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NFIB Research Foundation
Washington, D.C.
August 12, 2011

Effects of a Paid Sick and Safe Time Mandate on Colorado Small Businesses

This report analyzes the potential economic impact of a paid sick and safe time mandate on Colorado employers, workers, and economy. Paid sick leave mandates have re-emerged as a topical policy issue for private enterprise following the recent passage of the first statewide paid sick leave employer mandate in Connecticut. While there is legislation pending at the federal level for a nationwide paid sick leave mandate, proposed most recently in a bill sponsored by Massachusetts Senator John F. Kerry, similar mandates continue to be pushed at the state and local level. In Colorado's case, there is the upcoming referendum on the Denver paid sick and safe time ordinance this fall. Analyzing the Denver ordinance is an interesting exercise in itself, but this report takes a broader view and attempts to quantify the potential impact a similar *statewide* employer paid sick and safe time mandate might have on Colorado small businesses. This analysis was performed with the assistance of the NFIB Business Size Impact Module (BSIM), which was used to simulate the effects of a statewide mandate modeled after the proposed Denver ordinance.

The Denver ordinance would establish a minimum time-off standard for paid sick and safe time by requiring Denver small businesses to provide their employees with up to 40 hours of paid sick and safe time in a calendar year, and large businesses to provide up to 72 hours of paid sick and safe time. In general, paid sick time is to be provided to employees to care for their own or a family member's physical or mental illness, injury, health condition, need for a medical diagnosis, care, or treatment, or need for a medical procedure or preventive medical care. Paid safe time is to be provided to prevent or deal with the consequences of domestic abuse, sexual assault, or stalking. In practice, the price of these new mandated entitlements would be new costs imposed on Denver employers which would lead to reduced profitability, lost sales and production, and lost jobs.

The BSIM is a dynamic, multi-region model based on the Regional Economic Models, Inc. (REMI) structural economic forecasting and policy analysis model which integrates input-output, computable general equilibrium, econometric, and economic geography methodologies. It has the unique ability to forecast the economic impact of public policy and proposed legislation on different categories of U.S. businesses differentiated by size of firm. Forecast variables include levels of private sector employment and real output. By comparing simulation results for scenarios which include proposed or yet-to-be-implemented policy changes with the model's baseline forecast, the BSIM is able to obtain estimates of how these policy changes might impact employer firms and their workers.

BSIM inputs in this study consist of (1) new employer costs generated by the proposed mandate and (2) new spending on healthcare-related goods and services due to an increase in paid sick and safe leave taken by employees. Passage and implementation of the mandate is assumed to occur in 2012. Economic forecasts were generated by BSIM for years 2012 through 2016, a five-year window from the supposed date of implementation. The simulation results suggest that if a statewide paid sick and safe time mandate modeled after the Denver ordinance passes, over 14,000 CO jobs could be lost and CO real output could decrease by nearly \$2 billion by 2016. Small firms would bear the majority of job losses and roughly half of any lost sales.

New Employer Costs Generated by a Paid Sick and Safe Time Mandate

A paid sick and safe time mandate modeled after the Denver ordinance would impose three major costs on employers: compensation costs associated with paying more workers taking paid leave, lost production due to more workers taking leave, and new paperwork and recordkeeping costs incurred by complying with a paid leave mandate. These three costs, and our attempts to model them, are discussed in detail below.

A. Employee Compensation

A major cost to employers from this legislation is a “compensation cost” in the form of compensation (both wages and benefits) transferred from employers to employees during their additional paid time off. According to the referendum language, the Denver ordinance would entitle all employees who work for at least 40 hours in a year to earn, in general, from their employer not more than 72 hours of sick and safe time in a calendar year. An employee of a “small” business (defined as any “private individual, firm, partnership, institution, corporation, or association for which fewer than 10 persons work for compensation during a given week”) may not earn more than 40 hours of sick and safe time in a calendar year.

The ordinance would cover all employees, including part-time and temporary employees. With the exception of workers at “new” small businesses (those in operation for less than a year), paid sick and safe time would accrue at the commencement of employment and could be used as accrued beginning on the 90th calendar day of employment. Workers at “new” small businesses would begin accruing paid time off once their employer has been in operation for one year.

The size of employer compensation costs will depend on the amount of additional paid time off that employees take, either for sick leave or to deal with the impact of domestic violence in their lives. This study assumes that employees (at both small and large businesses) with newfound access to paid sick leave will use 40 hours of their newly available paid sick leave time.¹ Workers already with access to paid sick leave are assumed to not change the amount of paid leave they take after the mandate is implemented. The paid sick leave these workers have access to is also assumed to be sufficiently generous that it satisfies the mandate's requirements. Assumptions regarding the amount of paid safe time taken off by workers are discussed later.

Compensation cost estimates were calculated using data and assumptions regarding [1] the number of CO employees newly eligible for paid sick and safe time, [2] the quantity of additional paid sick and safe time taken by employees if the mandate

¹ This assumption is based on existing data on take-up rates for the Family and Medical Leave Act (FMLA), a federal law which entitles eligible employees of covered employers to take unpaid, job-protected leave for specified family and medical reasons. It is assumed that CO workers who become newly eligible for paid sick and safe time off should the mandate be implemented will avail themselves of paid leave in a *similar* fashion to how other workers respond to leave policies outlined in the FMLA. To the extent that there exist disparities between the FMLA and the proposed mandate (*e.g.*, the former provides for unpaid leave, the latter for paid leave; the scope of eligible reasons for taking leave may differ under the two mandates) and regional differences among employers and employees, the pattern of leave-taking by CO workers may differ from patterns of FMLA leave-taking. Nonetheless, the FMLA serves as an important and useful benchmark when analyzing other leave policies given its practical importance and wide reach.

A 2000 Department of Labor survey on the Family and Medical Leave Act reported that nearly 20 percent of FMLA-covered and -eligible employees who took leave over an 18-month period took their longest leave under FMLA. The percentage of covered and eligible employees who took *any* leave under FMLA is possibly much higher. The FMLA is an unpaid leave policy, and a similar paid leave policy can be expected to have higher take-up rates. According to the report, 54 percent of leave-takers (whether or not they were covered or eligible) who took leave for reasons covered under FMLA reported their longest leave as being between zero and 10 days. The remaining 46 percent reported their longest leave as lasting 11 or more days. The median length of leave taken was 10 days. The report also provides figures on the length of leave-takers' second longest leave: 43 percent reported one to three days, 26 percent said four to 5 days, 14 percent said six to 10 days, and the remainder said 11 or more days. Seventy-five percent of these leave-takers took leave just once during the 18 month period, 15 percent took leave twice, and 10 percent took leave three or more times during the period.

