

**EMBARGOED UNTIL TUESDAY, JUNE 2**

**EXECUTIVE OFFICE OF THE PRESIDENT  
COUNCIL OF ECONOMIC ADVISERS**



**THE ECONOMIC CASE FOR HEALTH CARE REFORM**

**JUNE 2009**

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### **EXECUTIVE SUMMARY**

The Council of Economic Advisers (CEA) has undertaken a comprehensive analysis of the economic impacts of health care reform. The report provides an overview of current economic impacts of health care in the United States and a forecast of where we are headed in the absence of reform; an analysis of inefficiencies and market failures in the current health care system; a discussion of the key components of health care reform; and an analysis of the economic effects of slowing health care cost growth and expanding coverage.

The findings in the report point to large economic impacts of genuine health care reform:

- We estimate that slowing the annual growth rate of health care costs by 1.5 percentage points would increase real gross domestic product (GDP), relative to the no-reform baseline, by over 2 percent in 2020 and nearly 8 percent in 2030.
- For a typical family of four, this implies that income in 2020 would be approximately \$2,600 higher than it would have been without reform (in 2009 dollars), and that in 2030 it would be almost \$10,000 higher. Under more conservative estimates of the reduction in the growth rate of health care costs, the income gains are smaller, but still substantial.
- Slowing the growth rate of health care costs will prevent disastrous increases in the Federal budget deficit.
- Slowing cost growth would lower the unemployment rate consistent with steady inflation by approximately one-quarter of a percentage point for a number of years. The beneficial impact on employment in the short and medium run (relative to the no-reform baseline) is estimated to be approximately 500,000 each year that the effect is felt.
- Expanding health insurance coverage to the uninsured would increase net economic well-being by roughly \$100 billion a year, which is roughly two-thirds of a percent of GDP.
- Reform would likely increase labor supply, remove unnecessary barriers to job mobility, and help to “level the playing field” between large and small businesses.

### **WHERE WE ARE AND WHERE WE ARE HEADED**

Health care expenditures in the United States are currently about 18 percent of GDP, and this share is projected to rise sharply. If health care costs continue to grow at historical rates, the share of GDP devoted to health care in the United States is projected to reach 34 percent by 2040. For households with employer-sponsored health insurance, this trend implies that a progressively smaller fraction of their total compensation will be in the form of take-home pay and a progressively larger fraction will take the form of employer-provided health insurance.

The rising share of health expenditures also has dire implications for government budgets. Almost half of current health care spending is covered by Federal, state, and local governments. If health care costs continue to grow at historical rates, Medicare and Medicaid spending (both

Federal and state) will rise to nearly 15 percent of GDP in 2040. Of this increase, roughly one-quarter is estimated to be due to the aging of the population and other demographic effects, and three-quarters is due to rising health care costs.

Perhaps the most visible sign of the need for health care reform is the 46 million Americans currently without health insurance. CEA projections suggest that this number will rise to about 72 million in 2040 in the absence of reform. A key factor driving this trend is the tendency of small firms not to provide coverage due to the rising cost of health care.

## **INEFFICIENCIES IN THE CURRENT SYSTEM AND KEY ELEMENTS OF SUCCESSFUL HEALTH CARE REFORM**

While the American health care system has many virtues, it is also plagued by substantial inefficiencies and market failures. Some of the strongest evidence of such inefficiencies comes from the tremendous variation across states in Medicare spending per enrollee, with no evidence of corresponding variations in either medical needs or outcomes. These large variations in spending suggest that up to 30 percent of health care costs (or about 5 percent of GDP) could be saved without compromising health outcomes. Likewise, the differences in health care expenditures as a share of GDP across countries, without corresponding differences in outcomes, also suggest that health care expenditures in the United States could be lowered by about 5 percent of GDP by reducing inefficiency in the current system.

The sources of inefficiency in the U.S. health care system include payment systems that reward medical inputs rather than outcomes, high administrative costs, and inadequate focus on disease prevention. Market imperfections in the health insurance market create incentives for socially inefficient levels of coverage. For example, asymmetric information causes adverse selection in the insurance market, making it difficult for healthy people to receive actuarially reasonable rates.

CEA's findings on the state of the current system lead to a natural focus on two key components of successful health care reform: (1) a genuine containment of the growth rate of health care costs, and (2) the expansion of insurance coverage. Because slowing the growth rate of health care costs is a complex and difficult process, we describe it in general terms and give specific examples of the types of reforms that could help to accomplish the necessary outcomes.

## **THE ECONOMIC IMPACT OF SLOWING HEALTH CARE COST GROWTH**

The central finding of this report is that genuine health care reform has substantial benefits. CEA estimates that slowing the growth of health care costs would have the following key effects:

1. ***It would raise standards of living by improving efficiency.*** Slowing the growth rate of health care costs by increasing efficiency raises standards of living by freeing up resources that can be used to produce other desired goods and services. The effects are roughly proportional to the degree of cost containment.

2. ***It would prevent disastrous budgetary consequences and raise national saving.*** Because the Federal government pays for a large fraction of health care, lowering the growth rate of health care costs causes the budget deficit to be much lower than it otherwise would have been (assuming that the savings are dedicated to deficit reduction). The resulting rise in national saving increases capital formation.

***Together, these effects suggest that properly measured GDP could be more than 2 percent higher in 2020 than it would have been without reform and almost 8 percent higher in 2030. The real income of the typical family of four could be \$2,600 higher in 2020 than it otherwise would have been and \$10,000 higher in 2030. And, the government budget deficit could be reduced by 3 percent of GDP relative to the no-reform baseline in 2030.***

3. ***It would lower unemployment and raise employment in the short and medium runs.*** When health care costs are rising more slowly, the economy can operate at a lower level of unemployment without triggering inflation. Our estimates suggest that the unemployment rate may be lower by about one-quarter of a percentage point for an extended period of time as a result of serious cost growth containment.

## **THE ECONOMIC IMPACT OF EXPANDING COVERAGE**

The report identifies three important impacts of expanding health care coverage:

1. ***It would increase the economic well-being of the uninsured by substantially more than the costs of insuring them.*** A comparison of the total benefits of coverage to the uninsured, including such benefits as longer life expectancy and reduced financial risk, and the total costs of insuring them (including both the public and private costs), suggests net gains in economic well-being of about two-thirds of a percent of GDP per year.
2. ***It would likely increase labor supply.*** Increased insurance coverage and, hence, improved health care, is likely to increase labor supply by reducing disability and absenteeism in the work place. This increase in labor supply would tend to increase GDP and reduce the budget deficit.
3. ***It would improve the functioning of the labor market.*** Coverage expansion that eliminates restrictions on pre-existing conditions improves the efficiency of labor markets by removing an important limitation on job-switching. Creating a well-functioning insurance market also prevents an inefficient allocation of labor away from small firms by leveling the playing field among firms of all sizes in competing for talented workers in the labor market.

The CEA report makes clear that the total benefits of health care reform could be very large if the reform includes a substantial reduction in the growth rate of health care costs. This level of reduction will require hard choices and the cooperation of policymakers, providers, insurers, and the public. While there is no guarantee that the policy process will generate this degree of change, the benefits of achieving successful reform would be substantial to American households, businesses, and the economy as a whole.

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## I. INTRODUCTION

The President has identified health care reform as a top priority. His vision for reform is to put us on a path toward a patient-centered health care system that preserves an individual's choice of doctor and plan, and assures high quality, affordable care for every American. Cost containment is a top priority. Health care costs have risen rapidly over the last two decades and are projected to rise even more rapidly in the future. Unless cost growth is slowed, the budget deficit will grow sharply and the rate of improvement in U.S. living standards will slow significantly. In addition, nearly 46 million Americans are currently without health insurance, and this number is projected to rise substantially. Lack of coverage can lead to worse health outcomes, while at the same time raising costs for both the government and the privately insured.

This study investigates the likely economic impact of health care reform that meets the President's goals of substantial cost containment and coverage expansion. At this point, the particulars of health care reform legislation are still being developed. In consultation with the Administration and a wide variety of experts, the House and the Senate are evaluating options and formulating proposals. As a result, our analysis must necessarily be viewed as illustrative of the possible benefits, rather than definitive. But, it should help to show that the current health care system in the United States is on an unsustainable path, and that reforming the system could have large economic benefits.

The analysis begins with a survey of the economics of the current and projected state of health care in the United States. While there is much that is right with America's health care system, particularly the rate of technological innovation, the rapid growth of this sector presents severe challenges to the American economy. As health care spending rises as a share of GDP under the current system, both households and governments will feel pressure on their budgets. Rising costs are also projected to cause continuing increases in the number of Americans without health insurance.

The study looks at the extent and sources of inefficiency in the current system. Comparisons with other countries suggest that Americans spend substantially more resources to achieve outcomes that are similar or less good than other developed countries. Similarly, comparisons across states show large variations in spending without commensurate differences in health. Thus, there appear to be substantial inefficiencies in the current system. The inefficiencies are the result of many well known problems in the American health care system, including flawed payment systems, high administrative costs, and too little emphasis on disease prevention.

The report then discusses how successful reform could reduce inefficiency and expand coverage. In particular, it describes a number of crucial "game changers" that could significantly slow the rate of health care spending growth and some of the measures likely to be involved in cost-effective coverage expansion.

The final two sections of the study examine the economic impacts of successful health care reform. The first examines the impact of slowing health care cost growth by improving efficiency in this key sector. Using a growth accounting framework, we find that improved

efficiency raises living standards by freeing up economic resources from the health care sector that can be used to produce other goods and services people demand. We also examine the impact of slower cost growth on the government budget deficit and private capital formation. Finally, we examine the effect on short-run macroeconomic performance.

The final section looks at the economic effects of health insurance coverage expansion. Many of the benefits of increased access to coverage are inherently hard to measure. But, others can be discussed in economic terms and quantified, at least roughly. We consider, for example, the improved economic well-being of the newly insured relative to the costs of insuring them. We also look at the effects of greater access to coverage on the labor supply behavior of the newly insured. Finally, we consider the impact of greater coverage, and innovations such as elimination of pre-existing condition restrictions, on labor mobility and the competitiveness of small businesses.

We find that the sum of these economic benefits could be very large if reform genuinely brings about a substantial reduction in the growth rate of real health care costs and expands coverage. Because such a substantial reduction will require hard choices and the cooperation of policymakers, providers, insurers, and the public, success is not guaranteed. But, the economic benefits of achieving successful reform would be very large.

## **II. WHERE WE ARE AND WHERE WE ARE HEADED**

An obvious place to begin the analysis is with a survey of the economics of the current and projected state of health care in the United States. One key issue is the share of GDP devoted to health care. This is a fundamental issue of resource allocation that affects the country as a whole, households, employers, and government at all levels. Another key economic issue concerns trends in insurance coverage.

### **A. Health Care Spending as a Share of GDP**

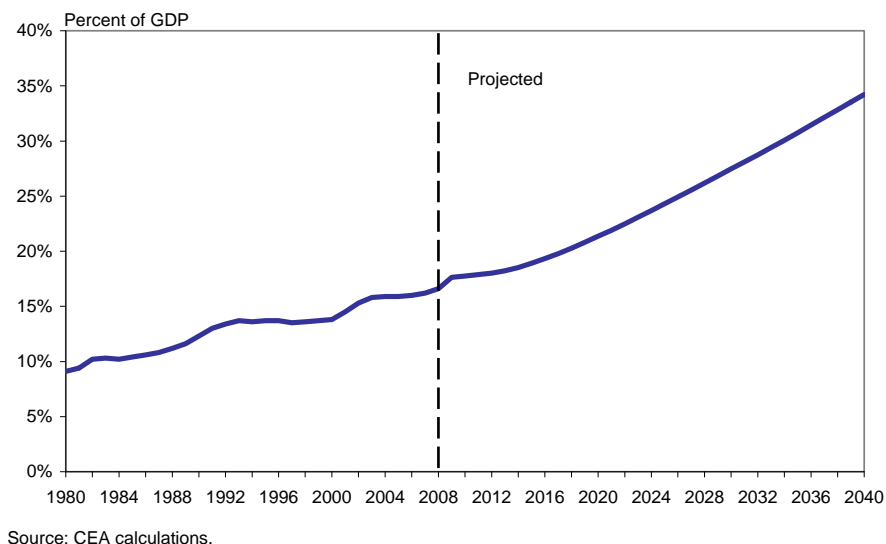
Real per person spending on health care has been increasing rapidly, rising over 40 percent in the past decade alone. As a result, as Figure 1 shows, the share of GDP devoted to health care almost doubled between 1980 and 2007.<sup>1</sup> In 2009, health care expenditures are expected to be approximately 18 percent of GDP.

Virtually all analysts agree that without major reform, health care's share of GDP will continue to rise rapidly. The projections in Figure 1 imply a health share of 28 percent in 2030 and 34 percent in 2040.<sup>2</sup>

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<sup>1</sup> U.S. Department of Health and Human Services, National Health Expenditure Accounts.

<sup>2</sup> For the short run, the projections use the spending projections from the National Health Expenditure Accounts, generated by the Centers for Medicare and Medicaid Services (CMS). For the longer run (2019 and onward), they assume that excess cost growth rates for Medicare, Medicaid, and all other health care spending each continue at their historical averages.

**Figure 1: National Health Expenditures as a Share of GDP, 1980-2040**

## B. The Effect of Rising Health Care Costs on Households

Rising health care costs have major implications for household well-being. For many workers, health insurance is obtained as part of their total compensation package along with wages and other fringe benefits, such as paid leave or a retirement plan. As Figure 2 shows, roughly 59 percent of individuals younger than 65 years of age receive employer-sponsored health insurance.

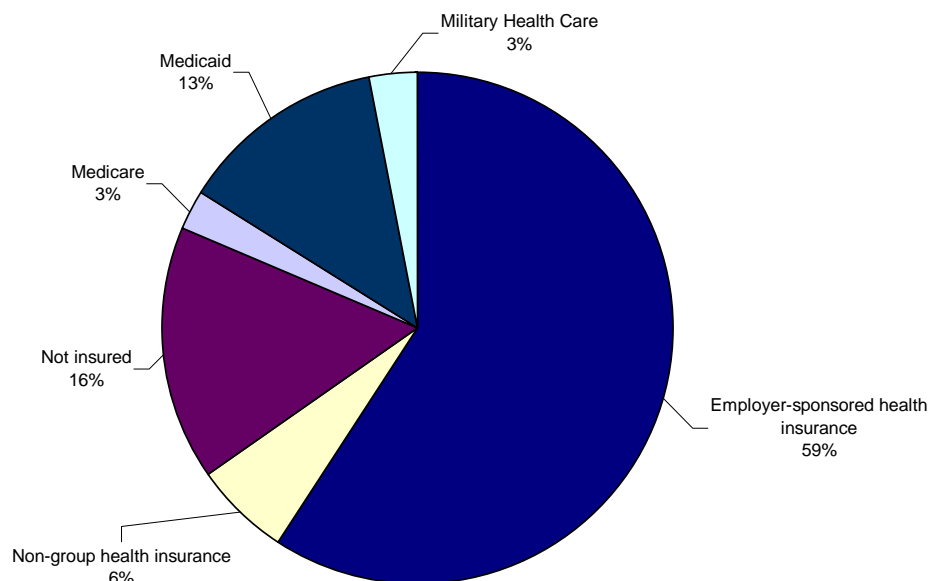
As health care costs have grown, so have employer-sponsored health insurance premiums. For example, between 1996 and 2006, the average annual premium for family coverage obtained through an employer grew from \$6,462 to \$11,941 (in 2008 dollars), an 85 percent increase in real terms.<sup>3</sup> These figures show the total amount paid for insurance through an employer-sponsored plan, including both the part paid by the employer and the part paid by the employee. If real premium growth continues at even 4 percent per year (which is less than the historical average of roughly 5.5 percent), premiums for family coverage will reach approximately \$25,200 per year by 2025 and over \$45,000 by 2040 (measured in 2008 dollars). Premiums for single coverage in 2006 were \$4,321 (in 2008 dollars). They are projected to reach approximately \$9,100 in 2025 and over \$16,000 in 2040.<sup>4</sup>

<sup>3</sup> U.S. Department of Health and Human Services, Medical Expenditure Panel Survey-Insurance Component (1996) and U.S. Department of Health and Human Services, Medical Expenditures Panel Survey-Insurance Component (2006).

<sup>4</sup> Data on single coverage health insurance premiums come from the 1996 to 2006 Medical Expenditure Panel Survey-Insurance Component. We then assume 4 percent annual real growth in future years, which is slightly lower than historical trends.



**Figure 2: Health Insurance Status of Non-Elderly Individuals in the United States, 2007**



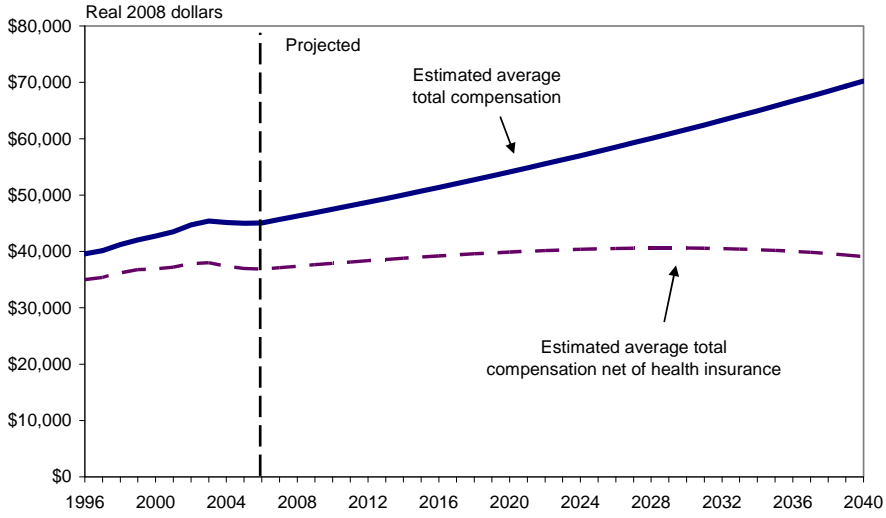
Source: U.S. Census Bureau. Income, Poverty, and Health Insurance Coverage in the United States: 2007.

Based on theory and the best available empirical evidence, economists generally believe that over the long run, workers pay for the rising cost of health insurance through lower wages.<sup>5</sup> To illustrate this relationship, the top line of Figure 3 shows historical and projected average annual total compensation (measured in 2008 dollars), which includes wages as well as non-wage benefits like health insurance. The bottom line of Figure 3 shows annual total compensation net of health insurance premiums. Since health insurance premiums are growing more rapidly than total compensation in percentage terms, an increasing share of total compensation that a worker receives goes to cover health insurance premiums. In this calculation, our premium measure is a weighted average of projected premiums for single and family coverage. The figure shows that compensation net of health insurance premiums is projected to eventually decline as premiums rise rapidly.<sup>6</sup>

<sup>5</sup> Pauly (1998).

