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The High Price of Massachusetts Health Care Reform

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Table of Contents

Executive Summary 4

Introduction 7

Health Care Reform in Massachusetts 7

Current Cost Estimates 10

The BHI Estimates 13

Conclusion 19

Methodology 20

References 28

About the Authors 31

Table of Tables & Figures

Table 1: Effect of Health Care Reform on HHS and Medicaid Spending ($m)..14

Table 2: Effect of Health Care Reform on HHS & Medicaid with National Growth Rates ($m).............14

Table 3: Reallocation of HHS and Medicaid Spending ($m) 15

Table 4: Effects of Health Care Reform on Average Health Insurance Premiums 16

Table 5: Effects of Healthcare Reform on Total Health Insurance Costs 17

Table 6: Effects of Health Care Reform on Medicare Spending in Massachusetts 17

Table 7: Effects of Health Care Reform on the Private Sector Insurance Premiums.................................23

Table 8: State HHS Spending ($m)...24

Table 9: State Medicaid Spending ($m)..24

Table 10: Medicare Advantage Plan Rate ($ per Month) 24

Table 11: Medicare Personal Health Care Expenditures ($m) 26

Table 12: Insurance Costs, Average Single Plan Premium ($ per Year)...26

Table 13: Insurance Costs, Average Family Plan Premium ($ per Year)..27

Executive Summary

In 2006, Massachusetts enacted landmark health care reform legislation that promised to extend health care coverage to all citizens while significantly lowering costs. The law imposes mandates on residents to obtain health insurance and on employers with 11 or more employees to provide health insurance for their employees. It also expands Medicaid coverage and establishes a health insurance subsidy program. Additionally, it creates an insurance exchange, the Massachusetts Health Insurance Connector, which helps individuals who are not eligible for Medicaid purchase competitively-priced health plans.

Now that the law has been in effect for more than five years, we can begin to assess its impact on the state of Massachusetts. Several studies have quantified the effect of Massachusetts health care reform on the state budget and health insurance premiums, but to date no study has set out to calculate the aggregate cost of the health care reform law.[1]

In this study, the Beacon Hill Institute at Suffolk University (BHI) attempts to fill the gap by calculating the effect of health care reform on state and federal governments and the private health insurance markets, including employee contributions to their private insurance plans. We find that, under health care reform:

- State health care expenditures have risen by $414 million over the period;
- Private health insurance costs have risen by $4.311 billion over the period;
- The federal government has spent an additional $2.418 billion on Medicaid for Massachusetts.
- Over this period, Medicare expenditures increased by $1.426 billion;
- For a total cumulative cost of $8.569 billion over the period; and
- The state has been able to shift the majority of the costs to the federal government.

The federal government continues to absorb a significant cost of health care reform through enhanced Medicaid payments and the Medicare program. Health care reform has also increased the rate for Medicare Advantage plans in Massachusetts, which has contributed to an increase in Medicare health care expenditures through prices for medical service delivery.

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[1]See John F. Cogan, Glen Hubbard, and Daniel Kessler, "The Effect of Massachusetts' Health Reform on Employer- Sponsored Insurance Premiums," *Forum for Health Economics & Policy* 13, no. 2, http://www.bepress.com/fhep/13/2/5/ (accessed December, 2010).

We estimate the effects of health care reform by comparing the actual value of each variable with the value it would have had, based on recent trends, had health care reform not been implemented. We use the year 2006 (the year reform was enacted) and year 2007 (first full year of implementation) as alternative "event" dates in separate analyses. We also compare the growth in the expenditure variable in Massachusetts after the "event" date with the growth rate of the same variable in the United States as a whole, in order to exclude national factors that have contributed to the Massachusetts growth rate.

Cost-containment is often a major goal of health reform plans. However, this particular health care reform legislation did not provide an effective means for containing costs. The promise of cost-containment rested on a vague hope that the newly insured would seek preventive care, access their primary care physicians earlier in their illness and avoid costly emergency room visits. Yet, the number of emergency room visits rose from 2.351 million in 2006 to 2.521 million in 2009, or by 7.2% over the period. The total cost of emergency visits has soared by 36% over the period, or by $943 million.[2]

Under health care reform, the state Health Safety Net Fund (HSNF), previously known as the Uncompensated Care Fund, which provides payments to hospitals and community health centers for delivering care to the uninsured and underinsured, has seen payments drop by about $250 million from FY 2007 to FY 2008. However, the HSNF payments began to rise again in FY 2009, possibly due to the recession. In fact, the HSNF experienced a shortfall of $100 to $125 million in FY 2011, meaning that the hospitals and community health centers had to absorb these losses.[3]

It is clear that the healthcare reform law sparked increases in private health insurance premiums. Premiums for plans covering a single person rose by $284 per year by 2009 and increased family plan premiums by $2,504 per year.

The vast number of the newly insured residents in Massachusetts is responsible for bottlenecks in the primary care system that forces residents to utilize emergency room care at a significantly higher than expected rate.[4] However, the promise of expanded

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[2] See Office of Health and Human Services, "Hospital Summary Utilization," http://www.mass.gov/?pageID=eohhs2subtopic&L=6&L0=Home&L1=Researcher&L2=Physical+Health+and+Treatment&L3=Health+Care+Delivery+System&L4=DHCFP+Data+Resources&L5=Hospital+Summary+Utilization+Data&sid=Eeohhs2 (accessed June 24, 2011).

[3] Massachusetts Department of Health and Human Services, Division of Healthcare and Finance Policy, "Health Safety Net Annual Reports for 2010, 2009, 2008 and 2007," http://www.mass.gov/Eeohhs2/docs/dhcfp/r/pubs/10/hsn_2010_annual_report.pdf (accessed January 2010).

[4] Kay Lazar, "Many continue to rely on ERs," *Boston Globe,* November 29, 2010, http://www.boston.com/news/local/massachusetts/articles/2008/11/29/many_continue_to_rely_on_ers/ (accessed December, 2010).

coverage at lower costs contradicts another basic economic theory. By increasing demand for health care services without an equal increase in their supply, the universal health care law guaranteed that the price of health care services and health insurance would increase. Our findings are consistent with this most fundamental tenet of economic law.

Introduction

In April 2006, then Governor Mitt Romney signed the Massachusetts health care reform (HRC) law, which entitled "An Act Providing Access to Affordable, Quality, Accountable Health Care." At the time, proponents, including Governor Romney, claimed that the law would not only expand coverage to all Massachusetts residents, but also reduce health care costs.[5]

Almost four years later, in March 2010, President Obama signed into law "The Patient Protection and Affordable Care Act," which, some have said, is "essentially identical" to the Massachusetts law.[6] The President claimed that the federal law "will lower health care costs, guarantee more health care choices, and enhance the quality of health care."[7]

If the federal law is modeled after the Massachusetts law, it stands to reason that Massachusetts' experience with health care reform provides an idea of what is in store for the country under the federal law. We now have five years of data to consider in assessing how well health care reform has worked out for Massachusetts. In this study, we provide estimates of the effects of Massachusetts health care reform on health care costs as measured by federal and state expenditures on health care and by the cost of private insurance.

