



## **Small Business Effects of a National Employer Healthcare Mandate**

Michael J. Chow and Bruce D. Phillips  
NFIB Research Foundation  
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### **EXECUTIVE SUMMARY**

During the recent public debate on healthcare reform, employer mandates have reemerged as a frequently mentioned tool to help finance increased insurance coverage. Proponents of employer mandates argue that such policies will finance higher coverage rates. Opponents, however, caution that any gains in coverage will come at the price of lost employment and output, increased regulation, and additional business costs. Small businesses, which bear a disproportionate share of regulatory costs, would face steep challenges in the form of increased employer contributions and search and administrative costs.

This paper analyzes the potential economic impact of a national employer healthcare mandate on small businesses. A hypothetical employer mandate was modeled and tested using a computer simulation that captured the mandate's effects on U.S. businesses by firm size. The assumed mandate requires that all employers must offer private health insurance to their employees. Employers must finance at least 50 percent of their employees' health insurance premiums. The remaining share of employee premiums is assumed to be financed by employee contributions and federal subsidies.

The results indicate that without major reductions in the cost of healthcare, the employer mandate would cause the economy to lose over 1.6 million jobs within the first five years of program implementation. Small firms would be most adversely affected by the mandate and account for approximately 66 percent of all jobs lost. Almost all sectors except those in healthcare would shed jobs, and real GDP would contract by \$200 billion.

## **I. Introduction**

Rising healthcare costs and increasing numbers of uninsured in recent years have amplified the stress on the U.S. healthcare system and reinvigorated the healthcare reform debate. According to the Department of Health and Human Services (HHS), between 1996 and 2006 premiums for single coverage increased 107 percent and premiums for family coverage rose 130 percent.<sup>1</sup> Meantime, the number of uninsured individuals in the United States grew from 39 million in 1999 to 46 million in 2007.<sup>2</sup> Such trends are plainly unsustainable, and the U.S. healthcare system requires serious reform.

One frequently mentioned tool to help finance increased coverage is some form of national employer mandate that would require employers to offer and subsidize insurance for employees. Proponents of employer mandates argue that such policies will finance higher coverage rates. Opponents, however, caution that any gains in coverage will come at the price of lost employment and output, increased regulation, and additional business costs. Importantly, an employer mandate would have a large impact on the 27 million uninsured small business owners, employees, and dependents in the United States.<sup>3</sup>

Complying with new employer mandates generates many new costs for firms. In the case of a healthcare mandate, a small firm previously not offering health insurance needs to subsidize new insurance policies for its employees. It must also bear search costs, which can include time spent by owners, managers, or employees investigating insurance options, the use of agents, brokers, or consultants to recommend a set of appropriate options, and the hiring of full-time benefits staff to manage search efforts. Potential new administrative costs to employers include extra hours of a bookkeeper, additional paperwork, and new software to manage employee insurance plans.

In many instances, these new costs have a material impact on small business performance. Particularly large costs may force firms to shed jobs or even close their businesses entirely. In the aggregate, firm failures and contractions can result in significant reductions in employment and output.

## **II. Model Description**

The NFIB Business Size Impact Module (BSIM) was used to simulate the impact of a national employer healthcare mandate on U.S. businesses by firm size. The BSIM consists of a series of 10 regional models designed to measure the effects of macroeconomic changes on firms. It receives inputs (new costs and spending) and generates outputs (macro variables) according to firm size. No other model of which we are aware has an interface capable of measuring the effects of new government policies by firm size.

This unique capability is important because government policies have financial effects on businesses, and regulatory costs per unit are often higher on small firms than their larger counterparts. Within the last two years, the BSIM has been used to study proposed mandatory healthcare schemes in California, Colorado, Illinois, New York, Pennsylvania, and Wisconsin.<sup>4</sup> Analyses of “pay or play” schemes presented in these states show that in many cases imposing employer payroll mandates on very small business owners would result in substantial job and output losses.

To analyze the impact of a national employer healthcare mandate, the BSIM must receive as input (a) new direct business costs induced by the mandate, by firm size, and (b) changes in government administrative costs and demand for private sector goods and services. The model uses these inputs to forecast anticipated changes in employment and output at regional, industry, and firm-size levels. National estimates are obtained by aggregating results from the 10 regional models.

The employer healthcare mandate modeled in this study assumes the following:

- All employer firms must offer private health insurance to full-time and part-time employees.
- Employers must finance at least 50 percent of their employees’ insurance premiums.
- Employee contributions and government subsidies finance the remaining share of employee premiums.
- Program implementation begins in 2009.

The above assumptions (mandated employer provision of employee insurance, required employer contributions, and government subsidies) are features that can reasonably be expected

to be included in serious mandate proposals. The results of this study therefore provide a useful baseline from which the economic consequences of future mandate proposals can be estimated, and against which they can be compared. Readers should note that the model assumes the implementation of an employer mandate only; an individual mandate is not included in the model.

In addition to assumptions about the mandate's structure, other assumptions were made regarding consumer behavior, firm costs, government administrative costs, and new spending on healthcare goods and services. These assumptions are covered in detail in the next section. Readers interested only in simulation results can skip directly to page 16.

### **III. Input Calculations**

To forecast economic effects for different firm-size groups, the BSIM requires as input new per-firm costs for six unique employer-size classes: firms with one to four employees, five to nine employees, 10 to 19 employees, 20 to 99 employees, 100 to 499 employees, and 500 or more employees. Per-firm costs were calculated for each of these size classes for years 2009 to 2013, the first five years of program implementation under the assumed mandate. New government administrative costs generated by the mandate and new spending on healthcare goods and services were also calculated and provided as input. The derivation of these inputs is discussed below.

#### **A. Employer Contributions toward New Insurance Premiums**

In general, the principal cost to employers of offering health insurance is their subsidy of employee insurance (employer contributions). Total employer contributions for purposes of model input depend on three variables:

1. **Employers' share of insurance premiums.** Total employer contributions are driven in part by the dollar amount of employee insurance premiums that employers finance.
  - a. The assumed mandate requires that all employers finance at least 50 percent of their employees' premiums. Existing data suggest that most employers offering insurance already contribute more than 50 percent toward employee premiums. Employer contributions at firms already offering insurance prior to 2009 are therefore assumed to remain unchanged following program implementation.<sup>5</sup>
  - b. Employers who did not offer insurance before 2009 most often did not because of costs.<sup>6</sup> These employers will want to minimize new costs generated by the mandate. The model therefore assumes that employers originally not offering insurance subsidize only 50 percent of any new employee premiums.
2. **Coverage rates of employees.** Total employer contributions are directly related to the number of workers who purchase employer-based insurance. The higher coverage rates

are, the more employee premiums there are for employers to finance. Hence, calculating the cost of new employer contributions requires an assumption about how uninsured workers at firms not offering insurance will respond to the sudden availability of employer-based insurance.

- a. Employees at firms offering health insurance prior to 2009 already have access to employer-based health insurance. Given the above assumption that employer contribution rates do not change at firms already offering insurance, coverage rates at firms already offering insurance will remain unchanged after program implementation.<sup>7</sup>
- b. For firms not offering insurance, once program implementation begins, it is assumed that workers will elect to take up employer-based insurance at a slightly lower rate than workers at firms already offering insurance. This assumption is based on literature on worker sorting, which suggests the existence of a firm selection bias among workers.<sup>8</sup>
  - i. The literature indicates that workers who value health insurance accept jobs only/primarily with employers that provide insurance. For these individuals, working at firms not offering health insurance is a second-best option that is avoided when employment at firms offering insurance is possible.
  - ii. In contrast, workers who do not value health insurance will accept jobs at both employers who do and do not offer insurance. Some of these workers may even prefer working for firms not offering health insurance, where they may be able to receive additional cash compensation in lieu of health benefits.
- c. This firm selection bias means that a degree of self-selection occurs during the matching process between workers and employers. Workers who value health

insurance choose to work predominantly for firms that offer it. And at firms not offering insurance, a larger share of the workforce is comprised of workers who do not value health insurance (compared to firms offering health insurance).

- d. This self-selection means that after program implementation workers at firms originally not offering health insurance should take up health insurance at lower rates than workers at firms already offering insurance.
  - i. Currently, take-up rates at firms offering insurance are approximately 80 percent across all firm sizes.<sup>9</sup>
  - ii. Accounting for the firm selection bias, the model assumes that take-up rates for workers at firms forced into offering insurance by the mandate will be 75 percent across all firm sizes (through at least 2013).

3. **Plan selection.** Employer-based health insurance programs can include single, employee-plus-one, and family coverage plans. Insurance premiums vary substantially depending on whether insurance is single, employee-plus-one, or family coverage, so the plan selection of workers affects the magnitude of total employer contributions. Workers' decisions on which plan type to select can depend on a number of factors, including personal preferences and private information like personal finances.

- a. The model assumes that the distribution of plans—the percentages of individuals who purchase single, employee-plus-one, and family coverage insurance—among employees at firms already offering insurance remains unchanged after program implementation.
- b. The distribution of plans among workers newly purchasing insurance is assumed to be identical to the historical consumption pattern of existing insured workers.

- i. According to HHS data, 48.9 percent of private-sector employees with health insurance purchased single coverage insurance in 2006, 18.0 percent had employee-plus-one coverage, and 33.2 percent chose family coverage.<sup>10</sup>
  - ii. Thus, the model assumes that the distribution of new insurance plans purchased by workers at firms originally not offering insurance is 48.9 percent single coverage, 18.0 percent employee-plus-one coverage, and 33.2 percent family coverage.
- c. Insurance plan distributions are assumed constant over time.

