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Econometric Scoring of Maryland Senate Bill No. 472:

Economic Effects of a Proposed Paid Sick Leave Mandate on Maryland Small Businesses

Executive Summary

This report analyzes the potential economic impact of implementing the statewide paid sick leave mandate outlined in Senate Bill No. 472 (SB472) and House Bill No. 580 (HB580) on Maryland private sector employment and production, with a particular focus on the impact on the small business sector of the economy. Introduced on February 3, 2016 by Senator Catherine Pugh and Delegate Luke Clippinger, SB472 and HB580 propose a statewide paid sick leave mandate that would impose new costs on MD employers in the forms of compensation costs associated with paying workers taking paid sick leave, 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 October 2016, over 8,500 MD jobs could be lost by 2026, and MD real output could decrease by over $1.0 billion by 2026. The cumulative real output lost between 2017 and 2026 is estimated to be $7.0 billion. Small businesses would bear 61 percent of job losses and 56 percent of lost sales.

Introduction

This report analyzes the potential economic impact of a proposed paid sick leave mandate on Maryland employers, workers, and economy. In Maryland, legislation has been introduced which, if passed, would establish a minimum time-off standard for paid sick leave by requiring Maryland businesses to allow their employees to earn no less than one hour of paid sick leave for every 30 hours worked.[1] The mandate would require employers to provide paid sick days for (a) diagnosis, care, or treatment of health conditions of the employee or an employee's family member, or (b) to deal with the closure of the employee's place of business by order of a public official due to a public health emergency or an employee's need to care for a child whose school or place of care has been closed by order of a public official due to a public health emergency. In practice, the price of this new mandated entitlement would be new costs imposed on Maryland employers which would lead to reduced profitability, lost sales and production, and lost jobs.

Forecasting the economic impact of SB472 was done using the BSIM, 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. The BSIM has the unique ability to forecast the economic impact of public policy and proposed legislation on different categories of U.S. businesses differentiated by employee-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 leave taken by employees. Implementation of the paid sick leave mandate is assumed to occur on October 1, 2016 for firms with 10 or more employees. In accordance with the language contained in SB472, the paid sick leave mandate is assumed not to apply to firms with nine employees or less, although these employers would be required to provide unpaid sick leave. Although employees newly-eligible for paid sick leave under the law would be allowed to begin accruing paid sick leave time in October 2016, we assume that the use of paid sick leave by newly-eligible employees does not begin until year 2017. Economic forecasts were generated by the BSIM for years 2017 through 2026, a ten-year window starting during the assumed year when newly-eligible employees first begin using paid sick leave. The simulation results suggest that if the statewide paid sick leave mandate such as the one outlined in SB472 was passed and implemented, over 8,500 MD jobs could be lost and MD real output could decrease by $1.0 billion by 2026. Small firms would bear 61 percent of the job losses and 56 percent of lost sales.

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[1] The mandate would generally apply to employees regardless of whether they are full-time or part-time.

New Employer Costs Generated by a Paid Sick Leave Mandate

A paid sick leave mandate modeled after the legislation introduced in the Maryland senate 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 bill language, the Maryland mandate would enable all eligible employees to earn no less than one hour of earned paid sick leave for every 30 hours worked. For this analysis, we assume that employees earn the minimum of one hour of paid sick leave for every 30 hours worked. Unused accrued paid sick days carry over to the following year of employment.

Employers are assumed to be required to compensate employees for earned sick leave at the same wage as employees normally earn during regular work hours.[2] Employees who work overtime on a regular basis are assumed to be compensated at their regular (non-overtime) rate of pay during days on which they take paid sick leave. The mandate generally applies to both full-time and part-time employees. It should be noted that the legislation does not impose a formal "cap" on the maximum number of earned paid sick leave hours an employee can earn during a given calendar year, but the law does stipulate that an employer may not be required to allow and employee to earn more than 56 hours of earned sick leave in a year, nor may an employer be required to allow the use of more than 80 hours of earned sick leave per year (per employee). A typical private sector worker in Maryland newly eligible for paid sick leave may therefore be assumed to earn approximately 6.96 in earned paid sick days each year assuming the mandate is implemented.[3]

The size of new employer compensation costs depends on the amount of additional paid time off that employees take, either for sick leave or to deal with the closure of their employees' place of business or their children's schools or places of care due to a public health emergency. This study assumes that employees with newfound access to paid sick leave will take an average of 5.2 paid sick days per year, or roughly 65 percent of their newly available paid sick leave time.[4] 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.

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[2] The term "wage" is used loosely here, as many workers do not earn "wages" in the strict sense, but are instead salaried employees. In this analysis, it is assumed that employers would also compensate employees with customarily earned non-wage benefits on a pro rata basis under the mandate in addition to compensation in the form of customarily earned wages or salary.

[3] (34.1 hours worked per week) x (49 work weeks per year) x (1 earned paid sick leave hour per 30 hours worked) x (1 earned paid sick leave day per 8 earned paid sick leave hours) = 6.96 earned paid sick leave days. 34.1 hours is the average number of hours worked per week by a private sector employee in Maryland in 2014.