Health Care Reform in Massachusetts

The Massachusetts health care reform law was a bold attempt to attain universal health insurance coverage and reduce health care costs. The law was the culmination of three decades of state intervention in health care markets. An understanding of the long-standing imperfections of the state's health care system is critical to understanding the forces that led to the passage of the Massachusetts law.

In 1974, Massachusetts joined Maryland, New York and New Jersey in a hospital rate-setting program that implemented annual revenue caps for acute care hospitals.[8] The regulatory formulas became complex and cumbersome for hospitals to administer.

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[5] Joseph Rago, "The Massachusetts Health-Care 'Train Wreck': The future of ObamaCare is unfolding here: Runaway spending, price controls, even limits on care and medical licensing," *Wall Street Journal* *http://online.wsj.com/article/SB10001424052748704324304575306861120760580.html*, July 7, 2010.

[6] Ibid.

[7] U.S. Department of Health and Human Services, Healthcare.gov, "Understanding the Affordable Care Act," http://www.healthcare.gov/law/introduction/index.html (accessed November 2010).

[8] John McDonough, "The road to universal health coverage in Massachusetts," *The New England Journal of Public Policy* 20, no. 1 (2004): 57-63.

In 1986, Congress enacted the Emergency Medical Treatment and Active Labor Act requiring hospitals to provide care to anyone needing emergency health care treatment regardless of citizenship, legal status or ability to pay. The Act failed to provide funds to reimburse the hospitals.[9] That year, Massachusetts established the Uncompensated Care Pool to cover the costs of providing care to the uninsured: a burden that previously fell on the individual hospitals. The pool is funded through a surcharge on all payments made to hospitals and ambulatory service centers and an assessment paid by the hospitals. To cover the shortfalls between revenue and expenses, the legislature often made appropriations.[10]

Two years later, the state enacted legislation that required all employers with more than five workers to provide health insurance or pay $1,680 per employee tax to help provide coverage. The law also retained, but at the same time, relaxed the regulation of hospital budgets. Other provisions included a health insurance mandate for all full-time college students, as well as programs that expanded health insurance coverage to the unemployed, disabled, children, low-income pregnant women and new mothers. However, given strong opposition from the business community— coupled with a severe recession in the state economy—the employer mandate was never implemented.[11]

Governor William Weld, who took office in 1991, began to remove some of the regulations enacted in the 1970s. In addition, Weld began an initiative to expand health insurance coverage by utilizing Section 1115 of the Social Security Act Federal Medicaid Research and Demonstration waiver. The plan was to bring hundreds of millions in new federal dollars into the state, subsidize employer coverage for lower income workers, and repeal the 1988 employer mandate. The Weld administration advertised the plan as "universal coverage without an employer mandate." Subsequent legislation increased Medicaid eligibility for children and adjusted the Uncompensated Care Pool financing formula. Later, the legislature added a cigarette tax increase of $0.25 per pack and a prescription drug program for low-income seniors.[12]

The Weld administration was able to secure additional federal funding for this effort by convincing the federal government that the waiver was presumably "budget-neutral"

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[9] U.S. Government Printing Office, Title 42 "Examination and treatment for emergency medical conditions and women in labor," 42USC1395dd, (January 2002) http://law.justia.com/us/codes/title42/42usc1395dd.html (accessed September 29, 2010).

[10] Robert W. Seifert, "The Uncompensated Care Pool: Saving the Safety Net," Mass. Health Policy Forum *Issue Brief* 16, (October 2002): 1-32, http://www.ncbi.nlm.nih.gov/pubmed/12776714 (accessed June 21,2011.

[11] McDonough, 59.

[12] Ibid, 60.

(spending would be at the same levels as without the waiver).[13] As a result of the flexibility provided by the waiver, Medicaid enrollments in Massachusetts exploded from 670,000 in 1995 to over one million in 2001, or almost 16% of the state population, before dropping back below one million. Furthermore, health care inflation began to surge as more people gained access to insured care.

This situation posed a dilemma to the state officials. They had secured a renewal of the waiver in 2002, but the waiver was up for renewal again in 2005. They needed to secure continued federal supplemental funding commitments under the Medicaid waiver. Without an extension of the waiver, the state would have been forced to cover the total costs of the expanded Medicaid rolls (over $2 billion) or revert to the standard eligibility rules and reduce the rolls.[14] The first option would have crippled the state budget, and the second option would have forced politicians to make unwanted cuts in health care.[15]

Beginning in 2003, Governor Mitt Romney's Secretary of Health and Human Services, Ron Preston, began working on a plan to expand access to health insurance even further. Then, in April 2006, Massachusetts Governor Romney signed into law Chapter 58 which was designed to achieve universal access to health insurance for all Massachusetts residents. The law also gave Massachusetts a new program on which to base an extension of the Medicaid Demonstration Waiver.

Key components were:

- An individual mandate, requiring all residents with the financial means to obtain health insurance;
- An employer mandate requiring all employers with 11 or more employees to make a 'fair and reasonable' contribution towards their employees' health insurance;
- An expansion of Medicaid and creation of a health insurance subsidy program for residents with income up to 300% of the federal poverty level; and
- The creation of a quasi-public authority – the Massachusetts Health Insurance Connector (Connector) – that would serve as an insurance "exchange" and provide a "seal-of-approval" to health insurance products that the Connector deemed to be of good value to consumers.

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[13] Joshua Greenberg and Barry Zuckerman, "State Health Care Reform in Massachusetts: How One State Expanded Health Insurance for Children," *Health Affairs* 16, no. 4 (1997): 188.
[14] Using data from the 2004 and 2008 Massachusetts Comprehensive Annual Financial Report, we average the Medicaid rolls for 1995-1997, or 691,000, and for 2003-2005, or 961,000. We multiply the difference of (270,000) by the average Medicaid expenditure per case for 2005 ($7,815) to arrive at $2.110 billion.
[15] McDonough, 61.

Supporters of the reform plan argued that it would enable all residents to obtain high quality health insurance, ease the financial burden on hospitals for providing care to the uninsured, lower the cost of health insurance and eliminate "job-lock" by providing portability of insurance through the Connector. A key concept that proponents used to generate support was that of "shared responsibility." To be effective, the rationale was that any health care reform proposal must require individuals and families, employers and government to share the burden of expanding coverage.

Current Cost Estimates

The law has achieved success in increasing health insurance coverage from 91% of the population in 2005 to 98.1% in 2010.[16] However, the law has failed to deliver the promised reductions in health care costs or to lessen the financial burden on hospitals that serve a disproportionate percentage of uninsured and underinsured residents.[17] Because these costs and burdens have increased rather than decreased, health insurance premiums, particularly those paid by small business, have continued to rise.