<sup>6</sup> For this illustration, we construct a total compensation measure using data from the Bureau of Labor Statistics Payroll Employment Survey. We use hourly compensation and annualize it by multiplying by 2,080. We project total compensation by assuming the same rate of historical average annual growth between 1996 and 2006. Data on health insurance premiums for single and family coverage come from the 1996 to 2006 Medical Expenditure Panel Survey-Insurance Component. Our weights are proportional to enrollment by U.S. private establishment workers in single coverage and family coverage plans in 2006. We then assume 4 percent annual real growth in future years, which is slightly lower than historical trends.

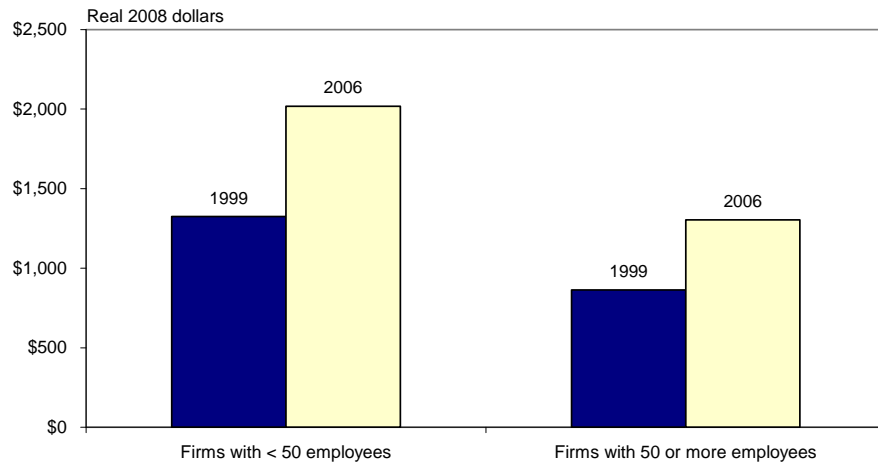
**Figure 3: Projected Annual Total Compensation and Compensation Net of Health Insurance Premiums**



Source: CEA calculations.

A different way in which households with employer-sponsored health insurance could be affected by rapid cost growth is by employers shifting to less generous plans. In particular, Figure 4 shows that employers are shifting toward plans with higher annual deductibles, which require workers and their dependents to pay more out-of-pocket when they receive care. Small employers appear to be shifting to less generous plans even more dramatically than large employers. A continuation of this trend would mitigate the effect shown in Figure 3, because it would reduce the growth rate of employer-sponsored health insurance premiums. But, workers would have to spend a larger fraction of their take-home pay on deductibles and co-payments.

**Figure 4: Average Employer-Sponsored Health Insurance Family Deductibles by Firm Size, 1999 and 2006**



Source: Agency for Healthcare Research and Quality. Medical Expenditure Panel Survey Insurance Component (MEPS IC): 1999 & 2006.

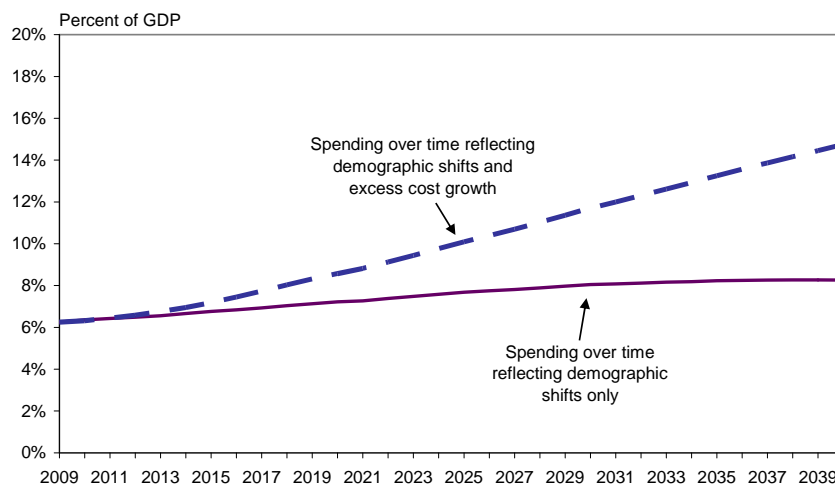
Note: Estimates are conditioned on plans that have a deductible provision.

### C. The Effect of High Health Care Costs on Government

The reason that rising health care costs have major implications for government budgets is simple: almost half of health care is paid for by Federal, state, and local governments through Medicare, Medicaid, CHIP, and other programs.<sup>7</sup> This fraction is expected to grow in the years ahead as the baby boom generation becomes eligible for Medicare, and as enrollment in Medicaid and CHIP increases.<sup>8</sup>

Figure 5 shows projected spending on Medicare and Medicaid as a share of GDP. In the absence of reform, Medicare and Medicaid expenditures are projected to rise from the current 6 percent of GDP to 15 percent in 2040. As the figure shows, only about one-quarter of this rise is due to the projected demographic shifts in the population. The remaining three-quarters is due to the fact that health care costs are projected to increase faster than GDP.

**Figure 5: Projections of Total Spending on Medicare and Medicaid as a Share of GDP, 2009-2040**



Source: CEA calculations.

Note: Total spending includes both Federal and state expenditures.

This projected trend in Medicare and Medicaid spending obviously has implications for the government budget. For a given path of revenue and non-health spending, the projected behavior of Medicare and Medicaid in the absence of reform implies an unsustainable rise in the Federal deficit. Since state governments pay for a large fraction of health care for low-income populations, particularly through Medicaid, rising health care costs also have serious implications for state budgets. And, because states must balance their budgets each year, the budgetary pressures are felt more quickly at the state level.

<sup>7</sup> U.S. Department of Health and Human Services, National Health Expenditure Accounts, Projections 2008-2018.

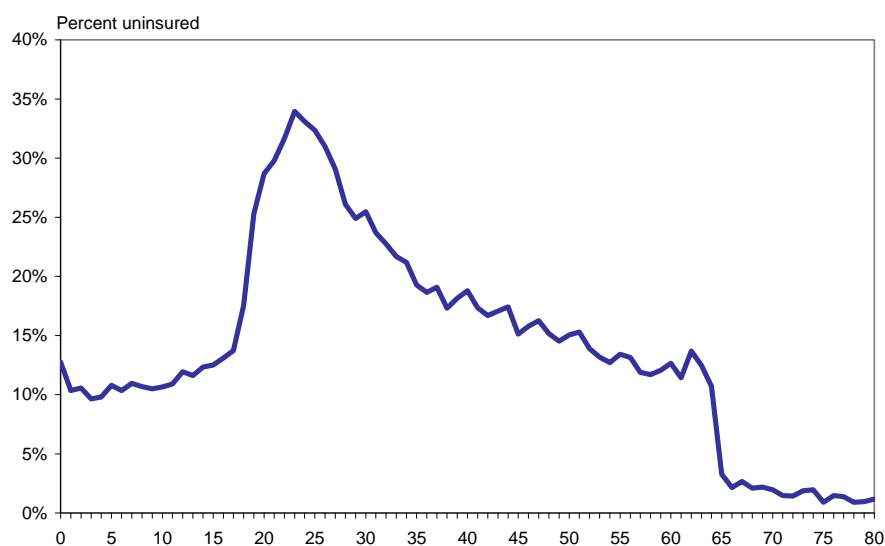
<sup>8</sup> Many low-income individuals also become eligible for Medicaid upon reaching the age of 65. According to CMS data at <http://msis.cms.hhs.gov/>, the fraction of Medicaid spending in 2006 for recipients who were 65 or older was 24.2 percent. Their corresponding share of all recipients was 10.2 percent. Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds (2008); Hadley et al. (2008).

## D. Trends in Insurance Coverage

In 2007, 45.7 million Americans did not have health insurance.<sup>9</sup> About one out of every six U.S. residents under the age of 65 is currently without health insurance.<sup>10</sup> Moreover, an even larger number of non-elderly individuals experience gaps in coverage over longer time periods. For example, one study found that 31.8 percent (82 million individuals) were uninsured for at least one month during the 2004 and 2005 calendar years.<sup>11</sup>

As Figure 6 demonstrates, the fraction of Americans without insurance varies substantially across ages, with the highest rates among young adults and the lowest rates among the elderly, virtually all of whom are covered by Medicare.

**Figure 6: Percent of Americans Uninsured by Age**



Source: U.S. Census Bureau. 2008 Annual Social and Economic (ASEC) Supplement.

One reason for the large number of uninsured in the United States is high and increasing health care costs. Individuals may become uninsured if out-of-pocket premium requirements are no longer affordable. They may also become uninsured if employers no longer offer health insurance as part of workers' total compensation.<sup>12</sup> Recent work suggests that rising health insurance costs (which are highly correlated with overall health care spending) can explain more than one-half of the declines in overall rates of health insurance coverage during the 1990s.<sup>13</sup>

<sup>9</sup> DeNavas-Walt et al. (2007).

<sup>10</sup> Based on CEA tabulations of the U.S. Census Bureau's March 2008 Current Population Survey.

<sup>11</sup> Rhoades and Cohen (2007). See also Cutler and Gelber (2009).

<sup>12</sup> See Chernew, Culter, and Keenan (2005). Cutler (2003) and Glied and Jack (2003) examine specifically declines in private coverage rates rather than overall coverage.

<sup>13</sup> Chernew, Cutler, and Keenan (2005).

Workers in small firms are especially vulnerable. In the United States, almost 96 percent of firms with 50 or more employees offer health insurance as compared with 43 percent of firms that have fewer than 50 workers.<sup>14</sup> Among small firms, the percentage offering health insurance peaked in 2001 and has been gradually declining since then.<sup>15</sup> On average, small firms face much higher premiums relative to large firms for a given level of coverage generosity.<sup>16</sup> This is primarily due to small firms facing higher administrative costs and insurers' concern about potential adverse selection risks.<sup>17</sup> Assuming that real growth in employer-sponsored insurance premiums does not slow from current rates, CEA projects that less than 20 percent of small employers will offer coverage by 2040.<sup>18</sup>

While the percentage of Americans with public insurance has been rising, it has not been sufficient to offset the decline in rates of private health insurance coverage.<sup>19</sup> Using historical changes in the percentage of non-elderly uninsured individuals to predict future trends, Figure 7 shows that 22 percent of the non-elderly population (roughly 72 million Americans) will be uninsured by 2040.<sup>20</sup>

As the number of uninsured rises, there is a corresponding increase in uncompensated care costs, which include costs incurred by hospitals and physicians for the charity care they provide to the uninsured as well as bad debt (for example, unpaid bills).<sup>21</sup> Both the Federal government and state governments use tax revenues to pay health care providers for a portion of these costs through Disproportionate Share Hospital (DSH) payments, grants to Community Health Centers, and other mechanisms.<sup>22</sup> In 2008, total government spending to reimburse uncompensated care costs incurred by medical providers was approximately \$42.9 billion.<sup>23</sup> In the absence of reform to slow the real growth rate of health spending and a subsequent rise in the uninsured, we project that the real annual tax burden of uncompensated care for an average family of four will rise from \$627 in 2008 to \$1,652 (in 2008 dollars) by 2030.<sup>24</sup>

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<sup>14</sup> U.S. Department of Health and Human Services, Medical Expenditure Panel Survey-Insurance Component (2006).

<sup>15</sup> Kaiser Family Foundation (2008).

<sup>16</sup> Gabel, McDevitt, and Gandolfo (2006).

<sup>17</sup> Lee (2002); Simon (2005).

<sup>18</sup> Projection was generated using the average annual change in small firm offer rates over the 2001 to 2006 period. For additional discussion of small firms' demand for health insurance, see Hadley and Reschovsky (2002) and Gruber and Lettau (2004).

<sup>19</sup> Cutler and Gelber (2009).

<sup>20</sup> The projection was generated using the historical average annual change in the percentage of the non-elderly population that is uninsured from 1999 to 2007, as reported by DeNavas-Walt et al. (2007). Given the lags in data availability on national health insurance coverage, our estimates do not fully incorporate the effect of the economic downturn on employer-sponsored coverage and its impact on future coverage rates. Moreover, the projection does not take into account other factors that may influence coverage rates, such as changes in public insurance eligibility or local labor market conditions.

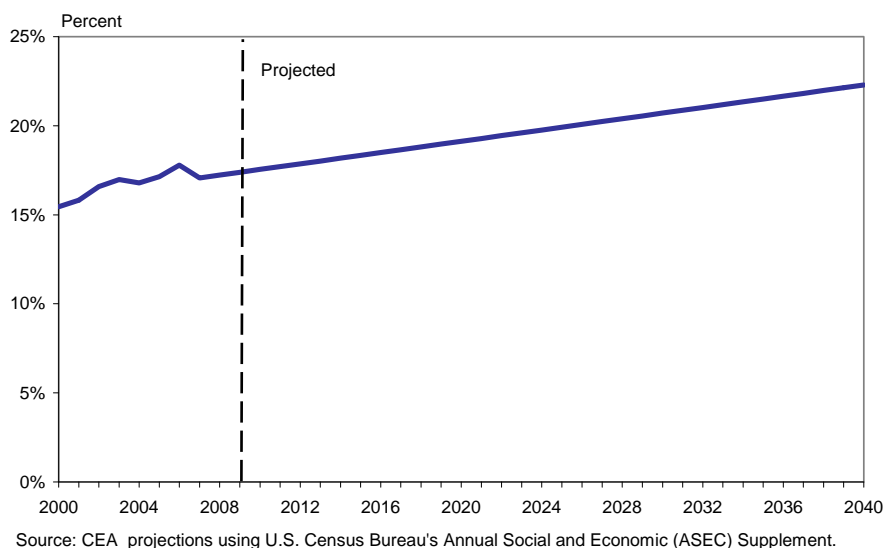
<sup>21</sup> American Hospital Association (2005).

<sup>22</sup> Hadley et al. (2008).

<sup>23</sup> The precise amount of government spending used to finance uncompensated care is challenging to estimate since these resources may not be well targeted to providers who treat the uninsured. See Hadley et al. (2008) for more discussion.

<sup>24</sup> Current year per capita estimates were based on the ratio of total estimated uncompensated care costs paid for by the government to the estimated number of full-year uninsured. We then assume that per capita spending would grow at 4 percent per year in real terms.

**Figure 7: Projected Percentage of the U.S. Population Under Age 65 without Health Insurance, 2000-2040**



Taken together, these facts and projections paint a compelling picture of the serious challenges facing the American health care system. Rapidly rising costs threaten to lead to stagnating take-home wages and devastating budget deficits. And, they are likely to greatly increase the number of people without health insurance over the next three decades.

### III. INEFFICIENCIES IN THE CURRENT SYSTEM

To understand what could be accomplished with health care reform, it is crucial to identify the inefficiencies present in the current system. This section details both the empirical evidence for such inefficiencies and the likely sources. It also describes the market failures leading to low rates of insurance coverage. The section then describes two key components of health care reform: genuine containment of the growth rate of health care costs and expansion of insurance coverage. Because genuine cost containment will be difficult, we describe some of the critical changes likely to be necessary to achieve success.

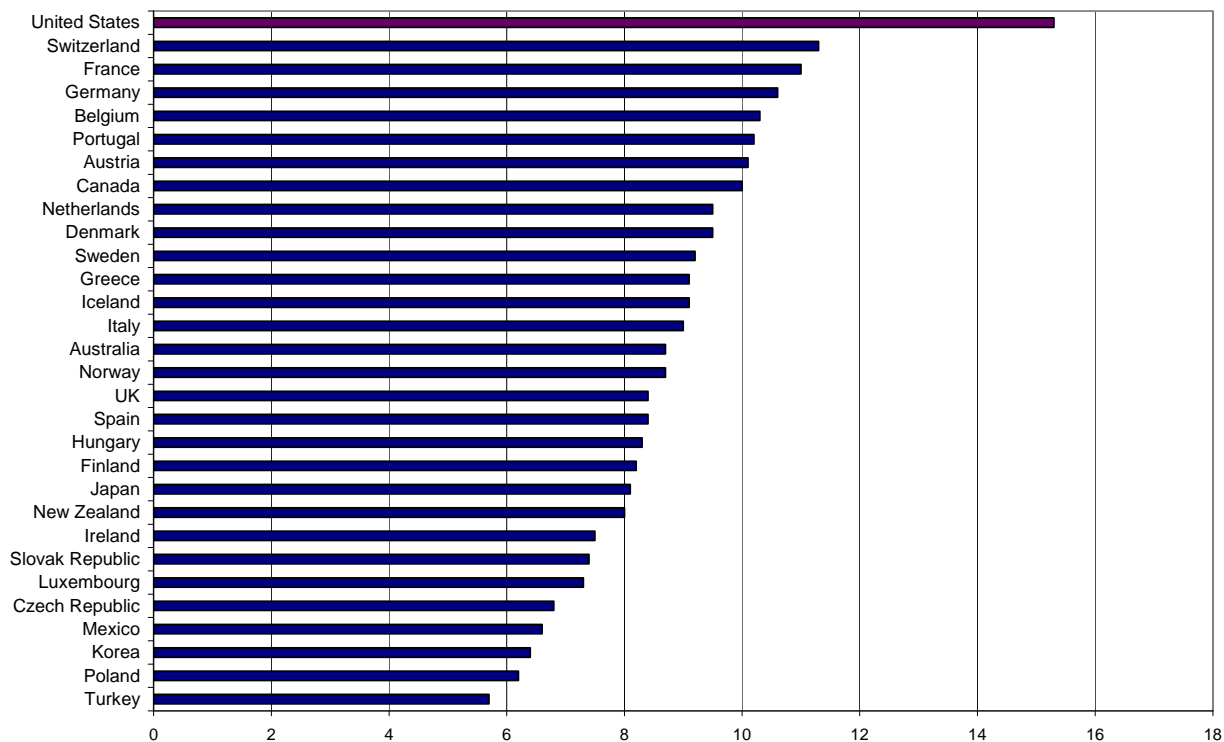
#### A. Quantifying the Amount of Inefficiency Using Comparisons

It is well known that the American health care system has many virtues. Over the past half century, American hospitals, physicians, pharmaceutical companies, and academic researchers have developed techniques and prescription drugs that permit the treatment of a host of previously untreatable conditions.<sup>25</sup> Nevertheless, two sets of comparisons strongly suggest that there are large inefficiencies in the American health care system.

<sup>25</sup> Cutler and McClellan (2001).

***International comparisons.*** The first set of comparisons is international. We devote a far larger share of our GDP to health care than other developed countries, but we do not achieve better health outcomes.<sup>26</sup> Figure 8 shows the fraction of GDP devoted to health care in a number of developed countries in 2006. According to the Organization for Economic Cooperation and Development (OECD), the United States spent 15.3 percent of its GDP on health care in 2006. The next highest country was Switzerland, with 11.3 percent. In most other high-income countries, the share was less than 10 percent.