*Estimating Pre-Tax Costs of New Employer Contributions*

The above assumptions mean that the mandate generates new employer contributions only among firms that, prior to 2009, did not offer insurance. To estimate the per-firm costs of these new employer contributions, values must be assigned to newly-purchased insurance plans. The model assumes that all new buyers of insurance purchase one of three options: single coverage, employee-plus-one coverage, or family coverage. Mathematically, this is equivalent to assuming that each new buyer of insurance purchases a hypothetical “weighted average insurance plan” whose premium equals a weighted average of single premiums, employee-plus-one premiums, and family premiums. The weighted average insurance plan is a useful instrument since it allows the estimation of costs of new employee insurance plans per firm, which can be obtained by multiplying the value of a weighted average insurance plan by employee-per-firm ratios.

To understand the pricing of a weighted average insurance plan, consider the following calculation of a “weighted average premium” in 2006. HHS data indicate that the average total premium for employer-based single coverage insurance in 2006 was \$4,118. Meanwhile, average total premiums for employee-plus-one coverage and family coverage in 2006 were \$7,988 and \$11,381, respectively. Using the coverage rates described earlier, a weighted average insurance plan purchased in 2006 subsequently costs:

$$(0.489) \times (\$4,118) + (0.180) \times (\$7,988) + (0.332) \times (\$11,381) = \$7,230$$

**Table 1** provides a time series of weighted average premiums calculated for 2001 to 2006, years in which historical HHS data are available.

**Table 1: Weighted Average Insurance Premiums, 2001-2006**

Year	Distribution of Plans			Premiums			Wtd. Avg. Premium
	Single	Empl.+1	Family	Single	Empl.+1	Family	
2001	46.30%	17.30%	36.40%	\$2,889	\$5,463	\$7,509	<b>\$5,016</b>
2002	47.70%	17.30%	35.00%	\$3,189	\$6,043	\$8,469	<b>\$5,531</b>
2003	47.30%	16.50%	36.20%	\$3,481	\$6,647	\$9,249	<b>\$6,091</b>
2004	47.30%	17.40%	35.20%	\$3,705	\$7,056	\$10,006	<b>\$6,502</b>
2005	48.60%	17.30%	34.00%	\$3,991	\$7,671	\$10,728	<b>\$6,914</b>
2006	48.90%	18.00%	33.20%	\$4,118	\$7,988	\$11,381	<b>\$7,230</b>

Source: Department of Health and Human Services, Medical Panel Expenditure Survey, 2001-2006

By assumption, 75 percent of workers at firms originally not offering health insurance purchase employer-based insurance once their employers begin offering it. Since many uninsured workers currently decline health insurance because of cost, it is reasonable to assume that a number of these new insurance consumers will remain sensitive to prices despite employer contributions and government assistance. Cost sensitivity will induce many of these workers to purchase low-cost, high-deductible options that include minimum catastrophic coverage and few other benefits. In practice, such limited coverage plans cost less than the average health insurance plan. Consequently, the model assumes that new buyers of insurance purchase plans whose average premium equals 80 percent—an arbitrary figure—of the average premium paid by already insured workers. A worker who purchases such an “adjusted” weighted average insurance plan in 2006 would thus pay  $(0.80) \times \$7,230$ , or \$5,784.

Since the model requires firm costs for years 2009 to 2013 as input, the cost of future new employer contributions needs to be calculated. This requires the estimation of future weighted average premiums for years 2009 to 2013. Estimating these future premiums in turn requires an assumption about future trends in health insurance costs. According to **Table 1**, premiums for all plan types increased linearly from 2001 to 2006. The model assumes that this historical trend persists and that insurance premiums continue to increase linearly through 2013. Based on this assumption, linear regression was applied to the time series in **Table 1** to extrapolate forecast weighted average premiums for years 2007 to 2013.

To obtain per-firm costs of future new employer contributions, employer contributions toward future new employee insurance plans were multiplied by 75 percent<sup>11</sup> of estimated employee-per-firm ratios for years 2009 to 2013. This calculation yields future pre-tax costs to employers of new employee insurance plans, by firm-size group. Employer contributions toward future new employee premiums were obtained by multiplying the assumed employer share of new employee premiums (50 percent) by the forecast weighted average premiums discussed above. The estimated employee-per-firm ratios were calculated from projected employee and firm statistics for years 2009 to 2013, which were forecast using historical Census Bureau data.<sup>12</sup> Time series for weighted average premiums, adjusted weighted average premiums, and pre-tax costs of employer contributions are presented in **Table A1** in Appendix A on page 27.

#### *Estimating After-Tax Costs of New Employer Contributions*

A final adjustment must be made to future pre-tax costs to obtain final per-firm costs of new employer contributions. Specifically, employers' abilities to deduct healthcare expenditures from gross income when filing state and federal taxes must be incorporated into the calculations. The tax deductibility of healthcare expenditures means that employers who offer and subsidize health insurance for employees effectively bear less than the nominal price of their contributions toward employee insurance plans. The model assumes that employers pay a combined state and federal income tax rate of 30 percent.<sup>13</sup> Continuing the example from above, a tax rate of 30 percent means that the after-tax cost to an employer of a new insurance plan purchased in 2006 equals  $(1 - 0.30) \times (0.50) \times (\$5,784)$ , or \$2,024.<sup>14</sup> **Table A2** in Appendix A presents time series of after-tax costs of new employer contributions.

#### **B. Employer Search and Administrative Costs**

In addition to having to pay employer contributions, firms offering health insurance also incur search and administrative costs. Search costs vary according to firm size. For the smallest firms, these costs consist of time spent by owners, managers, or employees investigating insurance options. Larger firms may decide to use an agent or broker to recommend a set of appropriate insurance options. The largest firms may use agents, brokers, or consultants and hire full-time benefits staff to manage search efforts.

Administrative costs associated with plan management increase as firms grow in size, since larger firms face many costs that smaller firms do not. These costs include the hiring of specialized employees to manage and source benefits, additional paperwork, and investments in new software. **Table 2** gives the assumed search and administrative costs used in the simulation. The figures do not account for possible inflation, but they do capture the relationship between escalating costs and firm size.

**Table 2: Assumed Search and Administrative Costs per Firm, Firms Previously Not Offering Insurance, 2009-2013**

		Year				
		2009	2010	2011	2012	2013
# Employees per Firm	1-4	\$500	\$375	\$375	\$375	\$375
	5-9	\$1,000	\$750	\$750	\$750	\$750
	10-19	\$2,500	\$1,875	\$1,875	\$1,875	\$1,875
	20-99	\$60,000	\$45,000	\$45,000	\$45,000	\$45,000
	100-499	\$200,000	\$150,000	\$150,000	\$150,000	\$150,000
	500+	\$295,000	\$221,250	\$221,250	\$221,250	\$221,250

Using data from an NFIB Small Business Poll on purchasing health insurance, managers at firms with one to four employees were estimated to spend an average of 8.32 hours annually investigating health insurance options.<sup>15</sup> Assuming initial managerial search and administrative costs of \$60 per hour, the search and administrative cost for a one- to four-employee firm in 2009 is approximately \$500.<sup>16</sup> Initial annual costs for firms with five to nine and 10 to 19 employees are slightly larger—\$1,000 and \$2,500 per firm, respectively—on account of increased administration, the need to investigate a larger number of insurance options, and new software.

Firms with 20 to 99 employees are assumed to also initially require the services of a benefits specialist to manage new insurance plans, and these firms suffer per-firm search and administrative costs of \$60,000 in 2009. Firms with 100 to 499 employees are assumed to have two benefits specialists and two benefits assistants on payroll and incur first-year annual search and administrative costs of \$200,000 per firm. In addition to specialists and assistants, firms with 500 or more employees are assumed to also have a benefits manager on staff and face search and administrative costs in 2009 equal to \$295,000 per firm.<sup>17</sup>

Search and administrative costs can be expected to be substantially larger in the first year of program implementation when firms initiate their insurance programs. In subsequent years, search costs should be substantially lower. Hence, the model assumes that search and administrative costs are 25 percent lower—an arbitrary amount—in out-years than in 2009.

An important nuance involves the modeling of new benefits staff hired by firms forced into offering insurance: the compensation of new benefits managers, specialists, and assistants does not generate any new demand for private sector goods or services in the model. Because these new workers are hired by firms that must newly offer insurance, their compensation is considered to be a new *firm cost* generated by the mandate. Had these professionals instead (a) been employed by firms already offering insurance and (b) had they been contracted to assist firms forced into offering insurance, then the new revenue generated by these professionals would have been considered new spending in the professional, scientific, and technical services industry.

Payments to consultants, software makers, and other external agents who help firms initiate new employee insurance programs constitute legitimate increases in spending on private sector goods and services. Such costs are negligible when compared to firm revenues, however; they constitute less than one-tenth of 1 percent of annual firm revenue for all firm-size categories. Costs of this magnitude will not have a material impact on simulation results, and they were omitted from calculations of new spending on private sector goods and services for convenience.

### **C. Total Estimated Direct Costs to Employers**

**Table 3** summarizes the total direct per-firm costs for firms forced into offering health insurance. Direct costs are costs that firms must pay as a direct consequence of new legislation, *i.e.*, the new employer contributions and search and administrative costs discussed earlier. Indirect costs, like decreased output caused by reduced demand and lower employment, are the outputs generated by the simulation and are discussed in the Results section.

Under the mandate, the average U.S. firm with one to four employees not offering health insurance would face new direct costs of \$3,449 in 2009. Continued inflation in health insurance premiums mean that these costs would rise to \$3,909 in 2013. Other small businesses would also face substantial direct costs. Between 2009 and 2013, per-firm direct costs would increase from

\$12,964 to \$15,181 for firms with five to nine employees, and from \$26,974 to \$31,410 for firms with 10 to 19 employees. These direct costs for very small firms may seem minor, but even small costs can have a major impact on a firm’s solvency, since small businesses frequently have problematic free cash flows, minimal cash reserves, and few excess costs that they can eliminate.

Direct costs for firms with 20 to 99 employees total \$137,457 per firm in 2009, but actually fall in 2010 due to the reduced search and administrative costs in out-years. Inflation in health insurance premiums eventually causes direct costs to increase to \$131,205 per firm in 2013. A similar pattern holds for firms with 100 to 499 employees, which initially face direct costs of \$553,839 per firm in 2009. Direct costs are lower for 2010 and 2011, but gradually increase to \$578,035 per firm in 2013.