Officials at the Commonwealth Connector and other supporters of the law have become conspicuously silent on the issue of cost. The Division of Health Care Finance and Policy estimates that per capita spending on health care in Massachusetts is 15% higher than the rest of the nation, even when accounting for the state's higher wages and spending on medical research and education.[18] Nevertheless, even that report dismisses any direct connection between higher costs in Massachusetts and the reform law. It concludes that increasing health care costs are a national problem, not unique to Massachusetts or directly caused by Chapter 58's expansion of access to coverage."[19]

The report mistakenly identifies market failure, not policy failure, as the driver of rising health care costs. It points to a "wide variation in the prices that are paid by health insurers, reflecting an imbalance in the health care marketplace that merits intervention."[20] Like most studies that identify "market failure" as the problem, the report recommends more government intervention in the health care market, such as:

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[16] Massachusetts Department of Health and Human Services, "Health Insurance Coverage in Massachusetts: Results from the 2008-2010 Massachusetts Health Insurance Surveys," http://www.mass.gov/Eeohhs2/docs/dhcfp/r/pubs/10/mhis_report_12-2010.pdf (accessed January 2011).
[17] Urban Institute, "Estimates of Health Insurance Coverage in Massachusetts from the 2009 Massachusetts Health Insurance Survey," (October 2009).http://www.mass.gov/Eeohhs2/docs/dhcfp/r/pubs/09/his_policy_brief_estimates_oct-2009.pdf.
[18]Division of Health Care Finance and Policy, "Massachusetts Health Care Cost Trends: 2010 Final Report," (April 2010):1.
[19] Ibid, 2.
[20] Ibid, 3.

- More health resource planning;
- Immediate government oversight of health insurance premiums and provider rates;
- Legislative review of provider contract provisions that may now limit competition; and
- Oversight and direction provided by an independent public entity.[21]

According to one report, premiums in Massachusetts are growing 21-46% faster than the national average, in part as a result of the "minimum creditable coverage" requirements for meeting the individual mandate.[22] Massachusetts' largest health insurers initially sought double-digit premium increases in 2010, with small businesses and individuals to experience the greatest increase.[23] Several insurers negotiated a reduced increase with the state health insurance commission, while others continue to bargain with the state.

In 2009, the Massachusetts Taxpayers Foundation (MTF) issued a report in which it estimated that health care spending by Massachusetts would increase by $707 million from FY 2006 to FY 2010. According to the MTF, the federal government paid for half of this increase, and the law raised taxpayer health care costs by $353 million from 2006 – 2010: an *average* increase of $88 million per year.[24] However, as Cato Institute scholar Michael Cannon points out, MTF assumes cuts in payments to safety net hospitals for FY 2010, which are unlikely to materialize. These cuts would reduce overall spending on "health care reform," by $110 million between FY 2009 and FY 2010.[25] As noted above, the Health Safety Net Fund failed to make $75 million in payments to hospitals and community health centers in FY 2010. Since these healthcare facilities had to absorb the unpaid costs, the cuts do not reflect savings but rather cost shifting.

Perhaps most importantly, according to the Massachusetts Taxpayers Foundation, only 20% of reform's costs actually accrued to the Commonwealth of Massachusetts. The

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[21] Ibid.
[22] Cathy Schoen, Jennifer L. Nicholson, and Sheila D. Rustgi, "Paying the Price: How Health Insurance Premiums Are Eating up Middle-Class Incomes," The Commonwealth Fund, http://bit.ly/91cTbe, (August 2009): 8.
[23] Robert Weisman, "2 Insurers Again Seek Double-digit Increases: Earlier Rejections Still Under Appeal," *Boston Globe*, June 3, 2010, http://www.boston.com/business/healthcare/articles/2010/06/03/mass_health_insurers_seek_double_digit_increases_again/ (accessed June 11, 2011).
[24] Massachusetts Taxpayers Foundation, *Massachusetts Health Reform: The Myth of Uncontrolled Costs* (May 2009). http://www.masstaxpayers.org/files/Health%20care-NT.pdf (accessed September 27, 2010).
[25] Michael F. Cannon, "The Boston Globe Misleads Readers About the Cost of Health Reform in Massachusetts," August 5, 2009, http://www.cato-at-liberty.org/the-boston-globe-knowingly-obscures-facts-of-mass-miracle/ (accessed September 30, 2010.)

federal government paid for another 20%.[26] The vast majority of new spending on health care affects private individuals and businesses, whose increased spending on health care makes up 60% of the total.[27]

According to Michael Cannon and Aaron Yelowitz, "total new spending came to more than $1 billion in 2008." Specifically, "the state of Massachusetts, the federal government, and the newly insured spent $1 billion more in 2008 than they would have without health care reform." The authors call this a conservative estimate, since it includes only new spending by the state government, the U.S. government and the previously uninsured. It does not include new spending on insurance by previously insured residents, whose policies were deemed inadequate under health care reform's new mandates. The policies of the previously insured exceeded the out-of-pocket limits, and the services covered under such plans were often too limited to satisfy the new law. In addition, Cannon and Yelowitz criticize insurance coverage rate claims, asserting that "gains in coverage have been overstated by nearly 50%, while costs have been understated by at least one-third and likely more." [28]

In one of the early studies on the new health care law in Massachusetts, Cogan and his co-authors estimated the effect of health care reform on employer-sponsored insurance premiums from 2006-2008.[29] Controlling for other national premium trends, they found that health care reform had increased these premiums by 6% over the period. This increase becomes more striking when we consider that Commonwealth Care began to "crowd out" employer sponsored insurance, meaning that the demand for coverage has actually fallen.[30]

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[26] Mass Taxpayers Foundation, *Massachusetts Health Care Reform*.
[27] Michael F. Cannon, "Busting the Bay State: Hiding the Cost of Health Reform," *Providence Journal*, August 9, 2009, http://www.projo.com/opinion/contributors/content/CT_cannon9_08-09-09_73F9ICH_v9.3f8e6eb.html. (accessed September 20, 2010).
[28] Aaron Yelowitz and Michael F. Cannon, "Policy *Analysis* 657, Cato Institute (January 20, 2010).
[29] Cogan, Hubbard, and Kessler, "The Effect of Massachusetts' Health Reform on Employer-Sponsored Insurance Premiums."
[30] Ibid.