**Figure 8: International Comparison of Health Care Spending as a Share of GDP, 2006**



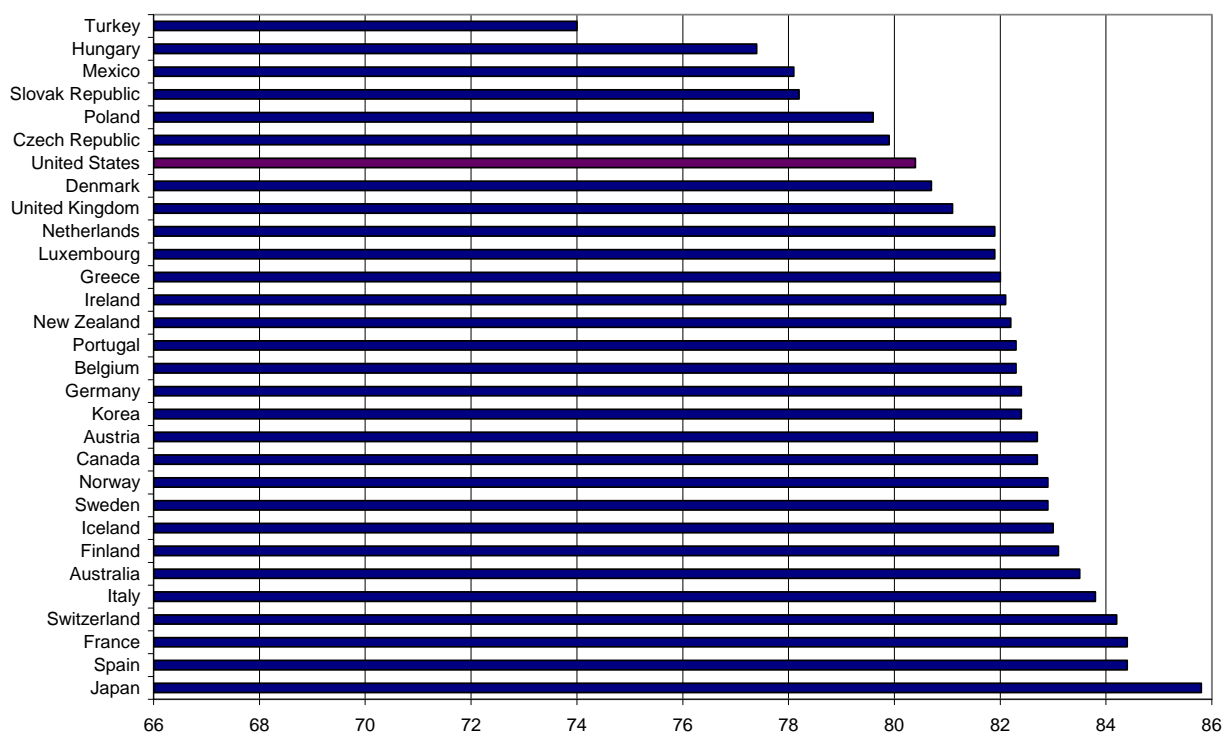
Source: Organization for Economic Cooperation and Development, OECD Health Data, 2008 (Paris: OECD, 2008).

Note: For countries not reporting 2006 data, data from previous years is substituted.

Figures 9a and 9b show female and male life expectancy in the same group of countries. The data show that life expectancy in the United States is lower than in any other high-income country—and many middle-income countries. The same result holds if one looks at infant mortality: despite the high share of health care expenditures in the United States, our infant mortality rate is substantially above that of other developed countries. Of course, many factors other than health care expenditures may affect life expectancy and infant mortality rates, including demographics, lifestyle behaviors, income inequality, non-health disparities, and measurement differences across countries.<sup>27</sup> But, the fact that the United States lags behind lower spending countries is strongly suggestive of substantial inefficiency in our current system.

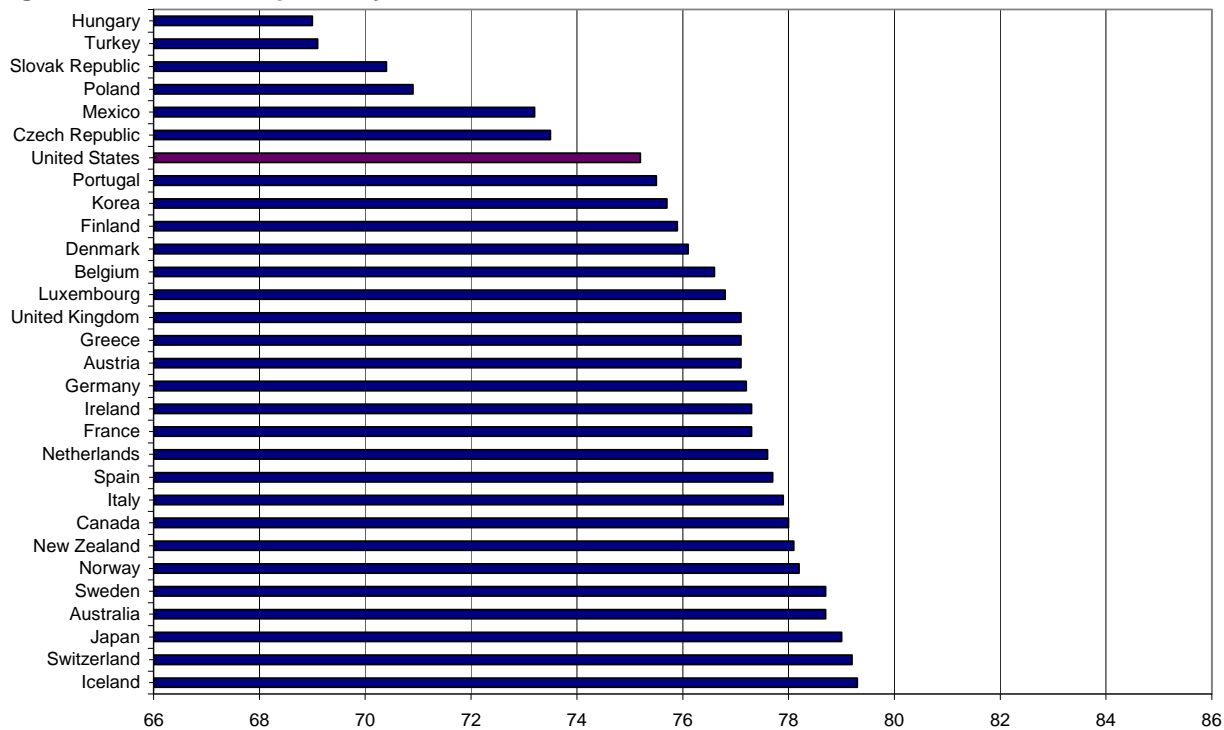
<sup>26</sup>Anderson and Frogner (2008).

<sup>27</sup>Robert Wood Johnson Foundation (2009). For more information on how differences in measurement and norms affect cross-country comparisons, see Congressional Budget Office (1992).

**Figure 9a: Female Life Expectancy at Birth, 2006**

Source: Organization for Economic Cooperation and Development. OECD Health Data, 2008 (Paris: OECD, 2008).

Note: For countries not reporting 2006 data, data from previous years is substituted.

**Figure 9b: Male Life Expectancy at Birth, 2006**

Source: Organization for Economic Cooperation and Development. OECD Health Data, 2008 (Paris: OECD, 2008).

Note: For countries not reporting 2006 data, data from previous years is substituted.



As a crude indicator, one can use the difference in health care's share of GDP between the United States and similar countries to gauge the magnitude of inefficiency. Looking at the average for Canada, Germany, Japan, Sweden, Britain, and France, it appears that the amount of resources devoted to health care in the United States that may be due to inefficiency is roughly 5 percent of GDP (15.3 percent in the United States in 2006, versus 9.6 percent, the average for the six comparison countries, all of which have better health outcomes).<sup>28</sup> Put another way, judging from the spending and outcomes in other countries, efficiency improvements in the U.S. health care system potentially could free up resources equal to 5 percent of U.S. GDP. This is, however, only a rough measure. It may well be that because of other differences between the various countries the true level is smaller. But, this estimate is a useful guidepost.<sup>29</sup>

Further evidence that the high level of spending in the United States reflects inefficiency comes from the behavior of spending over time. U.S. health care spending has risen dramatically in recent decades relative to spending in other countries, with no evident gains in relative outcomes. In 1970, we devoted only a moderately higher fraction of our GDP to health care than other high-income countries. As described above, today we spend dramatically more. Yet, during that period, life expectancy has actually risen less in the United States than in other countries.<sup>30</sup> Unless one believes that other influences on life expectancy have deteriorated dramatically in the United States relative to other countries, this suggests that much of the increased U.S. spending is inefficient.

**State comparisons.** A second set of comparisons is within the United States. Because U.S. states are more similar on most dimensions than independent countries, this comparison is even more compelling. There is a large body of evidence, much of it assembled by researchers associated with the Dartmouth Atlas of Health Care, showing that utilization of specific procedures and per capita health care spending vary enormously by geographic region, and that in many cases these variations are not associated with any substantial differences in health outcomes.<sup>31</sup> Figure 10, for example, shows the wide variation in spending per Medicare enrollee across the United States. Large variation remains even after adjusting for differences in the age, sex, and race of enrollees across states.<sup>32</sup>

Analyses suggest that areas with high rates of per capita spending have higher intensity of services in an inpatient setting, higher rates of minor procedures, and greater use of specialists and hospitals (“supply-sensitive services”). Factors such as differences in medical care prices, patient demographics, health status, and income levels cannot fully explain this variation.<sup>33</sup>

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<sup>28</sup> OECD (2008).

<sup>29</sup> A recent report by McKinsey Global Institute (2008) concluded that the United States spends \$630 billion more than expected on health care after adjusting for differences in wealth. This is over 4 percent of GDP in 2008.

<sup>30</sup> Garber and Skinner (2008).

<sup>31</sup> Wennberg, Fisher, and Skinner (2002).

<sup>32</sup> Fisher, Bynum, and Skinner (2009).

<sup>33</sup> Research suggests that there may be additional contributing factors, including workforce patterns and end-of-life care education. See Baicker and Chandra (2004) and Fisher et al. (2003) for additional discussion.



care are classic examples of markets in which asymmetric information is important—that is, where one party to a transaction is likely to have more information than another. In health insurance markets, asymmetric information can lead to adverse selection, whereby individuals who know they are likely to have high health care costs are more likely to seek health insurance. Information asymmetries also lead to moral hazard, where insurance coverage may insulate patients from cost consciousness and promote unnecessary care. In considerable part because of these market failures, government programs and policies play a large role in health care. This means that in many cases incentives are not determined by market forces.

These departures from the conditions that would lead to efficient outcomes manifest themselves in seven main drivers of inefficiency in the U.S. health care system.

***Provider incentives.*** Most provider payment systems are fee-for-service, which creates financial incentives for doctors and hospitals to focus on the volume of services that they deliver rather than the quality, cost, or efficiency of care delivery. In general, payment systems do not reward higher quality and value. In some cases, they reward poor quality of care by paying for the costs associated with additional medical care necessary to fix errors that could have been prevented.<sup>35</sup> Providers also have strong financial incentives to compete on the basis of technology adoption rather than price, leading to an excess supply of high technology equipment and services (for example, MRI machines and minimally invasive vascular diagnostic and procedure suites) and accelerated replacement of hospital beds in local markets. In turn, this can lead to higher rates of utilization and costs.<sup>36</sup> Also, current payment systems generally do not reward providers for effectively managing patients with chronic illnesses or educating patients about preventing disease through lifestyle changes such as exercise, improved nutrition, and smoking cessation. Finally, some academic research has suggested that some physicians practice “defensive medicine,” that is, supply additional services that are of marginal or no medical value, including additional diagnostic tests and unnecessary referrals to specialists.<sup>37</sup>

***Limited financial incentives for consumers.*** While health insurance provides valuable financial protection against high costs associated with medical treatment, current benefit designs often blunt consumer sensitivity with respect to prices, quality, and choice of care setting.<sup>38</sup> There is well documented evidence that individuals respond to lower cost-sharing by using more care, as well as more expensive care, when they do not face the full price of their decisions at the point of utilization.<sup>39</sup> Additionally, most insurance benefit designs do not include direct

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<sup>35</sup> Preventable re-admissions are an example. According to Medicare Payment Advisory Commission (MEDPAC), about 18 percent of Medicare hospital admissions result in re-admissions within 30 days of discharge, which amounts to an extra \$15 billion a year spent on re-admissions. About \$12 billion of this amount is spent on potentially preventable re-admissions (Hackbarth, 2009). A second example is payment for drug-related injuries. In a recent Institute of Medicine study, researchers estimated that medication errors injure at least 1.5 million people each year and generate at least \$3.5 billion in health care spending (Institute of Medicine, 2006).

<sup>36</sup> U.S. General Accounting Office (2008).

<sup>37</sup> Studdert et al. (2005).

<sup>38</sup> This source of inefficiency is driven in part by the tax treatment of health insurance, which over time has led to very generous health insurance products (e.g., low deductibles and coinsurance) being offered in the market, particularly in employer settings.

<sup>39</sup> The classic illustration of this relationship is from the RAND Health Insurance Experiment (Manning et al., 1987). Additional evidence can be found with respect to emergency room visits (Selby, Firemand, and Swain, 1996;

financial incentives to enrollees for choosing physicians, hospitals, and diagnostic testing facilities that are higher quality and lower cost.

**Pricing of medical treatment.** There are relatively few forces in health care markets that lead to price reductions in the way that we observe price reductions in other sectors of the economy when new technologies are introduced and diffused. Many administered pricing systems, such as those used by Medicare and some private plans, are slow to adjust for productivity improvement or decreasing marginal costs of production that come as new medical procedures are routinized and providers acquire experience. One example of this is CT scan technology, whereby a procedure on an older 8- or 16-slice machine may be reimbursed at a similar rate as one on a newer 32- or 64-slice model. Even though the newer machine is faster, which can lead to greater throughput and a lower average cost per scan, prices are not adequately updated to reflect this, leading to potential overpayment.<sup>40</sup>

**Fragmentation.** Within the United States, patients receive care from a variety of independent and often competing organizations. Poor information flows across provider organizations and misaligned incentives can lead to higher utilization and costs, as well as poorer health outcomes.<sup>41</sup> There is some evidence that vertically integrated provider systems (such as Kaiser Permanente, Geisinger, and Mayo Health System) can better manage costs and coordinate high-value treatment plans with patients, resulting in higher quality of care.<sup>42</sup> Fragmentation of the system also leads to higher administrative costs. Because there is a lack of standardization around billing systems, forms, and benefit designs, additional personnel are needed in hospitals and physicians offices to handle administrative functions for different payers. There is a wide range of estimates regarding just how much higher administrative costs are in the United States relative to other countries given our complex multiple-payer system. For example, a report by the McKinsey Global Institute estimates that the excess administrative costs associated with the U.S. multi-payer system are approximately \$100 billion (in 2008 dollars) per year.<sup>43</sup>

**Lack of information for providers.** Medical care has become increasingly specialized and complicated, and patients do not always receive care that fully complies with current clinical guidelines.<sup>44</sup> Often, it is exceedingly difficult for providers to keep up with the best available evidence regarding the clinical risks and potential health benefits of alternative treatments. In the United States, there are few coordinated efforts to objectively quantify the benefits of new devices, drugs, and procedures for diagnosing and treating diseases relative to their predecessors. This lack of information for providers is likely an important part of explaining the variation in treatment patterns, and may help to explain why the United States spends a great deal on procedures and treatments with little objective marginal value.

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Wharam et al., 2007); and the effect of tiered cost-sharing for pharmaceuticals (see Gibson, Ozminkowski, and Goetzl, 2005, for a review).

<sup>40</sup> Competitive bidding systems would address some of these weaknesses, but have only been adopted in limited capacities by public insurance programs. See Dowd, Feldman, and Christianson (1996) for additional discussion of competitive bidding and Cutler (2009) for discussion of productivity improvement in health care.

<sup>41</sup> Cebul et al. (2008).

<sup>42</sup> For example, see Feachem, Sekhri, and White (2002).

<sup>43</sup> McKinsey Global Institute (2008).

<sup>44</sup> A study by McGlynn et al. (2003) found that only 54 percent of acute care and 56 percent of chronic care provided by physicians conformed to clinical recommendations in the medical literature.

**Lack of comprehensive performance measurement and feedback.** Performance measurement provides a way for physicians to determine how well or poorly they are doing with respect to delivering recommended care, using resources, and patient outcomes.<sup>45</sup> There is some evidence that when physicians receive data on their clinical performance, they change behavior in ways that can improve outcomes.<sup>46</sup> Currently, a large proportion of physicians do not get timely feedback on the quality of care they provide and their resource use relative to that of their peer group, making it difficult for them to know how they compare in order to modify their practice behavior.<sup>47</sup>

**Lack of information for consumers.** During the past several years, there have been important investments by government and private organizations to develop better information resources for consumers.<sup>48</sup> However, large gaps still exist with respect to the availability of information on the effectiveness of alternative treatment options, preventive care recommendations, physician quality, and transaction prices for specific medical services. Without this, consumers are not able to make informed decisions when they select providers and treatments—choices that may affect their out-of-pocket costs, the quality of care they receive, and their health outcomes. For example, when a patient lacks information on the number of times a provider has performed a particular procedure, he or she may choose to go to a low-volume hospital for a complex procedure, even though there is very good evidence that this choice will put him or her at higher risk of complications and death.<sup>49</sup>

### **C. Market Failures Leading to High Numbers of Uninsured**

The preceding discussion focuses on the sources of unnecessarily high costs related to the delivery of medical care. But, the large number of individuals and families without health insurance represents another major inefficiency of our health care system. In a well-functioning market, individual choices lead to the desirable quantities of goods and services being purchased, and the fact that many individuals choose not to purchase some goods is not usually a cause for concern. The market for health insurance, however, is not a well-functioning market. There are several market failures—that is, factors that cause the costs and benefits that households face to differ from the true costs and benefits. These market failures result in too few individuals and households having insurance.

**Asymmetric information and adverse selection.** The most important market failure causing inefficiently low coverage is adverse selection. An insurance company will not price

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<sup>45</sup> Institute of Medicine Report Brief (2005).

<sup>46</sup> The New York State Cardiac Surgery Reporting System provides one such example. Chassin (2002) reports some evidence that measurement and public reporting on cardiac surgeons' performance led to improved patient outcomes.