Cross tabulations for the lengths of leave-takers' longest and other leaves are unavailable. Nor are statistics available on the total or average number of leaves taken by leave-takers. The absence of this information obviously introduces an added layer of uncertainty to the modeling process. However, given the known duration of the longest and second-longest leaves from the FMLA study combined with data from the Bureau of Labor Statistics (BLS) on worker absences indicating that employed full-time wage and salary private sector workers experience, on average, three work absences per year, make the modeling assumption that newly eligible CO workers will use 40 hours of paid sick and safe time a not-unreasonable one. In the absence of more informative distributional data on the number of leaves and the amount of time off taken, we believe that it is as good as any. The facts that the Denver ordinance also allows workers to take paid "safe time" off and permits workers at non-small businesses to take off up to 72 hours in a given year increases the likelihood that the 40-hour assumption constitutes a lower bound.

The cited FMLA statistics can be found in the report "Balancing the Needs of Families and Employers: Family and Medical Leave Surveys 2000" submitted by Westat and funded by the Department of Labor under Contract MS-23F-8144H, available at <http://www.dol.gov/asp/archive/reports/fmla/toc.htm>. BLS data on worker absences for employed full-time wage and salary workers is available at <http://www.bls.gov/cps/cpsaat47.pdf>.

passes, and [3] the compensation of these employees. Because of the assumption that employees newly eligible for paid sick leave will take off 40 hours per year, the compensation costs will be dominated by the costs associated with paid sick leave (and not paid safe time). We therefore simplify the estimation of [1] by focusing on the number of CO employees who would be newly eligible for paid sick time if the mandate were implemented.

To estimate [1], industry-level estimates of the percentage of workers without paid sick leave were multiplied by the number of workers in those industries. This calculation produces an estimate of the number of CO employees with no paid sick days—the set of employees newly eligible for paid sick leave if the mandate were implemented. The percent estimates of CO workers ineligible for paid sick leave were derived from employee coverage rates for paid sick leave published by the Institute for Women’s Policy Research and the Bureau of Labor Statistics. Industry-level data on the number of CO private sector employees were obtained from the Census Bureau. These figures are shown in **Table 1** along with the calculated estimates for the number of CO employees currently without paid sick days, by industry (right-most column).

Table 1: Estimated Number of CO Employees without Paid Sick Days, by Industry

NAICS Industry Code	Private Sector Industry	Percent of Workers without Paid Sick Days Nationally ²	Number of CO Employees, by Industry ³	Estimated Number of CO Employees without Paid Sick Days, by Industry
11	Agriculture	67	1,444	967
21	Mining	52	25,878	13,327
22	Utilities	15	10,275	1,503
23	Construction	75	172,519	128,837
31-33	Manufacturing	48	139,427	66,883
42	Wholesale Trade	29	105,068	30,375
44-45	Retail Trade	55	261,560	143,753
48-49	Transportation/Warehousing	44	64,718	28,534
51	Information	26	82,984	21,169
52	Finance and Insurance	18	107,453	19,180
53	Real Estate	33	63,464	21,210
54	Prof., Scientific, & Tech. Services	31	164,509	51,245
55	Management	23	41,250	9,582
56	Admin., Support, Waste Man., & Rem. Services	69	206,620	142,733
61	Education	32	42,462	13,460

² Except for agriculture, industry-level paid sick days coverage rates are taken from Vicky Lovell’s *Taking Care: Adequacy and Equity of Paid Leave*, published by the Institute for Women’s Policy Research. Lovell’s estimates are derived using data from the BLS March 2006 National Compensation Survey, adjusted for eligibility using data from the BLS Nov. 2005 through Oct. 2006 Job Openings and Labor Turnover Surveys (JOLTS). The coverage rate for agricultural workers is taken directly from the BLS March 2010 National Compensation Survey and is not adjusted using JOLTS data.

³ Estimates of the number of CO employees by industry are taken from the Census Bureau’s 2008 Statistics of U.S. Businesses dataset.

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62	Healthcare and Social Assist.	29	245,626	70,937
71	Arts, Entertain., & Recreation	65	49,808	32,330
72	Accommodation and Food Serv.	78	237,950	185,720
81	Other Services	51	98,535	49,938
--	All Industries	48	2,120,106	1,030,718

BSIM has a unique capacity among forecasting models to generate results for specific firm-size categories. This ability allows for a finer analysis of policy impacts on small firms than other forecasting tools. To produce firm-size-specific outputs, BSIM requires that inputs also be firm-size specific. The estimates of CO employees without paid sick leave in Table 1 therefore need to be allocated to a pre-defined set of firm-size categories.

The approach taken in this study was to distribute the estimates of CO employees currently ineligible for paid sick leave according to the present firm-size distribution of CO employees. To illustrate this process, consider the case of the construction industry where an estimated 128,837 CO construction employees are ineligible for paid sick leave. **Table 2.A** gives Census Bureau data on the distribution of CO employees working construction across firm-size groups. Multiplying the estimated number of CO construction workers without paid sick leave, 128,837, by the percentage shares for the firm-size categories in Table 2.A yields an estimated distribution of construction employees without paid sick leave across firm-size categories (**Table 2.B**). This process was repeated for most 2-digit NAICS industry categories to obtain a matrix of estimated CO employees without paid sick leave by firm-size category and major industry (**Table 2.C**), completing the estimation of [1].

Table 2.A: Distribution of CO Construction Employees, 2006

	All Construction Employees	No. of Employees per Firm					
		1-4	5-9	10-19	20-99	100-499	500+
No. of Employees	172,519	20,248	18,180	21,130	47,192	27,990	37,779
% of Employees	100.00%	11.74%	10.54%	12.25%	27.35%	16.22%	21.90%

Source: Census Bureau, Statistics of U.S. Businesses

Table 2.B: Estimated Distribution of CO Construction Employees without Paid Sick Leave

	All Construction Employees without Paid Sick Leave	No. of Employees per Firm					
		1-4	5-9	10-19	20-99	100-499	500+
No. of Employees	128,837	15,121	13,577	15,780	35,243	20,903	28,213
% of Employees	100.00%	11.74%	10.54%	12.25%	27.35%	16.22%	21.90%

Table 2.C: Estimated Number of CO Employees without Paid Sick Leave, by Firm Size and Industry

