costs of the CAAA are in fact much smaller than the benefits. The role of economic growth in reducing mortality is also discussed as well as the importance of choosing regulatory policies whose costs are less than their benefits. Given the current slow growth in jobs and GDP in the U.S., careful attention needs to be paid to the purported benefits and costs of existing and new regulations of all types.

How is EPA's Estimate of \$2 Trillion of CAAA Benefits Calculated?

EPA's estimate of \$2 trillion in benefits from CAAA in 2020 is based on: (1) survey's that ask individuals what they would be "willing to pay" (called "stated" WTP) for a small increase in life expectancy and (2) the wage differential between occupations of different riskiness such as a commercial fishermen compared to an office worker ("revealed" WTP). The academic surveys of WTP used by EPA have no link to overall economic activity and do not address how (or if) WTP affects the components of GDP (consumption, investment, government spending and net exports). "Willingness to Pay" responses by survey participants or the wage differential between occupations with different levels of risk do not create any new jobs, cause any investment or increase levels of spending in the U.S. economy.

EPA's Macroeconomic Model Results Show that CAAA Slows GDP Growth

In sharp contrast to EPA's \$2 trillion estimate of the "economic value" of the CAAA described above, EPA's own simulations with its macroeconomic model shows that the CAAA has significant negative impacts on U.S. GDP growth over the 2010-2020 period (see Figure 1). GDP declines by \$79 billion in 2010 and by \$110 billion in 2020 relative

¹ The Benefits and Costs of the Clean Air Act from 1990 to 2020, U.S. Environmental Protection Agency, Office of Air and Radiation, Summary Report, March 2011, page 2
<http://www.epa.gov/cleanairactbenefits/feb11/summaryreport.pdf>

² Ibid. page 3.

to the baseline forecast. In other words, the already implemented CAAA regulations have real, quantifiable costs to the economy. Even when EPA adjusts the U.S. labor force for estimated health benefits, the economy still shrinks in 2010 and 2015(see Figure 1). By 2020, there is a tiny increase in GDP(\$5 billion) under the labor force adjusted case. Note that EPA calculation of a \$5 billion increase in GDP in 2020 when health benefits are included is only a tiny fraction(0.25 %) of the \$2 trillion in claimed “ economic benefits” from the CAAA.

In addition to estimating losses in GDP over the 2010-2020 period under the CAAA, EPA’s macroeconomic model results also show losses in output by industry(See Figure 2). Losses in industrial output in 2020 range from over 5% in the category “other minerals”, almost 4% in aluminum and electricity. Mining, other primary metals, petroleum and transportation services also face significant reductions, compared to the baseline forecast.

The Link between Economic Growth and Mortality Rate Decline in the U.S.

Many scholars have documented the link between economic growth and declines in the U.S. mortality rate. For example, M. Harvey Brenner, Professor of Health Policy and Management, Johns Hopkins University analyzed the relationship between real per capita GDP and the decline in the mortality rate in the U.S. over the 1901-2000 period.³ Professor Brenner concluded that “Economic growth, cumulatively over at least a decade, has been the central factor in mortality rate decline in the US over the 20th century(see Figure 3).”⁴ He explains the “fundamental contributions of economic growth to the reduction of poverty—through the elevation of real incomes via basic earnings and government and employer contributions to the ‘social safety net’. For a broader view, it is important to keep in mind investment in the sciences and industrial technologies that directly minimize harm to health, including improved ergonomics, injury control, and reduction of toxic emissions. Of enormous importance is the considerable investment in new medicines, types of surgery and prosthetics, structure of care and hospital facilities and ambulance services.”⁵

The role of unemployment is also an important factor in the health of U.S. workers. Professors Burgard, Brand and House have documented the negative relationship between job insecurity and worker health in a recent article in Social Science and Medicine. They conclude that persistent job insecurity is a significant predictor of subsequent health.⁶

Restoring U.S. Job and Economic Growth

³ M. Harvey Brenner, Commentary: Economic growth is the basis of mortality rate decline in the 20th century-experience of the United States 1901-2000, International Journal of Epidemiology , July, 2005, <http://ije.oxfordjournals.org/content/34/6/1214.full.pdf>

⁴ Ibid. page 1214.

⁵ Ibid. page 1216.