<sup>47</sup> A Commonwealth Fund study by Audet, Doty, Shamasdin, and Schoenbaum (2005a) found only one-third of physicians had any comparative performance data available to them, with health plans being the most common source. See also, Audet, Doty, Shamasdin, and Schoenbaum (2005b)

<sup>48</sup> Two examples of government information resources include Hospital Compare and Nursing Home Compare, which are found on the U.S. Department of Health and Human Services, Center for Medicare and Medicaid Services website. Other resources include the Leapfrog Group and HealthGrades.

<sup>49</sup> See for example, Birkmeyer et al. (2002), Gaynor, Seider, and Vogt (2005), and Huckman and Pisano (2006).

individual health insurance at the average cost of covering the uninsured. If it did, the individuals who purchased the policy would be disproportionately those who knew they were likely to have high health care costs, and so the company would lose money. To address adverse selection risks, most insurers use medical underwriting and incorporate a risk premium into the actual price of coverage. As a result, the price of health insurance that a typical person would face in the individual market greatly exceeds the average cost of covering him or her.<sup>50</sup> Moreover, a significant proportion of individuals may be uninsured because they are denied coverage as a result of medical underwriting. For example, a 2007 survey by America's Health Insurance Plans found that in a sample of about 1.5 million individual applicants underwritten for coverage, among those between 50 and 64 years of age, approximately 22 percent of applicants were denied coverage based on medical underwriting.<sup>51</sup>

***Liquidity constraints and uncompensated care.*** Imperfections in credit markets reduce the ability of households, especially low-income households, to obtain goods and services with immediate costs but long-term benefits. Health insurance is a classic example of such a good. Similarly, the uninsured obtain some free medical care through emergency rooms, free clinics, and hospitals, which reduces their incentives to obtain health insurance.<sup>52</sup>

***Positive externalities.*** When an uninsured person obtains health insurance and thus better access to care, there are benefits to others. For example, in the case of infectious diseases such as influenza or tuberculosis, appropriate diagnosis and care may prevent the spread of illness. This is the classic definition of a positive externality—a benefit that accrues to someone other than the decision-maker. This is another force that works in the direction of causing too few individuals and households to have health insurance.

#### **IV. KEY ELEMENTS OF SUCCESSFUL HEALTH CARE REFORM**

As discussed above, the key goals of health care reform are reducing the growth rate of costs, while maintaining choice of doctors and health plans, and assuring quality, affordable health care for all Americans. At this point, the specifics of reform are far from settled. In the analysis that follows, we therefore discuss relatively stylized versions of what successful reform could accomplish.

##### **A. Slowing Cost Growth**

On May 11, 2009, representatives from many facets of the health care system, including doctors, hospital administrators, health insurers, pharmaceutical firms, medical device manufacturers, and unions, met with the President and made clear their commitment to health care reform that lowers cost growth and covers all Americans. These representatives pledged to do their part to achieve the goal of reducing the annual growth rate of health care costs by 1.5

<sup>50</sup> Similar adverse selection problems exist for the self-employed and small employer groups.

<sup>51</sup> America's Health Insurance Plans (2007).

<sup>52</sup> Herring (2005).

percentage points. They agreed with the President that this goal is achievable only in the context of comprehensive reform.<sup>53</sup>

This ambitious goal of slowing annual cost growth by 1.5 percentage points would genuinely “bend the curve” of rising health care expenditures. In the analysis that follows, we take this degree of cost containment as one key case. The health care representatives who signed the letter to the President pledged to do their part to rein in cost growth as soon as possible. However, to be conservative, we assume that widespread cost containment will take time to spread throughout the health care system. For this reason, we assume costs will follow their baseline trajectory until 2013 and then cost growth will be slower from 2014 onward. To further err in the direction of conservatism, we also analyze more moderate degrees of cost growth containment. In particular, we look at the implications of reducing annual health care cost growth by 1.0 and by 0.5 percentage points.

Although cost growth containment of 1.5 percentage points per year may sound small, it would, in fact, be a tremendous accomplishment. As we show in the next section, it would have dramatic implications for the share of GDP devoted to health care in 2040. Even with the support of crucial participants, achieving this level of cost containment will be challenging. The inefficiencies in our health care system are large and complex, and they cannot be eliminated quickly or easily. And, containing costs will require taking on groups that profit from the current system. That is why health care reform is often described in terms of a need for game changers. We will not be able to fix the health care system through simple, one-time actions. Instead, we need reforms that will alter the incentives of providers, patients, and other stakeholders in order to change the direction in which the system is moving. A change in direction can cumulate over time into far-reaching gains for our health care system.

To give a sense of the difficulties involved, it is useful to describe some of the broad changes likely to be necessary to control cost growth. In each case, we try to give specific examples of actions in the category. Importantly, key stakeholders in the health care system agree that these actions are needed.

**Reorienting the financial incentives of providers toward value rather than volume.**

Payment systems should be modified to encourage more appropriate use of resources by providers, particularly in the outpatient setting. Systems should reward providers who deliver care that adheres to evidence-based guidelines and should not pay for preventable medical errors. Examples may include bundling payments for certain types of outpatient care or procedures, using blended payments when there are multiple treatments that are mutually effective, and denying payments for certain health care associated infections and “never events.”<sup>54</sup> Given the extensive variation in utilization and spending, other reforms might include directly targeting individual providers or geographic regions that are high-end outliers.<sup>55</sup> Payment systems should

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<sup>53</sup> For the text of the letter, see:

[http://www.whitehouse.gov/assets/documents/05-11-09\\_Health\\_Costs\\_Letter\\_to\\_the\\_President.pdf](http://www.whitehouse.gov/assets/documents/05-11-09_Health_Costs_Letter_to_the_President.pdf).

<sup>54</sup> Examples of health care associated infections and “never events” include foreign objects retained after surgery, air embolism, blood incompatibility, pressure ulcers (stages III and IV), burn and electric shock, catheter-associated urinary tract infection, and surgical site infection associated with certain surgeries.

<sup>55</sup> Here it would be very important to use risk-adjustment methods to control for differences in patient demographics, health status, and medical care prices that may affect utilization and spending.

also create positive incentives for promoting disease prevention activities and helping patients manage chronic conditions effectively.

**Looking systematically at what works and what doesn't in order to provide more high-value care and less care that is of low value.** For many types of medical conditions, a patient may have a choice of several methods or treatments, each having different benefits or risks. Systematic examinations of the merits of different treatments and dissemination of the results of those examinations to patients and providers is one mechanism for promoting high-value care. Health information technology may play an important role in increasing the rate at which new information broadly diffuses to providers and is incorporated into practice behavior.

**Expanding performance measurement and provider feedback.** Performance measurement includes collecting and summarizing information about clinical quality, consumer satisfaction, and resource use of provider practices. Typically, hospitals and physicians face reporting requirements across the set of insurers with whom they contract. One potential way to increase efficiency is to facilitate the development of a set of performance measures that all providers would adopt and report.<sup>56</sup> Widespread adoption of health information technology can help in this process by increasing the rate at which data can be exchanged. Additionally, new efforts could be made to generate risk-adjusted provider performance profiles to encourage quality improvement and to inform consumer decision-making around quality.

**Reducing fragmentation.** When multiple, independent providers are used in the care of a patient and information does not flow well between them, quality of the care can be poor and resources used can be greater than if care had been more closely coordinated. Some have advocated strategies that promote reduced fragmentation and greater coordination through the use of financial incentives such as bundled payments for specific episodes of care. Another type of fragmentation is administrative. The unique systems of payers lead to greater administrative costs for hospitals and physicians. One proposed strategy would be to create a standardized electronic billing, benefit determination, preauthorization, and patient payment determination method that could be used by all providers and payers and lead to administrative simplification.

**Aggressively targeting fraud and abuse.** Anecdotal evidence suggests that there is significant fraud and abuse in the Medicare and Medicaid programs, including the submission of bills for services not rendered, billing individually for services that should have been paid for as a single payment, “upcoding” of services to receive a higher payment, submitting bills for non-covered services, and providing services that are not medically necessary.<sup>57</sup> Modernizing data systems that enable real-time detection of fraudulent activities and increasing personnel to investigate suspicious activity are two types of proposals that would help the Federal government and states become more effective at identifying and eliminating these costly practices.

**Giving patients a greater role.** Engaging patients in medical decision-making can lead both to better alignment of treatment strategies with patient preferences and to lower costs: well informed patients are more likely to be comfortable with less invasive, extensive, and expensive

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<sup>56</sup> Of course, different sets of measures could be specified for different patient populations.

<sup>57</sup> Becker, Kessler, and McClellan (2005).



treatment options.<sup>58</sup> Another strategy involves creating financial incentives for patients needing complex surgeries to use high quality, lower total cost “centers of excellence.”<sup>59</sup> It will also be important to encourage individuals through education and incentives to make healthier lifestyle choices, such as exercising and healthy eating. This is important because healthier lifestyle choices have positive, direct benefits on lowering costs.<sup>60</sup>

**Rewarding high-value technology creation that reduces morbidity, mortality, and total spending over the lifetime.** In most fields, technological progress is generally cost-reducing as individuals discover more effective ways of accomplishing things that were already being done. In medicine, however, technological progress in recent decades has been almost exclusively cost-increasing, without generating a commensurate increase in value. Undoubtedly, provider incentives, which largely reward finding an expensive way of treating a previously untreated condition rather than finding a less costly alternative to an existing treatment, contribute to this trend.

## **B. Coverage Expansion**

Successful health care reform will also expand coverage. In our analysis of the economic effects, we consider expansion that covers all of the uninsured. If the expansion is not complete, its economic impacts would obviously be smaller.

A number of developments will be needed to overcome the problems of adverse selection and other market failures in the provision of health insurance.

**Improving health insurance purchasing options for individuals and small employers.** One proposed strategy for improving the functioning of the individual and small-group markets is to create an insurance exchange. An exchange could perform several functions, including coordinating health plan participation; negotiating premiums with insurers; creating and disseminating consumer information about benefit designs, premiums, and plan quality; facilitating enrollment; and coordinating risk adjustment to reduce insurers’ risk in the event of adverse selection within the exchange. By adopting an exchange, it is possible to reduce the cost to individuals and small employers that is associated with shopping for coverage and to generate greater efficiencies in the marketing and distribution of coverage, potentially leading to lower premiums and higher coverage rates.<sup>61</sup>

**Ensuring that all individuals, regardless of health status, can purchase coverage.** Changing the rating rules to include guaranteed issue, elimination of pre-existing condition exclusions, and modified community rating will ensure that people who would historically pay very high premiums or not be insurable are able to have access to more affordable coverage. This change will provide greater security for individuals and families who fear losing their

<sup>58</sup> O’Connor, Llewellyn-Thomas, and Flood (2004).

<sup>59</sup> Lower total cost takes into account that patients treated at “centers of excellence” may have lower risk of complications and lower future costs associated with the episode of care.

<sup>60</sup> See Finkelstein, Fiebelkorn, and Wang (2003) for a discussion of the impact of obesity on health care spending.

<sup>61</sup> See Marquis et al. (2006) and Abraham, DeLeire, and Royalty (2009) for discussion of the role of price and non-price barriers on the purchase of insurance by individuals and small firms.

employer-sponsored health insurance if they become unemployed or change jobs.

**Improving the affordability of health insurance for lower-income individuals and families.** For a significant proportion of individuals and families, the annual cost of health insurance would simply consume too large of a share of the family budget to render it affordable. To ensure that all individuals are able to reap the benefits of coverage, additional financial assistance may be made available to lower-income individuals and families.

Though we describe them separately, it is important to note that there may be interactions between expanding access to coverage and slowing cost growth. For example, wider access to primary care, with an emphasis on prevention, is likely to help restrain cost growth. Likewise, an insurance exchange that standardizes application forms and streamlines insurance purchase may slow the growth of administrative costs. Thus, the distinction between cost growth containment and coverage expansion may be a somewhat arbitrary one.

## **V. THE ECONOMIC IMPACT OF SLOWING HEALTH CARE COST GROWTH**

The preceding section describes some of the reforms that could help slow health care cost growth. This section considers the possible economic impact of slower cost growth. What would be the likely impacts on both longer-run standards of living and shorter-run macroeconomic performance? We find that if we make the hard choices necessary to restrain cost growth significantly, the economic benefits we can hope to achieve are potentially very large.

### **A. Improved Efficiency Raises Standards of Living**

The first effect that we consider is the direct impact of improved efficiency in the health care system. Restraining cost growth fundamentally implies that we gain efficiency in the health care system. This means that we can achieve a given set of outcomes using fewer resources. If we do not slow the growth rate of health care spending, we will have to devote a larger and larger share of our labor force and capital stock to health care. Efficiency improvements will free up some of those resources to produce other goods that we value, thereby directly raising our standards of living.

**Methodology.** To gauge the potential magnitude of the effects, we need to specify the possible efficiency gains in health care. As discussed above, we consider three scenarios: a slowdown in annual cost growth of 0.5, 1.0, and 1.5 percentage points. In all three scenarios, the reductions in cost growth are assumed to begin in 2014 and continue through the end of the simulation in 2040. As stressed above, none of these scenarios is intended as an exact representation of what an actual reform program would do. Rather, the purpose is to provide a general indication of the types of benefits that could come from reform that slows real health care cost growth and expands coverage. Also, as stressed above, achieving any of these degrees of cost growth containment will be challenging.

Using these alternative scenarios for possible health care savings, we then consider the possible effects of these savings on living standards and economic growth. To do this, we use a standard growth accounting framework. This framework is described in detail in Appendix 1. In this subsection, we consider only the direct gains from the efficiency improvements in health care. Suppose, for example, that the cumulative efficiency improvements have lowered health care costs by 5 percent in 2018. This means that we can obtain the same health care outcomes using 5 percent fewer economic resources than we would have needed without reform. Since health care was projected to be 20 percent of the economy in 2018, this means that reform will have freed up 5 percent of 20 percent, or 1 percent, of our economic resources. These resources can be used to produce other goods and services that we value. Thus, GDP would be about 1 percent higher than it would have been in the absence of reform.

One subtlety is that the national income accounts often measure the output of the health care system using inputs (doctors visits, for example) rather than outcomes (successful treatments, for example). As a result, obtaining the same outcomes using fewer inputs might reduce *measured* GDP in the health care sector. “True” or “properly measured” GDP in health care (that is, the quantity of health care obtained) would be unchanged, however, leaving only the increases in other goods and services. In this study, we focus on the theoretical construct of properly measured GDP because we are concerned with the effect of health care reform on real living standards, not with the imperfections of national income accounting.

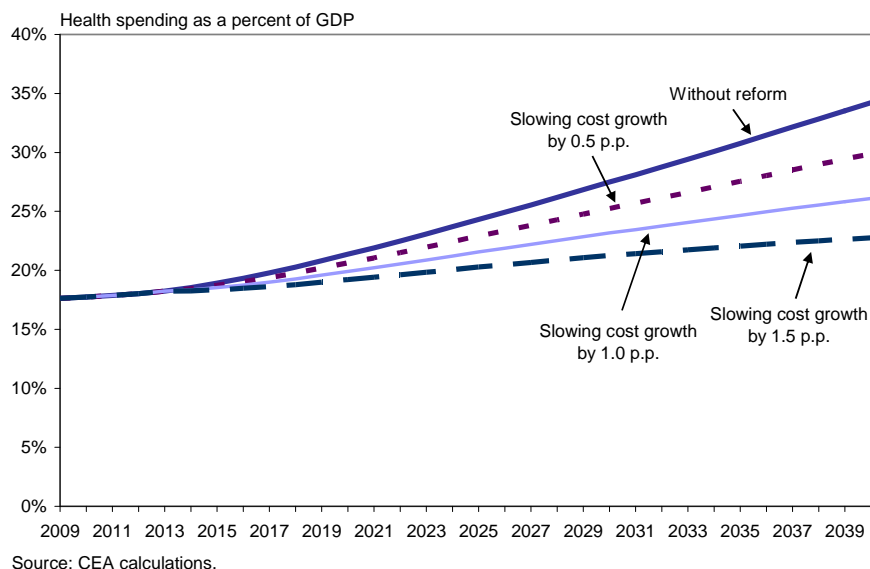
***Effects on health expenditures.*** Figure 11 shows the implications of the different scenarios for the path of health care spending as a share of GDP.<sup>62</sup> Under the assumption that health care costs continue to grow at historical rates, the share would rise by about 0.5 percentage points per year, from 18 percent in 2009 to 34 percent in 2040. In the first scenario (0.5 percentage point slowing in cost growth), the share of GDP in 2040 is 30 percent; in the second (1.0 percentage point slowing), it is 26 percent; and in the third (1.5 percentage point slowing), it is 23 percent.

One way to assess the reasonableness of these figures is to return to the comparison of the United States with other high-income countries. The share of the economy devoted to health care in those countries is generally between one-half and two-thirds that in the United States. Thus, substantial savings should be possible. At the same time, the United States is, and almost certainly will remain, the technological leader in health care, and Americans value high quality health care enormously. Thus, bringing our health share down by over a third relative to its current path is likely to be very challenging. This discussion suggests that the cost savings envisioned in the first scenario are almost certainly achievable, while those in the third are probably near the upper bound of what is feasible.

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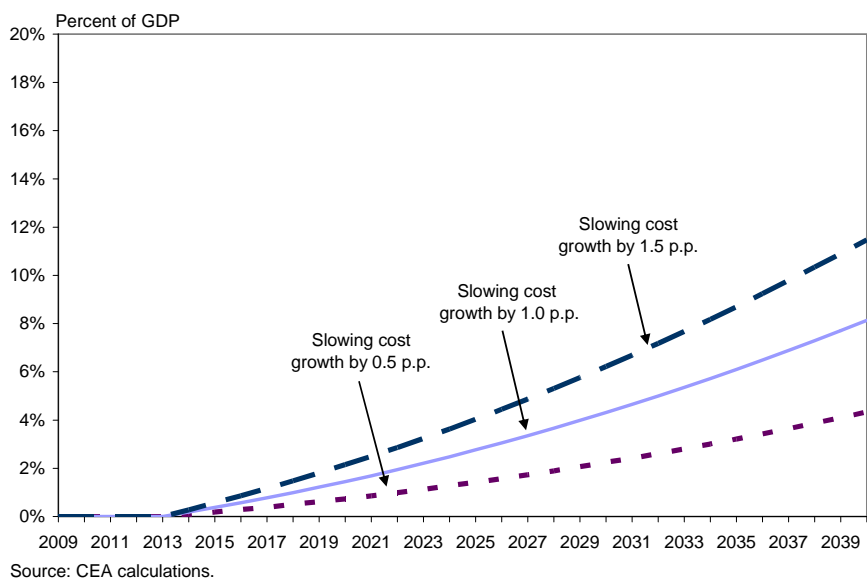
<sup>62</sup> The details of this calculation are given in Appendix 1. Health care expenditures are expressed as a percent of estimated GDP, where the estimate includes the impact of increased efficiency.