**Table 3: Estimated Direct Per-Firm Costs Associated with a National Employer Healthcare Mandate by Firm Size, Firms Previously Not Offering Insurance, 2009-2013**

		Year					
		2009	2010	2011	2012	2013	All Years
# Employees per Firm	1-4	\$3,449	\$3,471	\$3,617	\$3,763	\$3,909	<b>\$18,209</b>
	5-9	\$12,964	\$13,330	\$13,947	\$14,564	\$15,181	<b>\$69,987</b>
	10-19	\$26,974	\$27,614	\$28,879	\$30,144	\$31,410	<b>\$145,022</b>
	20-99	\$131,457	\$120,143	\$123,830	\$127,517	\$131,205	<b>\$634,151</b>
	100-499	\$553,839	\$522,357	\$540,896	\$559,455	\$578,035	<b>\$2,754,582</b>
	500+	\$6,505,318	\$6,779,992	\$7,130,685	\$7,483,587	\$7,838,642	<b>\$35,738,224</b>

**Table 4** shows the derivation of total direct per-firm costs for different employer-size classes. Consider the case of a one- to four-employee firm that must newly offer insurance. In the model, the nominal price of new healthcare premiums in 2009 for a one- to four-employee firm previously not offering insurance is \$8,426.<sup>18</sup> Since employers contribute 50 percent toward new employee premiums, the employer share of new premiums is  $(0.50) \times (\$8,426)$ , or \$4,213. Because firms can deduct healthcare expenditures from gross revenue, the after-tax cost of new premiums to employers is  $(1 - 0.30) \times (\$4,213)$ , or \$2,949. Adding search and administrative costs of \$500 to this figure yields a total after-tax direct cost of \$3,449 per firm.

The data in **Table 4** also show how employer contributions toward employee insurance premiums dominate the new firm costs created by the mandate. For firms with one to four employees, after-tax premium costs make up 85.5 percent of total direct employer costs created by the mandate. After-tax premium costs account for an even greater percentage of total direct

costs for firms with five to nine and 10 to 19 employees—over 90 percent in either case. Percent shares are lower for firms with 20 to 99 and 100 to 499 employees, but still exceed 50 percent in both cases. And for large firms, those with 500 or more employees, after-tax premium costs make up 95.5 percent of total direct costs, higher than for any other firm-size group. Assuming that health insurance prices continue to grow at their current rate, these percentages will only increase in later years.

**Table 4: Estimated Total Direct Cost to an Individual Employer by Firm Size, Firms Previously Not Offering Insurance, 2009**

		<b>Adjusted Wtd. Avg. Premiums (1)</b>	<b>Employer Share of Premiums (2)</b>	<b>After-Tax Employer Share (3)</b>	<b>Search and Administrative Costs (4)</b>	<b>Estimated Total Cost (Sum: 3+4)</b>
<b># Employees per Firm</b>	<b>1-4</b>	\$8,426	\$4,213	\$2,949	\$500	<b>\$3,449</b>
	<b>5-9</b>	\$34,182	\$17,091	\$11,964	\$1,000	<b>\$12,964</b>
	<b>10-19</b>	\$69,927	\$34,963	\$24,474	\$2,500	<b>\$26,974</b>
	<b>20-99</b>	\$204,162	\$102,081	\$71,457	\$60,000	<b>\$131,457</b>
	<b>100-499</b>	\$1,010,970	\$505,485	\$353,839	\$200,000	<b>\$553,839</b>
	<b>500+</b>	\$17,743,766	\$8,871,883	\$6,210,318	\$295,000	<b>\$6,505,318</b>

While an employer mandate will affect only those firms that originally did not offer insurance, the BSIM requires that input costs be provided as average per-firm costs for all firms; the model is incapable of accepting costs associated with only a subset of firms. Hence, total direct costs must be distributed across all employers for the model to accept them as input.

**Table 5** shows the distribution of direct costs across all U.S. firms for years 2009 to 2013.

**Table 5: Estimated Direct Per-Firm Costs Associated with a National Employer Healthcare Mandate by Firm Size, All U.S. Firms, 2009-2013**

		<b>Year</b>					
		<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>All Years</b>
<b># Employees per Firm</b>	<b>1-4</b>	\$2,414	\$2,384	\$2,479	\$2,574	\$2,669	<b>\$12,520</b>
	<b>5-9</b>	\$8,764	\$8,915	\$9,315	\$9,716	\$10,116	<b>\$46,826</b>
	<b>10-19</b>	\$11,507	\$11,347	\$11,812	\$12,278	\$12,744	<b>\$59,688</b>
	<b>20-99</b>	\$79,722	\$65,739	\$66,757	\$67,775	\$68,792	<b>\$348,786</b>
	<b>100-499</b>	\$220,877	\$171,969	\$173,063	\$174,158	\$175,254	<b>\$915,320</b>
	<b>500+</b>	\$527,887	\$467,203	\$480,354	\$493,588	\$506,902	<b>\$2,475,933</b>

#### **D. Government Administrative Costs and Private Demand**

In addition to per-firm costs, the BSIM model also takes as input new government administrative costs and new spending on private sector goods and services. These additional inputs are required to balance the model. Government administrative costs increase because federal administrators must ensure that firms comply with the mandate. Administrators must also collect insurance contributions and oversee the transfer of funds to insurers and healthcare providers. Based on estimates of administrative costs for federal and state-level insurance programs, additional government administrative costs in the model are assumed to be financed by 10 percent of total employer contributions to new employee insurance premiums.<sup>19</sup>

Private demand also increases as a result of the mandate, since insurance and healthcare providers must be paid for additional goods and services. The model assumes that employer contributions toward new insurance premiums are channeled back into the private sector vis-à-vis purchases of goods and services solely from the healthcare industry.<sup>20</sup> The distribution of new spending in the model is based on existing healthcare expenditure data from HHS. Hospitals receive 33.6 percent of new spending; ambulatory healthcare services (physicians, dentists, and other healthcare professionals) 31.4 percent; insurance carriers 16.3 percent; chemical manufacturers (makers of prescription drugs) 10.3 percent; and nursing and residential care facilities 8.4 percent.<sup>21</sup>

Finally, it should be noted that the model does not assume a mandate program that is fiscally balanced at all times. Instead, it allows for the possibility that the government may either borrow to finance a budget shortfall, or save and accumulate funds when costs turn out to be less than anticipated. Program delays and inefficiencies in incipient years could also mean that employer contributions are not immediately spent. Any delays in care will be exacerbated if new healthcare demand swamps the capabilities of providers, a distinct possibility given the existing shortage of certain healthcare professionals. The model assumes that only 75 percent of employer contributions less government administration costs are immediately recycled back into the healthcare industry. The remaining 25 percent is assumed to be either (a) saved for healthcare purchases in subsequent years, or (b) allocated for spending, but not actually spent due to program delays and demand-supply mismatches.<sup>22</sup>

## **IV. Results**

The BSIM forecasts both employment and output effects caused by macroeconomic changes. Economic effects for the first five years of program implementation, 2009 to 2013, were forecast for this study. Based on the inputs described above, the BSIM projects that:

- The employer healthcare mandate will generate a net loss of over 1.6 million U.S. jobs between 2009 and 2013.
- Small businesses will lose over 1.0 million jobs and account for 66 percent of all jobs lost.
- U.S. real GDP will contract by approximately \$200 billion between 2009 and 2013.
- Small businesses will lose roughly \$113 billion of real output and account for 56 percent of all real output lost.

These results are discussed further below.

### **A. Employment Effects**

**Table 6** shows forecast employment trends for different employer-size groups between 2009 and 2013. In total, over 1.6 million jobs are lost as a consequence of the employer mandate. These job losses are the results of firm closings and contractions, which entail layoffs, the elimination of positions, and reductions in employee compensation. The impact on small business employment is severe: 65.9 percent of jobs lost (1.1 million jobs) are at firms with fewer than 500 employees; 55.0 percent (888,000 jobs) are at firms with fewer than 100 employees; 28.9 percent (467,000 jobs) are at firms with fewer than 20 employees.

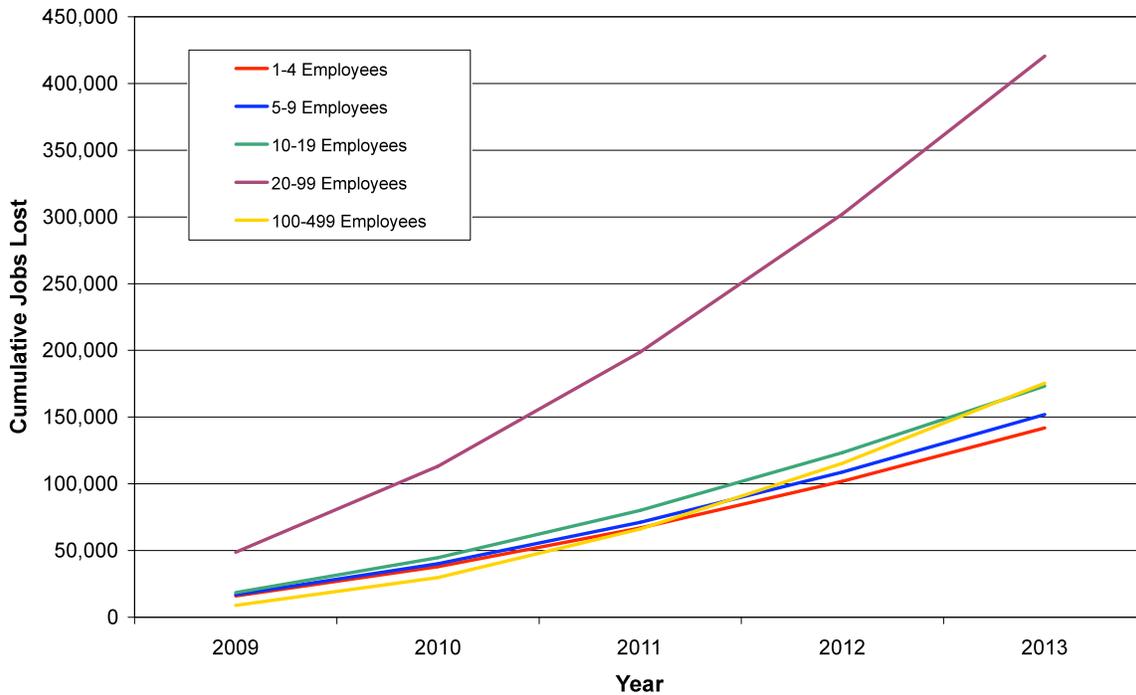
**Figure 1** shows cumulative job losses at small businesses over time. The chart indicates that the firm-size group experiencing the most job losses is employers with 20 to 99 employees. Firms in this category are forecast to eliminate approximately 421,000 jobs between 2009 and 2013. Firms with 100 to 499 employees, expected to lose roughly 175,000 jobs, account for the

second largest number of job losses. The remaining firm-size groups—firms with one to four, five to nine, or 10 to 19 employees—are each forecast to lose between 141,000 and 174,000 jobs.