Industry	No. of Employees per Firm					
	1-4	5-9	10-19	20-99	100-499	500+
Agriculture	188	157	109	295	0	0
Mining	511	457	860	1,795	2,110	7,594
Utilities	29	18	22	168	143	0
Construction	15,121	13,577	15,780	35,243	20,903	28,213
Manufacturing	1,919	2,974	4,078	12,572	10,135	35,206
Wholesale Trade	1,500	1,524	2,213	5,604	4,197	15,338
Retail Trade	7,115	9,495	10,049	16,688	9,660	90,748
Transportation/Warehousing	1,186	1,011	1,191	3,297	2,682	19,166
Information	418	444	560	1,393	2,326	16,028
Finance and Insurance	1,386	745	530	1,534	2,217	12,767
Real Estate	0	1,646	1,491	2,838	1,383	10,842
Prof., Scientific, & Tech. Services	7,107	4,500	5,137	9,175	6,292	19,033
Management	0	0	0	329	1,015	8,167
Admin., Support, Waste Man., & Rem. Services	4,602	5,175	6,214	15,713	17,354	93,675
Education	537	599	891	3,398	2,313	5,722
Healthcare and Social Assist.	3,138	4,681	4,991	10,713	13,901	33,513
Arts, Entertain., & Recreation	1,215	1,360	1,630	6,040	7,064	15,021
Accommodation and Food Serv.	4,190	9,281	19,224	53,569	23,597	75,859
Other Services	6,717	7,276	7,327	12,640	6,494	9,484

Regarding [2], the quantity of additional paid leave taken under the mandate will be the sum of additional time off taken by newly eligible workers either for traditional family and medical leave reasons or to deal with the impact of domestic violence in their lives. As mentioned above, employees newly-eligible for paid sick leave are assumed to avail themselves of the full 40 hours per calendar year allowed under the mandate. This assumption implies that any additional paid time off for safety reasons will only be incurred by those workers who already have access to paid sick leave but do not take more than 40 hours off in a given year. Current data on the amount of paid sick leave *taken* by private sector workers is not readily available. The most recent data from BLS on paid sick leave days taken by full-time employees is from 1997. At that time, small firm employees took, on average, a minimum of 8.0 paid sick leave days off per year, whereas employees at medium and large firms took, on average, a minimum of 11.2 days off per year. Part-time employees eligible for paid sick leave will likely take fewer sick days off than their full-time colleagues, partly because they will have been offered less generous benefits than full-time employees.

Although these rates may have changed over time, the likelihood that this change leans toward more *liberal* use of sick leave policies is strong, given legislative trends and public opinion with respect to paid sick leave policies. The probability that many, if not most or all, workers with access to paid sick leave already take more than five work days (~40 work hours) off per year due to sickness, is therefore also strong. This analysis subsequently assumes that all private sector workers already (prior to the mandate’s implementation) eligible for paid sick leave take, and continue to take, at least 40 hours

of paid leave off under their employers’ benefit plans. As a consequence, any additional time off taken for safety reasons will not impose a direct cost on employer firms *in the model*, permitting the analyst to exclude calculations of potential costs to employers associated with paid safe time taken off by victims of domestic violence from the subsequent analysis.

Finally, estimates for [3], employee compensation, were derived using industry-level data on the average workweek lengths of employees and average hourly earnings⁴ or wages of employees. Data on average workweek lengths of employees come from the Bureau of Labor Statistics’ Current Employment Statistics database, as do data on average hourly earnings for non-agricultural employees. For agricultural employees, wage data from the Department of Agriculture’s (DOA) National Agricultural Statistics Service were used. The BLS and DOA workweek length and earnings/wage data are given in columns (A) and (B) in **Table 3**. This study assumes that a typical workweek consists of 40 hours and that any time worked during a given week in excess of 40 hours constitutes overtime. It is assumed that workers taking paid leave under the mandate would earn regular, and not overtime, pay. The hourly earnings/wage rates for mining and utilities therefore had to be adjusted downward to obtain estimated rates of regular pay for those industries (not shown).⁵ The values in column (C) are the implied maximum earnings/wage cost per employee per year (40 hours), obtained by multiplying the respective hourly earnings/wage rates for regular pay by 40.

Table 3: Estimated Earnings, Wages, and Hours Worked by CO Employees, by Industry⁶

Industry	Avg. # Hrs. Worked per Week (A)	Avg. Hourly Earnings/Wages (B)	Earnings/Wages per Employee for 40 Hours (C)
Agriculture	40.0	\$10.96	\$438.40
Mining	43.6	\$28.00	\$1,075.59
Utilities	41.1	\$32.55	\$1,284.81
Construction	38.4	\$23.71	\$948.40
Manufacturing	37.9	\$27.28	\$1,091.20

⁴ Average hourly earnings reported by BLS reflect the actual return to a worker for a stated period and are different from wage rates, which are the amounts stipulated for given units of work or time. BLS earnings do not measure the level of total labor costs on the part of employers since they exclude items like benefits, irregular bonuses, retroactive items, and the employer’s share of payroll taxes.

⁵ For industries where the average workweek length exceeded 40 hours, non-overtime hourly earnings/wages were imputed for use in calculating compensation costs due to the paid sick leave mandate. Overtime pay was assumed to equal 1.5 times regular pay for the relevant industries. Non-overtime earnings/wages were estimated using the equation: Average Weekly Earnings/Wages = (40 Hours) x (Non-Overtime Earnings/Wage Rate) + (Avg. Workweek Length in Hours – 40) x (Overtime Earnings/Wage Rate).

⁶ With the exception of the agriculture industry, all dollar values in Table 3 represent or are derived from 2010 earnings data taken from the Bureau of Labor Statistics’ Current Employment Statistics (CES) dataset. When available, CO-specific earnings data were used (construction, manufacturing, other services). In the absence of CO-specific earnings data, national-level data were used. No earnings data for agriculture was available from BLS, so 2010 wage data from the Department of Agriculture’s National Agricultural Statistics Service was used instead.

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Wholesale Trade	38.1	\$26.12	\$1,044.80
Retail Trade	31.3	\$15.56	\$622.40
Transportation/ Warehousing	38.3	\$21.00	\$840.00
Information	36.5	\$30.52	\$1,220.80
Finance and Insurance	36.9	\$27.18	\$1,087.20
Real Estate	34	\$21.46	\$858.40
Prof., Scientific, & Tech. Services	36.1	\$34.63	\$1,385.20
Management	37.9	\$32.76	\$1,310.40
Admin., Support, Waste Man., & Rem. Services	34	\$17.82	\$712.80
Education	32.8	\$22.96	\$918.40
Healthcare and Social Assist.	32.9	\$23.18	\$927.20
Arts, Entertain., & Recreation	25.2	\$18.20	\$728.00
Accommodation and Food Serv.	25.9	\$12.23	\$489.20
Other Services	32.2	\$20.79	\$831.60

BSIM requires inputs to be provided for individual firm-size categories. This was achieved for most industries by multiplying the 40-hour earnings/wage costs in column (C) by the industry-by-firm-size matrix of estimated numbers of CO employees without paid sick leave (Table 2.C). The result is an industry-by-firm-size matrix of new compensation costs to employers for providing paid sick and safe time under the mandate (Table 4). These compensation costs are based on the latest data available and are assumed to apply for the year 2011.