**Figure 11: Different Scenarios for Path of Health Care Expenditures**



***Effects on GDP.*** Figure 12 shows the implied output gains from direct effects of the efficiency improvements under the three scenarios. The figure shows that with a 0.5 percentage point reduction in annual cost growth, GDP is about 2 percent higher in 2030 than without reform. With a 1.0 percentage point reduction, the increase is 4 percent. And, with a 1.5 percentage point reduction, it is 6 percent. The increases are even larger in later years.

**Figure 12: Impact on GDP of Improved Efficiency in Health Care**



Note that all of the cost savings are assumed to take the form of efficiency gains—getting the same health output at a lower cost. To the extent that slowing the growth of costs is accompanied by quality improvements or the elimination of painful, unnecessary, or even harmful tests or procedures, this methodology understates the gains from health reform. To the extent that some of the savings come from eliminating spending with low but not zero benefits, this analysis overstates the benefits.

## **B. Slower Cost Growth Would Prevent Disastrous Budgetary Consequences and Raise National Saving**

In the absence of reform, more and more of our economic resources will be devoted to health care. The preceding discussion focuses on the fact that this directly reduces our ability to produce other things that we value. The fact that much of health care is paid for by the government creates additional effects. Recall that without reform, Federal spending on health care as a share of GDP will rise rapidly. As a result, in the absence of potentially painful and harmful large tax increases or cuts in other government spending, the United States would experience rapidly rising deficits. Rising deficits lower national saving, raise interest rates, and crowd out investment. And, deficits are only a stop-gap; eventually we would have to choose among tax increases, spending cuts, and repudiation of our debt through high inflation or outright default. This section considers the impact of successful cost growth containment working through the fact that it would allow us to have lower deficits.

***Assumptions.*** In this analysis, we assume that all of the savings to the Federal government take the form of deficit reduction. The assumption is a reasonable approximation. In the absence of reform, rising health care costs will cause unsustainable increases in the deficit. Using the savings from reducing the growth of health care costs to prevent these increases is essential to our long-run fiscal health.

This section implicitly assumes that the costs of expanding coverage, which we discuss in the next section, would be covered by budgetary savings above and beyond the “curve benders” that are the focus of this analysis and by revenue increases. This is consistent with the President’s budget, which identified particular savings in the Medicare program and proposed specific revenue measures to pay for health care reform. In addition, over an extended period, the costs of expanded coverage are much smaller than the resources freed up by slowing cost growth. For these reasons, even if a small part of the costs of expanding coverage were paid for out of the savings resulting from slowing cost growth, this would have only a minor effect on the analysis we present.

***Methodology.*** To estimate the fraction of health care savings that represent savings to the Federal government, we use the estimates of the projected share of the Federal government in overall health care spending from the Centers for Medicare and Medicaid Services (CMS).<sup>63</sup> For example, since the CMS projects that the Federal government will pay for 36 percent of all health care spending in 2014, we assume that 36 percent of the saving from greater efficiency in 2014 will take the form of lower Federal spending. The CMS projections end in 2018. For later years,

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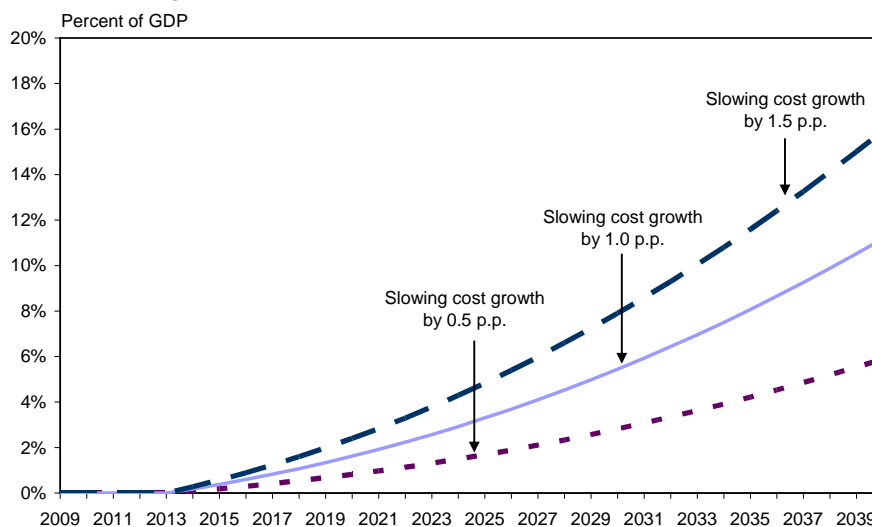
<sup>63</sup> U.S. Department of Health and Human Services, “National Health Expenditures Projections, 2008-2018.”

we use the projected Federal share of 38 percent in 2018.

The lower Federal deficits will translate into higher national saving, and hence lower interest rates, a higher capital stock, and higher output and wages. It is also likely some portion of the efficiency gains in health care will translate into higher saving by the private sector and state and local governments. These increases would magnify the effects of the lower Federal deficits. Appendix 1 explains the details of our assumptions about saving outside the Federal government, and how we translate the assumptions about lower deficits and higher saving into implications for the path of GDP. The initial efficiency improvements in health care cause lower deficits and increase private sector resources; this increases saving and investment, and so raises the next year's capital stock. The higher capital stock adds to income above and beyond the direct effects of the efficiency gains in health care, which creates further increases in saving and investment.

***Effects on GDP.*** Figure 13 shows the resulting implications for GDP, now accounting for both direct efficiency gains and greater capital accumulation. The effects in 2030 are about a quarter larger than before. For example, in the scenario where cost growth slows by 1.5 percentage points, GDP would be about 8 percent higher in 2030 than without reform, as opposed to 6 percent higher from just the direct efficiency gains. In the reform scenario where cost growth slows 1.0 percentage point, the combined effect is that GDP in 2030 is 5 percent higher than it otherwise would have been. In the scenario where cost growth slows by 0.5 percentage point, the combined effect is that GDP is 3 percent higher in 2030 than it otherwise would have been.

**Figure 13: Impact on GDP of Improved Efficiency in Health Care and Increased Capital Formation due to Lower Deficits**



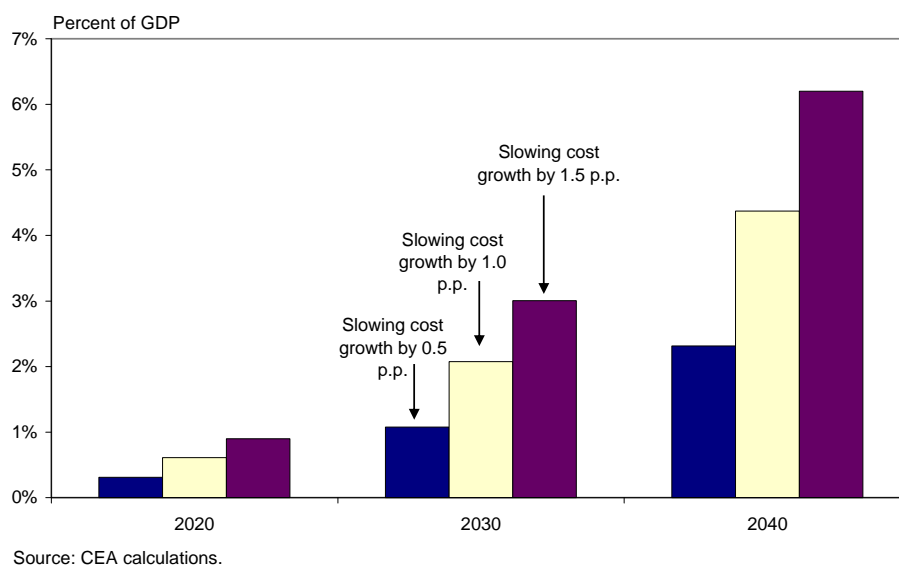
Source: CEA calculations.

***Effects on the deficit.*** These additional increases in GDP stem largely from reductions in the government budget deficit. The deficit falls for a number of reasons. This analysis incorporates the two most important ones. First, and most importantly, the government's health

care savings are assumed to translate directly into deficit reduction. Second, the reduced deficits bring down the stock of government debt relative to what it otherwise would be, and so reduce interest payments.

Figure 14 shows the implied reduction in the deficit as a share of GDP.<sup>64</sup> The figure shows that the deficit reduction is substantial. With a 0.5 percentage point decline in annual cost growth, the deficit is lower by 1 percent of GDP in 2030; with a 1.0 percentage point decline, it is lower by 2 percent of GDP; and with a 1.5 percentage point decline, it is lower by 3 percent of GDP.<sup>65</sup> These deficit reductions increase more than proportionately over time. The reduction in the deficit in 2040 with a 1.5 percentage point slowing of cost growth is 6 percent of GDP.

**Figure 14: Reduction in Federal Budget Deficit Due to Health Care Reform**



It is useful to note that two indirect effects would further reduce the deficit but are left out of this analysis, leaving it on the conservative side. These are that the plan would result in somewhat greater labor supply (as we discuss below) and a rising share of income taking the form of taxable wages, both of which would raise tax revenues still further. On the other hand, if some of the coverage expansion were paid for out of the savings from slower growth of health care costs, rather than other sources, this would operate in the other direction.

<sup>64</sup> Note that these deficit budget projections are the result of our simulations in a stylized, growth accounting framework. They are not designed to have the same precision and attention to detail as official OMB projections. The projections in this report are also longer-run projections outside the 10-year window included in the 2010 Budget.

<sup>65</sup> Following the OMB budget projections, the calculations assume that the GDP price index grows by 1.8 percent per year and that the interest rate on government debt is 4.0 percent. The deficit reduction is computed as a percent of the no-reform level of GDP. For budget projections see OMB (2009, Table 12-1, p. 172). For the interest rate, we use the rate on 91-day Treasury bills.

Of course, the impact on GDP is an imperfect guide to the effects of reducing the government budget deficit and increasing capital formation on economic well-being. Two considerations are worth noting. First, if a large fraction of the gains from efficiency improvements are saved, the increase in consumption will be smaller than the increase in overall output. In that regard, looking at the impact on output including the effect through greater capital accumulation tends to overestimate the welfare benefits. On the other hand, using the Federal government health care savings to lower the deficit would do more than just increase capital formation. It would also avoid the need for an extremely painful choice down the road about how to deal with the mounting debt. In this case, looking only at the impact through higher capital formation understates the benefits of deficit reduction.

***Cumulative effects on standards of living.*** The results of both the efficiency and capital formation effects considered so far are summarized in Table 1. The table shows, for each of the scenarios for cost growth reductions, the effects on GDP in 2020, 2030, and 2040. The overall effects, which are shown in the final column, are decomposed into the increases resulting directly from the efficiency gains and the additional increases resulting from deficit reduction and higher capital formation.<sup>66</sup>

**Table 1**  
**Effects of Health Care Reform on Real GDP**

Reduction in Growth Rate of Costs (percentage points)	Efficiency Effects Alone	Deficit and Capital Effects Alone	Sum of Both Effects
	<i>Percent Increase in GDP Relative to Baseline</i>		
		<b><u>2020</u></b>	
0.5 pp	0.7	0.1	<b>0.8</b>
1.0 pp	1.5	0.2	<b>1.6</b>
1.5 pp	2.1	0.3	<b>2.4</b>
		<b><u>2030</u></b>	
0.5 pp	2.2	0.6	<b>2.8</b>
1.0 pp	4.3	1.1	<b>5.4</b>
1.5 pp	6.2	1.7	<b>7.9</b>
		<b><u>2040</u></b>	
0.5 pp	4.3	1.5	<b>5.9</b>
1.0 pp	8.1	3.0	<b>11.2</b>
1.5 pp	11.5	4.4	<b>15.9</b>

*Note: Numbers may not sum due to rounding.*

<sup>66</sup> The interaction effects between increased efficiency and capital formation are included in the capital column. That is, the reported impact through capital formation includes the direct effect of greater capital formation and the interaction effects with efficiency.



This analysis suggests that the direct efficiency effects of health care reform are the key source of higher national income following reform. The effects through deficit reduction, though smaller, are also significant.

For a typical family of four, the increases in income would be substantial.<sup>67</sup> Table 2 presents the results from Table 1, where percentage changes have been translated into changes in constant 2009 dollars for a typical family of four. For the case of a reduction in cost growth of 1.5 percentage points per year, the projections imply that the family's income would be higher (in 2009 dollars) by roughly \$2,600 in 2020, \$10,000 in 2030, and a remarkable \$24,300 in 2040. Even with a cost reduction of 0.5 percentage point per year, the projected effect is still almost \$900 in 2020, over \$3,500 in 2030, and almost \$9,000 in 2040.

**Table 2**  
**Effects of Health Care Reform on Family Income (2009 Dollars)**

	Efficiency Effects Alone	Deficit and Capital Effects Alone	Sum of Both Effects
<i>Increase in Income for a Family of Four (2009 Dollars)</i>			
<b>Reduction in Growth Rate of Costs (percentage points)</b>		<b>2020</b>	
0.5 pp	787	90	<b>877</b>
1.0 pp	1,551	179	<b>1,730</b>
1.5 pp	2,292	268	<b>2,560</b>
		<b>2030</b>	
0.5 pp	2,837	722	<b>3,560</b>
1.0 pp	5,456	1,428	<b>6,884</b>
1.5 pp	7,871	2,115	<b>9,986</b>
		<b>2040</b>	
0.5 pp	6,626	2,361	<b>8,987</b>
1.0 pp	12,441	4,619	<b>17,060</b>
1.5 pp	17,540	6,757	<b>24,297</b>

*Note: Increase in income uses median income for a family of four. Numbers may not sum due to rounding.*

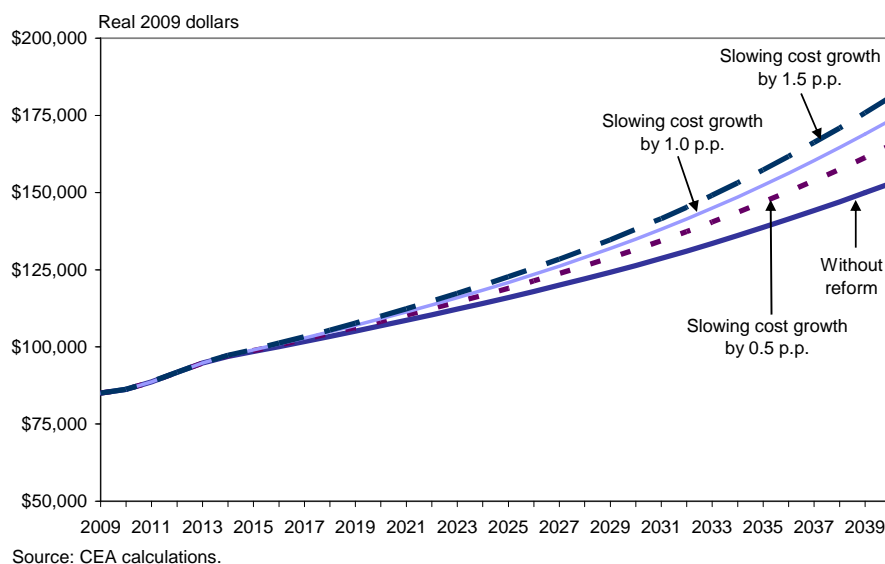
Although these numbers are large, they should not be surprising. The main source of the effects is simply that the cumulative impact of reducing cost growth in a very large part of our economy is substantial. Further, the effects are magnified by the normal process of

<sup>67</sup> By a "typical" family of four, we mean one with the median income. To project what this median would be in the absence of health care reform, we assume that the ratio of median income among four-person families to GDP per capita remains constant at its 2007 level, and then use the projected path of GDP per capita from OMB. (2007 is the most recent year for which data on median family incomes are available. The data are from the U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2008. For the data, see U.S. Department of Commerce, Current Population Survey, 2008.)

economic growth: even in the absence of reform, real income per capita is projected to rise by 49 percent by 2030.

Figure 15 presents another way of viewing the effects of reform on family income. The figure shows family income under the case of no reform and with successful cost growth reduction of various degrees. The figure makes clear that family income will be substantially higher with reform than without. One can view the difference between the no-reform case and each of the reform scenarios as a measure of the “cost of doing nothing.” Just how large those costs are depends on the “something” that we do. Reform that slows the growth rate of health care costs by 1.5 percentage points per year could have a substantial effect on standards of living after just a decade and profound effects after two or three decades. Reform that slows cost growth by 0.5 percentage point will also have important effects, but noticeably smaller than more significant reform.

**Figure 15: Estimated Family Income with and without Health Care Reform**



### C. Slower Cost Growth Would Lower Unemployment in the Short and Medium Runs

A third impact of health care cost containment focuses not on long-run growth, but on short-run macroeconomic performance—in particular, on the level of unemployment and employment, at a steady level of inflation.

***Explanation.*** The costs of providing health care are one component of firms’ costs. When health care costs are rising more slowly, the non-wage portion of firms’ compensation costs is rising more slowly. As a result, the amount that firms raise their prices for a given growth rate of their workers’ wages is lower—that is, inflation is lower. What this means is that, as long as the slower growth of health care costs is not fully reflected in workers’ view of normal wage growth, the economy can operate at a lower level of unemployment without triggering inflation. Lower unemployment means higher employment and output.

Concretely, each year that the growth of health care costs is lower than it would have been in the absence of reform, the inflation rate is lower for a given growth rate of wages than it otherwise would have been. Thus, health care reform that lowers the growth rate of costs can be understood as resembling what economists call a series of “favorable supply shocks.” It therefore allows us to have a period of somewhat more rapid growth as the economy moves to a somewhat lower unemployment rate.