**Table 6: U.S. Job Losses by Firm Size, 2009-2013**

		Year					
		2009	2010	2011	2012	2013	All Years
# Employees per Firm	1-4	16,064	21,838	28,998	34,949	40,004	<b>141,853</b>
	5-9	16,907	23,223	31,076	37,624	43,182	<b>152,012</b>
	10-19	18,576	26,080	35,465	43,278	49,918	<b>173,317</b>
	20-99	48,834	64,315	85,643	103,370	118,438	<b>420,600</b>
	100-499	8,901	20,957	36,343	49,165	60,088	<b>175,454</b>
	500 +	31,137	66,970	113,973	152,978	186,266	<b>551,324</b>
	All Firms	<b>140,419</b>	<b>223,383</b>	<b>331,498</b>	<b>421,364</b>	<b>497,896</b>	<b>1,614,560</b>

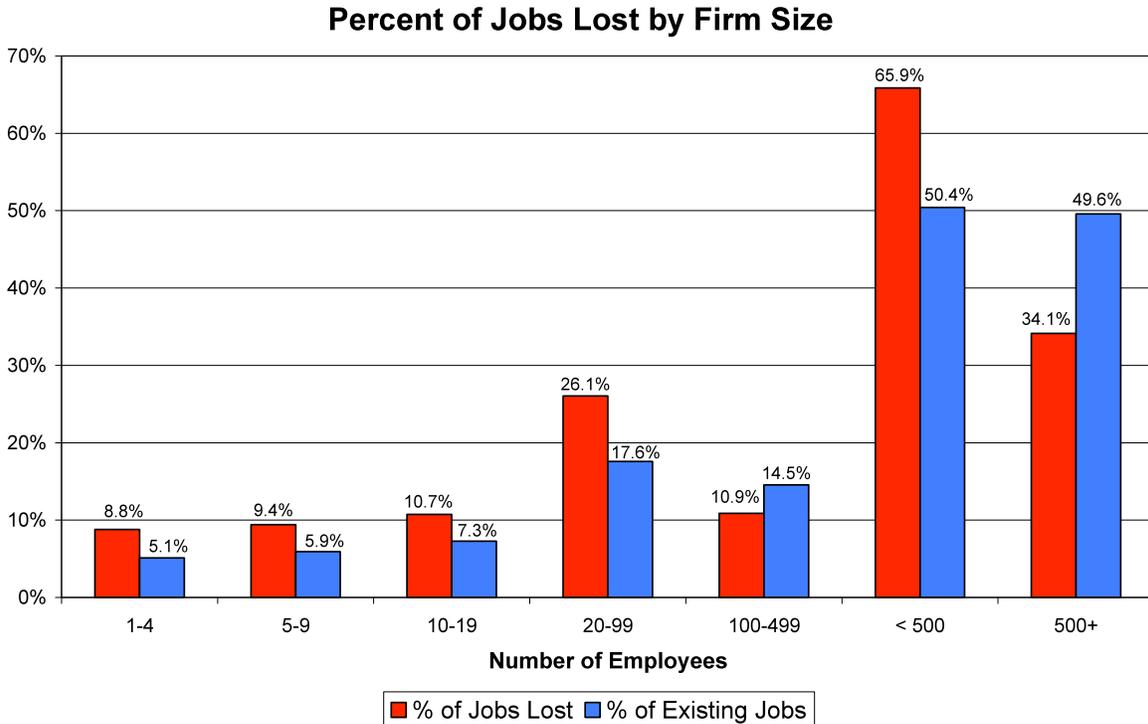
**Cumulative U.S. Small Business Jobs Lost Due to a National Employer Healthcare Mandate**



**Figure 1**

Firms with fewer than 100 employees, especially those with 20 to 99 employees, lose significantly more jobs than their current employment share might predict (see **Figure 2**). For example, firms with 20 to 99 employees account for 17.6 percent of existing jobs, but 26.1 percent of jobs lost. Additionally, firms with 10 to 19 employees account for 7.3 percent of

existing jobs, but 10.7 percent of jobs lost. Similar trends are found among firms with one to four and five to nine employees. The lopsided number of job losses at very small firms highlights how small businesses typically shoulder a disproportionate share of regulatory burdens. This is because regulatory costs frequently consume a higher percentage of revenue at smaller firms than at larger firms. Small firms generally also have limited cash reserves and few excess costs that they can eliminate.

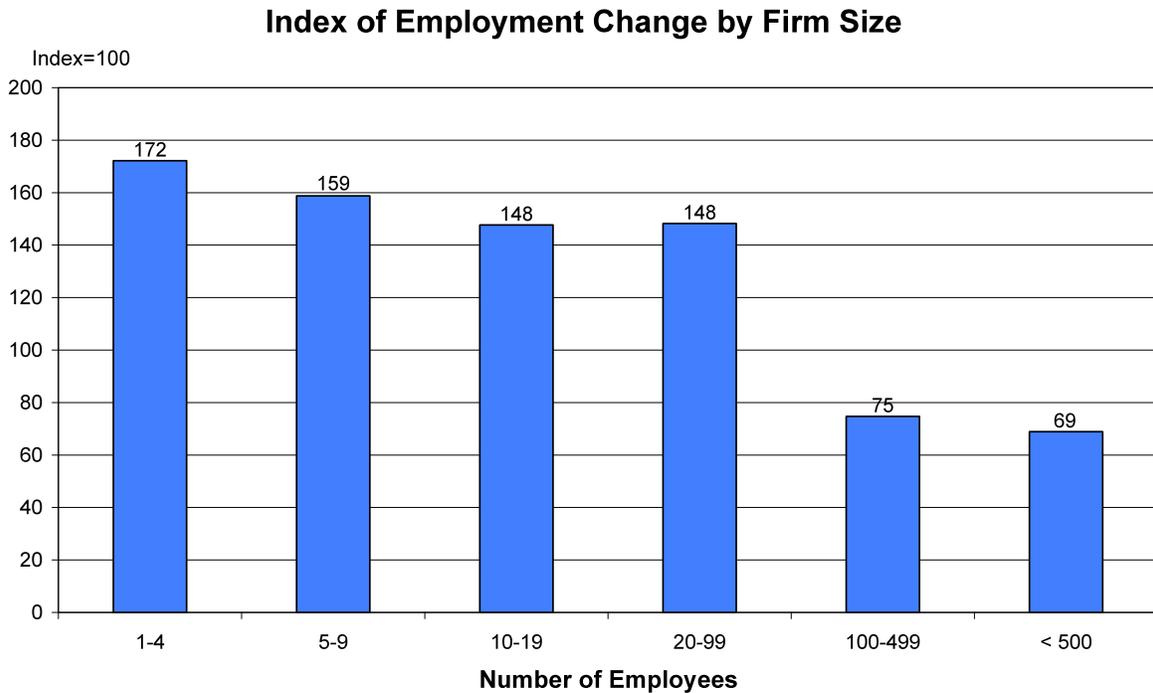


\*Historical jobs figures taken from the Census Bureau's Statistics of U.S. Businesses dataset (2005)

**Figure 2**

**Figure 3** provides another way of viewing the disproportionate number of job losses at small firms. The chart shows an index of employment change by firm size calculated by dividing (a) the percentages of total jobs lost attributable to different firm-size groups by (b) corresponding percentages of existing jobs. The index indicates whether job losses for a particular firm-size group are proportionate to the group's share of existing employment. It is normalized to 100, so an index value greater than 100 indicates a firm-size group that experiences a disproportionately high number of job losses relative to its current employment share (and vice versa for an index value lower than 100).

The index of employment change is strongly correlated with firm size, with smaller firms having higher index values than larger firms. The index is highest for the smallest firms. Employers with one to four employees have an index value of 172, which reflects the fact that in 2005, firms in this size group accounted for 5.1 percent of existing jobs, but are forecast by the simulation to shed 8.8 percent of all jobs lost. The uneven allocation of job losses is apparent among other very small firms, which also have index values greater than 100. Index values for firms with five to nine, 10 to 19, and 20 to 99 employees are 159, 148, and 148, respectively. Larger firms have index values less than 100, indicating that they bear a disproportionately lower number of job losses relative to their employment shares.



\*Index = [(% of Jobs Lost) / (% of Existing Jobs)] x 100

\*\*Historical jobs figures taken from the Census Bureau's Statistics of U.S. Businesses dataset (2005)

**Figure 3**

Most job losses are forecast to occur in industries dominated by discretionary spending and small firms. Labor intensive industries like retail trade, restaurants and drinking places, and construction suffer particularly heavy losses and account for 932,000 jobs lost between 2009 and 2013 (see **Table 7**). Administrative and support services, a lower-skilled but populous industry, is similarly affected and is forecast to lose 99,000 jobs. Other industries forecast to suffer large job losses include real estate (-190,000 jobs), professional, scientific, and technical services

(-125,000 jobs), social assistance (-113,000 jobs), and wholesale trade (-91,000). Given that coverage rates among low-skilled industries trail rates among industries with higher-skilled, better-educated workers, the heavy job losses in low-skilled industries mean that the employer mandate has the perverse effect of pushing large numbers of uninsured workers into unemployment. This outcome will actually reinforce the likelihood of noninsurance among some individuals the policy was originally intended to help.