[4] This assumption is based on statistics provided by the Institute for Women's Policy Research (IWPR). According to IWPR, workers covered by paid sick days policies "miss an average of 3.9 days of work per year for their own illness and injury (excluding maternity leave)" and "need 1.3 days of paid sick time per year to care for family members" (on average). See Hartmann, Heidi I., "The Healthy Families Act: Impacts on Workers, Businesses, the Economy, and Public Health," Testimony before the U.S. Senate Committee on Health, Education, Labor, and Pensions, February 13, 2007.

Compensation cost estimates were calculated using data and assumptions regarding [1] the number of MD employees newly eligible for paid sick leave, [2] the quantity of additional paid sick leave taken by employees if the mandate passes, and [3] the current compensation of these employees. 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 MD employees with no paid sick days—the potential set of employees newly eligible for paid sick leave if the mandate were implemented. The percent estimates of MD workers currently ineligible for paid sick leave were derived from employee coverage rates for paid sick leave published by the Institute for Women's Policy Research (IWPR) and the Bureau of Labor Statistics. Industry-level data on the number of MD 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 MD employees currently without paid sick days, by industry (right-most column).

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

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

NAICS Industry Code	Private Sector Industry	Percent of Workers without Paid Sick Days Nationally[5]	Number of MD Employees, by Industry[6]	Estimated Number of MD Employees without Paid Sick Days, by Industry
11	Agriculture	61	956	583
21	Mining	52	1,365	703
22	Utilities	15	12,171	1,781
23	Construction	75	138,657	103,549
31-33	Manufacturing	48	103,180	49,495
42	Wholesale Trade	29	84,461	24,418
44-45	Retail Trade	55	283,609	155,872
48-49	Transportation/Warehousing	44	64,200	28,306
51	Information	26	53,769	13,716
52	Finance and Insurance	18	99,580	17,775
53	Real Estate	33	43,346	14,486
54	Prof., Scientific, & Tech. Services	31	18,182	5,664
55	Management	23	48,418	11,248
56	Admin., Support, Waste Man., & Rem. Services	69	185,698	128,280

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[5] 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 National Compensation Survey, adjusted for eligibility using data from the BLS Job Openings and Labor Turnover Surveys (JOLTS). The coverage rate for agricultural workers is taken directly from the BLS March 2014 National Compensation Survey and is not adjusted using JOLTS data.

[6] Estimates of the number of MD employees by industry are taken from the Census Bureau's 2012 Statistics of U.S. Businesses dataset.

61	Education	32	81,805	25,932
62	Healthcare and Social Assist.	29	353,187	102,000
71	Arts, Entertain., & Recreation	65	36,204	23,500
72	Accommodation and Food Serv.	78	202,783	158,272
81	Other Services	51	112,068	56,796
--	All Industries	48	1,923,639	921,793

The approach taken in this study was to distribute the estimates of MD employees currently ineligible for paid sick leave according to the present firm-size distribution of MD employees. To illustrate this process, consider the case of the construction industry where an estimated 103,549 MD construction employees are ineligible for paid sick leave. **Table 2.A** gives Census Bureau data on the distribution of MD employees working construction across firm-size groups. Multiplying the estimated number of MD construction workers without paid sick leave, 103,549, 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 MD 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 MD Construction Employees, 2012

	All Construction Employees	No. of Employees per Firm					
		1-4	5-9	10-19	20-99	100-499	500+
No. of Employees	138,657	14,332	14,130	17,851	44,356	29,349	18,639
% of Employees	100.00%	10.34%	10.19%	12.87%	31.99%	21.17%	13.44%

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

Table 2.B: Estimated Distribution of MD 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	103,549	10,703	10,552	13,331	33,125	21,918	13,920
% of Employees	100.00%	10.34%	10.19%	12.87%	31.99%	21.17%	13.44%

Table 2.C: Estimated Number of MD 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	127	95	60	0	0	194
Mining	0	50	20	272	0	311
Utilities	6	5	7	0	0	1,695
Construction	10,703	10,552	13,331	33,125	21,918	13,920
Manufacturing	1,098	1,550	2,452	9,134	7,488	27,773
Wholesale Trade	1,123	1,281	1,939	6,005	4,869	9,201

Retail Trade	6,300	8,952	8,829	16,145	12,504	103,142
Transportation/Warehousing	1,151	1,285	1,644	4,352	2,668	17,206
Information	264	255	407	1,491	1,605	9,695
Finance and Insurance	800	722	617	1,741	2,183	11,712
Real Estate	1,486	1,004	1,093	2,875	2,567	5,462
Prof., Scientific, & Tech. Services	417	328	419	1,093	872	2,535
Management	10	11	37	387	1,368	9,434
Admin., Support, Waste Man., & Rem. Services	4,320	4,956	6,639	21,168	21,274	69,923
Education	436	589	1,065	3,942	5,228	14,672
Healthcare and Social Assist.	3,394	5,280	6,176	13,563	18,418	55,169
Arts, Entertain., & Recreation	970	1,006	1,910	6,205	5,922	0
Accommodation and Food Serv.	5,055	8,682	15,502	49,781	19,257	59,996
Other Services	7,338	8,346	9,387	17,572	6,347	7,805

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 for closure of newly eligible employees' workplaces or the schools or places of care of these employees' children. As mentioned above, employees newly-eligible for paid sick leave are assumed to avail themselves of 5.2 days of paid sick leave per calendar year.