Table 4: Estimated Earnings and Wages Paid by Firms to Employees Newly Eligible for Paid Sick and Safe Time, Year 2011

Industry	No. of Employees per Firm					
	1-4	5-9	10-19	20-99	100-499	500+
Agriculture ⁷	\$82,538	\$68,732	\$47,878	\$129,534	\$0	\$0
Mining	\$550,054	\$491,891	\$924,511	\$1,930,451	\$2,269,456	\$8,168,271
Utilities	\$37,218	\$22,556	\$28,759	\$215,222	\$183,644	\$0
Construction	\$14,340,952	\$12,876,260	\$14,965,642	\$33,424,448	\$19,824,341	\$26,757,548
Manufacturing	\$2,093,795	\$3,244,858	\$4,449,837	\$13,719,065	\$11,058,899	\$38,416,419
Wholesale Trade	\$1,566,742	\$1,592,114	\$2,312,206	\$5,854,668	\$4,385,186	\$16,025,050
Retail Trade	\$4,428,110	\$5,909,619	\$6,254,427	\$10,386,303	\$6,012,241	\$56,481,402
Transportation/ Warehousing	\$996,628	\$849,597	\$1,000,332	\$2,769,522	\$2,253,246	\$16,099,375
Information	\$510,116	\$541,570	\$683,580	\$1,700,698	\$2,839,894	\$19,567,523

⁷ The zero values present in this and subsequent tables are not errors. According to Census Bureau data, there are no Colorado employees working at agricultural firms with 100 or more employees, utility firms with 500 or more employees, real estate firms with between one and four employees, or management companies with between one and 19 employees.

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Finance and Insurance	\$1,507,304	\$810,028	\$576,180	\$1,667,990	\$2,410,678	\$13,880,707
Real Estate	\$0	\$1,412,584	\$1,279,473	\$2,435,875	\$1,187,098	\$9,307,160
Prof., Scientific, & Tech. Services	\$9,845,303	\$6,233,302	\$7,116,130	\$12,709,101	\$8,716,094	\$26,364,027
Management	\$0	\$0	\$0	\$431,039	\$1,330,254	\$10,701,695
Admin., Support, Waste Man., & Rem. Services	\$3,280,384	\$3,688,585	\$4,429,651	\$11,200,181	\$12,369,637	\$66,771,713
Education	\$493,470	\$549,950	\$818,374	\$3,120,361	\$2,124,396	\$5,255,529
Healthcare and Social Assist.	\$2,909,379	\$4,340,639	\$4,627,426	\$9,932,859	\$12,889,367	\$31,072,921
Arts, Entertain., & Recreation	\$884,604	\$989,981	\$1,186,560	\$4,397,029	\$5,142,705	\$10,935,632
Accommodation and Food Serv.	\$2,049,613	\$4,540,229	\$9,404,623	\$26,205,875	\$11,543,582	\$37,110,290
Other Services	\$5,585,963	\$6,050,406	\$6,092,973	\$10,511,506	\$5,400,101	\$7,887,107

The reader will note that the compensation figures given in Table 4 do not represent the total labor cost to employers generated by the paid sick and safe time mandate. Significant additional costs include employee benefits and payroll taxes paid by employers for employees newly taking sick leave. To estimate the true labor cost to employers, the figures in Table 4 must be adjusted to account for these factors.

The incorporation of employee benefits into the model was achieved by adjusting the compensation figures in Table 4 upward by a percentage based on the ratios of benefits and wages/salary to total compensation. This adjustment was performed on an industry-by-industry basis. For example, the Bureau of Economic Analysis reports that in 2009, average compensation per private sector employee working in manufacturing totaled \$72,417. Of this figure, \$55,786 was due to wage and salary accruals. The balance of \$16,631 consists of non-cash benefits and other wage and salary supplements, including the employer’s share of payroll taxes. In general, an employer’s share of payroll taxes equals 7.65 percent of employee wages and salary. Of this 7.65 percent, 6.2 percentage points are intended to help fund old age, survivors, and disability insurance, and 1.45 percentage points go toward helping to pay for Medicare hospital insurance. Subtracting the employer’s share of payroll taxes from the balance of \$16,631 therefore yields an estimate of the share of employee compensation represented by non-cash compensation for manufacturing employees, roughly 18.1 percent of total employee compensation.⁸

⁸ The balance of \$16,631 includes the employer’s share of payroll taxes. Under current law, the employer’s share of payroll taxes is 7.65 percent of employee wage and salary. On average, this amounts to 0.0765 x \$55,786, or \$4,268 per manufacturing employee. Subtracting this figure from estimated wage and salary supplements yields \$12,368, roughly 18.1 percent of reported per-employee compensation (not including the employer’s share of payroll taxes).

Note that the subtraction of the employer’s share of payroll taxes here is done solely to calculate the ratio of non-cash compensation received directly by employees to total compensation received directly by the employee. Payroll taxes are not ignored as an employer cost in this analysis and are introduced at a later stage of the modeling process.

This share is likely to vary by firm size, given the comparative ease with which large firms can provide non-cash benefits to their employees due to greater financial resources and cost savings achieved through greater purchasing power. In contrast, smaller firms are less able to afford non-cash benefits like health insurance for their workers. For this reason, the percentage share of employee compensation represented by benefits was assumed to vary with the number of workers per firm, with the percentage share represented by benefits being smaller at small firms and larger at large firms.⁹ In accordance with this assumption, the cash compensation figures in Table 4 were adjusted upward by degrees varying by firm size to reflect the costs of non-cash employee compensation to employers. The resulting adjusted compensation cost figures which include both cash and non-cash compensation are given in **Table 5**.