**Table 7: Largest Job Losses and Gains by Industry (in Thousands), 2009-2013**

<b>Largest Losses</b>	Retail Trade	-449
	Restaurants and Drinking Places	-354
	Real Estate	-190
	Construction	-129
	Professional, Scientific, and Technical Services	-125
	Social Assistance	-113
	Administrative and Support Services	-99
	Wholesale Trade	-91
<b>Largest Gains</b>	Ambulatory Healthcare Services	+330
	Hospitals	+327
	Nursing and Residential Care Facilities	+157
	Insurance Carriers	+76

The employer mandate would boost demand for healthcare goods and services, thereby increasing employment in healthcare-related sectors. The number of ambulatory healthcare professionals (physicians, dentists, and other healthcare practitioners) needed will increase by 330,000. An additional 327,000 staff will be required to work in hospitals. Some 157,000 more nurses (net of retirements) will be needed to staff doctors’ offices, outpatient clinics, and other provider locations. And payrolls at insurance companies will expand by 76,000 workers.

A caveat applies to the job gain figures above. While the BSIM projects employment gains in the healthcare industry, these projections are based on the assumption that occupational flows are dynamic. In reality, the existing shortage of nurses and other healthcare professionals in the United States suggests that finding enough new healthcare professionals to meet new demand will be difficult. Without a commensurate increase in labor supply, increased demand for healthcare professionals will drive up wages and prices for healthcare goods and services.

This additional inflation in healthcare costs may price some individuals out of the market and force some of the existing insured to drop health insurance coverage. If labor supply is

sufficiently inelastic and new labor demand sufficiently high, then it is not inconceivable that rather than producing an increase in insurance coverage, an employer mandate may actually lead to lower coverage rates due to dropped coverage. A more severe imbalance between the supply and demand of healthcare workers will also result in longer patient delays in obtaining care.

**B. Output Effects**

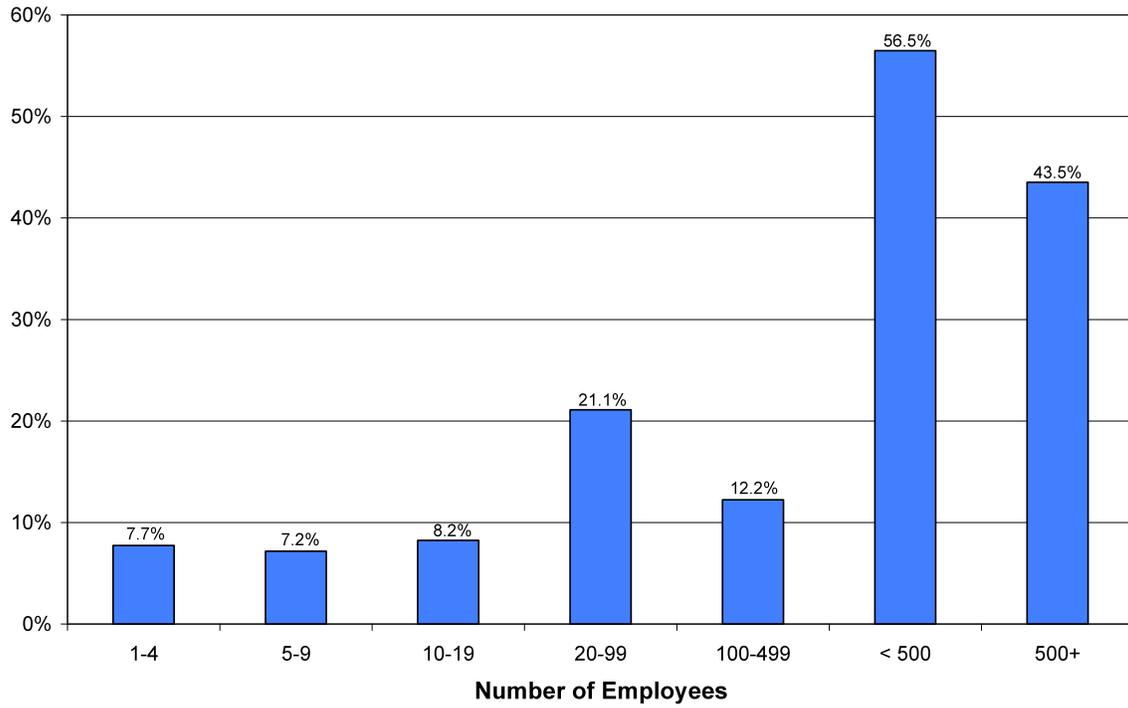
In addition to employment effects, the model also forecasts expected losses in real output. Reductions in output occur due to the firm closings and contractions mentioned earlier. In total, U.S. firms are projected to lose \$200 billion in real output between 2009 and 2013 as a consequence of the employer mandate (see **Table 8**). Small firms, which account for roughly one-half of private-sector GDP, bear the brunt of output losses.<sup>23</sup> Firms with fewer than 500 employees are forecast to lose roughly \$113 billion in real output, or 56.5 percent of all output lost. Additionally, firms with fewer than 100 employees account for 44.3 percent of all output lost, and firms with fewer than 20 employees account for 23.1 percent of all output lost. **Figure 4** presents a distributional chart of output losses across firm-size groups.

**Table 8: U.S. Real Output Loss by Firm Size (in Billions of Chained 2000 \$s), 2009-2013**

		Year					
		2009	2010	2011	2012	2013	All Years
<b># Employees per Firm</b>	<b>1-4</b>	1.790	2.349	3.129	3.805	4.410	<b>15.483</b>
	<b>5-9</b>	1.554	2.123	2.903	3.588	4.200	<b>14.368</b>
	<b>10-19</b>	1.704	2.397	3.338	4.155	4.894	<b>16.488</b>
	<b>20-99</b>	4.577	6.223	8.538	10.564	12.387	<b>42.289</b>
	<b>100-499</b>	1.664	3.104	4.990	6.638	8.115	<b>24.511</b>
	<b>500 +</b>	6.234	11.179	17.709	23.437	28.610	<b>87.169</b>
	<b>All Firms</b>	<b>17.523</b>	<b>27.375</b>	<b>40.607</b>	<b>52.187</b>	<b>62.616</b>	<b>200.308</b>

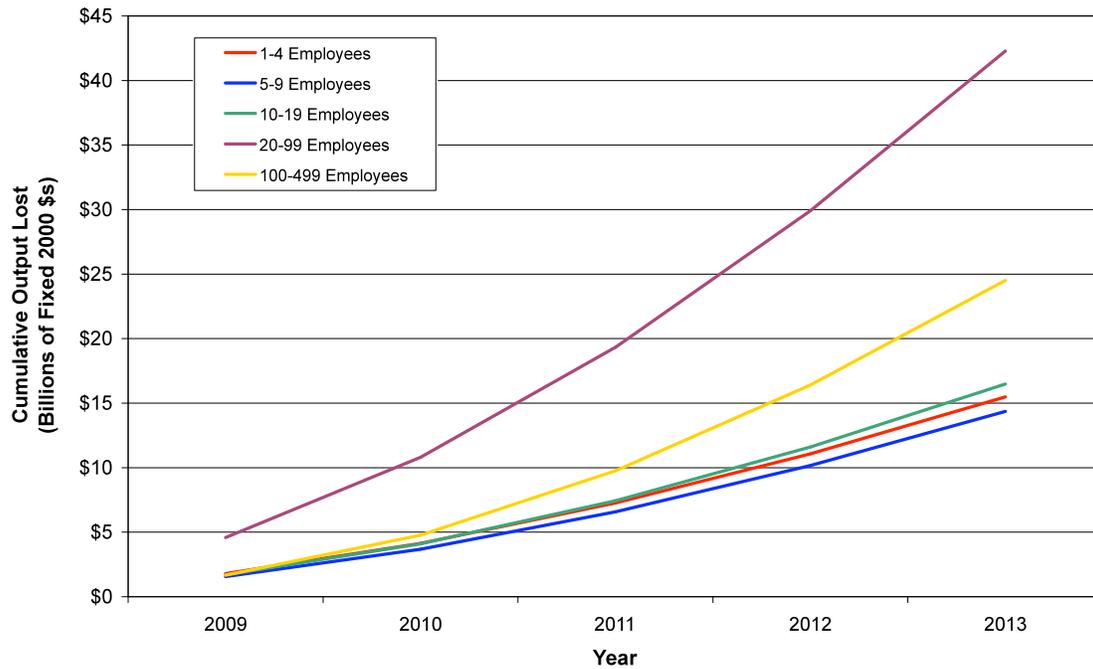
**Figure 5** contains a graph of cumulative small business output losses over time. The graph shows how firms with 20 to 99 employees suffer the largest output loss. Firms in this size group are forecast to lose over \$42 billion in real output between 2009 and 2013. Firms with 100 to 499 employees are projected to lose the second largest amount in real output, nearly \$25 billion over five years. Additionally, firms with one to four, five to nine, and 10 to 19 employees are each projected to lose between \$14 billion and \$17 billion.