Finally, estimates for [3], employee compensation, were derived using industry-level data on the average workweek lengths of employees and average hourly earnings[7] 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 or wages for employees. The BLS 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 manufacturing therefore had to be adjusted downward to obtain estimated rates of regular pay for that industry (not shown).[8] The values in columns (C) are the estimated earnings/wage cost per employee per year for 5.2 work days, obtained by multiplying the respective hourly earnings/wage rates for regular pay by the average number of hours worked per day multiplied accordingly by 5.2 days.

The BSIM requires inputs to be provided for individual firm-size categories. This was achieved for most industries by multiplying the earnings/wage costs in column (C) by the industry-by-firm-size matrix of estimated numbers of MD employees without paid sick leave (Table 2.C). The results are industry-by-firm-size matrices of new compensation costs to employers for providing paid sick leave under the mandate (**Table 4**). These compensation costs are based on the latest data available and are assumed to apply for the year 2017. The reader should note that the

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[7] 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.

[8] 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).

absence of new costs to firms with fewer than 10 employees is due to the mandate's business size exemption.

Table 3: Estimated Earnings, Wages, and Hours Worked by MD Employees, by Industry[9]

Industry	Avg. # Hrs. Worked per Week (A)	Avg. Hourly Earnings/Wages (B)	Earnings/Wages per Employee for 5.2 Work Days (C)
Agriculture	34.1	$27.36	$971.07
Mining	38.8	$27.08	$1,092.20
Utilities	33.2	$20.91	$722.56
Construction	38.8	$27.08	$1,092.20
Manufacturing	40.1	$25.61[10]	$1,064.08
Wholesale Trade	38.9	$28.07	$1,134.69
Retail Trade	31.3	$17.01	$553.25
Transportation/ Warehousing	38.6	$22.86	$918.85
Information	36.7	$33.98	$1,296.39
Finance and Insurance	37.2	$32.99	$1,277.62
Real Estate	34.6	$24.07	$866.04
Prof., Scientific, & Tech. Services	37.0	$37.51	$1,442.24
Management	38.4	$36.64	$1,464.91
Admin., Support, Waste Man., & Rem. Services	34.9	$18.73	$680.41
Education	32.9	$26.77	$916.02
Healthcare and Social Assist.	32.9	$26.77	$916.02
Arts, Entertain., & Recreation	25.5	$14.89	$394.37
Accommodation and Food Serv.	25.5	$14.89	$394.37
Other Services	33.1	$24.73	$851.52

Table 4: Estimated Earnings and Wages Paid by Firms to Employees Newly Eligible for Paid Sick Leave, Year 2017

Industry	No. of Employees per Firm					
	1-4	5-9	10-19	20-99	100-499	500+
Agriculture	$0	$0	$58,643	$0	$0	$188,367
Mining	$0	$0	$21,374	$297,552	$0	$339,739
Utilities	$0	$0	$4,968	$0	$0	$1,224,659
Construction	$0	$0	$14,560,205	$36,179,062	$23,938,572	$15,202,939
Manufacturing	$0	$0	$2,608,849	$9,719,761	$7,967,427	$29,552,831
Wholesale Trade	$0	$0	$2,199,837	$6,813,393	$5,525,179	$10,440,204
Retail Trade	$0	$0	$4,884,841	$8,931,977	$6,917,835	$57,063,399

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[9] All dollar values in Table 3 represent or are derived from 2014 earnings data taken from the Bureau of Labor Statistics' Current Employment Statistics (CES) dataset. When available, MD-specific earnings data were used. In the absence of MD-specific earnings data, national-level data were used.

[10] Prior to downward adjustment to account for overtime.

Transportation/ Warehousing	$0	$0	$1,510,291	$3,998,543	$2,451,792	$15,809,844
Information	$0	$0	$527,482	$1,932,666	$2,080,493	$12,567,952
Finance and Insurance	$0	$0	$787,704	$2,223,998	$2,788,891	$14,964,093
Real Estate	$0	$0	$946,443	$2,490,275	$2,222,839	$4,730,480
Prof., Scientific, & Tech. Services	$0	$0	$603,860	$1,575,831	$1,257,773	$3,656,604
Management	$0	$0	$54,107	$567,618	$2,004,698	$13,819,861
Admin., Support, Waste Man., & Rem. Services	$0	$0	$4,516,980	$14,403,104	$14,475,019	$47,576,824
Education	$0	$0	$975,961	$3,610,852	$4,789,207	$13,440,152
Healthcare and Social Assist.	$0	$0	$5,657,589	$12,423,892	$16,871,446	$50,536,296
Arts, Entertain., & Recreation	$0	$0	$753,359	$2,447,201	$2,335,592	$0
Accommodation and Food Serv.	$0	$0	$6,113,278	$19,631,992	$7,594,427	$23,660,520
Other Services	$0	$0	$7,993,605	$14,962,711	$5,404,304	$6,646,306

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 leave mandate (see footnote 7). 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 2014, average compensation per private sector employee working in manufacturing totaled $79,553. Of this figure, $64,021 was due to wage and salary accruals. The balance of $15,532 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 $15,532 therefore yields an estimate of the share of employee compensation represented by non-cash compensation for manufacturing employees, roughly 19.2 percent of total employee compensation.[11]

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[11] The balance of $15,532 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 $61,563, or $3,215 per manufacturing employee. Subtracting this figure from estimated wage and salary supplements yields $12,317, roughly 19.2 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.[12] In accordance with this assumption, the cash compensation figures in Table 4 were adjusted 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 2017