Table 5: Compensation Costs before Accounting for Taxes, Year 2011

Industry	No. of Employees per Firm					
	1-4	5-9	10-19	20-99	100-499	500+
Agriculture	\$94,228	\$78,467	\$54,659	\$147,880	\$0	\$0
Mining	\$611,680	\$547,001	\$1,028,090	\$2,146,731	\$2,672,303	\$10,219,904
Utilities	\$47,988	\$29,084	\$37,082	\$277,507	\$253,108	\$0
Construction	\$16,428,029	\$14,750,176	\$17,143,632	\$38,288,796	\$24,089,177	\$34,617,153
Manufacturing	\$2,552,345	\$3,955,496	\$5,424,370	\$16,723,600	\$14,355,837	\$53,330,832
Wholesale Trade	\$1,731,047	\$1,759,080	\$2,554,687	\$6,468,647	\$5,128,371	\$19,904,823
Retail Trade	\$5,060,107	\$6,753,064	\$7,147,084	\$11,868,678	\$7,286,664	\$72,869,643
Transportation/ Warehousing	\$1,187,181	\$1,012,037	\$1,191,592	\$3,299,048	\$2,854,047	\$21,770,874
Information	\$586,252	\$622,401	\$785,606	\$1,954,532	\$3,462,734	\$25,408,058
Finance and Insurance	\$1,715,731	\$922,037	\$655,852	\$1,898,636	\$2,909,618	\$17,829,601
Real Estate	\$0	\$1,547,851	\$1,401,994	\$2,669,132	\$1,376,171	\$11,453,423
Prof., Scientific, & Tech. Services	\$10,831,552	\$6,857,720	\$7,828,985	\$13,982,229	\$10,147,422	\$32,590,562
Management	\$0	\$0	\$0	\$498,133	\$1,631,595	\$13,983,497
Admin., Support, Waste Man., & Rem. Services	\$3,637,529	\$4,090,173	\$4,911,920	\$12,419,580	\$14,521,482	\$83,275,561
Education	\$551,914	\$615,083	\$915,298	\$3,489,918	\$2,516,737	\$6,618,159
Healthcare and Social Assist.	\$3,312,239	\$4,941,683	\$5,268,182	\$11,308,254	\$15,559,869	\$39,920,375
Arts, Entertain., & Recreation	\$964,858	\$1,079,796	\$1,294,209	\$4,795,942	\$5,932,821	\$13,388,008
Accommodation and Food Serv.	\$2,248,243	\$4,980,227	\$10,316,034	\$28,745,512	\$13,397,051	\$45,721,978
Other Services	\$6,143,898	\$6,654,730	\$6,701,549	\$11,561,411	\$6,285,116	\$9,746,930

⁹ The ratio of non-cash compensation to overall compensation for all firms in a particular industry was adopted as the ratio for firms with 100 to 499 employees in that industry. For firms with fewer than 100 employees, this ratio less five percentage points was adopted. For firms with 500 or more employees, this ratio plus five percentage points was adopted.

The figures in Table 5 are estimates of what employers could expect to pay employees newly taking paid sick leave in the absence of tax distortions. They would not be accurate estimates under current tax law, however, which permits employers to deduct the value of certain benefits, like their share of employee health insurance premiums, when calculating income tax liability. This feature of tax law was accounted for in the model by assuming that employers of all sizes (a) pay an income tax rate of 35 percent, (b) have sufficient earnings to deduct the maximum share possible of their contributions toward employee benefits, and (c) actually do deduct the maximum value. Current tax law also requires employers to make federal insurance contributions in the form of payroll taxes on behalf of their employees, an amount equal (generally) to 7.65 percent of employee wages and salary.

To incorporate these features of tax law into the model, the compensation figures in Table 5 were first reduced by an amount equal to 35 percent of the corresponding estimates of non-cash employee benefits. Next, a sum equal to 7.65 percent of the non-benefit (pre-tax) share of compensation was added to each term. The resultant compensation figures are given in **Table 6**.

Table 6: Compensation Costs after Accounting for Taxes, Year 2011

Industry	No. of Employees per Firm					
	1-4	5-9	10-19	20-99	100-499	500+
Agriculture	\$98,660	\$82,158	\$57,230	\$154,837	\$0	\$0
Mining	\$646,917	\$578,512	\$1,087,316	\$2,270,400	\$2,765,685	\$10,345,411
Utilities	\$48,062	\$29,129	\$37,139	\$277,935	\$247,761	\$0
Construction	\$17,178,614	\$15,424,101	\$17,926,912	\$40,038,184	\$24,643,843	\$34,629,677
Manufacturing	\$2,608,089	\$4,041,885	\$5,542,841	\$17,088,849	\$14,344,017	\$52,078,243
Wholesale Trade	\$1,835,345	\$1,865,067	\$2,708,611	\$6,858,395	\$5,321,136	\$20,201,890
Retail Trade	\$5,296,221	\$7,068,174	\$7,480,580	\$12,422,492	\$7,461,530	\$72,966,875
Transportation/ Warehousing	\$1,223,414	\$1,042,925	\$1,227,960	\$3,399,736	\$2,876,471	\$21,448,513
Information	\$612,287	\$650,041	\$820,494	\$2,041,329	\$3,538,030	\$25,384,707
Finance and Insurance	\$1,798,448	\$966,489	\$687,472	\$1,990,172	\$2,983,952	\$17,881,018
Real Estate	\$0	\$1,646,392	\$1,491,249	\$2,839,057	\$1,432,593	\$11,663,428
Prof., Scientific, & Tech. Services	\$11,503,138	\$7,282,918	\$8,314,404	\$14,849,166	\$10,546,611	\$33,134,020
Management	\$0	\$0	\$0	\$519,165	\$1,663,508	\$13,940,084
Admin., Support, Waste Man., & Rem. Services	\$3,851,310	\$4,330,556	\$5,200,598	\$13,149,489	\$15,045,810	\$84,395,063
Education	\$582,422	\$649,082	\$965,892	\$3,682,828	\$2,598,814	\$6,684,004
Healthcare and Social Assist.	\$3,471,704	\$5,179,597	\$5,521,815	\$11,852,682	\$15,956,343	\$40,032,822
Arts, Entertain., & Recreation	\$1,028,126	\$1,150,601	\$1,379,074	\$5,110,426	\$6,187,393	\$13,659,054

Accommodation and Food Serv.	\$2,390,396	\$5,295,120	\$10,968,303	\$30,563,051	\$13,940,500	\$46,540,452
Other Services	\$6,525,511	\$7,068,072	\$7,117,799	\$12,279,520	\$6,533,056	\$9,910,533

The compensation cost estimates in Table 6 are based on the latest data available, and we assume them to be the costs employers can expect to pay in 2011. Given inflation, these costs can be expected to be higher in 2012 and beyond. To account for inflation, the model assumes that employee compensation costs increase annually between 2012 and 2016 at their historical rate of growth during recent years. Based on data from the Bureau of Economic Analysis, the average annual percentage change for nominal full-time private sector employee compensation between 2002 and 2009 was 3.57%. This growth rate was applied to the figures in Table 6 to obtain estimated compensation costs for years 2012 through 2016 (not shown).

The figures in Table 6 and corresponding tables for years 2012 through 2016 represent the final estimated compensation costs to employers created by a paid sick and safe time mandate in the medium term. It should be noted that these estimates rely upon a key assumption regarding employer behavior, namely, that no preemptive action is taken by employers in anticipation of the mandate’s implementation. According to the economic theory of rational expectations, rational agents will take actions in the present that optimize the value of expected present and future outcomes. When future expectations change, agents will adjust their behavior in the present to account for the change in expectations. Hypothetically, it is possible that certain employers will seek to offset some of the expected future costs generated by the mandate by immediately lowering employee compensation, reducing the number of workers employed, or decreasing other business spending. No such effect was modeled as part of this analysis.