⁶ Sarah A. Burgard, Jennie E.Brand, James S. House, Perceived job insecurity and worker health in the United States, Social Science and Medicine, September, 2009, pages 777-785.

The continuing weakness of U.S. economic growth(1.8 % in the first quarter of 2011) and high unemployment rate(9.1% in May) is of concern to policymakers and workers alike. Although business confidence has improved in the last several months, the business community faces uncertainty on an unusually large number of fronts. For example, the implementation of health care and financial reforms legislation, the specter of an \$18 trillion dollar federal debt in 2021 as well as the unknown cost of complying with various EPA regulations.

As illustrated in Figure 4 dramatic reductions in gross private domestic investment since the last quarter of 2007 are by far the largest contributor to the nation's slow GDP growth. Gross private domestic investment was down by \$313 billion in the first quarter of 2011 relative to the fourth quarter of 2007. In recent years relationship between investment spending and employment has been that each \$1 billion dollar decrease in investment is associated with a loss of 15,500 jobs in the U.S. Conversely, each billion dollar increase in investment is associated with 15,500 additional jobs.

Conclusions

Restoring strong growth to the U.S. economy will require that policymakers fully understand the data being provided by regulatory agencies so as not to impose undue costs that restrain investment spending and job growth. Current and proposed regulations should be analyzed with using sound economic principles and widely respected economic models. EPA's estimated \$2 trillion in "economic value" from the CAAA clearly does not meet those criteria. In addition, EPA's own economic modeling shows that the CAAA results in lost GDP and reductions in industrial output over the next decade.

Figure 1. EPA's Estimate of Economic Impact of Clean Air Act Amendments of 1990 on U.S. GDP, 2010-2020