Industry	No. of Employees per Firm					
	1-4	5-9	10-19	20-99	100-499	500+
Agriculture	$0	$0	$67,345	$0	$0	$244,387
Mining	$0	$0	$23,491	$327,019	$0	$419,485
Utilities	$0	$0	$6,287	$0	$0	$1,774,161
Construction	$0	$0	$16,491,249	$40,977,304	$28,741,063	$19,418,628
Manufacturing	$0	$0	$3,052,166	$11,371,425	$9,900,461	$39,155,626
Wholesale Trade	$0	$0	$2,417,775	$7,488,396	$6,425,672	$12,891,367
Retail Trade	$0	$0	$5,517,530	$10,088,854	$8,281,548	$72,661,576
Transportation/ Warehousing	$0	$0	$1,732,460	$4,586,745	$2,983,584	$20,485,424
Information	$0	$0	$597,799	$2,190,305	$2,499,472	$16,063,888
Finance and Insurance	$0	$0	$871,671	$2,461,070	$3,266,939	$18,619,671
Real Estate	$0	$0	$1,033,067	$2,718,200	$2,566,349	$5,796,101
Prof., Scientific, & Tech. Services	$0	$0	$657,380	$1,715,499	$1,448,072	$4,466,984
Management	$0	$0	$59,635	$625,609	$2,338,375	$17,118,531
Admin., Support, Waste Man., & Rem. Services	$0	$0	$5,070,497	$16,168,079	$17,215,036	$60,160,178
Education	$0	$0	$1,156,144	$4,277,493	$6,030,596	$18,061,042
Healthcare and Social Assist.	$0	$0	$6,485,358	$14,241,648	$20,515,805	$65,430,728
Arts, Entertain., & Recreation	$0	$0	$836,280	$2,716,560	$2,745,025	$0
Accommodation and Food Serv.	$0	$0	$6,735,034	$21,628,679	$8,854,581	$29,294,301
Other Services	$0	$0	$8,758,527	$16,394,518	$6,264,658	$8,178,403

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 are not 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

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[12] 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.

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 resulting compensation cost figures are given in **Table 6**.

Table 6: Compensation Costs after Accounting for Taxes, Year 2017

Industry	No. of Employees per Firm					
	1-4	5-9	10-19	20-99	100-499	500+
Agriculture	$0	$0	$68,786	$0	$0	$239,190
Mining	$0	$0	$24,385	$339,468	$0	$417,564
Utilities	$0	$0	$6,206	$0	$0	$1,675,522
Construction	$0	$0	$16,929,239	$42,065,618	$28,891,492	$19,106,161
Manufacturing	$0	$0	$3,096,582	$11,536,904	$9,833,408	$38,055,439
Wholesale Trade	$0	$0	$2,509,784	$7,773,369	$6,533,176	$12,832,136
Retail Trade	$0	$0	$5,669,779	$10,367,244	$8,333,463	$71,567,564
Transportation/ Warehousing	$0	$0	$1,770,238	$4,686,763	$2,985,019	$20,058,424
Information	$0	$0	$613,540	$2,247,980	$2,511,987	$15,801,759
Finance and Insurance	$0	$0	$902,542	$2,548,230	$3,312,972	$18,484,972
Real Estate	$0	$0	$1,075,152	$2,828,932	$2,616,168	$5,785,016
Prof., Scientific, & Tech. Services	$0	$0	$684,843	$1,787,166	$1,477,687	$4,463,081
Management	$0	$0	$61,840	$648,735	$2,374,947	$17,021,215
Admin., Support, Waste Man., & Rem. Services	$0	$0	$5,222,315	$16,652,176	$17,363,369	$59,395,631
Education	$0	$0	$1,167,741	$4,320,399	$5,962,484	$17,471,902
Healthcare and Social Assist.	$0	$0	$6,628,445	$14,555,861	$20,530,945	$64,083,704
Arts, Entertain., & Recreation	$0	$0	$864,890	$2,809,495	$2,780,397	$0
Accommodation and Food Serv.	$0	$0	$6,985,085	$22,431,686	$8,994,501	$29,132,507
Other Services	$0	$0	$9,102,315	$17,038,033	$6,376,963	$8,150,611

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 2017. Given inflation, these costs can be expected to be higher in 2018 and beyond. To account for inflation, the analysis assumes that employee compensation costs increase annually between 2017 and 2026 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 2007 and

2014 was 2.28%. This growth rate was applied to the figures in Table 6 to obtain estimated compensation costs for years 2018 through 2026 (not shown).

The figures in Table 6 and corresponding tables for years 2018 through 2026 represent the final estimated compensation costs to employers created by a paid sick leave mandate as stipulated in SB472 during the next ten years. 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 (business owners) 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 employers could seek to offset some of the expected future costs generated by the mandate by immediately lowering employee compensation, reducing the number of workers employed, eliminating paid vacation, 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 leave 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 leave 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.[13] In the real world, these two assumptions need not hold: sometimes there is too much product available for too little demand, and prices can 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 for technical reasons. First, 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 the 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. Second, the BSIM is not constructed to accept exogenous changes in production levels as input. Rather, the module is

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[13] 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.

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 to 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 the BSIM does. The main point from the preceding discussion is that *to the extent that such production losses are absent from the model, the forecast job and output losses associated with a statewide paid sick leave mandate contained herein may be low*.