**Percent of Output Lost by Firm Size**



**Figure 4**

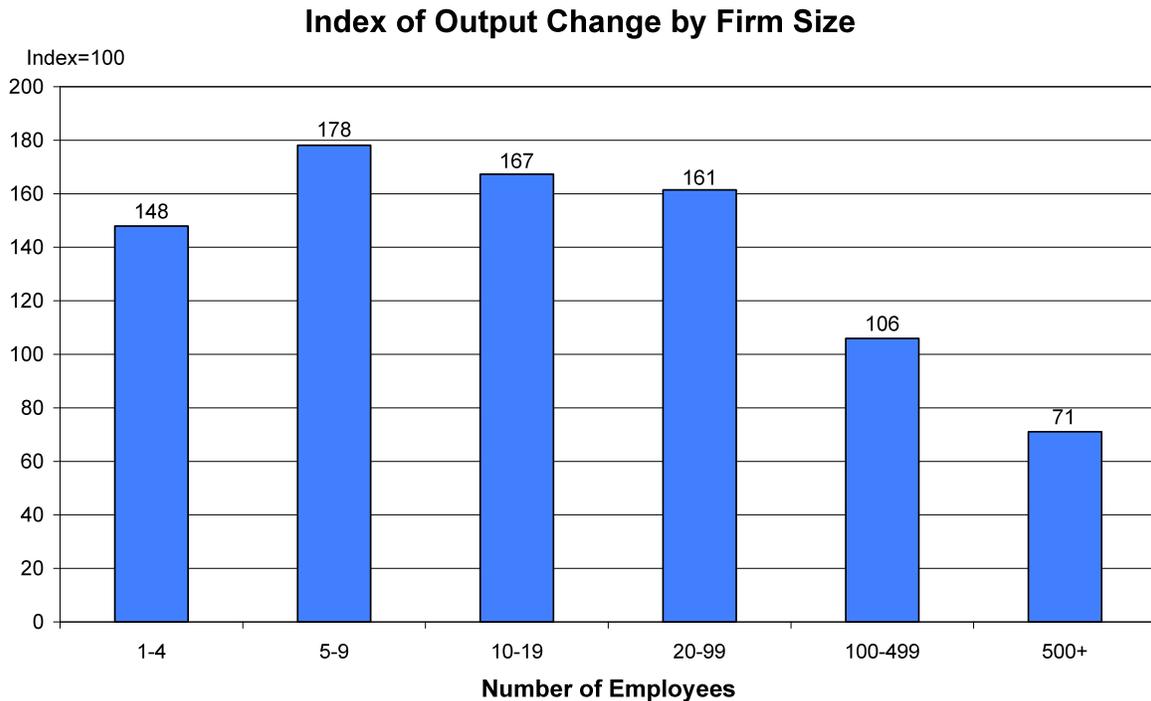
**Cumulative U.S. Small Business Real Output Lost Due to a National Employer Healthcare Mandate**



**Figure 5**

Dividing the percentage of output lost attributable to a firm-size group by the group’s percent share of existing gross receipts yields an index of output change (see **Figure 6**). This index indicates whether a firm-size group’s output loss is proportionate to the group’s share of existing revenues. As with the index of employment change, an output change index value above 100 signifies a disproportionate amount of output lost by a particular firm-size group (and vice versa for a value below 100). The chart below underscores the disproportionate amount of output lost by small firms: all firm-size groups with fewer than 500 employees have indices above 100.

Output losses are most disproportionate for firms with five to nine, 10 to 19, and 20 to 99 employees, which have index values of 178, 167, and 161, respectively. Firms with one to four employees also lose substantially more output than might be expected and have an index value of 148. Firms with 100 to 499 employees have an index of 106, which indicates that firms this size lose only slightly more output than might be expected. In contrast to small firms, large firms with 500 or more employees have an index value of just 71.



\*Index = [(% of Output Lost) / (% of Existing Gross Receipts)] x 100

\*\*Gross receipts data taken from the Census Bureau's 2002 Economic Census

**Figure 6**

## **V. Limitations**

To compensate for a lack of available data, certain simplifying assumptions were made during the modeling stage of this project. These assumptions bias the results both positively and negatively. Two assumptions merit a brief discussion.

First, the model assumes that the mandate imposes no additional costs on firms already offering insurance. This assumption presumes that employers currently offering insurance (a) contribute at least 50 percent toward employee premiums and (b) no crowding out occurs among workers with non-employer-based insurance. Regarding the first point, HHS data indicate that firms offering insurance typically contribute well over 50 percent, regardless of plan type or firm size. According to the Medical Expenditure Panel Survey, employer contribution rates for all firms toward single coverage, employee-plus-one coverage, and family coverage premiums in 2006 equaled 80.9 percent, 76.2 percent, and 76.6 percent, respectively. The rates vary somewhat by firm size, but they never dip below 67 percent.<sup>24</sup>

These rates suggest that few firms already offering insurance contribute less than 50 percent toward employee insurance premiums. Nonetheless, it is possible that there are some firms that contribute less than 50 percent. Workers at these firms may be inclined to drop existing non-employer-based coverage in favor of employer-based insurance once employers increase contribution rates to 50 percent. The introduction of new government subsidies of employee health insurance, whose effect is not accounted for in the model, would also contribute to this trend. All other things being equal, an increase in the percentage of employees enrolled in employer-based plans would raise firm costs and increase the simulation's forecast employment and output losses. The omission of any such effects potentially biases the results downward.

Second, the model assumes that the consumption pattern of new purchasers of insurance will mirror the existing pattern of already insured workers. As mentioned earlier, health insurance consumer behavior can depend on a large number of variables, many of which involve private information. This makes the prediction of future behavioral patterns difficult. This assumption was ultimately made for convenience, but it is not unreasonable to expect that individuals who wish to purchase insurance, but cannot currently afford to do so, share similar preferences and characteristics (besides income) with those who can afford and currently do purchase insurance.

In addition to these two assumptions, readers should note a further limitation imposed by BSIM's ability to only fully account for the mandate's direct effects on employers. Although the model includes assumptions regarding future employee consumption of health insurance, it does not capture the mandate's full effect on employees. Specifically, the economic impact of assumed changes in employee spending behavior is left out of the model. In practice, new buyers of insurance will need to modify their spending by reallocating dollars to health insurance premiums. Prior to the mandate, these dollars were either saved or spent on other goods and services. As a consequence of employees rebalancing their spending, borrowers (banks, investment funds, other financial institutions where employees may have placed (saved) their funds, etc.) and producers outside the healthcare industry will see their revenues shrink. And as with employer contributions, employee contributions will also be recycled back into the economy and provide an additional stimulus to the healthcare industry.

Also left out of the model is the impact that federal subsidies will have on the government's balance sheet. Government-subsidized insurance will require some combination of reduced federal spending on non-related programs, higher taxes, and additional debt. All of these options will have macroeconomic consequences, none of which are captured by the model.

## **VI. Implications**

The employment and output effects forecast by the BSIM are large and cast doubt on whether a national employer healthcare mandate that includes small-firm owners can avoid harming small businesses and the broader economy. The specifics of any future mandate proposals may vary from the hypothetical mandate in this paper, but the magnitude of the results here suggests that even substantially different policies will cause millions of job losses and reduce real GDP by billions of dollars. The direct per-firm costs created by a mandate are considerable and are reinforced by substantial job and output losses. Mandates requiring employer provision of not only basic coverage, but also more complex, expensive insurance plans, would result in even more severe economic consequences. Relatively low offer rates at small firms mean that more small businesses than large businesses will be directly affected by a mandate. Small firms will also bear a disproportionate amount of any new employer costs.

In addition to firm costs, other consequences of a national employer mandate also merit consideration. In particular, a federally-subsidized program like the one described in this paper will have important implications for the federal budget. The recent experience of the Massachusetts plan, in which expenditures have greatly exceeded initial expectations, serves as a cautionary tale about just how large these fiscal consequences may be.<sup>25</sup> Ultimately, financing a government-subsidized mandate program will require some combination of tax increases, more debt, and reductions in existing government spending on non-related programs. But given the current economic crisis, it is difficult to see where or how funds to support such a program can be generated.

The Congressional Budget Office recently projected a federal deficit of \$1.2 trillion in 2009, equal to 8.3 percent of GDP. Deficits this size will give lawmakers pause before considering subsidizing insurance with additional debt. And with the unemployment rate expected to exceed 9 percent by early 2010, policymakers are now focused on stimulating the economy.<sup>26</sup> Tax cuts and massive new spending programs are expected to be part of any stimulus package. Hence, the other two mechanisms for financing a mandate—additional tax increases and cuts in existing spending—also appear to be out the question. It also goes without saying that enacting a new federal program that will cost millions of jobs will clearly diminish, and perhaps negate entirely, the impact of any fiscal stimulus. These economic realities raise important questions regarding the practicality of implementing a new employer healthcare mandate in the near term.

## **VI. Appendix A: Time Series Data**

**Table A1: Weighted Average Insurance Premiums and Pre-Tax Costs of New Employer Contributions, Firms Previously Not Offering Insurance, 2001-2013**

Year	Wtd. Avg. Premium	Adjusted Wtd. Avg. Premium	Pre-Tax Per-Firm Costs of New Employer Contributions					
			1 to 4 Empl.	5 to 9 Empl.	10 to 19 Empl.	20 to 99 Empl.	100 to 499 Empl.	500+ Empl.
2001	\$5,016	\$4,013	\$2,491	\$9,890	\$20,211	\$59,147	\$289,486	\$4,997,606
2002	\$5,531	\$4,425	\$2,728	\$10,899	\$22,288	\$64,881	\$320,601	\$5,519,352
2003	\$6,091	\$4,873	\$3,008	\$11,997	\$24,536	\$71,624	\$353,947	\$6,040,713
2004	\$6,502	\$5,202	\$3,185	\$12,811	\$26,206	\$76,502	\$377,745	\$6,462,744
2005	\$6,914	\$5,531	\$3,348	\$13,627	\$27,837	\$81,412	\$401,879	\$6,844,887
2006	\$7,230	\$5,784	\$3,531	\$14,249	\$29,141	\$85,102	\$420,470	\$7,297,415
2007	\$7,777	\$6,222	\$3,792	\$15,329	\$31,351	\$91,551	\$452,676	\$7,886,465
2008	\$8,224	\$6,579	\$4,003	\$16,210	\$33,157	\$96,815	\$479,064	\$8,377,464
2009	\$8,671	\$6,936	\$4,213	\$17,091	\$34,963	\$102,081	\$505,485	\$8,871,883
2010	\$9,117	\$7,294	\$4,423	\$17,972	\$36,770	\$107,347	\$531,938	\$9,369,631
2011	\$9,564	\$7,651	\$4,632	\$18,853	\$38,577	\$112,614	\$558,422	\$9,870,621
2012	\$10,010	\$8,008	\$4,840	\$19,735	\$40,385	\$117,881	\$584,936	\$10,374,768
2013	\$10,457	\$8,366	\$5,048	\$20,616	\$42,193	\$123,149	\$611,479	\$10,881,989