The BHI Estimates

To gauge the rise in health care costs attributable to the reform law, BHI compiled historical data on relevant health care costs, defined as Massachusetts Health and Human Services (non-Medicaid), Medicaid, Medicare expenditures and Medicare Advantage plan rates and health insurance premiums in Massachusetts. Using historical data, we estimated the data-point values for the years 2006 to 2009 (or 2010 if data is available) to determine baseline estimates of spending had health care reform not been enacted. Our state expenditure data is available in state fiscal years, while our other data available in calendar years. We then compared the baseline estimates to the actual data to determine what effect health care reform had on health care costs. This method is similar to that used by other researchers to estimate health care costs.[31]

To obtain our baseline estimates, we calculated two linear trends of the data, prior to 2006 and 2007, the year health care reform was enacted and the first full year after enactment. These dates act as our analysis "events." In the absence of health care reform, the cost data should approximately follow its recent historical pattern. The job of calculating the impact based on deviations from the trend is complicated because of the problem of determining the true trend. Therefore, we used four scenarios to make our estimates. For example, we used 2006 in an attempt to capture any changes that began as the health care reform law became more of a certainty over the course of the year.

To check our results we also conducted the analysis using the trend in national data, where available. This method captures any trends in spending that have affected the entire U.S. health care market, but were not captured in our trend analysis for the state. This method provides a second benchmark against which to measure Massachusetts health care spending.

Our hypothesis is that if health care reform increased health care costs in the Commonwealth, then the actual data for 2006-2009/2010 would be higher than the trend. Conversely, if the reform law reduced the growth rate of health care costs, then the actual data would be below the trend. To calculate our final estimates, we take the average of our four estimates. The appendix contains a more detailed explanation of our methodology and data.

Medicaid and Health and Human Services

Table 1 shows the estimation results using linear trend calculation for HHS spending and exponential trend for Medicaid spending. The top half of Table 1 contains our estimates using FY 2006 — the year health care reform legislation was enacted — as our

[31] Cogan, et al.

event date. In the first five years the reform law lowered spending for Massachusetts HHS and the state portion of Medicaid before spending exceeded the trend for FY 2009; leading to total savings of $466 million to the state budget. While the state HHS and Medicaid spending dropped in the initial years, federal Medicaid spending rose during the period by $2.315 billion.

However, if we use FY 2007 as our event, health care reform increased state HHS and Medicaid spending by $513 million and increased federal Medicaid spending by $1.668 billion for a total increase of $2.181 billion over the period. Our results demonstrate the importance of the federal Medicaid waiver extension negotiated in FY 2008 in shielding the state from incurring the full cost of the health care reform law. The federal government absorbed between $1.668 billion and $2.315 billion in Medicaid spending.

Table 1: Effect of Health Care Reform on HHS and Medicaid Spending ($m)

Event Date: FY 2006	2006	2007	2008	2009	2010	Total
Massachusetts HHS+ Medicaid	(265)	(180)	(7)	174	(189)	(466)
Federal Government Portion of Medicaid	338	582	565	700	130	2,315
Total	**73**	**401**	**558**	**874**	**(58)**	**1,849**
Event Date: FY 2007		2007	2008	2009	2010	Total
Massachusetts HHS+ Medicaid		(173)	286	360	40	513
Federal Government Portion of Medicaid		409	530	634	94	1,668
Total		**237**	**815**	**994**	**135**	**2,181**

Table 2 shows the results using the growth rate of state government health care and Medicaid spending in the other states as our baseline. The results are consistent with those above. Massachusetts and HHS and Medicaid spending growth drops below the growth rate of the other states in FY 2006, FY 2007 and FY 2008, before moving higher than the other states in FY 2009 and dropping again in FY 2010, while federal Medicaid spending increases rapidly throughout the period. Over the period, Massachusetts HHS and total Medicaid spending fell by an average of $1.217 billion.

Table 2: Effect of Health Care Reform on HHS & Medicaid with National Growth Rates ($m)

Event Date: 2006	2006	2007	2008	2009	2010	Total
Massachusetts HHS+ Medicaid	(591)	(619)	(26)	164	(145)	(1,217)
Federal Government Portion of Medicaid	187	396	763	995	597	2,938
Total	**(404)**	**(223)**	**737**	**1,158**	**453**	**1,721**
Event Date: 2007		2007	2008	2009	2010	Total
Massachusetts HHS+ Medicaid		191	818	1,043	772	2,825
Federal Government Portion of Medicaid		396	763	995	597	2,751
Total		**587**	**1,582**	**2,038**	**1,369**	**5,576**

When we use FY 2007 as our start date, state HHS and Medicaid spending grow rapidly compared to the national trend. The difference in the growth rate of spending between the state and the national average shows Massachusetts spent $2.825 billion in more from FY 2007 to FY 2010. Once again, the Medicaid waiver plays an important role in relieving the state of health care reform induced health care expenditures. On average, Massachusetts spent $414 million over the period due to the health care reform law.

The Effect of the Medicaid Waiver

The Massachusetts Comprehensive Annual Financial Report (CAFR) provides a glimpse of the effect of the FY 2008 Medicaid waiver extension agreement. Table 3 shows the ten-year schedule of HHS and Medicaid expenditures and other financing uses from both the FY 2007 (left portion of the table) and FY 2009 (middle portion) CAFR reports.[32]

The reports contain different entries under HHS and Medicaid headings for the fiscal years FY 2002 through FY 2008. The FY 2007 CAFR shows the data before the Medicaid waiver extension was approved in September of 2008, while the FY 2009 CAFR shows the spending after the waiver extension. The FY 2009 CAFR shows smaller amounts under HHS and larger amounts under Medicaid than the FY 2007 CAFR. The changes between the amounts under the two headings offset one another almost exactly, showing the amount of spending that the Medicaid waiver has allowed the state to reclassify as Medicaid.

Table 3: Reallocation of HHS and Medicaid Spending ($m)

Fiscal	Pre waiver extension			Post waiver extension			Difference	
Year	HHS	Medicaid	Total	HHS	Medicaid	Total	HHS	Medicaid
2002	6,104	5,261	11,365	5,386	5,979	11,365	-718	718
2003	5,962	5,542	11,504	5,327	6,177	11,504	-635	635
2004	6,832	5,945	12,777	5,868	6,909	12,777	-964	964
2005	7,602	6,313	13,915	6,208	7,706	13,914	-1,394	1,393
2006	6,797	7,219	14,016	5,865	8,151	14,016	-932	932
2007	7,089	7,862	14,951	5,907	9,044	14,951	-1,182	1,182
*2008	7,603	8,590	16,193	6,423	9,770	16,193	-1,180	1,180
*2009	8,117	9,410	17,527	6,684	10,843	17,527	-1,433	1,433
*2010	8,522	9,245	17,767	7,089	10,678	17,767	-1,433	1,433
Total	**64,628**	**65,387**	**130,014**	**54,757**	**75,257**	**130,014**	**-9,871**	**9,870**

*Estimate based on FY 2008 CAFR reporting that $4.3 billion in additional Medicaid reimbursements for FY 2009-2011 above the FY 2006-2008 period. Totals may not sum due to rounding.

[32] Comptroller of the Commonwealth, "Massachusetts Comprehensive Annual Financial Reports," (December 2009 and January 2008):164-165, 162-163; http://www.mass.gov/?pageID=oscterminal&L=3&L0=Home&L1=Publications+and+Reports&L2=Financial+Reports&sid=Aosc&b=terminalcontent&f=reports_audits_rpt_cafr&csid=Aosc. (accessed June 2011).