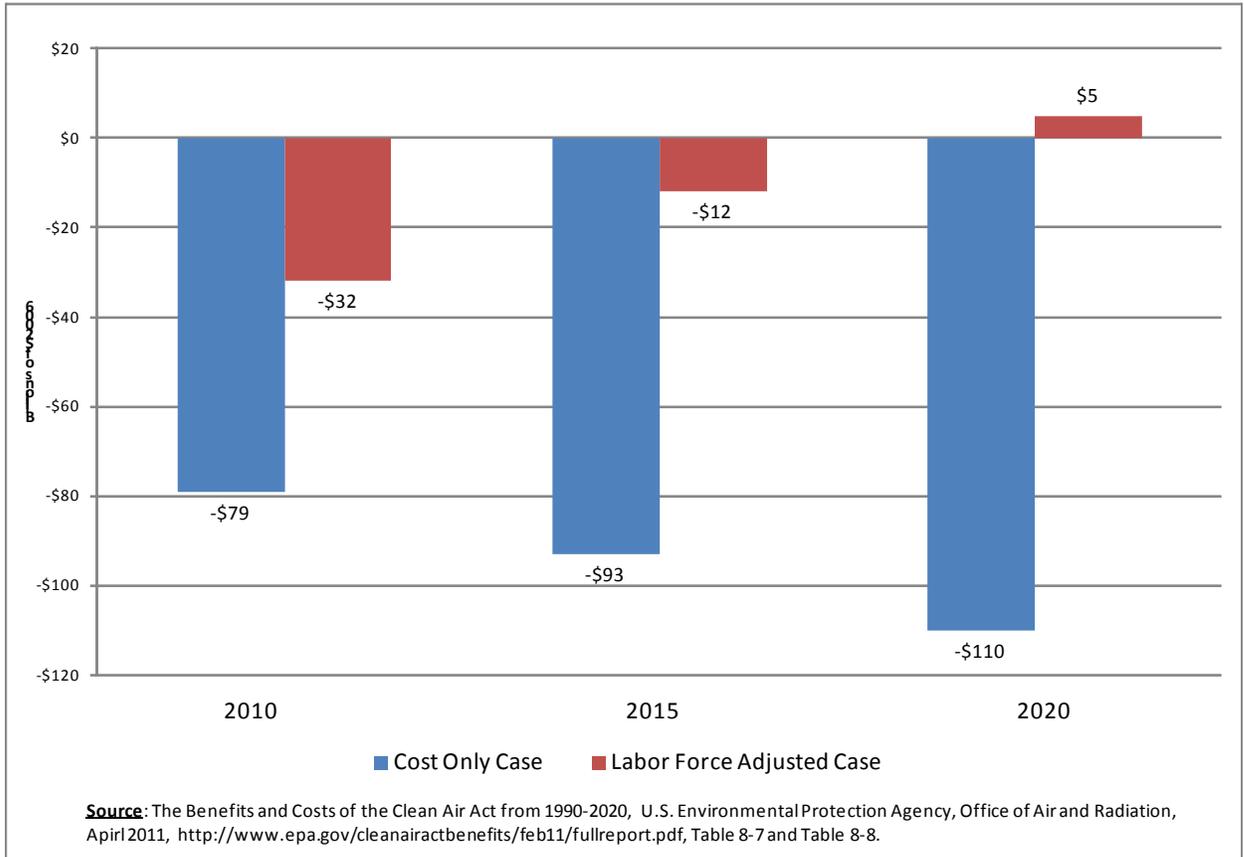
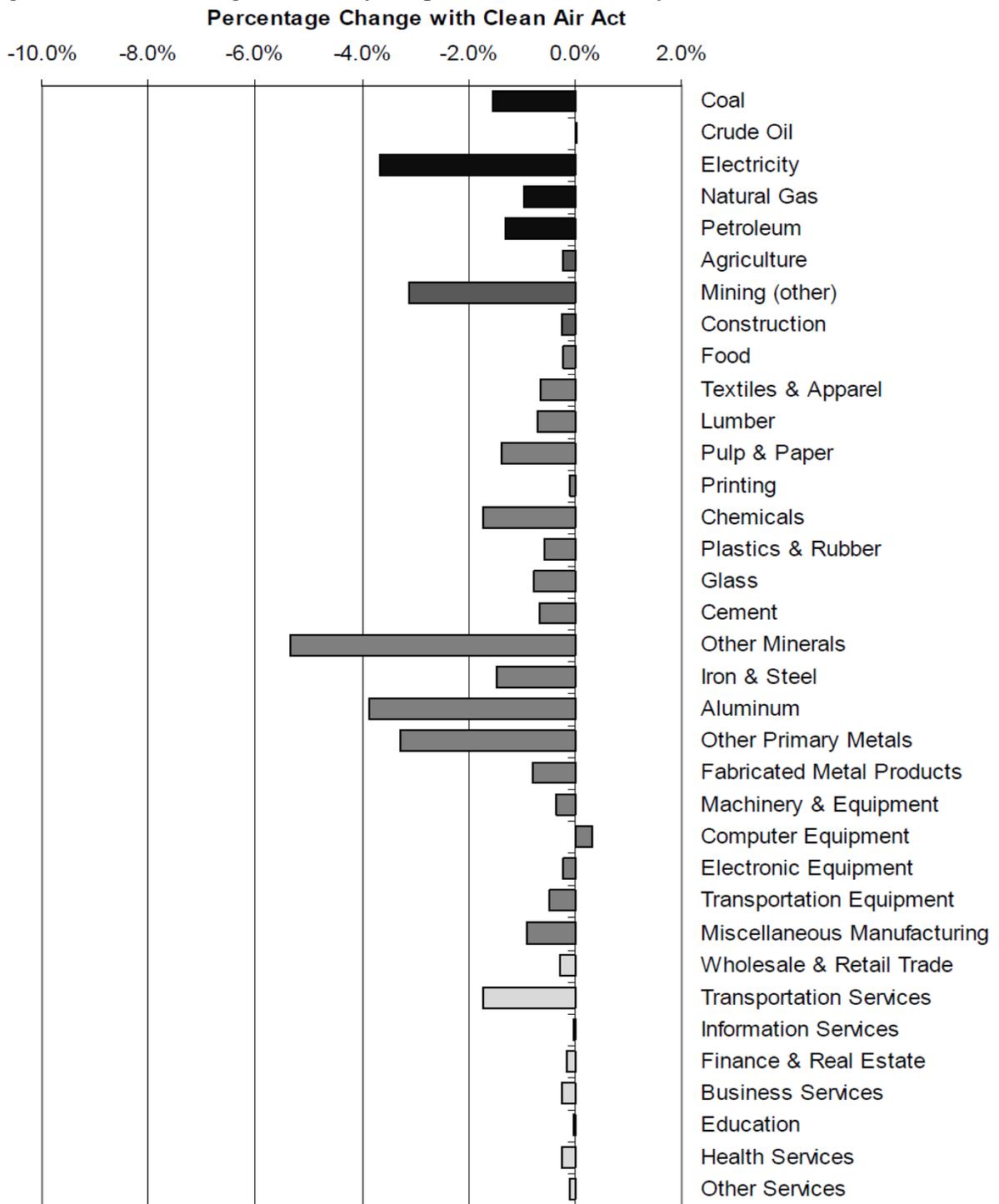
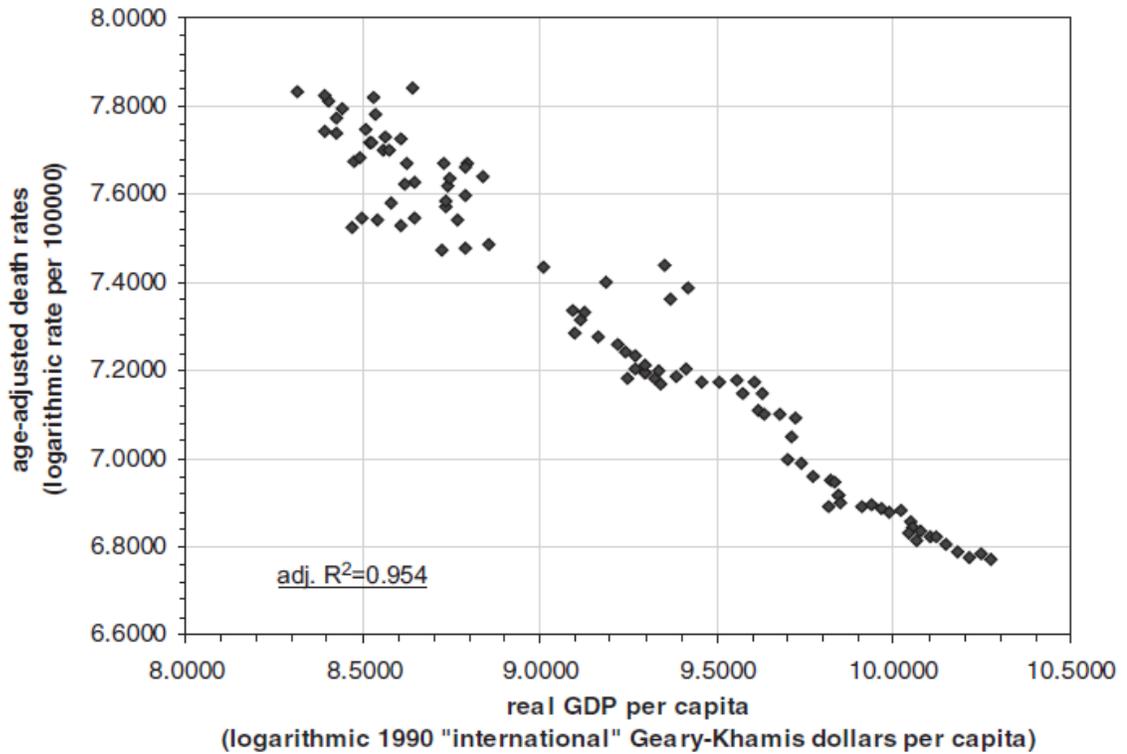


Figure 2. Percent Change in Industry Output in 2020: Cost-Only Case



Source: The Benefits and Costs of the Clean Air Act from 1990-2020, U.S. Environmental Protection Agency, Office of Air and Radiation, April 2011, <http://www.epa.gov/cleanairactbenefits/feb11/fullreport.pdf>, Figure 8-5.

Figure 3. Relation of real GDP per capita to age-adjusted death rates, US 1900–2000 (natural logarithms)



Source: Commentary: Economic growth is the basis of mortality rate decline in the 20th century experience of the United States 1901–2000, M Harvey Brenner, *International Journal of Epidemiology* 2005; 34:1214–1221, <http://ije.oxfordjournals.org/content/34/6/1214.full.pdf>

Figure 4. Key Quarterly GDP Components Compared to 2007 4th Quarter (Billions of 2005\$)