**Table A2: After-Tax Per-Firm Costs of New Employer Contributions, Firms Previously Not Offering Insurance, 2001-2013**

Year	Firm Size					
	1 to 4 Employees	5 to 9 Employees	10 to 19 Employees	20 to 99 Employees	100 to 499 Employees	500+ Employees
2001	\$1,743	\$6,923	\$14,148	\$41,403	\$202,640	\$3,498,324
2002	\$1,909	\$7,629	\$15,601	\$45,416	\$224,420	\$3,863,546
2003	\$2,106	\$8,398	\$17,176	\$50,136	\$247,763	\$4,228,499
2004	\$2,229	\$8,968	\$18,344	\$53,552	\$264,421	\$4,523,921
2005	\$2,344	\$9,539	\$19,486	\$56,988	\$281,316	\$4,791,421
2006	\$2,472	\$9,974	\$20,398	\$59,571	\$294,329	\$5,108,191
2007	\$2,654	\$10,730	\$21,946	\$64,085	\$316,873	\$5,520,525
2008	\$2,802	\$11,347	\$23,210	\$67,771	\$335,345	\$5,864,225
2009	\$2,949	\$11,964	\$24,474	\$71,457	\$353,839	\$6,210,318
2010	\$3,096	\$12,580	\$25,739	\$75,143	\$372,357	\$6,558,742
2011	\$3,242	\$13,197	\$27,004	\$78,830	\$390,896	\$6,909,435
2012	\$3,388	\$13,814	\$28,269	\$82,517	\$409,455	\$7,262,337
2013	\$3,534	\$14,431	\$29,535	\$86,205	\$428,035	\$7,617,392

## **VII. Appendix B: Labor Productivity**

The preceding discussion did not address the issue of the potential effect health insurance may have on labor productivity. While not extensive, the relevant literature in this field does not come to any specific conclusion. The lack of a general consensus is due in part for the need to separately analyze the effects of health insurance on chronic illnesses like asthma, diabetes, and depression from effects on easily curable short-term illnesses. Additional obstacles involve the inability of researchers to measure observable gains in worker skill and productivity and the correlation between higher skill levels and coefficients on health insurance and other benefits, which impart a positive bias to health insurance coefficients. Because of these difficulties, leading researchers such as Michael Morrissey of the University of Alabama-Birmingham prefer a zero sign on the productivity variable.<sup>27</sup> The Congressional Budget Office has also indicated that because the effects of changes to the healthcare system on health outcomes are uncertain, caution should be used when considering potential productivity effects of insurance coverage.<sup>28</sup>

Other researchers disagree and have produced estimates for the magnitude of the labor productivity effect ranging as high as (approximately) 3 percent of GDP. A group of researchers sponsored by Project Hope wrote in *Health Affairs* in 2004 that about \$65 billion to \$130 billion is foregone annually in lost output nationwide due to uninsurance, equivalent to about a 0.6 percent to 1.2 percent decline in worker productivity.<sup>29</sup> Furthermore, a 2005 study published by the Commonwealth Foundation concludes that lost worker productivity in the United States totaled \$260 billion of foregone output in 2003, equal to about 2.4 percent of GDP.<sup>30</sup> Proponents of paid sick leave have also argued for positive effects on the labor productivity variable.<sup>31</sup>

Finally, some researchers take a third approach to this issue and highlight the lack of good tools and standard metrics in this area of research. Many of the productivity measuring instruments common to this area were developed for different aims and were applied to different study populations, making cross-study comparisons of productivity impacts difficult. The numerous ways in which diseases or productivity are defined have produced very high variability in estimates of on-the-job productivity losses.<sup>32</sup>

This subject has had very credible research for about 10 years without a general consensus. Conclusions of various studies vary according to data source, time period, disease, and income of the underlying population, and the subject remains an area for continued research.

## Notes

<sup>1</sup> Department of Health and Human Services, Agency for Healthcare Research and Quality, Center for Financing, Access and Cost Trends, Medical Expenditure Panel Survey-Insurance Component, 1996-2006.

<sup>2</sup> U.S. Census Bureau, Current Population Survey, 2000 and 2008 Annual Social and Economic Supplements.

<sup>3</sup> Estimate calculated using data from the Employee Benefits Research Institute Databook on Employee Benefits.

<sup>4</sup> For more information on BSIM results for California, New York, Pennsylvania, and Wisconsin, please refer to: Bruce Phillips, “ABX1: Economic and Small Business Effects” (Washington, D.C.: NFIB Research Foundation, 2008).

Bruce Phillips and Gabor Lukacs, “Fair Share for Health Care: S07090; A10583: An Application of NFIB’s BSIM Regulatory Simulation Model” (2006).

Bruce Phillips, “Universal Access to Health Care in Pennsylvania—‘Cover all Pennsylvanians’ Economic and Small Business Effects” (Washington, D.C.: NFIB Research Foundation, 2007).

Bruce Phillips, “Evaluating Assembly Bill 1140—The Wisconsin Health Plan: Economic and Small Business Effects” (Washington, D.C.: NFIB Research Foundation, 2007).

<sup>5</sup> See the Limitations section for a detailed discussion about employer contribution rates at firms currently offering insurance. In brief, the data suggests that most employers offering insurance contribute at least 50 percent toward employee premiums. Employers who currently offer insurance frequently contribute high percentages to encourage employees to purchase insurance. Having large numbers of enrolled employees benefits employers since the size of employee insurance pools is increased, allowing employers to obtain lower prices.

It is possible that under certain conditions, employers offering insurance may choose to reduce contribution rates after program implementation. In particular, the provision of universal low-cost government-sponsored insurance will encourage lower private contribution rates, since employers would no longer have to worry about enlarging employee risk pools to qualify for lower premiums. The model used in this study assumes that such a public option does not exist. Hence, employers have no incentive to lower contribution rates from their current levels after program implementation.

<sup>6</sup> According to a 2003 NFIB National Small Business Poll on health insurance, 65 percent of small employers (those with fewer than 250 employees) who do not offer employee health insurance say a major reason for their decision is that the business cannot afford it. Additionally, data from the Kaiser Family Foundation indicate that among small firms (3 to 199 workers) not offering health benefits, the high cost of premiums was either the most or second most important reason for not offering insurance at 70 percent of firms. For more information, please see:

Michael A. Morrissey, “Health Insurance,” NFIB National Small Business Poll, 3.4, ed. William J. Dennis, Jr. (Washington, D.C.: NFIB Research Foundation, 2003) 17-19.

The Kaiser Family Foundation and Health Research & Educational Trust, 2008 Annual Survey on Employer Health Benefits, (2008) 42 <<http://www.kff.org/insurance/7672/upload/76723.pdf>>.

<sup>7</sup> This assumption ignores the potential impact that new government subsidies and changes in eligibility may have on employee decision-making. At firms already offering insurance, the introduction of new government subsidies for employer-based insurance may sufficiently incentivize certain non-insured employees to take up insurance through their employer. Government subsidies may also make employer-based insurance more economically attractive than existing non-employer-based insurance options. This would encourage employees who currently purchase insurance outside their employer to switch to employer-based insurance. Any increase in the number of employees purchasing coverage through their employer would increase firm costs.

<sup>8</sup> For some background on labor market segmentation according to worker preferences for health benefits, please see:

Steven F. Lehrer and Nuno Sousa Pereira, “Worker Sorting, Compensating Differentials and Health Insurance: Evidence from Displaced Workers,” NBER Working Paper No. 12951 (March 2007).

Alan C. Monheit and Jessica Primoff Vistnes, “Health Insurance Availability at the Workplace: How Important are Worker Preferences?” The Journal of Human Resources 34.4 (Autumn 1999): 770-785.

Frank A. Scott, Mark C. Berger, and Dan A. Black, “Effects of the Tax Treatment of Fringe Benefits on Labor Market Segmentation,” Industrial and Labor Relations Review 42.2 (January 1989): 216-229.

<sup>9</sup> Kaiser Family Foundation and Health Research & Educational Trust, 2008 Annual Survey on Employer Health Benefits.

<sup>10</sup> Department of Health and Human Services, Medical Expenditure Panel Survey, 2006.

<sup>11</sup> After program implementation, take-up rates for workers at firms originally not offering insurance are assumed to be 75 percent across all firm sizes. Hence, employer contributions are multiplied by only 75 percent of forecast employee-per-firm ratios.

<sup>12</sup> For employee and firm statistics, the coefficient of determination,  $R^2$ , varies according to firm size and region. In general,  $R^2$  is very strong for small firm-size groups. For larger firm-size groups, the coefficient's strength deteriorates somewhat. However, a higher percentage of large firms offer health insurance to their employees, which means that the impact of forecasting imprecision on per-firm costs for large firms will be limited. Forecast employee and firm statistics were obtained using Census Bureau data from the Statistics of U.S. Businesses (SUSB) database. SUSB data is available at <http://www.census.gov/csd/susb/index.html>.

<sup>13</sup> Determining the income tax rate of businesses is difficult, since rates can vary across firms according to business structure, location, and the share of income allocated to wages, salary, and dividends. For incorporated firms, the income tax rate equals the sum of the relevant federal and state corporate income tax rates. Most large firms fall into this category.