According to the FY 2008 CAFR report, the Medicaid waiver extension "authorizes federal reimbursement for approximately $21 billion in spending from FY 2009 through FY 2011, $4.3 billion more in spending than was authorized for FY06 through FY08."[33] The report outlines the extension of federal reimbursement for all current eligibility and reimbursement levels and Commonwealth Care's subsidized coverage up to 300% of the poverty rate. These figures provide further evidence of how the federal government continues to pick up the state government's tab for health care reform.

Massachusetts Health Care Insurance Rates and Expenditures

BHI examined the effect of health care reform on health insurance costs from the Medical Expenditure Panel Survey conducted by the Agency for Healthcare Research and Quality at the U.S. Department of Health and Human Services. Table 4 displays the results for total insurance premium costs for both single and family plans. By calendar year (CY) 2009, annual premiums for a single plan exceeded the trend line by $217. Between CY 2006 and CY 2009 the total excess premium paid for a single person was $398. The difference for a family plan is even greater, exceeding the trend line by $1,074 in CY 2009. The total aggregate increase in premiums paid on a family plan between CY 2006 and CY 2009 was $3,185. The analysis using CY 2007 as the "event" reduces the total premium increases by nearly half: to $171 for a single plan and $1,822 for a family plan. On average, the single plan premiums increased by $284 and the family plan premiums increased by $2,504.

Table 4: Effects of Health Care Reform on Average Health Insurance Premiums

Event Year	2006	2007	2008	2009	Total
Single Plan ($ per year)					
Event date: 2006	101.60	60	19	217	398
Event date: 2007		23	(22)	170	171
Family Plan ($ per year)					
Event date: 2006	612	704	796	1,074	3,185
Event date: 2007		481	545	796	1,822

The increase in the health care premiums led to large increases in aggregate health insurance costs over the period. Table 5 provides the results.

We estimate that health care reform drove health care insurance expenditures up by $4.736 billion to $6.144 billion over the period. This calculation is based on the assumption that there exists a high correlation between the amount that private consumers pay for health insurance, and the actual consumption of health care. That is,

[33] 2009 CAFR, 19-20.

we are likley to find that private insurance premiums rise or fall, depending on the actual amount of health care that ratepayers consume.

The analysis utilizing CY 2007 as the event year, health care reform increased premiums by $3.361 billion in CY 2009, using the Massachusetts growth trend, or $3.004 billion using the United States growth trend over the period. On average, the health care reform law drove up health care insurance expenditures by $4.311 billion over the period.

Table 5: Effects of Healthcare Reform on Total Health Insurance Costs

	2006	2007	2008	2009	Total
Massachusetts Trend ($m)					
Event Date: 2006	1,292	1,380	1,461	2,011	6,144
Event Date: 2007		914	941	1,506	3,361
US Growth Rate ($m)					
Event Date: 2006	420	979	1,530	1,806	4,736
Event Date: 2007		544	1,080	1,380	3,004

Medicare Expenditures in Massachusetts

As discussed above, the federal government absorbed a large portion of the state government expenditures for health care reform through the state Medicaid waiver program. In order to better understand the federal government's liability for health care reform and, in light of the increases in Medicaid costs and private health insurance costs, BHI analyzed Medicare spending, both insurance plan costs and personal health care expenditures in Massachusetts. Table 6 displays the results.

Table 6: Effects of Health Care Reform on Medicare Spending in Massachusetts

Event Year	2006	2007	2008	2009	2010	Total
Medicare Advantage Rate Plan ($ per year)						
Massachusetts						
Event date: 2006	385	521	874	926	647	3,352
Event date: 2007		328	649	669	359	2,005
Rest of the United States						
Event date: 2006	237	320	360	71	102	1,090
Event date: 2007		201	217	(97)	(80)	242
Medicare personal health care expenditures ($, million)						
Massachusetts						
Event date: 2006	668	955	1,281	1,647	2,056	6,606
Event date: 2007		788	1,099	1,450	1,845	5,186
Rest of United States						
Event date: 2006	52	1,179	1,551	1,969	2,435	7,685
Event date: 2007		968	1,324	1,726	2,177	6,194

Medicare Advantage plans in Massachusetts exhibit a higher growth rate in the period after the passing of health care reform than the trend line prior to reform.[34] In CY 2006, the plan rates jumped to $385 per year above the trend line and surged by $647 in CY 2010 for total increase of $3,352 over the period. When compared to the United States over the same period rates jumped by close to $237 above the trend in the first year, resulting in an average Medicare Advantage plan costing $1,090 more than if health care reform had not been implemented over the five-year period.

We reach similar conclusions using CY 2007 as the event year. Medicare Advantage plan rates are higher, against the United States or Massachusetts trend growth, by $242 per year and $2,005 respectively. Likewise, Medicare personal health care expenditures would have been much lower had health care reform not been implemented. In CY 2010 alone, spending would have been between $1.845 billion and $2.435 billion less. On average, the Medicare Advantage plans increased by $1,672 over the period.

[34] The Kaiser Family Foundation, *Medicare Health and Prescription Drug Tracker*, "Massachusetts: Entire Medicare Advantage Profile," (2009).
http://healthplantracker.kff.org/georesults.jsp?r=26&yo=2&n=1&pt=8 (accessed September 27, 2010).

Conclusion

Amid celebration and fanfare, the Commonwealth of Massachusetts enacted a long-sought-after health care reform law in 2006. Advocates promised that the law would shrink the rolls of the uninsured and reduce health care costs. As a result, Massachusetts was held up as a model upon which national health care reform legislation would be based. There is no doubt the federal Patient Protection and Affordable Care Act closely resembles the state's health care reform law. But it is likely the consequences will be the same: higher costs for both the policyholders and taxpayers.

The Commonwealth has made strides in increasing health insurance coverage in Massachusetts. However, the 2006 law has failed to reduce health care costs, an important goal that was stressed as equally critical to success as universal coverage. Health care reform has pushed increases both above the pre-reform growth trend in Massachusetts and the growth rate found in the rest of the country. The Commonwealth has been fortunate. Few of the increased costs identified in this study have been shifted to the Commonwealth primarily because the federal government, through its Medicaid waiver agreement, has absorbed a large portion of the cost increases.

Private insurance carriers have not been able to escape the burden of the increase in health care costs. While the Commonwealth's health care ticket is paid by the federal government, private companies have no choice but to pass the higher costs onto the insured. Some of these costs fall in the double-digit range, a development that has come under fire from the same state officials who celebrate the law's success. Since it must respond to competitive demands, the insurance industry does not enjoy the largess of the federal government to cover its cost increases. The proposed solution will make the problems worse. Governor Deval Patrick and others now talk of controlling insurance rates through regulatory oversight, a dubious policy. Controlling costs will translate into capping services provided by physicians and other caregivers. These are, in effect, price controls that will dampen the incentive to provide services and lead to longer wait times and the rationing of healthcare.