One final note concerning production effects due to a paid sick leave mandate: Some contend that a paid sick leave mandate will increase labor productivity among workers, the argument being that sick workers are less productive than healthy workers and spread their germs to co-workers, further reducing firm-wide productivity. While some research has suggested that improved health status among workers might lead to higher productivity growth, the results of other studies urge caution with regard to claims that better health outcomes lead to greater growth. The Congressional Budget Office's official position on this matter is one of agnosticism.[14] Lacking a sufficient body of evidence to sway us from a state of uncertainty, we assume that a paid sick leave mandate would neither increase nor decrease labor productivity.

C. Paperwork and Recordkeeping Costs

The proposed mandate would also impose costs on employers in the form of additional paperwork and recordkeeping. Employers would be required to retain records documenting hours worked by employees and earned sick leave taken by employees, for a period of at least three years. They shall also be required to allow the appropriate state department to access these records to monitor compliance with the mandate.

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.[15] In that same survey, small business owners/managers responded that they felt $40 (approximately) was a fair per-hour amount to claim

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[14] When assessing potential productivity effects due to changes in the health insurance system during the national healthcare reform debate, the Congressional Budget Office issued a report part of which concerns evaluations of the claim that improved health status among workers increases economic output and productivity. The CBO performed a thorough literature review including studies that link healthier workers to higher wages and countries with better health outcomes to higher economic growth. The CBO questioned the direction of causation in these studies, noting, for example, that increased income may contribute to better health outcomes. Ultimately, the CBO concluded that "[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).
[15] See William J. Dennis, Jr., "Paperwork and Record-keeping," NFIB National Small Business Poll, Volume 3, Issue 5, 2003.

for the time and effort they spent doing paperwork and recordkeeping required by government.[16] To account for this burden, it is assumed that an 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 Leave 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 Maryland will increase by a dollar amount equal to the increase in MD employer costs.[17][†][¥]

Increased demand is assumed to be distributed across industries according to historical patterns of healthcare expenditures in Maryland. Data on 2009 MD healthcare expenditures from the Centers for Medicare and Medicaid Services (the latest data available) were used as the template for new healthcare spending (**Table 7**). The pattern of MD 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.

Table 7: Healthcare Expenditures in Maryland, 2009[18]

Personal Healthcare	50.0%
Hospital Care	18.5%
Physician and Clinical Services	12.0%
Prescription Drugs and Other Nondurables	7.4%
Nursing Home Care	4.0%
Other Health, Residential, and Personal Care	2.5%
Dental Services	2.3%

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[16] 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 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.

[17] 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 MD 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.

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

[18] These data are available on the Centers for Medicare and Medicaid Services website, https://www.cms.gov.

Other Professional Services	1.7%
Home Healthcare	1.0%
Durable Medical Products	0.7%
Total:	**100.0%**

Source: Centers for Medicare and Medicaid Services

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 2017. The estimated total cost to MD employers in 2017 for a full calendar year due to a statewide mandate is $768,288,157. Multiplying this sum by the percentages in Table 7 yields the dollar values in Table 8.

Table 8: Estimated New MD Healthcare Expenditures in 2017 Due to a Statewide Paid Sick Leave Mandate

Personal Healthcare	$384,144,079
Hospital Care	$141,863,608
Physician and Clinical Services	$91,898,556
Prescription Drugs and Other Nondurables	$56,987,020
Nursing Home Care	$30,990,411
Other Health, Residential, and Personal Care	$19,181,965
Dental Services	$17,397,176
Other Professional Services	$13,223,657
Home Healthcare	$7,544,786
Durable Medical Products	$5,056,899

Effects of the Paid Sick Leave Mandate on Government Demand

A statewide mandate will allocate powers necessary to successfully administer and enforce the mandate 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 leave policies, make estimating these costs difficult. Due to this uncertainty, for modeling purposes, it is assumed that the net effect on government demand as a consequence of the mandate's implementation is zero.

Results: Forecast Economic Impact of the Paid Sick Leave Mandate

The BSIM results suggest that a statewide paid sick leave mandate modeled after the legislation introduced in Maryland could cause substantial job loss and output[19] loss in Maryland. Based on the assumptions described above, the BSIM forecasts that if such a statewide mandate is implemented:

- Over 8,500 MD jobs could be lost by 2026.

- Real output in MD could be $1.0 billion less in 2026 than if the paid sick leave mandate had not been implemented. (The real output gap will be $1.0 billion in 2026.)

- Cumulatively, $7.0 billion in real output could be lost between 2017 and 2026.

Employment forecasts are presented in **Table 9** and **Figure 1** 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. According to the results, firms with one to four employees are forecast to employ 522 fewer workers (6.4 percent of the total employment difference) in 2026 if the mandate goes into effect, firms with five to nine employees are forecast to employ 555 fewer workers (6.6 percent), and firms with ten to 19 employees are projected to employ 830 fewer workers (10.3 percent). Job losses at firms with 20 to 99 employees are forecast to be considerably larger than those in any of the previous three categories. In 2026, these firms are expected to employ 2,049 fewer workers (25.4 percent of all jobs lost). Also, firms in the 100-to-499-employee category are forecast to employ 1,103 fewer workers (12.2 percent), while firms with 500 or more employees are projected to employ 3,533 fewer workers (39.1 percent) in 2026 if the mandate is implemented.