For small businesses, the exercise is more complicated, since most small businesses are not incorporated. These sole proprietors, partnerships, LLCs, S-corporations, and other pass-through entities generally do not pay corporate income taxes. Instead, most, if not all, business income is transferred to owners and employees through wages, salaries, and dividends, which are taxed at the individual level.

Since an employer healthcare mandate will affect more small businesses than large businesses, an estimate of the income tax rate for small businesses was adopted as the income tax rate for businesses of all firm sizes in this paper. To estimate the income tax rate on small businesses, data from a recent NFIB National Small Business Poll on finance questions was used. According to the poll, the median household income for a small business owner in 2007 fell between \$75,000 to \$99,999 and the middle 50 percent fell roughly between \$50,000 and \$150,000. Taking into account the fact that business income earned by small business owners is usually less than total household income, the range for a typical small business owner's annual business income will be lower than \$75,000 to \$99,999. Based on these facts and current federal and state income tax rates, 30 percent was adjudged to be an approximate income tax rate for small business owners. For more information on the NFIB poll on small business finances, please refer to William J. Dennis, Jr., "Finance Questions," NFIB National Small Business Poll 7.7 (Washington, D.C.: NFIB Research Foundation, 2007).

<sup>14</sup> For simplicity, the model assumes that businesses have income greater than new firm costs generated by the mandate. The impacts of tax carryforwards and carrybacks are therefore ignored.

<sup>15</sup> According to a recent NFIB survey on purchasing health insurance, when small businesses with one to nine employees shop for health insurance, either the manager/owner or an employee does the shopping over 70 percent of the time. The number of hours these firms spend shopping ranges from two hours or less (28.4 percent) to over 16 hours (11.3 percent). The vast majority spends less than eight hours searching. When the data is normalized to exclude respondents who declined to give a precise number of hours, the weighted average number of hours that one- to nine-employee firms spend shopping for insurance is 8.32 hours. For more information, please refer to William J. Dennis, Jr., "Purchasing Health Insurance," NFIB National Small Business Poll 7.3 (Washington, D.C.: NFIB Research Foundation, 2007).

<sup>16</sup> Assumption based on data from William J. Dennis, Jr., "Paperwork and Record-keeping," NFIB National Small Business Poll 3.5 (Washington, D.C.: NFIB Research Foundation, 2003).

<sup>17</sup> Wage estimates for specialized healthcare benefits professionals were taken from the Bureau of Labor Statistics's Occupational Employment Statistics (OES) database. According to OES data, the national mean annual wage in 2007 of a compensation and benefits manager was \$88,400. Compensation, benefits, and job analysis specialists had a mean annual wage of \$55,740. Human resources assistants, except for payroll and timekeeping, earned a mean annual wage of \$36,000 nationwide in 2007.

Readers should note that the assumed direct employer effects caused by the hiring of new benefits staff is not incorporated into the discussion of simulated job losses in the Results section. The reason these effects are not included is that despite the model's ex-ante assumption of an increase in the number of employee benefits professionals, most of these jobs should only exist for a brief window before they are destroyed by firm closings and contractions. This will particularly be the case for firms with 20 to 499 employees, which suffer the largest employment and output losses among small businesses. It is possible that some large firms will have the financial strength to take on these new employees without shutting down or eliminating existing positions. The number of these firms is small, however, and the direct employment effect of hiring new benefits staff at these firms is negligible relative to the simulation results.

<sup>18</sup> Multiplying the nominal price of a weighted average insurance plan in 2009 by 75 percent of the estimated 2009 employee-per-firm ratio for firms with one to four employees yields \$8,426.

<sup>19</sup> Administrative costs of healthcare programs vary according to whether a program is administered by public or private institutions. Actual and projected federal administrative costs of government healthcare programs have consistently equaled less than 8 percent of total national health expenditures per year since 1999. In 2003, the Center for Medicaid and Medicare Services estimated the administrative cost rate for Medicare to be 3 percent, excluding capital costs. Including capital costs increases Medicare's administrative cost rate to just under 10 percent. At the state level, the Lewin Group estimated in 2007 that the administrative cost of Colorado insurance and public health benefits programs to be 8 percent of total healthcare spending.

Administrative costs at private sector insurance companies are higher and vary by firm size. According to a 2003 Small Business Administration report, administrative expenses for insurers of small health plans make up 25 percent to 27 percent of premiums. More recently, Jon Gruber of MIT has pegged administrative costs in U.S.-based private insurance at 12 percent of premiums.

Ten percent was adjudged to be a reasonable assumption for government administrative costs on account of existing data and doubts as to whether a massive new federal insurance program could immediately achieve the same efficiencies as a long-standing program like Medicare. For more information, please see:

Rose C. Chu and Gordon R. Trapnell, "Study of the Administrative Costs and Actuarial Values of Small Health Plans," Actuarial Research Corporation, prepared for the Small Business Administration's Office of Advocacy under contract no. SBAHQ-01-M-0811 (2002).

Jonathan Gruber, "Incremental Universalism for the United States: The States Move First?," Journal of Economic Perspectives 22.4 (Fall 2008): 54.

Stephen Heffner, Sheila Smith, Sean Keehan, Christine Borger, M. Kent Clemens, and Christopher Truffer, "U.S. Health Spending Projections for 2004-2014," Health Affairs, Web Exclusive, 23 February 2005: W5-75, <<http://content.healthaffairs.org/cgi/reprint/hlthaff.w5.74v1.pdf>>.

Jeff Lemieux, "Perspective: Administrative Costs of Private Health Insurance Plans," America's Health Insurance Plans, Center for Policy and Research (2005).

The Lewin Group, "Cost and Coverage Impacts of Five Proposals to Reform the Colorado Health Care System," prepared for the Colorado Blue Ribbon Commission for Health Care Reform, 29 Dec. 2007.

<sup>20</sup> Other reasonable distributions of spending on private sector goods and services are possible, but it is likely that most, if not all, of the money collected from employer contributions will be recycled into healthcare. This is because (a) insurers must be paid, (b) a certain number of newly covered workers will require immediate healthcare services (so providers must be paid), and (c) a large portion of any remaining funds can reasonably be expected to go toward making insurance more affordable for low-income individuals.

<sup>21</sup> U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, "National Health Expenditure Accounts 2006 Highlights," <<http://www.cms.hhs.gov/NationalHealthExpendData/downloads/highlights.pdf>>.

<sup>22</sup> The percentages of employer contributions allocated to private demand and government savings are arbitrary, but the distribution captures the notions that (a) a new healthcare mandate will generate a significant amount of new spending in healthcare industries and (b) program delays may preclude the immediate rechanneling of funds back into the private sector.

<sup>23</sup> Kathryn Kobe, "The Small Business Share of GDP, 1998-2004," Economic Consulting Services, LLC, prepared for the Small Business Administration's Office of Advocacy under contract no. SBAHQ-05-M-0413 (2007), <<http://www.sba.gov/advo/research/rs299tot.pdf>>.

<sup>24</sup> Department of Health and Human Services, Agency for Healthcare Research and Quality, Center for Financing, Access and Cost Trends, Medical Expenditure Panel Survey-Insurance Component, 2006.

<sup>25</sup> Costs for Commonwealth Care, Massachusetts's subsidized health insurance program, have outpaced expectations due to underestimation of the number of uninsured individuals in Massachusetts. During the first year of the program, costs totaled \$625 million—substantially higher than the original estimated cost of \$472 million. When the program was initiated in 2006, eventual annual costs were projected to be \$725 million. However, projected annual costs have reportedly been revised upward by state officials to \$1.35 billion. For more information, please see:

Kaiser Family Foundation, "Massachusetts Health Care Subsidy Program Cost, Enrollment Could Double Over Three Years," Kaiser Daily Health Policy Report, 4 February 2008, <[http://www.kaisernetwork.org/Daily\\_Reports/rep\\_index.cfm?DR\\_ID=50200](http://www.kaisernetwork.org/Daily_Reports/rep_index.cfm?DR_ID=50200)>.

Alice Dembner, "Subsidized care plan's cost to double," The Boston Globe, 3 February 2008, <<http://www>>.

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boston.com/news/health/articles/2008/02/03/subsidized\_care\_plans\_cost\_to\_double>.

<sup>26</sup> Congressional Budget Office, “The Budget and Economic Outlook: Fiscal Years 2009 to 2019,” (January 2009) 1.

<sup>27</sup> E-mail exchange with Dr. Michael Morrissey, 17 December 2008.

<sup>28</sup> According to the Congressional Budget Office, “[b]ecause the impact on health outcomes from major changes to the health care system is uncertain, it is not clear whether such changes would have a substantial impact on overall economic output or productivity.” See Congressional Budget Office, “Key Issues in Analyzing Major Health Insurance Proposals” (December 2008).

<sup>29</sup> Wilhelmine Miller, Elizabeth Richardson Vigdor, and Willard G. Manning, “Covering The Uninsured: What Is It Worth?” Health Affairs, Web Exclusive, 31 March 2004, <content.healthaffairs.org/cgi/reprint/hlthaff.w4.157v1.pdf>.

<sup>30</sup> Karen Davis, Sara R. Collins, Michelle M. Doty, Alice Ho, and Alyssa L. Holmgren, “Health and Productivity Among U.S. Workers,” The Commonwealth Foundation, Issue Brief 856 (2005).

<sup>31</sup> Vicky Lovell, “Valuing Good Health in California: The Costs and Benefits of the Healthy Families, Healthy Workplaces Act of 2008,” Institute for Women’s Policy Research, Pub. #B259 (April 2008).

<sup>32</sup> Ron. Z. Goetzel, Stacey R. Long, Ronald J. Ozminkowski, Kevin Hawkins, Shaohung Wang, and Wendy Lynch, “Health, Absence, Disability, and Presenteeism Cost Estimates of Certain Physical and Mental Health Conditions Affecting U.S. Employers,” Journal of Occupational and Environmental Medicine 46.4 (2004): 398-412, <healthproject.stanford.edu/publications/health\_absence\_disability\_goetzel.pdf>.