The ability of the federal government, facing its own budgetary problems, to carry burdens imposed on it by the states, is not unlimited. Furthermore, its beneficence to the Commonwealth will most likely diminish, if not expire, in the future. Policymakers at all levels should take note.

Methodology

We use a simple linear trend equation method, using the TREND formula in Microsoft Excel which returns a value along a linear trend, using the Ordinary Least Squares (OLS) method to calculate the trend for all variables except for Medicaid. According to the state Fiscal Year (FY) 2008 Comprehensive Financial Report, $4.3 billion in additional Health and Human Services (HHS) spending was retroactively reimbursed under federal Medicaid waiver that supports the reform law.[35] This gave the impression that HHS spending dropped. However, state Medicaid spending spiked after FY 2004. In order to adjust for this switch, we used an exponential trend line to better capture this surge in Medicaid spending. All of our graphs report the coefficients of determination (R^2) value which measures the fit of the trend line to the data. The closer to 1.00 the R^2 value, the better the trend line fits to the data. All of our R^2 values exceed 0.82, with most exceeding 0.90, which means our trend line captures from 82% to over 90% of the variation in the data. See individual graphs for their respective R^2 values.

We analyzed the trends using two different 'event' years, both 2006 and 2007. When using event year 2006, the OLS trend calculation uses the years up to and including 2005 to determine the values of the independent variables. The actual data points, for example $551.51 in 1999 for Medicare Advantage plan rates, were used as the dependent variable to determine a simple regression. We then used this regression formula to estimate the spending for the years 2006, 2007, 2008, 2009 and 2010. The difference between our calculated values and the actual values was the cost increase, or decrease, of health care reform in Massachusetts. We employed the same mythology using 2007 as our event year, except data points up to and including 2006 were included, and we calculated only four years of spending (explaining why many of these resulting totals are lower).

In addition to using the Massachusetts trend for our calculations, we used the national trend, where available and applicable, to control for national policies and price changes that might have affected the cost of health coverage. To achieve this, we compiled the same data sets for the United States, and calculated the trend using both 2006 and 2007 as the event years. We then calculated the percent difference between the United States trend and the United States actual, and applied that to the Massachusetts actual, resulting in the Massachusetts trend with respect to the United States.

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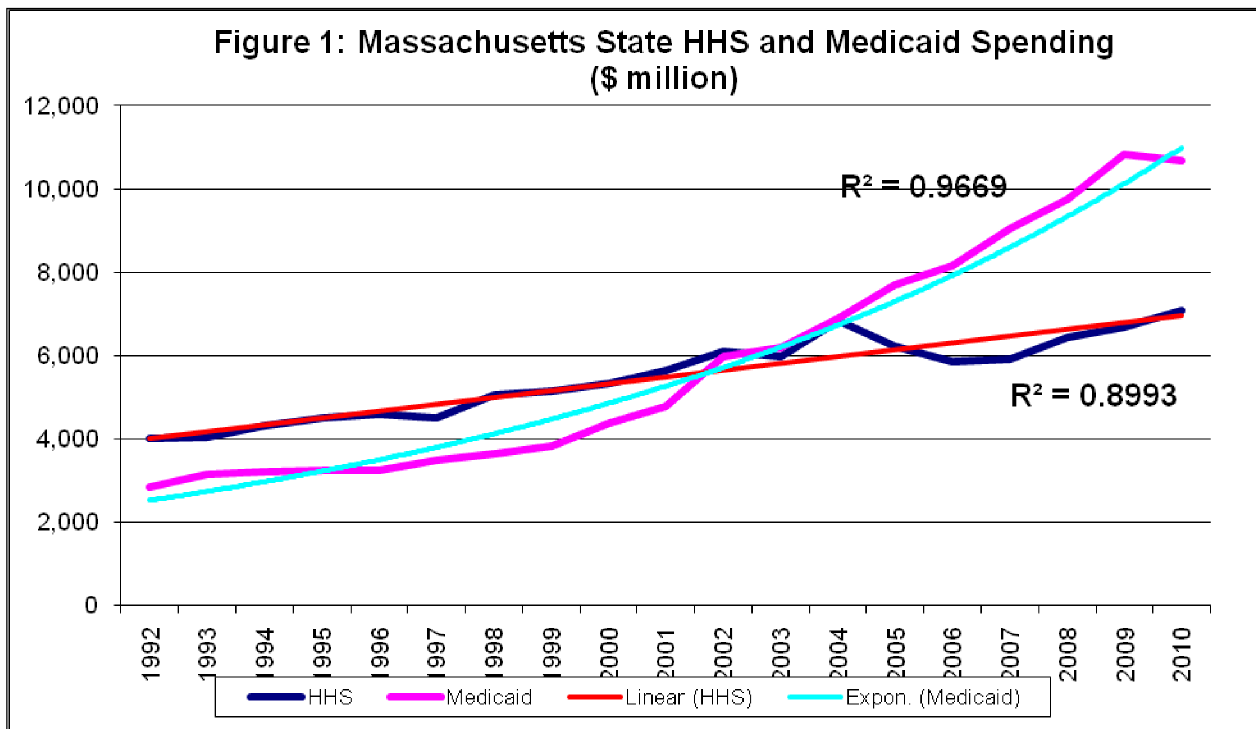
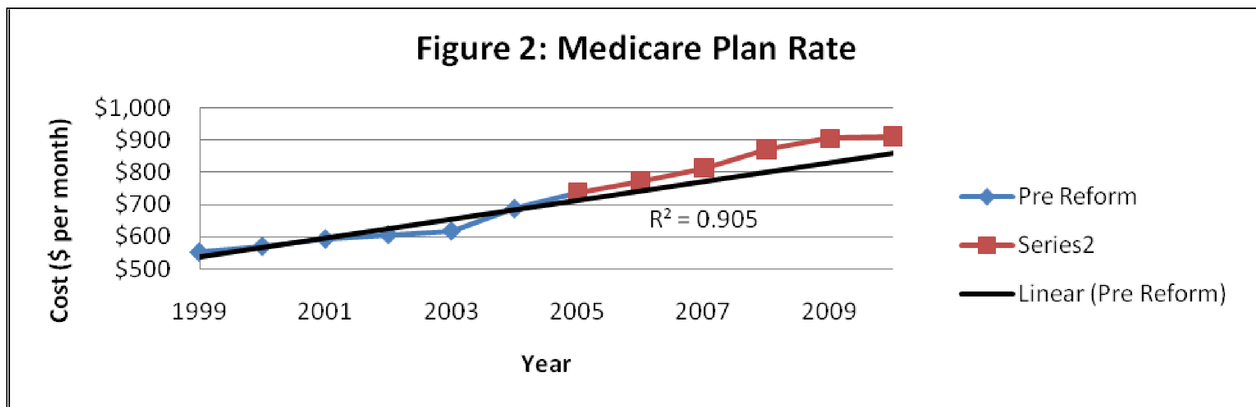
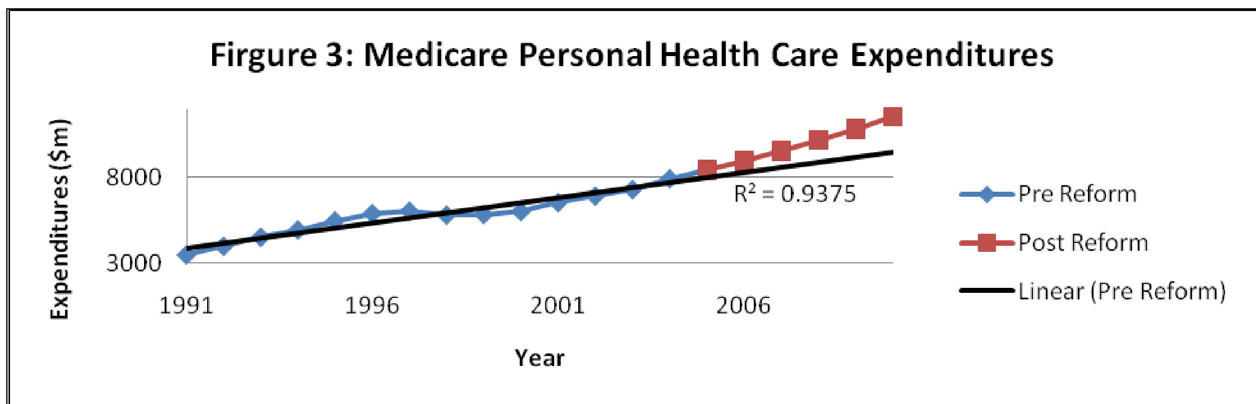
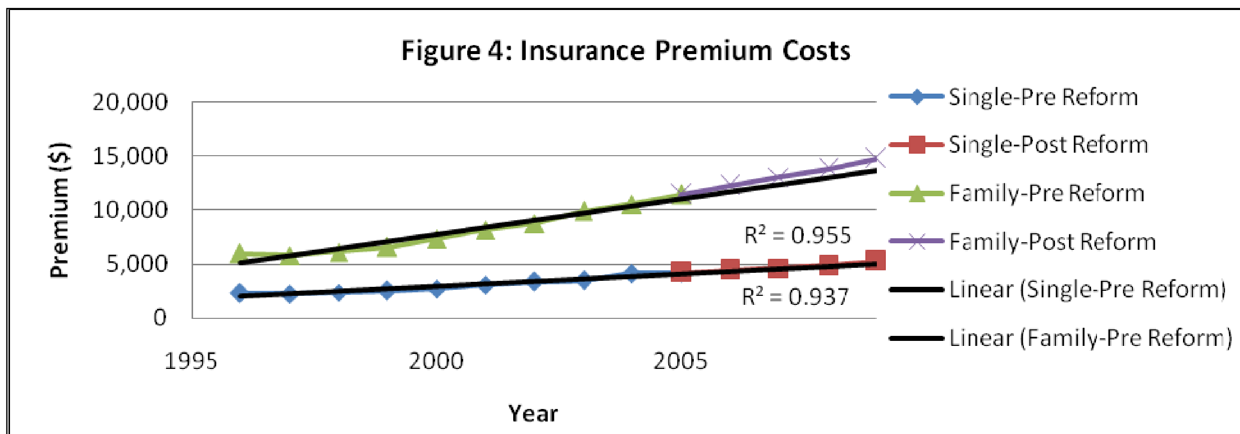
[35] Comptroller of the Commonwealth, "Fiscal Year 2008 State Comprehensive Annual Financial Report," (October 2008) 19-20, http://www.mass.gov/?pageID=oscterminal&L=3&L0=Home&L1=Publications+and+Reports&L2=Financial+Reports&sid=Aosc&b=terminalcontent&f=reports_audits_rpt_sbfr&csid=Aoscrts&sid=Aosc&b=terminalcontent&f=reports_audits_rpt_sbfr&csid=Aosc (accessed June 21, 2011).