Table 9: Forecast MD Employment Difference from Baseline (in Number of Employees) in 2026

Firm Size	MD Jobs Lost in 2026	% of Jobs Lost in 2026
1 to 4 Employees	522	6.4%
5 to 9 Employees	555	6.6%
10 to 19 Employees	830	10.3%
20 to 99 Employees	2,049	25.4%
100 to 499 Employees	1,103	12.2%
500 or More Employees	3,533	39.1%
< 20 Employees	1,907	23.3%
< 100 Employees	3,956	48.7%
< 500 Employees	5,059	60.9%
All Firms	8,592	100.0%

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[19] The term "output" refers to the aggregate output of the Maryland economy (Maryland'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 rough proxy for sales.

MD Private Nonfarm Employment:
Difference From Baseline (in Number of Employees) in 2026
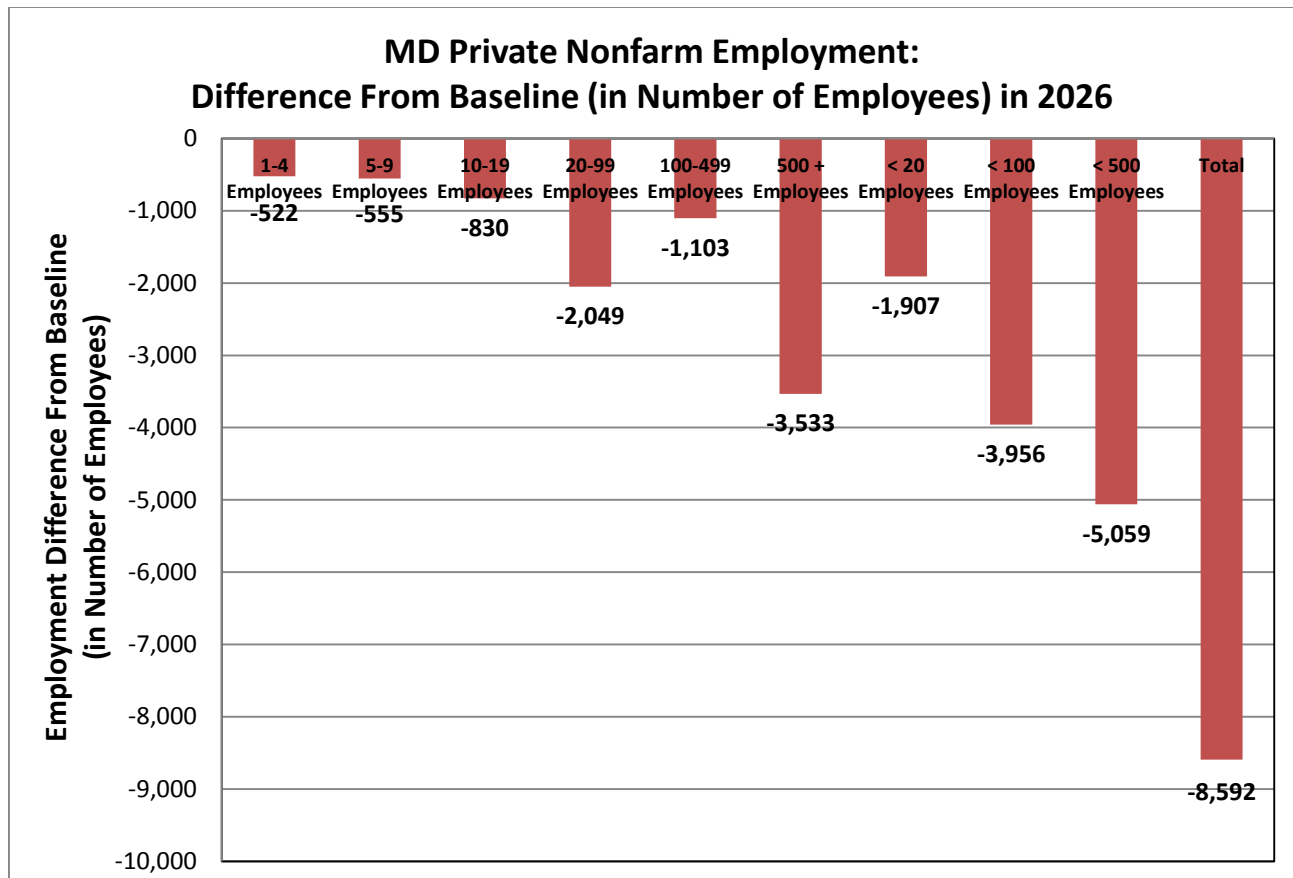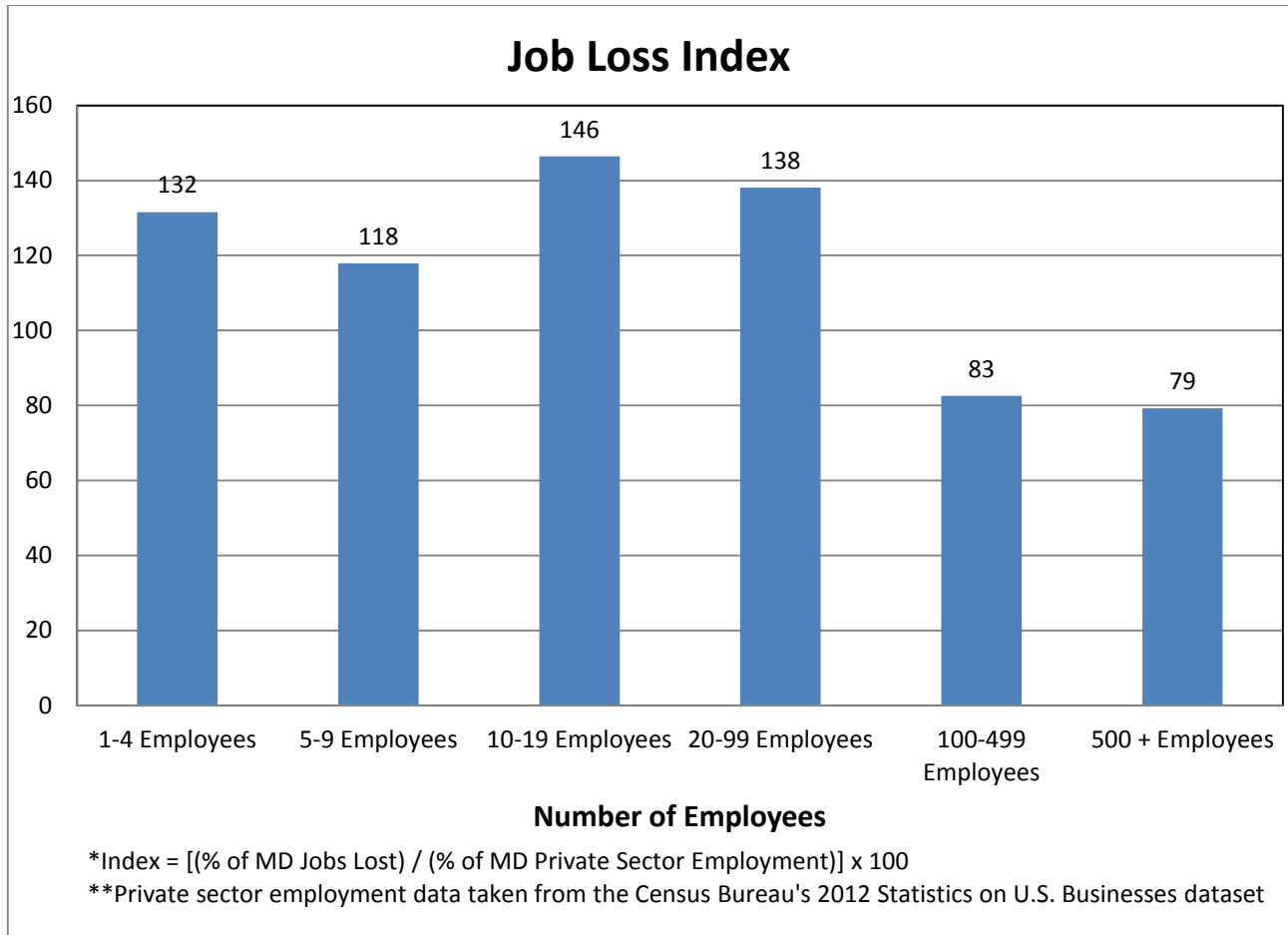