B. Lost Production Due to Absent Workers

The absence of workers from work causes employers to suffer lost production. Absent workers are unable to produce the goods and services that businesses sell. Given demand, this translates into lost sales which hurt business earnings and profit. A mandated paid sick and safe time policy will increase the number of work days missed by employees. The financial loss from this increase can be material and is an important consequence of the proposed legislation.

One should take care to note that the “cost” of lost production is separate and different from the compensation cost described earlier. With a paid sick and safe time mandate, workers are paid compensation whether they are present and healthy or absent and sick. The compensation costs accrue during occasions of worker absence. During these occasions of worker absence, the business is also not producing as many goods and services as it otherwise would. This should translate into lower revenue (and maybe profits) for the firm assuming that the market for the firm’s products is not oversupplied and if prices are relatively constant.¹⁰ In the real world, these two assumptions need not hold: sometimes there is too much product available for too little demand, and prices can

¹⁰ If supply outstrips demand, adding more goods and services to the market may not generate more revenue. Instead, the additional product might just sit on the shelf as unsold inventory.

and often do change. The impact of lost production on firm revenue and profitability is therefore less certain (insofar as modeling is concerned) than the cost of compensating an employee for a given period of time.

Despite the importance of this cost, exogenous production losses were not included in the BSIM forecast because of technical constraints. For one thing, there is a lack of available data necessary to estimate the magnitude and distribution of these production losses across industries. Labor productivity varies by industry, and labor productivity data only exist or are publicly available for select industries. Modeling and simulating the impact of an industry-neutral policy shock (such as the proposed paid sick leave mandate) using BSIM, however, requires input for all major NAICS industry codes. Including production losses in the model would therefore require the estimation of labor productivity for industries with missing data values, creating a potentially large source of error. More importantly, BSIM is not set up to accept exogenous changes in production levels as input. Rather, the module is designed to receive input in the form of nominal costs to employers or employees, from which it subsequently computes forecasts for production, employment, and other macro variables.

These obstacles prevented the inclusion of exogenous production losses due to increased worker absences from the analysis. However, we should point out that if one actually had a model capable of accepting such production losses and were capable of measuring them with a reasonable degree of accuracy, it is important to avoid double-counting in the sense that such a model might not also accept as input compensation costs like the ones described above in the same way that BSIM does. More could be said about this technical point, but we will not do so here. In any event, to the extent that such production losses are absent from the model, the forecast job and output losses associated with a statewide paid sick and safe time mandate modeled after the Denver ordinance contained herein may be low.

C. Paperwork and Recordkeeping Costs

The proposed mandate would also impose costs on employers in the form of additional paperwork and recordkeeping. Small business owners frequently handle such paperwork and recordkeeping themselves, allocating valuable time and energy to these administrative tasks that could be spent acquiring new customers, making business decisions, or otherwise operating and growing their businesses. According to a 2003 NFIB National Small Business Poll on paperwork and recordkeeping, 39.3 percent of small business owners/managers surveyed indicated that they personally handled their businesses' personnel paperwork and recordkeeping.¹¹ In that same survey, small business owners/managers responded that they felt \$40 (approximately) was a fair per-hour amount to claim for the time and effort they spent doing paperwork and recordkeeping required by government.¹²

¹¹ See William J. Dennis, Jr., "Paperwork and Record-keeping," NFIB National Small Business Poll, Volume 3, Issue 5, 2003.

¹² The poll asked respondents whether they thought government should compensate them for dealing with the added paperwork and recordkeeping it required of their businesses. Respondents who answered "Yes" were then asked: "What do you think would be a fair per hour amount to claim for your time and efforts?"

The Denver ordinance would require employers to “retain records documenting hours worked by employees and paid sick and safe time taken by employees, for a period of five years, and shall allow [state officials] access to such records, with appropriate notice and at a mutually agreeable time, to monitor compliance with the [mandate’s] requirements.” Although not explicitly stated, one may assume that an employer who does not maintain or retain adequate records may face penalties. To account for this burden, it is assumed that employer newly providing paid sick leave under the mandate will face a new paperwork and recordkeeping cost of 10 person-hours per year. At \$40 per hour, the paperwork and recordkeeping costs for an employer newly offering paid sick leave translates to \$400 per year.

Effects of the Paid Sick and Safe Time Mandate on Private Sector Demand

Employees newly eligible for paid sick leave who use it can be expected to increase demand for healthcare-related goods and services. Employees may, for example, spend their paid sick leave time visiting the doctor’s office, going to the dentist, or purchasing and taking medication for an illness. All these activities represent increases in the consumption of healthcare-related goods and services. To account for this effect, it is assumed that demand for private sector healthcare goods and services produced in Colorado will increase by a dollar amount equal to the increase in CO employer costs.^{13†‡}

Increased demand is assumed to be distributed across industries according to historical patterns of healthcare expenditures in Colorado. Data on 2004 CO healthcare expenditures from the Kaiser Family Foundation were used as the template for new healthcare spending in both scenarios (**Table 7**). The pattern of CO healthcare expenditures is assumed to be static in the medium term, so new demand is allocated according to the distribution in Table 7 for all forecast years.

The average response was \$43.30. Respondents who answered “No” were asked: “If the decision were made to reimburse you, what do you think would be a fair per hour amount to claim for your time and effort?” Their average response was \$40.72.

¹³ This assumption is reasonable, but it is possible that it overestimates new demand for healthcare goods and services. While some episodes of employees taking sick leave will certainly generate new healthcare expenditures (*e.g.*, paying for a visit to the doctor, dentist, or hospital), other cases may produce no or very little new expenditures. An example of the latter set of cases is the case of an employee with a minor cold which simply requires a day or two of rest at home for the employee to fully recuperate. Such an episode does not entail significant new healthcare expenditures. To the extent that demand for CO healthcare goods and services is overestimated, the forecast job and output losses may be low.

[†] This assumption also ignores the presence of workers originally without paid sick leave who took unpaid leave prior to the mandate being implemented, and who begin taking paid leave after implementation. Such workers might be expected to generate no or very little new healthcare spending, since they might already be consuming healthcare while on unpaid leave. According to a survey on the Family and Medical Leave Act (FMLA) conducted by the Department of Labor in 2000, 16.5 percent of employees nationwide took leave in the 18 months preceding the survey. Also, 1.2 percent of employees took leave at least once during that time period and took their longest leave under FMLA. This means that roughly 15 percent of the employee population was taking either unpaid leave or leave under another policy.

[‡] To the extent that demand for goods and services outside of CO increase due to the mandate, the forecast job and output losses may be understated. The assumption that only demand for CO goods and services increases is a constraint imposed by BSIM’s regional structure.