Figures 1 though 5 provide visual representations of the data sets. Additionally, they show the linear trend line and the respective coefficient of determination.









The Medical Expenditure Panel Survey (MEPS) supplied both the total number of private sector employees and the number of employees covered by a single of family plan. We multiplied the total number of private sector employees by the percentage of insured individuals in Massachusetts to approximate number of private sector employees buying insurance in a given year.[36] The MEPS also reports the fraction of private sector employees who are enrolled in either family or single insurance plans by year. Starting in CY 2001 the MEPS also began collecting enrollment date for employee-plus-one plans. As we do not have the average contribution for these types of plans, and the highest percent of employees purchasing this plan is 13%, we used the ratio between the family and single plans for our calculations.

First, we multiplied the number of private sector employees by the percent insured, and then by the ratio of single and family plans resulting in the number of each plan purchased by year. Since a family plan will typically cover more than one employee at multiple employers, we divide the amount of people under family coverage by 72%. According to the U.S. Bureau of the Census, 55.74% of two-person households contain two workers, while 44.26% contain one worker. Nonworking households were excluded, since we were calculating the cost of private sector employee health

[36] The Medical Expenditure Panel Survey conducted by the Agency for Healthcare Research and Quality at the U.S. Department of Health and Human Services, http://www.meps.ahrq.gov/mepsweb/.

insurance. To weight this correctly, 44.26% cover one employee, and 55.74% cover two employees. Because 44.26%/1 and 55.74%/2 sum to 72.13%, we infer that 72 policies are required to cover 100 employees on average. We then multiplied these two numbers by the amount above baseline that employees would have to contribute to either single or family plans. The result was the total annual insurance expense for private sector employees above the baseline. The following table supplies the basic assumptions included in our estimation of employee contributions changes due to health care reform in Massachusetts.

Table 7: Effects of Health Care Reform on the Private Sector Insurance Premiums

Variable	2006	2007	2008	2009
Number of private-sector employees	2,962,089	2,981,838	3,001,586	2,747,843
Single Coverage (Weighted)	55.20%	56.03%	56.86%	59.47%
Family Coverage (Weighted)	44.80%	43.97%	43.14%	40.53%
Percent Insured	90.40%	92.20%	94.75%	97.30%
Single Plan Difference ($ per plan)	98.40	101.61	104.82	269.53
Family Plan Difference ($ per plan)	203.60	148.23	92.85	644.98
Insurance Expense ($m)	389.69	335.71	283.43	1,127.49

A normal interval estimate, and the subsequent hypothetical testing for a confidence interval, cannot be calculated for our time series data sets. In each population n=1, since each time period is independent, only one data point is available. Since no other states implemented the same health care reform as Massachusetts, we must use Massachusetts data, resulting in just one data point for each year.