Figure 1

The results suggest that small businesses will shoulder a large percentage of future job losses due to the paid sick leave mandate. Sixty-one percent of the employment gap in 2026 will be experienced by firms with fewer than 500 employees.[20] In total, these small businesses are projected to employ 5,059 fewer workers in 2026 due to the additional costs imposed by the mandate. Forty-nine (49) percent of the employment gap will be at firms with fewer than 100 employees. Twenty-three (23) percent of job losses will occur at firms with fewer than 20 employees.

Dividing the percentage share of (forecast) job loss experienced by a firm-size group by that group's (historical) percentage share of private sector employment yields an index of employment change (**Figure 2**). This index serves as an indicator as to whether the job loss forecast for a particular firm-size group is proportionate to the group's existing employment base. An index value of 100 indicates that a firm-size group experiences job losses proportionate to the group's existing employment base. An index value higher 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).

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[20] This analysis adopts the Small Business Administration's size-of-business threshold of 500 employees to distinguish between small businesses and large businesses. The 500-employee threshold is frequently used by researchers to delineate the small business sector when working with firm-size data.

Job Loss Index

*Index = [(% of MD Jobs Lost) / (% of MD Private Sector Employment)] x 100
**Private sector employment data taken from the Census Bureau's 2012 Statistics on U.S. Businesses dataset

Figure 2

Small businesses (firms with fewer than 500 employees) clearly bear a disproportionately large amount of job losses generated by the mandate. The employment change index value for firms with one to four employees, for example, is 132, the result of dividing the percentage share of jobs lost by firms with one to four employees (6.4 percent) by the percentage share of private sector employment currently represented by this firm-size category (4.9 percent). Other firm-size categories with fewer than 100 employees also have disproportionately high index values. Firms with five to nine employees, ten to 19 employees, and 20 to 99 employees have index values of 118, 146, and 138, respectively.

In contrast to firms with fewer than 500 employees, larger firms bear a disproportionately small amount of the job losses generated by the mandate (when the share of private sector employment is used as the reference point). Firms with 100 to 499 employees have an index value of 83, while firms with 500 or more employees have an index value of 79. The dichotomy separating index values below and above the 100 mark highlights the comparatively high sensitivity of very small firms to regulatory costs.