Table 7: Healthcare Expenditures in Colorado, 2004¹⁴

Hospital Care	35.20%
Physician and Other Professional Serv.	33.70%
Drugs and Other Medical Nondurables	10.80%
Nursing Home Care	5.40%
Dental Services	7.10%
Home Healthcare	1.70%
Medical Durables	2.00%
Other Personal Healthcare	4.10%
Total:	100.00%

Source: The Kaiser Family Foundation

For illustrative purposes, the dollar values of the assumed increases in healthcare expenditures based on the distribution in Table 7 are given below in **Table 8** for year 2012. The estimated total cost to CO employers in 2012 due to a statewide mandate is \$1,125,011,949. Multiplying this sum by the percentages in Table 7 yields the dollar values in Table 8.

Table 8: Estimated New CO Healthcare Expenditures in 2012 Due to Statewide Paid Sick and Safe Time Mandate

Hospital Care	\$396,004,206
Physician and Other Professional Serv.	\$379,129,027
Drugs and Other Medical Nondurables	\$121,501,291
Nursing Home Care	\$60,750,645
Dental Services	\$79,875,848
Home Healthcare	\$19,125,203
Medical Durables	\$22,500,239
Other Personal Healthcare	\$46,125,490

Effects of the Paid Sick and Safe Time Mandate on Government Demand

The Denver ordinance stipulates that the Agency for Human Rights and Community Relations shall have the power to adopt rules necessary to administer and enforce the ordinance, including “the power to take complaints, conduct investigations, hold hearings, provide conciliation, issue orders, and impose fines for violations.” A statewide mandate will likely allocate similar powers to the appropriate state-level agency. These responsibilities will result in new government costs. The uncertainty of what powers the agency will adopt, how many complaints might be filed, and the availability of state funds to compile information related to compliance of paid sick and safe time policies, make estimating these costs difficult. The current strained nature of state and local finances also makes it unlikely that a material share of government funds will be allocated toward these new responsibilities in the short term. Hence, for modeling

¹⁴ These data are available on the Henry J. Kaiser Family Foundation’s website on state health data, www.statehealthfacts.org.

purposes, it was assumed that the net effect on government demand as a consequence of the mandate’s implementation is zero.

Forecast Economic Impact of the Paid Sick and Safe Time Mandate

The BSIM results suggest that a statewide mandate modeled after the Denver Paid Sick and Safe Time Ordinance could cause substantial job loss and output¹⁵ loss in Colorado. Based on the assumptions described above, BSIM forecasts that if such a statewide mandate is implemented:

- More than 14,000 CO jobs will be lost by 2016.
- Real output in CO will be \$1.9 billion less in 2016 than if the paid sick and safe time mandate had not been implemented.
- Cumulatively, over \$5.8 billion in real output will be lost between 2012 and 2016.

Detailed employment forecasts are given in **Table 9**. The forecasts are presented as employment differences relative to a baseline forecast. The baseline forecast represents the path of the economy if no policy shock occurs and the mandate is not implemented. Negative values indicate job losses, and positive values represent job gains. For example, according to the results, firms with 20 to 99 employees are forecast to lose 531 jobs in 2012, assuming the mandate goes into effect that year. Additional jobs are lost in subsequent years. By 2016, there will be 2,828 fewer jobs at firms currently with 20 to 99 employees due to the paid sick and safe time mandate than there would have been had the mandate not been implemented. The overall (all firm sizes) employment difference from the baseline for years 2012 through 2016 is graphed in **Figure 1**.

Table 9: Forecast Employment Difference from Baseline (in Units)

		Year				
		2012	2013	2014	2015	2016
Firm Size (No. of Employees per Firm)	1 to 4	-303	-592	-851	-1,063	-1,238
	5 to 9	-177	-448	-690	-892	-1,058
	10 to 19	-241	-560	-846	-1,085	-1,280
	20 to 99	-531	-1,239	-1,866	-2,394	-2,828
	100 to 499	112	-378	-817	-1,186	-1,493
	500+	-706	-2,506	-4,076	-5,377	-6,440
	All Firms	-1,846	-5,723	-9,146	-11,997	-14,337

¹⁵ The term “output” refers to the aggregate output of the Colorado economy (Colorado’s gross domestic product (GDP)). GDP has three possible definitions: (1) the value of final goods and services produced in an economy during a given period (as opposed to raw materials or intermediate goods which are produced or sourced earlier in the production process), (2) the sum of value added during a given period, or (3) the sum of incomes in the economy during a given period. It is a technical term whose significance may be better understood by the reader if she considers that because of the first definition, output serves as a very rough proxy for sales.

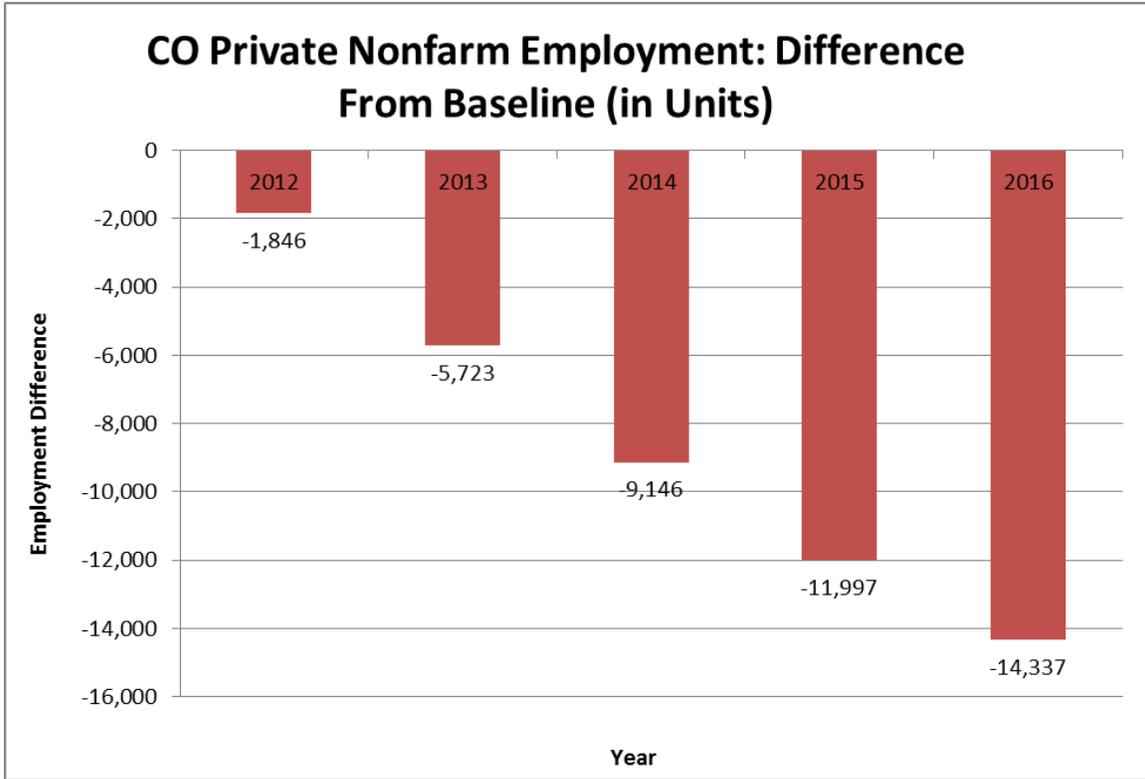


Figure 1

Table 10 gives the share of job losses that are forecast to occur among small businesses. The results suggest that small businesses will not only shoulder a large portion of future job losses, but they will also bear the brunt of job losses in the initial stages of the mandate. In 2013, 56.2 percent of the employment gap (jobs lost) will be at firms with fewer than 500 employees, while fifty (49.6) percent of the employment gap will be at firms with fewer than 100 employees. Twenty-eight percent of the job losses will occur at firms with fewer than twenty employees. These percentages decrease slightly over time as large firms gradually feel the full impact of the mandate. Still, by 2016, over fifty-five percent of job losses will be at small firms (< 500 employees).