Tables 8 though 13 provide the detail of our data sets. The first two columns in each table provide the year and actual data points as far back as possible. Since hypothesis testing was unavailable, we used the next three columns to provide a sensitivity analysis. We assumed an event year of 2006, and calculated the baseline trend multiplied by 95% and the baseline trend multiplied by 105%. The final column shows the difference between the calculated trend line and the actual data levels for each year.

Table 8 shows the detailed breakdown of state health and human service spending. When the trend numbers are increased or decreased by 5%, the magnitude of the difference does change, but the direction does not. This means that even with a 5% error the theory that health care reform increased HHS spending holds. The same holds true for Table 9, which provides details on state Medicaid spending. Again, with a 5% error, the size changes but the direction of the effect does not. Health care reform increased state Medicaid spending above the historical growth trend.

Table 8: State HHS Spending ($m)

Year	Actual	Trend less 5%	Trend	Trend plus 5%	Difference from Trend
1997	4,507.00	-	-	-	
1998	5,058.00	-	-	-	
1999	5,160.00	-	-	-	
2000	5,324.00	-	-	-	
2001	5,622.00	-	-	-	
2002	6,104.00	-	-	-	
2003	5,962.00	-	-	-	
2004	6,832.00	-	-	-	
2005	6,208.00	-	-	-	
2006	5,865.00	6,144.79	6,468.20	6,791.61	(603.20)
2007	5,907.00	6,335.24	6,668.68	7,002.11	(761.68)
2008	6,423.00	6,644.74	6,994.46	7,344.19	(571.46)
2009	6,684.00	6,849.17	7,209.66	7,570.14	(525.66)
2010	7,089.00	7,037.61	7,408.01	7,778.41	(319.01)

Table 9: State Medicaid Spending ($m)

Year	Actual	Trend less 5%	Trend	Trend plus 5%	Difference from Trend
1997	3,455.53	-	-	-	
1998	3,665.84	-	-	-	
1999	3,856.45	-	-	-	
2000	4,269.99	-	-	-	
2001	4,642.34	-	-	-	
2002	5,259.28	-	-	-	
2003	5,698.31	-	-	-	
2004	5,742.40	-	-	-	
2005	6,268.84	-	-	-	
2006	7,144.63	6,278.02	6,608.44	6,938.86	536.19
2007	7,840.93	6,628.82	6,977.70	7,326.59	863.23
2008	8,246.34	6,979.62	7,346.97	7,714.32	899.37
2009	8,679.21	7,330.42	7,716.23	8,102.05	962.98

Table 10 details Medicare Advantage plan rates. For 2006, a 5% increase in the trend does change the direction of the sign, making the trend $5 million, or 0.006% higher than the actual. Thus, a 5% increase in the trend changes the cost increase into cost savings for 2006. The rest of the results hold for a 5% increase in the trends.

Table 10: Medicare Advantage Plan Rate ($ per Month)

Year	Actual	Trend less 5%	Trend	Trend plus 5%	Difference from Trend
1999	551.51	-	-	-	
2000	569.90	-	-	-	
2001	592.62	-	-	-	
2002	606.41	-	-	-	
2003	617.85	-	-	-	
2004	687.50	-	-	-	
2005	737.72	-	-	-	
2006	772.42	703.35	740.37	777.39	32.05
2007	813.02	731.14	769.62	808.10	43.40
2008	871.69	758.93	798.87	838.82	72.82
2009	905.23	786.72	828.12	869.53	77.11
2010	911.29	814.51	857.38	900.24	53.91

Tables 11, 12 and 13 detail Medicare personal health expenditures and average premiums for single and family plan respectively, and follow this same pattern. A 5% change in the trend confirms that health care reform increased costs.

Table 12 shows that when we increase the trend for the average single plan premium by 5% the sign to changes and health care reform would show to reduce costs. Therefore, the results would not hold if our trend calculation were 5% below the true trend for these variables. Nevertheless, all the other trend estimates hold against a 5% trend increase, giving us confidence that our results withstand changes to our trend calculations.

Table 11: Medicare Personal Health Care Expenditures ($m)

Year	Actual	Trend less 5%	Trend	Trend plus 5%	Difference from Trend
1991	3,485.00	-	-	-	
1992	3,982.00	-	-	-	
1993	4,505.00	-	-	-	
1994	4,932.00	-	-	-	
1995	5,463.00	-	-	-	
1996	5,892.00	-	-	-	
1997	6,024.00	-	-	-	
1998	5,798.00	-	-	-	
1999	5,830.00	-	-	-	
2000	6,010.00	-	-	-	
2001	6,526.00	-	-	-	
2002	6,904.00	-	-	-	
2003	7,285.00	-	-	-	
2004	7,913.00	-	-	-	
2005	8,300.74	-	-	-	
2006	8,707.47	7,861.42	8,275.18	8,688.94	432.30
2007	9,134.14	8,140.70	8,569.16	8,997.62	564.98
2008	9,581.71	8,419.99	8,863.14	9,306.30	718.57
2009	10,051.22	8,699.27	9,157.13	9,614.98	894.09

Table 12: Insurance Costs, Average Single Plan Premium ($ per Year)

Year	Rate	Trend less 5%	Trend	Trend plus 5%	Difference from Trend
1996	2,329.00	-	-	-	
1997	2,237.00	-	-	-	
1998	2,392.00	-	-	-	
1999	2,539.00	-	-	-	
2000	2,719.00	-	-	-	
2001	3,086.00	-	-	-	
2002	3,353.00	-	-	-	
2003	3,496.00	-	-	-	
2004	4,141.00	-	-	-	
2005	4,235.00	-	-	-	
2006	4,448.00	4,129.08	4,346.40	4,563.72	101.60
2007	4,642.00	4,352.54	4,581.62	4,810.70	60.38
2008	4,836.00	4,575.99	4,816.84	5,057.68	19.16
2009	5,268.00	4,799.45	5,052.05	5,304.66	215.95

Table 13: Insurance Costs, Average Family Plan Premium ($ per Year)

Year	Rate	Trend less 5%	Trend	Trend plus 5%	Difference from Trend
1996	6,002.00	-	-	-	
1997	5,794.00	-	-	-	
1998	6,139.00	-	-	-	
1999	6,547.00	-	-	-	
2000	7,341.00	-	-	-	
2001	8,176.00	-	-	-	
2002	8,779.00	-	-	-	
2003	9,867.00	-	-	-	
2004	10,559.00	-	-	-	
2005	11,435.00	-	-	-	
2006	12,290.00	11,094.10	11,678.00	12,261.90	612.00
2007	13,039.00	11,718.35	12,335.11	12,951.86	703.89
2008	13,788.00	12,342.61	12,992.22	13,641.83	795.78
2009	14,723.00	12,966.86	13,649.33	14,331.79	1,073.67

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