Whether a permanent reduction in cost growth would allow for a permanent reduction in the unemployment rate or merely a temporary one depends on the subtleties of how workers form their views of normal wage increases. In one view, the effect is permanent. In the other, workers eventually adjust their expectations about how their wages will be changed to reflect the fact that the health care component of firms’ costs is growing more slowly. Once this occurs, the level of unemployment the economy can operate at without triggering higher inflation returns to its initial level. But, since there is no reason to expect that workers would adjust their expectations quickly, both views agree that there would be a fall in the sustainable level of unemployment for a number of years.<sup>68</sup>

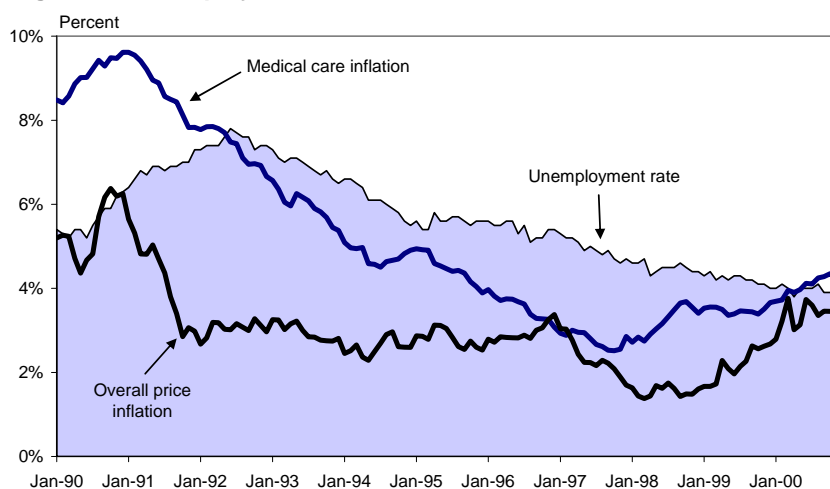
***Theory-based calculation.*** A simple calculation can provide a rough sense of the magnitudes involved. The costs of employer-paid medical insurance represent about 8 percent of compensation costs.<sup>69</sup> If annual growth of health care costs falls by 1.5 percentage points, this means that annual growth in firms’ compensation costs is about 0.12 percentage point lower than it otherwise would be. The usual rule of thumb is that a one point fall in the unemployment rate raises wage inflation by half a percentage point after a year. Thus, the unemployment rate could fall by 0.24 percentage point without triggering inflation, at least for several years: the upward pressure on inflation would be roughly counterbalanced by the downward pressure from slower growth in health care costs. A fall in the unemployment rate of one-quarter of a percentage point would translate into a rise in GDP of about 0.5 percent and a rise in employment of about 500,000. Obviously, if the degree of health care cost growth containment were lower, the effect on the unemployment rate and employment would be smaller. Appendix 2 describes the calculation in more detail.

***Evidence from the 1990s.*** Some evidence that these ideas are not just theoretical comes from the performance of the U.S. economy in the 1990s. The move from a traditional fee-for-service model of health care to a system with much greater reliance on managed care led to a period of considerably slower growth of health care costs. This coincided with a period of outstanding macroeconomic performance, as inflation remained almost entirely dormant despite the lowest unemployment rates in over a quarter century. Figure 16 shows the behavior of inflation in medical care, overall inflation, and the unemployment rate in this period. The annual growth in medical care prices fell from close to 10 percent at the beginning of the decade to below 3 percent before starting to rise again; overall inflation fell early in the decade and remained low; and unemployment fell steadily.

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<sup>68</sup> The effects at work are analogous to how an increase in productivity growth affects unemployment and inflation. For a discussion in the context of changes in productivity growth, see, for example, the Executive Office of the President, Council of Economic Advisers (2000, pp. 90-91).

<sup>69</sup> Employer-paid health insurance premiums are from the Department of Commerce, National Income and Product Accounts (NIPA) Table 7.8. The latest data are from 2007. These aggregate health insurance premiums are divided by total employee compensation from NIPA Table 1.12.

**Figure 16: Unemployment Rate and Medical Care Inflation in the 1990s**

Source: Bureau of Labor Statistics.

Note: Medical care inflation is the 12-month change in CPI-U: Medical Care, and overall price inflation is the 12-month change in CPI-U: All Prices.

The way the slowdown in medical inflation contributed to this excellent performance is exactly that described above: the slower growth of health care costs caused firms' overall costs to rise more slowly, and so caused overall inflation to be lower than it otherwise would have been. This in turn allowed the economy to operate at lower levels of unemployment and higher levels of output without triggering increases in inflation.

Formal studies suggest that these effects were quantitatively significant. One study, for example, estimated that the slowing of medical inflation lowered the unemployment rate the economy could sustain without triggering increases in inflation by about two-tenths of a percentage point in the 1990s. Since the overall fall in the sustainable unemployment rate in this period was about one percentage point, this is not a negligible effect.<sup>70</sup>

## VI. THE ECONOMIC IMPACT OF EXPANDING COVERAGE

A second characteristic of comprehensive health care reform is expansion of coverage. Such expansion will have economic effects in addition to those identified from slowing cost growth. As discussed above, it is also possible that coverage expansion may facilitate some of the game changers that actually work to bring cost growth down. At the same time, to the degree that these cost savings are used to pay for a portion of the coverage expansion, it will limit the benefits identified above working through deficit reduction and capital formation.

<sup>70</sup> Gordon (1998). See also Blinder and Yellen (2001).

## A. There Are Direct Gains from Covering the Uninsured

The fact that so many people lack insurance reflects several major distortions that affect the health insurance market: adverse selection, liquidity constraints, uncompensated care, and spillover benefits on others from better health care. As a result, it appears that even on narrow economic grounds, for most individuals without insurance, the benefits of covering them exceed the costs of providing the insurance. Covering these individuals would therefore raise economic well-being.

Here we consider two approaches to trying to gauge the size of the potential economic benefits of expanding coverage. Both approaches are somewhat ad hoc, and could understate the direct value of providing health care for the neediest Americans.

***Using direct estimates of distortions to estimate likely welfare gains.*** The first approach is to try to measure the magnitudes of the distortions that serve as barriers to greater coverage. In particular, it is possible to make rough estimates of the sizes of the distortions caused by adverse selection and uncompensated care. Some studies suggest that moving from the current system to an insurance exchange with widespread participation could bring down the price of health insurance by 20 percent, or roughly \$1,000 per year for a typical uninsured individual.<sup>71</sup> This suggests a gap between the price a typical uninsured individual faces and the cost of insuring them of about \$1,000. With 46 million uninsured Americans, this suggests an overall gap of about \$46 billion per year, or more than 0.3 percent of GDP. In addition, as noted above, total government spending on uncompensated care is about \$43 billion, or about 0.3 percent of GDP. Taken together, these estimates suggest a total improvement in economic well-being from removing these two distortions of up to 0.6% of GDP. Moreover, in the absence of reform, both distortions will rise over time as the number of uninsured rises further and health care costs continue to increase. Note that this approach makes no attempt to measure the size of the distortions from liquidity constraints and spillovers, and omits any broader social benefits from subsidizing care for those who can least afford it.

***Rough overall cost-benefit analysis.*** The second, and more ambitious, approach is to try to perform an overall cost-benefit analysis of expanding coverage. The cost side of the balance sheet is comparatively straightforward. Academic studies estimate that the overall public and private cost of providing coverage to the uninsured, net of the reduction in some types of spending that this would allow (such as spending on uncompensated care), would be about \$125 billion per year—a cost that would be spread across the Federal government, states, and individuals.<sup>72</sup> The Federal government's portion of these costs would be largely paid for by savings elsewhere in the budget and by increased revenues.<sup>73</sup> The President's budget provides for a \$635 billion reserve fund over ten years for the costs associated with coverage expansion, and calls for that expansion to be fully paid for. Thus, there would be no significant additional

<sup>71</sup> These estimates are based on the difference in administrative loading fees between the premium for a plan that would be purchased by a large group (which the exchange could resemble in terms of its scale and purchasing practices) and the estimated administrative loading fee in the individual or small group market. See for example Hay/Huggins (1988) and Karaca-Mandic, Abraham, and Phelps (2009).

<sup>72</sup> Hadley et al. (2008).

<sup>73</sup> In this calculation, we consider only the dollar costs of the coverage expansion. We do not consider any welfare loss that might result from the fact that raising taxes or lowering spending causes distortions.

costs in the short run of expanding coverage through increases in the deficit and lower capital formation.

The benefit side is much more complicated. Expansions in health insurance coverage would lead to increases in the utilization of medical care and ultimately to improved health outcomes for the uninsured. Previous research has found, for example, that expansions in health insurance to previously uninsured pregnant women led to increases in the use of prenatal care and to significant reductions in infant mortality.<sup>74</sup> At the other end of the age distribution, recent work demonstrates that Medicare coverage increases the utilization of medical care and substantially lowers in-hospital mortality rates for individuals once they become eligible for the program at age 65.<sup>75</sup> Similarly, following a severe auto accident, individuals without health insurance receive 20 percent less medical care in the hospital and are substantially more likely to die than are otherwise similar individuals with health insurance.<sup>76</sup>

These and related studies are obviously relevant for estimating the benefits of expanding insurance coverage. They suggest that if all of the uninsured had health insurance, there would be hundreds of fewer deaths among children between the ages of 0 and 14 each year, approximately 1,000 fewer individuals would perish in auto accidents, and 25 percent fewer near-elderly uninsured individuals admitted to the hospital with conditions that require immediate treatment (e.g. heart attacks, respiratory failure) would die.<sup>77</sup> These represent just three examples of the various channels through which health insurance coverage would improve health outcomes.

While it is of course difficult to assign a monetary value to the thousands of lives that would be saved each year by expansions in health insurance, a study by the National Academy of Sciences' Institute of Medicine aimed to do precisely that. The findings from this analysis suggest that the reductions in mortality alone would have a value of \$65 billion per year—an amount estimated using information on the difference in mortality risk between insured and uninsured individuals and an assumed value of \$160,000 for each life-year saved.<sup>78</sup> Of course, this estimate incorporates the effect of health insurance only on the length of life rather than on quality of life. When the authors incorporated these latter effects, the magnitude of the effect doubled to \$130 billion per year. Adjusting these estimates to account for the increase in the number of uninsured since 2001 and the increase in prices, the results suggest that the health improvements resulting from the expansions in insurance would have an economic value of approximately \$180 billion per year (in 2008 dollars).

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<sup>74</sup> Currie and Gruber (1996a).

<sup>75</sup> Card et al. (2009).

<sup>76</sup> Doyle (2005).

<sup>77</sup> The first number also utilizes the findings from Currie and Gruber (1996b) regarding the effect of Medicaid expansions on mortality among children. An estimate of 400 deaths can be calculated by assuming an 8 percent reduction in the mortality rate and that 5,000 of the 40,000 child deaths are among uninsured children. This is somewhat more conservative than Currie and Gruber's estimates. The second assumes that 18 percent of the 45,000 auto accident deaths each year are among those without health insurance and that half of these patients are treated in the hospital. This final number takes the midpoint of the range of estimates that Card, Dobkin, and Maestas (2009) deem plausible for the fraction of the mortality decline at age 65 that could be attributable to the uninsured.

<sup>78</sup> Institute of Medicine of the National Academy of Sciences (2003). The researchers used the results from previous studies to arrive at \$160,000 for the value of a life-year saved and used \$4.8 million for the value of a statistical life.

Further, the health benefits of coverage expansions would not be limited to the uninsured. As noted above, there are spillovers to the health of the insured from improvements in the health of the uninsured. In addition, recent research suggests that hospitals and other health care providers partially offset their financial losses from treating the uninsured through lower quality for their insured patients. For example, outcomes for Medicare-insured heart attack patients deteriorate when a hospital experiences an increase in the fraction of its patients who are without health insurance.<sup>79</sup>

An additional benefit of health care reform is that it would reduce individuals' exposure to the risk of facing catastrophic medical expenses. Medical bills related to illness or injury contribute to roughly one-sixth of bankruptcies.<sup>80</sup> And, there are surely many individuals who face high medical bills but do not end up filing for bankruptcy. Most health insurance policies have deductible and copayments, but provide coverage for very high expenses. Thus, expanding coverage would reduce individuals' exposures to financial risk.

One way of gauging the possible magnitude of the benefits that expanding coverage would have through this channel is to consider the effects of Medicare. Recent research demonstrates that the introduction of Medicare in 1965 greatly reduced the risk to beneficiaries of facing large out-of-pocket medical expenses, and that the value of this reduction in risk was approximately one-third as large as total spending on the program.<sup>81</sup> If we assume that the one-third ratio applies to the estimated cost of insuring the currently uninsured, this suggests that the benefits from the reduction in financial risk would be about \$40 billion a year. Thus, by focusing almost exclusively on health outcomes, most previous research on the effect of health insurance coverage has omitted an important social benefit.

Together, these estimates suggest that the economic benefits of expanded coverage would be well over \$180 billion a year, perhaps in the range of \$200 to \$250 billion. Even after subtracting the net cost of providing that coverage of about \$125 billion per year, this leaves a large gain from covering the uninsured—between \$75 billion and \$125 billion per year, or about two-thirds of a percent of GDP.

## **B. Health Care Reform Would Likely Increase Labor Supply**

A second benefit of expanding coverage is that it would increase output by improving workers' health: more workers would be able to work, and those who were working would be more productive. These effects would operate through several channels.

***Labor force participation and reduced disability.*** With insurance and better access to health care, some of the currently uninsured who are not healthy enough to maintain employment would be able to participate in the workforce. According to data from the 2008 March Current Population Survey, approximately 17.7 million non-elderly adults report the presence of one or more disabilities that prevent work or limit the type or amount of work that an individual can

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<sup>79</sup> Daysal (2009).

<sup>80</sup> Dranove and Millenson (2006, p. W79).

<sup>81</sup> Finkelstein and McKnight (2008).

perform, and approximately 3.0 million of these individuals are without health insurance.<sup>82</sup> These data also reveal that rates of labor force non-participation are substantially higher among those with a disability. For example, among those without health insurance, the disabled are three times more likely to be out of the labor force than their healthier counterparts (70.6 percent versus 22.4 percent).

One of the most significant benefits of a coverage expansion would be improved access to health care for the population of uninsured older workers. Enabling pre-Medicare eligible individuals to maintain their health status so that they are able to continue working is particularly important economically. By expanding their years of earning wages they increase their savings and retirement income, while simultaneously increasing Federal income and payroll tax revenue and reducing the number of individuals receiving Social Security Disability Insurance (SSDI) benefits.<sup>83</sup> Recent research further suggests that there are substantial health benefits to individuals who choose to retire later, thus amplifying the health benefits of expanded access to health insurance coverage.<sup>84</sup>

***Workplace productivity improvement.*** Another way in which improved access to health insurance and medical care could affect labor supply is through reduced absenteeism and presenteeism. Absenteeism refers to not being present at work as a result of injury or illness, while presenteeism refers to the loss of at-work productivity due to impairment from a medical condition.<sup>85</sup> Among non-elderly adults who are working, approximately 50 percent report having at least one serious medical condition.<sup>86</sup> Additionally, several studies have documented the indirect costs to employers of health-related productivity losses. Some of the costliest conditions include depression, migraines, and asthma—medical conditions that often can be effectively managed with prescription medications made more affordable by health insurance.<sup>87</sup> With expansion of coverage and improvement in the quality of care delivery, there could be important gains in worker productivity from improved health status.

***Potential offsetting effects.*** Not all of the effects of health care reform would necessarily work in the direction of raising labor supply. Previous research indicates that having employer-sponsored health insurance can lead workers to exit the labor force somewhat later than they otherwise would.<sup>88</sup> To the extent that health care reform leads to more affordable insurance alternatives for the near-elderly, this could lead them to retire before they become eligible for Medicare at age 65. However, labor force participation for individuals 54 to 64 years of age (not yet eligible for Medicare) and those 65 to 69 years of age (who are eligible for Medicare) are

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<sup>82</sup> CEA tabulations of the U.S. Census Bureau's 2008 Annual Social and Economic Supplement of the Current Population Survey. Workers are deemed disabled if they state that they have a disability that limits or prevents them from working or if they state that they are not working or are out of the labor force because they are ill or disabled.

<sup>83</sup> For an individual's SSDI application to be considered, a person must be considered unable to engage in "substantial gainful activity," which reduces a potential applicant's incentive to work. This disincentive remains once a person qualifies for SSDI benefits. Health reform would potentially reduce the number of individuals with disabilities who drop out of the labor force to apply for SSDI. See Autor and Duggan (2006).

<sup>84</sup> Evans and Snyder (2006).

<sup>85</sup> Executive Office of the President, Council of Economic Advisers (2008, p. 99).

<sup>86</sup> CEA tabulations of the 2006 Medical Expenditure Panel Survey-Household Component.

<sup>87</sup> Goetzl et al. (2004), Burton et al. (2002).

<sup>88</sup> See for example, Madrian, Burtless, and Gruber (1994), Karoly and Rogowski (1994), and Rust and Phelan (1997).



increasing at similar rates.<sup>89</sup> This suggests that the relationship between labor force participation and health insurance may not be a primary determinant of labor force participation of this segment of the population today.<sup>90</sup>

Similarly, the expansion of coverage will likely include subsidizing premiums for newly insured, low-income individuals and families. If subsidy levels decline as household income rises, this will increase the effective marginal tax rate for these households. As a result, workers could respond by reducing their labor supply. To consider the likely magnitude of this effect on aggregate labor supply, it is instructive to consider a policy that affected individuals across a relatively wide range of the incomes for which subsidized premiums may be relevant. Academic research explored the effect on labor supply of the earned income tax credit (EITC), which introduced a 10 percent tax rate for EITC beneficiaries with incomes slightly above the poverty line because of the phase-out of EITC benefits with additional earnings.<sup>91</sup> The results suggest that this tax had very little impact on labor supply, and the study concludes that the findings are consistent with previous research indicating that taxes such as these typically have very little effect on hours of work. It therefore seems likely that the effects of subsidized health insurance premiums on aggregate labor supply would be modest.

**Overall effects.** In light of the large number of individuals with disabilities and significant medical conditions, and the fact that the offsetting effects appear small, the net impact of health care reform would very likely be to increase effective labor supply. This would magnify the rise in GDP and improvement in the government's budgetary position discussed above. The magnitude of the effects would depend on the size of the effects on labor supply. For example, a one percent increase in overall labor supply would translate in the long run to a one percent increase in GDP beyond the effects described in Section V.

### **C. Health Care Reform would Improve the Functioning of the Labor Market**

The provision of health insurance through workers' employers has significant advantages. It is, and will remain, the source of health insurance for many Americans. At the same time, some of the specific features of our employer-based system cause the labor market to function less effectively. Properly designed health care reform could reduce those inefficiencies. Here we discuss two ways that health care reform would improve efficiency in the labor market.

**Reduce job lock.** Because of limitations on coverage of pre-existing conditions, many workers who might change jobs do not do so out of fear of losing their access to insurance coverage or facing limitations on coverage offered by a new employer.<sup>92</sup> Health care reform would allow many of these workers to move to jobs where they would be more productive.

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<sup>89</sup> U.S Department of Labor.

<sup>90</sup> Additionally, greater access to health care insurance may increase the utilization of treatments that facilitate work. For example, Garthwaite (2008) finds that the use of certain new pharmaceutical treatments substantially increased the labor supply of near-elderly individuals with chronic pain. The author argues that new treatments may be partially responsible for the increase in labor supply among near-elderly and elderly men during the past decade.

<sup>91</sup> Eissa and Liebman (1996).

<sup>92</sup> Gruber (2000).