Table 10: Small Business Share of Forecast Job Losses

		Year				
		2012	2013	2014	2015	2016
Firm Size	< 20 Employees per Firm	n/a	28.0%	26.1%	25.3%	24.9%
	< 100 Employees per Firm	n/a	49.6%	46.5%	45.3%	44.7%
	< 500 Employees per Firm	n/a	56.2%	55.4%	55.2%	55.1%

Detailed forecasts for CO real output are given in Table 11. As with employment, the output forecasts are presented as differences relative to a baseline forecast representing the path of the economy if the mandate is not implemented. The output gap is forecast to total roughly \$300 million in 2012. It is expected to grow in subsequent years and reach over \$1.9 billion in 2016. Between 2012 and 2016, over \$5.8

billion in real output is forecast to be lost as a consequence of the paid sick and safe time mandate. The overall (all firm sizes) output difference from baseline is graphed in **Figure 2**, while the small business share of these output reductions is given in **Table 12**. The figures in the table indicate that small firms will bear roughly half of production losses.

Table 11: Forecast Real Output Difference from Baseline (in Billions of 2000 \$s)

		Year				
		2012	2013	2014	2015	2016
Firm Size (No. of Employees per Firm)	1 to 4	-0.045	-0.084	-0.119	-0.149	-0.175
	5 to 9	-0.023	-0.054	-0.082	-0.107	-0.129
	10 to 19	-0.026	-0.061	-0.094	-0.122	-0.146
	20 to 99	-0.056	-0.135	-0.206	-0.268	-0.322
	100 to 499	0.000	-0.057	-0.109	-0.155	-0.195
	500+	-0.153	-0.393	-0.610	-0.800	-0.967
	All Firms	-0.303	-0.784	-1.220	-1.601	-1.934

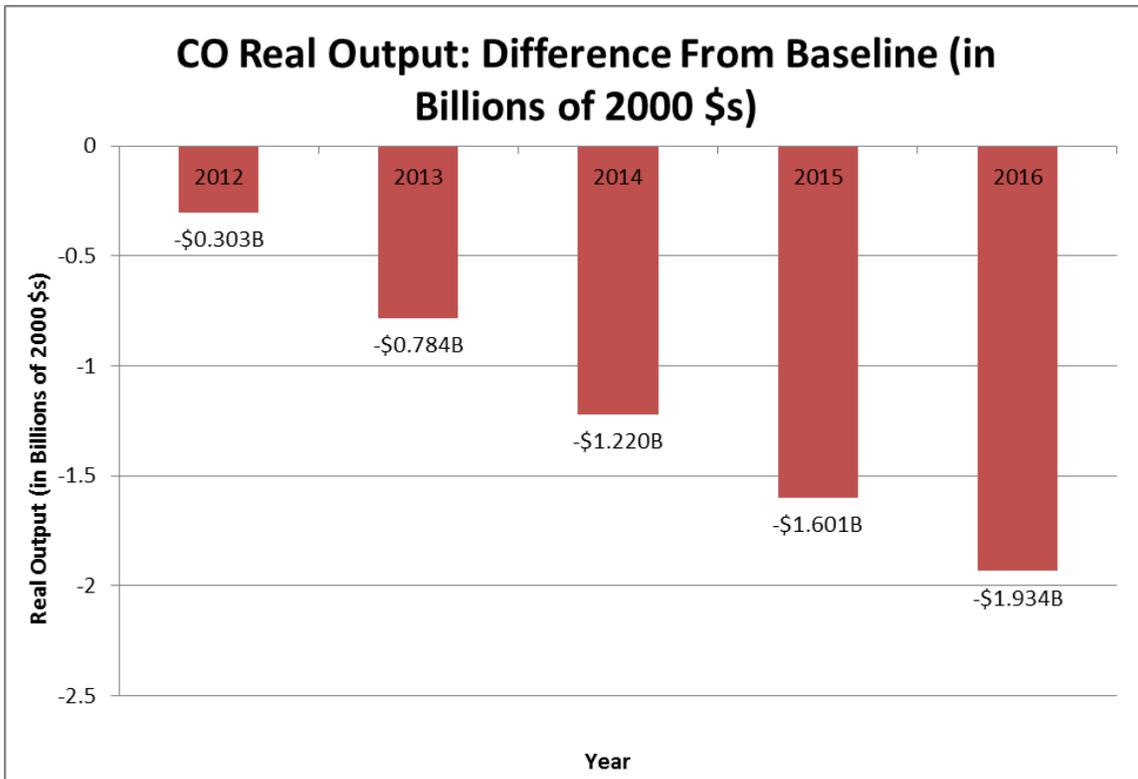


Figure 2

Table 12: Small Business Share of Forecast Output Losses

		Year				
		2012	2013	2014	2015	2016
Firm Size	< 20 Employees per Firm	31.0%	25.4%	24.2%	23.6%	23.3%
	< 100 Employees per Firm	49.5%	42.6%	41.1%	40.3%	39.9%
	< 500 Employees per Firm	49.5%	49.9%	50.0%	50.0%	50.0%

Summary

A statewide paid sick and safe time mandate modeled after the Denver ordinance would impose new costs on Colorado employers in the forms of compensation costs associated with paying workers taking paid sick and safe time, lost production due to more workers taking leave, and new paperwork and recordkeeping costs incurred by complying with the mandate. Assuming passage and implementation of the mandate in 2012, the BSIM forecasts that over 14,000 CO jobs could be lost by 2016, and CO real output could decrease by nearly \$2 billion. Small firms would bear the majority of job losses and about half of any lost sales. Policymakers would do well to keep in mind the potential negative effects to employment and production that employer mandates can have, especially with a current state unemployment rate of 8.5 percent. Imposing new, expensive mandates on job creators at a time of high unemployment is a questionable approach to getting people back to work.