Again, it is possible to get a sense of the size of the potential gains involved. Although there is not complete agreement on the issue, many studies find substantial effects of employer-sponsored insurance on job mobility.<sup>93</sup> In particular, one study examines the effect of employer-sponsored health insurance on job turnover, and estimates the corresponding effect on wages.<sup>94</sup> To do this, it focuses on the short-term (one-year effect) by multiplying the estimate of the number of workers between the ages of 25 and 54 who do not move in the current year (1.04 million in 1987) because of employer-sponsored insurance by the estimate of the average wage gain that the workers would have enjoyed in their new jobs (\$3,560 per year). The selectivity-adjusted wage gain of \$3.7 billion represents 0.3 percent of wages for all workers between the ages of 25 to 54 and more than ten percent of wages for the affected workers. This estimate is a lower bound, however, as it focuses on the flow in each year rather than the stock over a longer time period.

While there appear to be no corresponding estimates for long-term wage effects in the literature (that consider not just the flow but the stock), a simple back-of-the-envelope calculation can be useful. One study estimates that 16 percent of workers ages 25 to 54 change jobs each year.<sup>95</sup> This suggests that on average, a worker will change jobs five times between ages 25 and 54. It further estimates that both men and women are approximately 25 percent less likely to change jobs if they are likely to lose health insurance coverage. This implies that a worker with employer-sponsored insurance throughout his working years would change jobs approximately four times during the years from 25 to 54, whereas his counterpart with health insurance from another source would change jobs five times. Assuming that these job transitions are equally spaced during the 30-year interval and that the wage gain is the same for each worker at each transition, the average wage effect during this thirty-year period would be at least three times larger than the short-term estimate reported above would suggest.<sup>96</sup> This represents approximately 1.0 percent of wages for all workers between the ages of 25 and 54 in the typical year, and more than 0.2 percent of GDP.<sup>97</sup> This estimate is necessarily more speculative than the short-term one, however.

***Promote small firm creation and competitiveness.*** Firms compete for workers by offering compensation packages that include wages as well as non-wage benefits such as health insurance. In a large majority of states, current insurance market practices disadvantage small employers (including the self-employed) relative to larger firms with respect to purchasing coverage. High administrative costs and concerns among insurers about adverse selection contribute to higher premiums for small employers, which can reduce their willingness to offer health insurance as part of total compensation. This, in turn, can affect the ability of small

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<sup>93</sup> See, for example, Madrian (1994), Monheit and Cooper (1994), and Currie and Madrian (1999). For a review of related literature, see Gruber and Madrian (2001).

<sup>94</sup> Monheit and Cooper (1994).

<sup>95</sup> Monheit and Cooper (1994).

<sup>96</sup> The short-term estimate essentially only considers the wage difference that is missed at the time of the extra transition. However, because the worker will spend more time in each job, there will be more than one year at the lower wage, with this becoming increasingly true over time. For example, while the worker without ESI would change to a third job around the age of 37, the worker with ESI would not transition to the third job until age 41. On average, the worker with ESI transitions to the next job almost four years later than the one without ESI, and this lag increases from just a year or two at the first transition to several years at the final transition.

<sup>97</sup> The estimated long-term effect of at least \$11 billion in 1987 represents 0.24 percent of GDP in that year.

employers to attract and retain qualified workers. Moreover, if small employers choose not to offer health insurance, they are further disadvantaged given the preferential tax treatment associated with employer contributions toward health insurance.

In addition to the direct effect of higher premiums on the ability of small firms and the self-employed to purchase affordable health insurance, there are broader economic costs introduced by this market failure. Both economic theory and empirical evidence suggest that there are substantial benefits to society of individual risk-taking of the kind that entrepreneurs bear when starting up their own businesses.<sup>98</sup>

As discussed above, the creation of an exchange has the potential to improve access to affordable coverage for small employers and to help level the playing field with respect to their ability to compete for talented workers in the labor market.

## VII. CONCLUSION

The American health care system is on an unsustainable path. Expenditures as a share of GDP are already substantially higher than in other developed countries, and are projected to grow rapidly in the next three decades. This growth threatens to have a devastating impact on the growth in workers' take-home pay and the government budget deficit. It is also likely to increase the number of Americans without health insurance from its already very high level and thus undermine the health of our population.

Successful health care reform will slow the growth rate of health care costs, maintain choices of doctors and health plans, and expand coverage. Slowing the growth rate of costs by 1.5 percentage points per year would have a dramatic impact on the trajectory of health care expenditures as a share of GDP over time. Slowing the growth rate of costs by a smaller amount (0.5 or 1.0 percentage point per year) would have smaller, but still important effects.

Our analysis shows that successful health care reform would have major benefits for the U.S. economy. Over time, the slowing of cost growth through increased efficiency would bring about substantial increases in Americans' standard of living. It will also prevent devastating increases in the budget deficit and raise capital formation. We estimate that slowing health care cost growth by 1.5 percentage points will increase real GDP in 2030 by nearly 8 percent relative to what would happen without reform. We also find that slowing cost growth is likely to lower the unemployment rate consistent with steady inflation by roughly one-quarter of a percentage point for an extended period.

The net welfare effects of expanding coverage to the uninsured are also likely to be very large—probably in the range of \$100 billion each year. Genuine reform will also likely increase labor supply, reduce job lock, and aid small businesses.

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<sup>98</sup> van Praag and Versloot (2007) and Holtz-Eakin and Kao (2003); see also Lerner (1999).

The kind of reform that will bring about these economic rewards will not be easy. It will require truly game-changing innovations in many areas. But, if we can bring about such changes, there will be substantial benefits to American households, businesses, and the economy as a whole.

## APPENDIX 1

### A Model of the Growth Effects of Slowing the Growth of Health Care Costs

This appendix section sets out the details underlying the analysis in Sections V. The framework can be thought of as a growth accounting exercise or a Solow growth model. We first describe the general framework, and then turn to the specific assumptions underlying the calculations.

#### A. General Considerations

##### 1. Output in the absence of reform

In the absence of health care reform, GDP in a given year, year  $t$ , is given by

$$Y_t = A_t K_t^\alpha L_t^{1-\alpha}.$$

Here  $K$  is capital,  $L$  is labor, and  $A$  reflects technology.  $\alpha$  is a parameter between zero and one that reflects the importance of capital in producing output.

The model takes  $\alpha$  and the paths that  $K$ ,  $L$  and  $A$  would follow in the absence of health care reform as given.

##### 2. Direct gains from efficiency improvements in health care

The first part of the analysis (in Section V.A) concerns the direct effects of efficiency improvements in health care. Let  $HS_t$  denote the fraction of GDP in year  $t$  that we save as a result of health care reform. What this means is that because of efficiency improvements in the health care sector, we are able to obtain the same amount of health care as before (as measured by outcomes, such as diseases prevented and treated, the length and quality of life, and so on) while using a smaller fraction of our capital and labor than we otherwise would have. Those resources can be used to produce additional output. Thus, the total value of our output is higher than before.<sup>99</sup> Thus, if we free up fraction  $HS_t$  of our resources, output will be higher by proportion  $HS_t$  than it otherwise would have been. For example, if we are able to save 1 percent of GDP as a result of health care reform, GDP will be 1 percent higher than it otherwise would have been.<sup>100</sup>

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<sup>99</sup> Recall that, because of the way GDP is measured, not all of the higher output would be reflected in measured GDP. But the true value of health care and other goods and services produced would rise by the full amount of the value of the additional output produced using the resources freed up by reform.

<sup>100</sup> This assumes that the additional resources are used to produce non-health-care output. If some of them are used to provide additional health care, the output gain is slightly larger, because of the efficiency improvement in health care.

Formally, let  $h_t$  be the fraction of capital and labor devoted to health care (and the fraction of output that takes the form of health care) in the absence of reform. Without reform, fraction  $1 - h_t$  of the economy's stocks of capital and labor are used to produce non-health-care output; with reform, fraction  $1 - (h_t - HS_t)$  of the stocks are used to produce non-health-care output. Thus, the output of the non-health-care sector is  $1 - (h_t - HS_t)$  times initial GDP, rather than  $1 - h_t$  times initial GDP. Thus, total output (of the non-health-care and health-care sectors together) is higher by a factor of  $1 + HS_t$ . (Implicitly, we are measuring the percentage increase in GDP in year  $t$  as a result of cost savings using year  $t$  prices. If we used prices from some other year, the share of non-health-care in

### **3. Increases in investment and capital**

Some of additional income from health care reform will be saved, which will lead to a higher capital stock than we would otherwise have had. This effect is the subject of Section V.B.<sup>101</sup>

To think about these effects, consider the first year in which there are health savings, and call this year 1. Output is higher only by the direct effects of the health savings: because there are no prior health savings, there is no effect via capital. Thus,

$$\Delta Y_1 = Y_1^{DIRECTREFORM} - Y_1,$$

where a “ $\Delta$ ” in front of a variable means that it is the difference between its values with and without reform.

Let  $s_1$  denote the fraction of the additional income in year 1 that is saved. Then in the next year, the difference between the capital stock and what it would have been without reform is:

$$\Delta K_2 = s_1 \Delta Y_1.$$

Thus, output in year 2 is higher both because of the greater efficiency in health care and the higher capital stock.

Looking at year 3, we now need to account for the fact that we carry over higher capital from year 2 and that some of this additional capital depreciates. In particular,

$$\Delta K_3 = \Delta K_2 + s_2 \Delta Y_2 - \delta \Delta K_2,$$

where  $\delta$  is the depreciation rate. The analysis then proceeds as before: output in year 3 is higher from the efficiency gains and the increased capital stock, and so on for years 4 and beyond.<sup>102</sup>

## **B. Specific Assumptions**

### **1. The path of the economy without reform**

Our assumptions about the path of output in the absence of reform follow the January 2009 Administration projections. These projections have real GDP growing faster than usual over the next several years as the economy recovers from the recession, then growing at an annual rate of about 2.6 percent through 2019 and roughly 2.5 percent thereafter. The projections extend through 2040.

We make conventional assumptions about the capital stock, depreciation, and the marginal product of capital. Specifically, we assume that capital’s share,  $\alpha$ , equals one-third; the depreciation rate is 3.5 percent; and that on the pre-reform path, the capital-output ratio is constant at the level that implies

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real GDP in  $t$  would not necessarily exactly equal its share in nominal GDP,  $1 - h_t$ . This would have only small effects on the results.)

<sup>101</sup> In practice, some of the increased saving would translate into higher investment abroad rather than a larger domestic capital stock. Accounting for this effect changes the results only trivially.

<sup>102</sup> The increased capital stock is assumed not to affect the fraction of the economy’s output that takes the form of health care. Thus, some of the additional output is in health care and some is in non-health-care goods.

a marginal product of capital of 9.5 percent (which requires a capital-output ratio of about 3.5). These values are all fairly conventional.<sup>103</sup>

For the calculations, it turns out not to be necessary to specify the paths of L (labor supply) and A (technology) separately. Because our analysis in Section V.A is in terms of the percentage changes in efficiency, once we have specified paths for Y and K, this is enough for us to compute the percentage change in output from reform.

The final feature of the economy in the absence of health care reform that is important to our analysis is the path that health care spending would follow. Here, we use the projections from Section II of this report. These projections show health spending as a share of GDP rising at an increasing rate: from 17.6 percent in 2009, to 21.4 percent in 2020, to 27.5 percent in 2030, and 34.2 percent in 2040.

## **2. Efficiency improvements in health care**

As described in the text, we consider three stylized paths for how reform might improve the efficiency of the health care system. On each path, starting in 2014, the growth of health care costs is reduced by a constant amount relative to what it would have been without reform.

For concreteness, consider the case of a cost reduction of one percentage point per year. In this case, costs in 2014 are 0.99 times what they otherwise would have been; costs in 2015 are 0.99 times 0.99, or about 0.98, times what they would have been; and so on. This means that health savings in 2014 are 1 percent of what we otherwise would have spent on health care. Since the projections imply that health spending in 2014 will be 18.5 percent of GDP without reform, health savings in 2014 will be 1 percent of 18.5 percent of GDP, or about 0.2 percent of GDP. In 2015, health savings are  $(1 - .99^2)$ , or 0.0199, times 18.9 percent of GDP, or about 0.4 percent of GDP. And so on.

## **3. Increases in saving**

Our modeling of saving out of the higher income resulting from health care reform is somewhat complicated. However, because the increases in income through this channel are not the main source of the benefits from health care reform, substantial changes in the assumptions concerning this part of the analysis would have little impact on the conclusions.

As discussed in the text, the calculations assume that all of the Federal saving is used to reduce the deficit. For the saving that goes to state and local governments and the private sector, we assume that less than all of the cost reductions are translated into higher saving. To find a rough figure for the fraction that is likely to be saved, we use the average over the five-year period 2003-2007 of the saving of the private sector and state and local governments as a share of the resources available to those sectors. This share can be computed as the ratio of two quantities. The numerator is total national saving (investment plus net exports) plus the Federal deficit; the denominator is GDP less Federal taxes, plus transfers from the Federal government. The average of this ratio over 2003-2007 was 14.5 percent.<sup>104</sup> We therefore assume that this fraction of the reduction in health spending by state and local governments and the private sector is saved. We also assume that this saving rate applies to the higher national income from a

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<sup>103</sup> The specific values we choose are based on Elmendorf and Mankiw (1999). One aspect of our current economic situation that these assumptions leave out is that the capital-output ratio is currently somewhat elevated because of the recession, and is likely to return toward normal as the economy recovers. Because all of our analysis concerns long-run effects, accounting for this would have minimal implications.

<sup>104</sup> The data are from NIPA Tables 1.1.5 and 3.2. Using the saving numbers from NIPA Table 5.1 would yield a slightly higher non-Federal saving rate and so slightly higher output effects.

higher capital stock.

Note that this approach makes the parameters  $s_1$ ,  $s_2$ , and so on somewhat complicated weighted averages. Recall that health savings are assumed to begin in 2014.  $s_{2014}$  is therefore 36 percent (the fraction of the cost reductions that take the form of lower Federal spending) times 100 percent (the fraction of lower Federal spending that is assumed to take the form of deficit reduction), plus 64 percent (the fraction of the cost reductions that go to state and local governments and the private sector) times 14.5 percent (the fraction of non-Federal cost reductions that is assumed to be saved), or 45.5 percent. In 2015, the weight on the Federal government's deficit reduction is lower, because there is now additional income from the returns to the higher saving in 2014, and the non-Federal saving rate of 14.5 percent is applied to this income.



## APPENDIX 2

### The Algebra of the Effects of Health Care Reform on the Inflation-Unemployment Trade-Off

This appendix sets out the reasoning behind the analysis in Section V.C in more detail.

The growth rate of firms' compensation costs equals the growth rate of wages ( $\pi^w$ ), plus the product of the share of health care costs in overall compensation costs ( $\alpha$ ) times the difference between the growth of health care costs and the growth rate of wages ( $H$ ). Inflation ( $\pi$ ) equals the growth rate of compensation costs minus productivity growth ( $\Delta q$ ). Thus, we have:

$$\pi = \pi^w + \alpha H - \Delta q.$$

The growth rate of wages equals workers' expectations about real wage growth ( $Ew$ ) plus the previous period's inflation rate ( $\pi_{-1}$ ) plus a term that is positive if unemployment is below normal and negative if unemployment is above normal:

$$\pi^w = Ew + \pi_{-1} - \lambda(u - u_{NR}),$$

where  $u_{NR}$  is the normal unemployment rate and  $\lambda$  is a positive parameter. Combining these two equations implies:

$$\pi = Ew + \pi_{-1} - \lambda(u - u_{NR}) + \alpha H - \Delta q.$$

We can solve this equation for the unemployment rate that keeps inflation from changing (that is, the unemployment rate that implies  $\pi = \pi_{-1}$ ):

$$u^* = u_{NR} + \frac{Ew + \alpha H - \Delta q}{\lambda}.$$

Thus, if  $H$ —the difference between the growth of health care costs and the growth rate of wages—falls,  $u^*$  (the sustainable unemployment rate) falls. If  $\alpha = 0.08$  and  $\lambda = 0.5$  and if  $H$  falls by 1.5,  $u^*$  falls by 0.24—that is, by just under a quarter of a percentage point.

The issue of whether a permanent fall in  $H$  leads to a permanent or merely a long-lasting fall in  $u^*$  hinges on the behavior of  $Ew$ . If workers do not adjust their expectations about real wage growth to the slowing in the growth of health care costs, the fall is permanent. If, however, they eventually adjust their expectations, at that point  $u^*$  returns to its normal level,  $u_{NR}$ .

## REFERENCES

- Abraham, Jean, T. DeLeire, A. Royalty. "Health Insurance, Pensions, and Paid Leave: Access to Health Insurance at Small Establishments in a Broader Benefits Context." *Inquiry*, forthcoming.
- America's Health Insurance Plans. "Individual Health Insurance 2006-2007: A Comprehensive Survey of Premiums, Availability, and Benefits." AHIP Center for Policy and Research, December 2007.
- American Hospital Association. "Uncompensated Hospital Care Fact Sheet," November 2005. <http://www.aha.org/aha/content/2005/pdf/0511UncompensatedCareFactSheet.pdf>.
- Anderson, Gerard and B. Frogner. "Health Spending in OECD Countries: Obtaining Value Per Dollar." *Health Affairs*, 2008, 27(6): 1718 – 1727.
- Audet, Anne-Marie, M. Doty, J. Shamasdin, and S. Schoenbaum. "Physicians Views on Quality Care: Findings From the Commonwealth Fund National Survey of Physicians and Quality of Care." The Commonwealth Fund, May 2005a.
- Audet, Anne-Marie, M. Doty, J. Shamasdin, and S. Schoenbaum. "Measure, Learn, and Improve: Physicians' Involvement in Quality Improvement." *Health Affairs*, 2005b, 24(3): 843-853.
- Autor, David H. and M.G. Duggan. "The Growth in the Social Security Disability Rolls: A Fiscal Crisis Unfolding." *Journal of Economic Perspectives*, 2006, 20(3): 71-96.
- Baicker, Katherine and A. Chandra. "Medicare Spending, the Physician Workforce, and Beneficiaries' Quality of Care." *Health Affairs*, 2004, Web Exclusive, W4-W184.
- Becker, David, D. Kessler, and M. McClellan. "Detecting Medicare Abuse." *Journal of Health Economics*, 2005, 24(1): 189-210.
- Birkmeyer, John, A. Siewers, E. Finlayson, T. Stukel, F. Lucas, I. Batista, H. Welch, and D. Wennberg. "Hospital Volume and Surgical Mortality in the United States." *New England Journal of Medicine*, 2002, 346(15): 1128 – 1137.
- Blinder, Alan S. and J. L. Yellen. *The Fabulous Decade: Macroeconomic Lessons from the 1990s* (New York: Century Foundation Press, 2001).
- Burton, Wayne N., D. Conti, C. Chen, A. Schultz, and D. Edington. "The Economic Burden of Lost Productivity Due to Migraine Headache: A Specific Worksite Analysis." *Journal of Occupational & Environmental Medicine*, 2002, 44(6):523-529.
- Card, David, C. Dobkin, and N. Maestas. "Does Medicare Save Lives?" *Quarterly Journal of Economics*, 2009 124(2): 597-636.
- Cebul, Randall, J. Rebitzer, T. Lowell, and M. Votruba. "Organizational Fragmentation and Care Quality in the U.S. Health Care System." NBER Working Paper 14212, August 2008.
- Chassin, Mark R. "Achieving and Sustaining Improved Quality: Lessons from New York State and Cardiac Surgery." *Health Affairs*, 2002, 21(4): 40-51.

- Chernew, Michael, D. Cutler, and P. Keenan. "Increasing Health Insurance Costs and the Decline in Insurance Coverage." *Health Services Research*, 2005; 40(4):1021-1039.
- Congressional Budget Office. "Factors Contributing to the Infant Mortality Ranking of the United States," Feb. 1992. <http://www.cbo.gov/ftpdocs/62xx/doc6219/doc05b.pdf>.
- Currie, Janet and J. Gruber. "The Efficacy and Cost of Recent Changes in the Medicaid Eligibility of Pregnant Women," *Journal of Political Economy*, 1996a, 104(6): 1263-96.
- Currie, Janet and J. Gruber. "Health Insurance Eligibility, Utilization of Medical Care, and Child Health," *Quarterly Journal of Economics*, 1996b, 111(2): 431-66.
- Currie, Janet and B. C. Madrian. "Health, Health Insurance and the Labor Market," *Handbook of Labor Economics* (O. Ashenfelter & D. Card, eds.), Elsevier: New York, 1999.
- Cutler, David. "Employee Costs and the Decline in Health Insurance Coverage." *Forum for Health Economics and Policy*, 2003; 6(3).
- Cutler, David. "Health System Modernization Will Reduce the Deficit," Center for American Progress Action Fund, 2009.
- Cutler, David and A. Gelber. "Changes in the Incidence and Duration of Periods without Insurance." *New England Journal of Medicine*, 2009, 360(17): 36 – 44.
- Cutler, David and M. McClellan. "Is Technological Change in Medicine Worth It?" *Health Affairs*, 2001, 20(5): 11 – 29.
- Daysal, Meltem. "Does Uninsurance Affect the Health Outcomes of the Insured? Evidence from Heart Attack Patients in California," *University of Maryland Working Paper*, 2009.
- DeNavas-Walt, Carmen, B. Proctor, and J. Smith. U.S. Department of Commerce. U.S. Census Bureau. "Income, Poverty, and Health Insurance Coverage in the United States: 2007." August 2008.
- Dowd, Bryan E., R. Feldman, and J. Christianson. *Competitive Pricing for Medicare* (Washington: American Enterprise Institute Press, 1996).
- Doyle, Joseph J. "Health Insurance, Treatment and Outcomes: Using Auto Accidents as Health Shocks," *Review of Economics and Statistics*, 2005, 87(2): 256-270.
- Dranove, David, and M. L. Millenson. "Medical Bankruptcy: Myth Versus Fact," *Health Affairs*, 2006, Web Exclusive, W74-W83.
- Eissa, Nada and J. B. Liebman. "Labor Supply Response to the Earned Income Tax Credit." *Quarterly Journal of Economics*, 1996, 111(2): 605-637.
- Elmendorf, Douglas W. and N. G. Mankiw. "Government Debt," *Handbook of Macroeconomics*, (J. Taylor and M. Woodford, eds.), Amsterdam: Elsevier, 1999.
- Evans, William N. and S. Snyder. "The Impact of Income on Mortality: Evidence from the Social Security Notch," *Review of Economics and Statistics*, 88(3), 2006, 482-495.

- Executive Office of the President. Council of Economic Advisers. *Economic Report of the President*. February 2000. [http://www.gpoaccess.gov/usbudget/fy01/pdf/2000\\_erp.pdf](http://www.gpoaccess.gov/usbudget/fy01/pdf/2000_erp.pdf).
- Executive Office of the President. Council of Economic Advisers. *Economic Report of the President*. February 2008. [http://www.gpoaccess.gov/eop/2008/2008\\_erp.pdf](http://www.gpoaccess.gov/eop/2008/2008_erp.pdf).
- Feachem, Richard, N. Sekhri, and K. White. "Getting More for their Dollars: Comparison of the NHS with California's Kaiser Permanente" *BMJ*, 2002, 324: 135-43.
- Finkelstein, Amy and R. McKnight. "What Did Medicare Do? The Initial Impact of Medicare on Mortality and Out of Pocket Medical Spending 2008." *Journal of Public Economics*, 2008, 92: 1644-1669.
- Finkelstein, Erik A., I. C. Fiebelkorn, and G. Wang. "National Medical Spending Attributable to Overweight and Obesity: How Much, and Who's Paying?" *Health Affairs*, 2003, Web Exclusive, W3-291-226.
- Fisher, Elliot S., D. Wennberg, T. Stukel, D. Gottlieb, F. Lucas, and E Pinder. "The Implications of Regional Variations in Medicare Spending. Part 1: The Content, Quality, and Accessibility of Care." *Annals of Internal Medicine*, 2003, 138 (4): 273-287.
- Fisher, Elliott S., J. P. Bynum, and J. S. Skinner. "Slowing the Growth of Health Care Costs – Lessons from Regional Variation." *New England Journal of Medicine*, 2009, 360(9): 849-852.
- Gabel, Jon, R. McDevitt, L. Gandolfo, J. Pickreign, S. Hawkins, and C. Fahlman. "Generosity and Adjusted Premiums in Job-Based Insurance: Hawaii Is Up, Wyoming Is Down." *Health Affairs*, 2006, 25(3):832-43
- Garber, Alan M., and J. Skinner. "Is American Health Care Uniquely Inefficient?" *Journal of Economic Perspectives*, 2008, 22(40): 27-50.
- Garthwaite, Craig. "Economic Effects of Medical Innovation: Vioxx and Labor Supply." University of Maryland Working Paper, October 2008.
- Gaynor, Martin, H. Seider, and W. B. Vogt. "The Volume–Outcome Effect, Scale Economies, and Learning-by-Doing," *American Economic Review*, 2005, 95(2): 243-247.
- Gibson, Teresa B., R. Ozminkowski, and R. Z. Goetzel. "The Effects of Prescription Drug Cost Sharing: A Review of the Evidence," *American Journal of Managed Care*, 2005, 11(11): 730-740.
- Glied, Sherry, and K. Jack. "Macroeconomic Conditions, Health Care Costs, and the Distribution of Health Insurance." NBER Working Paper No. W10029, October 2003.
- Goetzel, Ron Z., S. Long, R. Ozminkowski, K. Hawkins, S. Wang, and W. Lynch. "Health, Absence, Disability, and Presenteeism Cost Estimates of Certain Physical and Mental Health Conditions Affecting U.S. Employers," *Journal of Occupational & Environmental Medicine*, 2004, 46(4):398-412.
- Gordon, Robert J. "Foundations of the Goldilocks Economy: Supply Shocks and the Time-Varying NAIRU." *Brookings Papers on Economic Activity*, 1998, No. 2: 297-346.

- Gruber, Jonathan. "Health Insurance and the Labor Market." *Handbook of Health Economics*. (A. Culyer and J. Newhouse, eds.), Elsevier: New York, 2000.
- Gruber, Jonathan and B. Madrian. "Health Insurance, Labor Supply, and Job Mobility: A Critical Review of the Literature," Economic Research Initiative on the Uninsured Working Paper 4, University of Michigan, November 2001.
- Gruber, Jonathan and M. Lettau. "How Elastic is the Firm's Demand for Health Insurance?" *Journal of Public Economics*, 2004, 88(7-8): 1273-1293.
- Hackbarth, Glenn. "Reforming America's Health Care Delivery System". Statement before the Senate Finance Committee Roundtable on Reforming America's Health Care Delivery System, 2009, p. 5. <http://www.medpac.gov/documents/Hackbarth%20Statement%20SFC%20Roundtable%20%2021%20FINAL%20with%20header%20and%20footer.pdf>.
- Hadley, Jack and J. Reschovsky. "Small Firms' Demand for Health Insurance: The Decision to Offer Insurance." *Inquiry*, 2002, 39(2): 118-137.
- Hadley, Jack, J. Holahan, T. Coughlin, and D. Miller. "Covering the Uninsured in 2008: Current Costs, Sources of Payment, and Incremental Costs." *Health Affairs*, 2008, Web Exclusive, W399-W415.
- Hay/Huggins Company, Inc. As appeared in: "Cost and Effects of Extending Health Insurance Coverage" Congressional Research Service (CRS), October 1988.
- Herring, Bradley. "The effect of the availability of charity care to the uninsured on the demand for private health insurance." *Journal of Health Economics*, 2005, 24(2): 225-252.
- Holtz-Eakin, Douglas and C. Kao. "Entrepreneurship and Economic Growth: The Proof is in the Productivity." Center for Policy Research, Maxwell School of Citizenship and Public Affairs, Syracuse University, Working Paper No. 50. February 2003.
- Huckman, Robert S. and G.P. Pisano. "The Firm Specificity of Individual Performance: Evidence from Cardiac Surgery," *Management Science*, 2006, 52(4): 473-488.
- Institute of Medicine. "Hidden Costs, Value Lost: Uninsurance in America." June 2003. <http://www.iom.edu/?id=12313&redirect=0>.
- Institute of Medicine. "Preventing Medication Errors." Institute of Medicine Report Brief, 2006. <http://www.iom.edu/Object.File/Master/35/943/medication%20errors%20new.pdf>.
- Institute of Medicine. "Performance Measurement: Accelerating Improvement." Institute of Medicine Report Brief, December 2005. [http://www.iom.edu/Object.File/Master/35/324/PerformanceMeasurement\\_Brief.pdf](http://www.iom.edu/Object.File/Master/35/324/PerformanceMeasurement_Brief.pdf).
- Kaiser Family Foundation and Health Research and Educational Trust. "Employer Health Benefits: 2008 Annual Survey." <http://ehbs.kff.org/>.
- Karaca-Mandic, Pinar, J. M. Abraham, and C. E. Phelps. "A Burden or Merely a Load: New Empirical Estimates of Health Insurance Loading Fees by Group Size," University of Minnesota Working Paper, May 2009.

- Karoly, L. and J. Rogowski. "The Effect of Access to Post-Retirement Health Insurance on the Decision to Retire Early." *Industrial and Labor Relations Review*, 1994, 48: 103-123.
- Lee, Jason. "Are Health Insurance Premiums Higher for Small Firms?" Robert Wood Johnson Foundation Research Synthesis Report No. 2. September 2002.  
[http://www.rwjf.org/pr/synthesis/reports\\_and\\_briefs/pdf/no2\\_policybrief.pdf](http://www.rwjf.org/pr/synthesis/reports_and_briefs/pdf/no2_policybrief.pdf).
- Lerner, Josh. "The Government as Venture Capitalist: The Long-Run Effects of the SBIR Program," *Journal of Business*, 1999, 72: 285-297.
- Madrian, Brigitte C., G. Burtless, and J. Gruber. "The Effect of Health Insurance on Retirement," *Brookings Papers on Economic Activity*, 1994, No. 1: 181-252.
- Madrian, Brigitte C. "Employment-Based Health Insurance and Job Mobility: Is There Evidence of Job-Lock?" *Quarterly Journal of Economics*, 1994, 109(1): 27-54.
- Manning, Willard G., J. Newhouse, N. Duan, E. Keeler, A. Leibowitz, and M. Marquis. "Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment," *American Economic Review*, 1987, 77(3): 251-77.
- Marquis, M. Susan, M. Buntin, J. Escarce, K. Kapur, T. Louis, and J. Yegian. "Consumer Decision Making in the Individual Health Insurance Market," *Health Affairs*, 2006, 25: W226–W234.
- McGlynn, Elizabeth, S. Asch, J. Adams, J. Keeseey, J. Hicks, A. DeCristofaro, and E. Kerr. "The Quality of Health Care Delivered to Adults in the United States." *New England Journal of Medicine*, 2003, 348: 2635-2645.
- McKinsey Global Institute. "Accounting for the Cost of U.S. Health Care: A New Look at Why Americans Spend More." December 2008.  
[http://www.mckinsey.com/mgi/reports/pdfs/healthcare/US\\_healthcare\\_report.pdf](http://www.mckinsey.com/mgi/reports/pdfs/healthcare/US_healthcare_report.pdf).
- Monheit, Alan C. and P. F. Cooper. "Health Insurance and Job Mobility: Theory and Evidence," *Industrial and Labor Relations Review*, 1994, 48(1): 68-85.
- O'Connor, Annette M., H. A. Llewellyn-Thomas, and A. B. Flood. "Modifying Unwarranted Variations in Health Care: Shared Decision Making Using Patient Decision Aids," *Health Affairs*, 2004, Web Exclusive, W63-W72.
- Office of Management and Budget. "Analytical Perspectives, Budget of the U.S. Government, Fiscal Year 2010." <http://www.whitehouse.gov/omb/budget/fy2010/assets/spec.pdf>. 2009.
- Organization for Economic Cooperation and Development. OECD Health Data 2008. Frequently Requested Data. December 2008.  
[http://www.oecd.org/document/16/0,3343,en\\_2649\\_34631\\_2085200\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/16/0,3343,en_2649_34631_2085200_1_1_1_1,00.html)
- Pauly, Mark V. *Health Benefits at Work: An Economic and Political Analysis of Employment-Based Health Insurance* (Ann Arbor: The University of Michigan Press, 1998).
- Rhoades, J. and S. Cohen. Agency for Health Care Research and Quality, U.S. Department of Health and Human Services, "The Long-Term Uninsured in America, 2002-2005." Statistical Brief #183, 2007.

- Robert Wood Johnson Foundation, Commission to Build a Healthier America. "Beyond Health Care: New Directions to a Healthier America," April 2009.
- Rust, J. and C. Phelan. "How Social Security and Medicare Affect Retirement Behavior in a World of Incomplete Markets." *Econometrica*, 1997, 66: 781-831.
- Selby, Joe V., B. Firemand, and B. E. Swain. "Effect of a Copayment on Use of the Emergency Department in a Health Maintenance Organization," *New England Journal of Medicine*, 1996, 334(10): 635-642.
- Simon, Kosali. "Adverse Selection in Health Insurance Markets: Evidence from State Small-Group Health Insurance Reforms." *Journal of Public Economics*, 2005, 89: 1865-1877.
- Studdert, David, M. Mello, W. Sage, C. DesRoches, J. Peugh, K. Zapert, and T. Brennan. "Defensive Medicine Among High-Risk Specialist Physicians in a Volatile Malpractice Environment." *Journal of the American Medical Association*, 2005, 293(21): 2609-2617.
- U.S. Department of Commerce. U.S. Census Bureau. "U.S. Population Projections." 2008. [http://www.census.gov/population/www/projections/files/nation/download/NP2008\\_D1.xls](http://www.census.gov/population/www/projections/files/nation/download/NP2008_D1.xls).
- U.S. Department of Commerce. U.S. Census Bureau. Current Population Survey, Annual Social and Economic Supplement, 2008. <http://www.census.gov/cgi-bin/broker>.
- U.S. Department of Commerce. National Income and Product Accounts. "Table 1.1.5. Gross Domestic Product." Last revised April 29, 2009. <http://www.bea.gov/national/nipaweb/TableView.asp?SelectedTable=5&Freq=Qtr&FirstYear=2007&LastYear=2009>
- U.S. Department of Commerce. National Income and Product Accounts. "Table 3.2. Federal Government Current Receipts and Expenditures." Last revised April 29, 2009. <http://www.bea.gov/national/nipaweb/TableView.asp?SelectedTable=85&Freq=Qtr&FirstYear=2007&LastYear=2009>.
- U.S. Department of Commerce. National Income and Product Accounts. "Table 7.8. Supplements to Wages and Salaries by Type." 2007. <http://www.bea.gov/national/nipaweb/TableView.asp?SelectedTable=288&Freq=Year&FirstYear=2006&LastYear=2007>.
- U.S. Department of Health and Human Services. Agency for Healthcare Research and Quality. Center for Financing, Access and Cost Trends. "1996 Medical Expenditure Panel Survey-Insurance Component." [http://www.meps.ahrq.gov/mepsweb/data\\_stats/summ\\_tables/insr/national/series\\_1/1996/tid1.pdf](http://www.meps.ahrq.gov/mepsweb/data_stats/summ_tables/insr/national/series_1/1996/tid1.pdf).
- U.S. Department of Health and Human Services. Agency for Healthcare Research and Quality. Center for Financing, Access and Cost Trends. "2006 Medical Expenditure Panel Survey-Insurance Component." [http://www.meps.ahrq.gov/mepsweb/data\\_stats/summ\\_tables/insr/national/series\\_1/2006/tia2.pdf](http://www.meps.ahrq.gov/mepsweb/data_stats/summ_tables/insr/national/series_1/2006/tia2.pdf).
- U.S. Department of Health and Human Services. Centers for Medicare and Medicaid Services. The Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds. "2008 Annual Report." March 2008. <http://www.cms.hhs.gov/ReportsTrustFunds/downloads/tr2008.pdf>.

- U.S. Department of Health and Human Services. Centers for Medicare and Medicaid Services. National Health Expenditure Accounts. "National Health Expenditure Web tables." <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/tables.pdf>.
- U.S. Department of Health and Human Services. Centers for Medicare and Medicaid Services. National Health Expenditure Accounts. "National Health Expenditure Projections 2008-2018." <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/proj2008.pdf>.
- U.S. Department of Labor. Bureau of Labor Statistics. Current Population Survey. Labor Force Statistics. "Employment status of the civilian noninstitutional population by age, sex, and race." Table A-13. April 2009." <http://www.bls.gov/web/cpseea13.pdf>.
- U.S. Department of Labor. Bureau of Labor Statistics. Payroll Survey. Employer Costs for Employee Compensation Summary. "Private industry workers, by major occupational group and bargaining unit status." Table 5. March 2009. <http://www.bls.gov/news.release/ecec.nr0.htm>.
- U.S. General Accounting Office. "Medicare Part B Imaging Service: Rapid Spending Growth and Shift to Physician Offices Indicate Need for CMS to Consider Additional Management Practices," Report to Congressional Requesters. June 2008. <http://www.gao.gov/new.items/d08452.pdf>.
- van Praag, C. Mirjam and P. H. Versloot. "What is the Value of Entrepreneurship? A Review of Recent Research." *Small Business Economics*, 2007, 29: 351-382.
- Wennberg, John, E. Fisher, and J. Skinner. "Geography and the Debate over Medicare Reform." *Health Affairs*, 2002, Web Exclusive, W96-W113.
- Wharam, J. Frank, B. Landon, A. Galbraith, K. Kleinman, S. Soumerai, D. Ross-Degnan. "Emergency Department Use and Subsequent Hospitalizations among members of High-Deductible Health Plan," *Journal of the American Medical Association*, 2007, 297(10): 1093-1102.