The variation in employment effects across different employee-size-of-firm groups is consistent with IWPR research analyzing possible negative effects on San Francisco workers due to that city's implementation of a paid sick leave ordinance in 2007. In a 2011 IWPR report detailing

the results of a survey of private-sector employees of San Francisco firms, over 18 percent of respondents at firms with fewer than 25 workers indicated they had experienced layoffs or saw their total number of work hours reduced. In contrast, just 13 percent of workers at firms with 100 or more workers reported experiencing such events.[21]

Detailed forecasts for MD real output losses are given in **Table 10** and **Figure 3**. 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 annual real output gap is forecast to average approximately $700 million from 2017 to 2026. In 2026, the output gap is projected to be $1.0 billion. Over the ten years spanning 2017 through 2026, the cumulative real output loss experienced by Maryland employers is forecast to total approximately $7.0 billion.
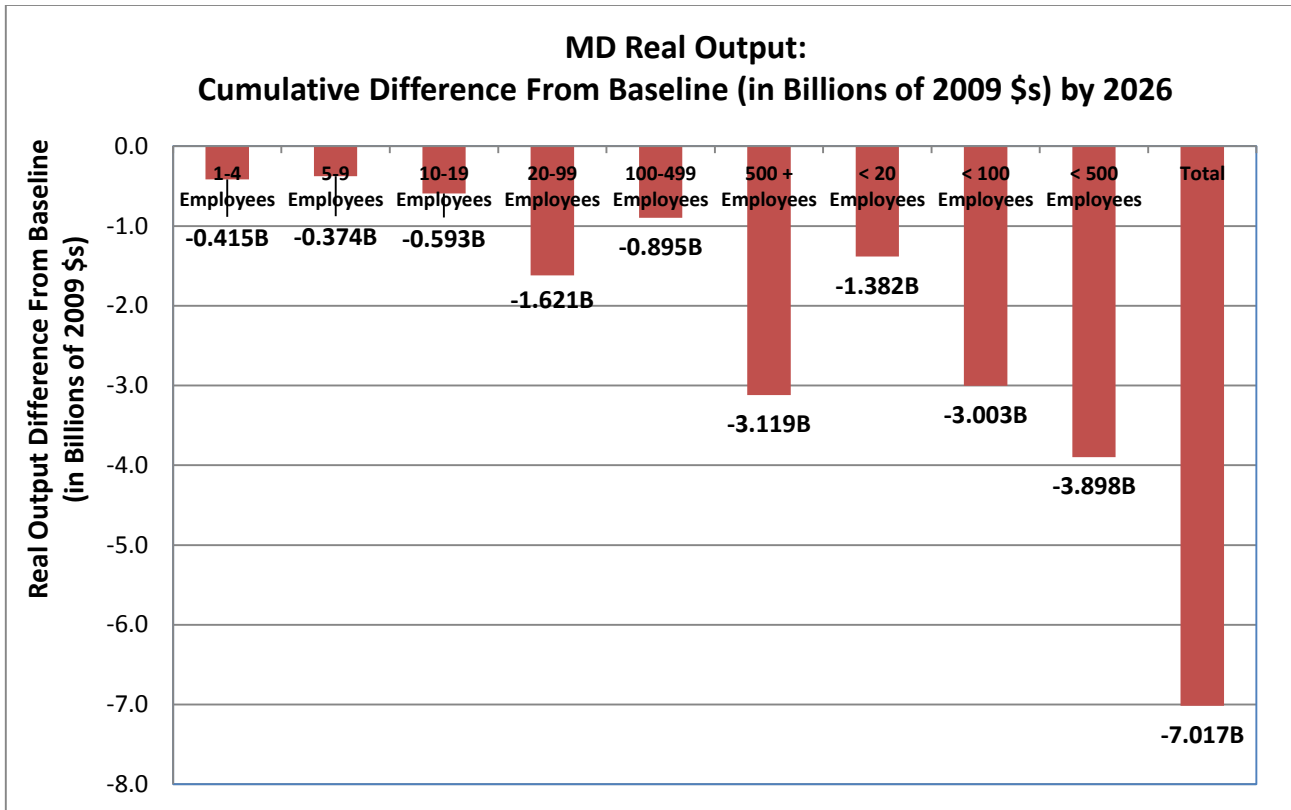
Small businesses (< 500 employees) are projected to bear approximately 56 percent of all lost output through 2026. Forty-three (43) percent of the lost output is forecast to occur at firms with fewer than 100 employees, whereas firms with fewer than 20 employees are projected to shoulder 20 percent of the output loss. As with job losses, the incidence of lost output is projected to be felt most strongly by small firms.

Figure 4 presents an index of output change by firm size, constructed analagously to the index of employment change, except with output losses serving as the numerator and gross receipts (a proxy for output) as the denominator. Output losses are most disproportionate for firms with ten to 19 employees. These firms will bear 8.5 percent of the cumulative output gap through 2026 but currently account for just 4.9 percent of statewide gross receipts, resulting in an index value of 172. Other small firms also bear a disproportionately large amount of real output losses. Firms with one to four, five to nine, and 20 to 99 employees have output change index values of 125, 128, and 161, respectively. As with changes in employment, large firms (those with 500 or more employees) bear a disproportionately small amount of lost output. Firms with 500 or more employees have an output change index value of just 76.
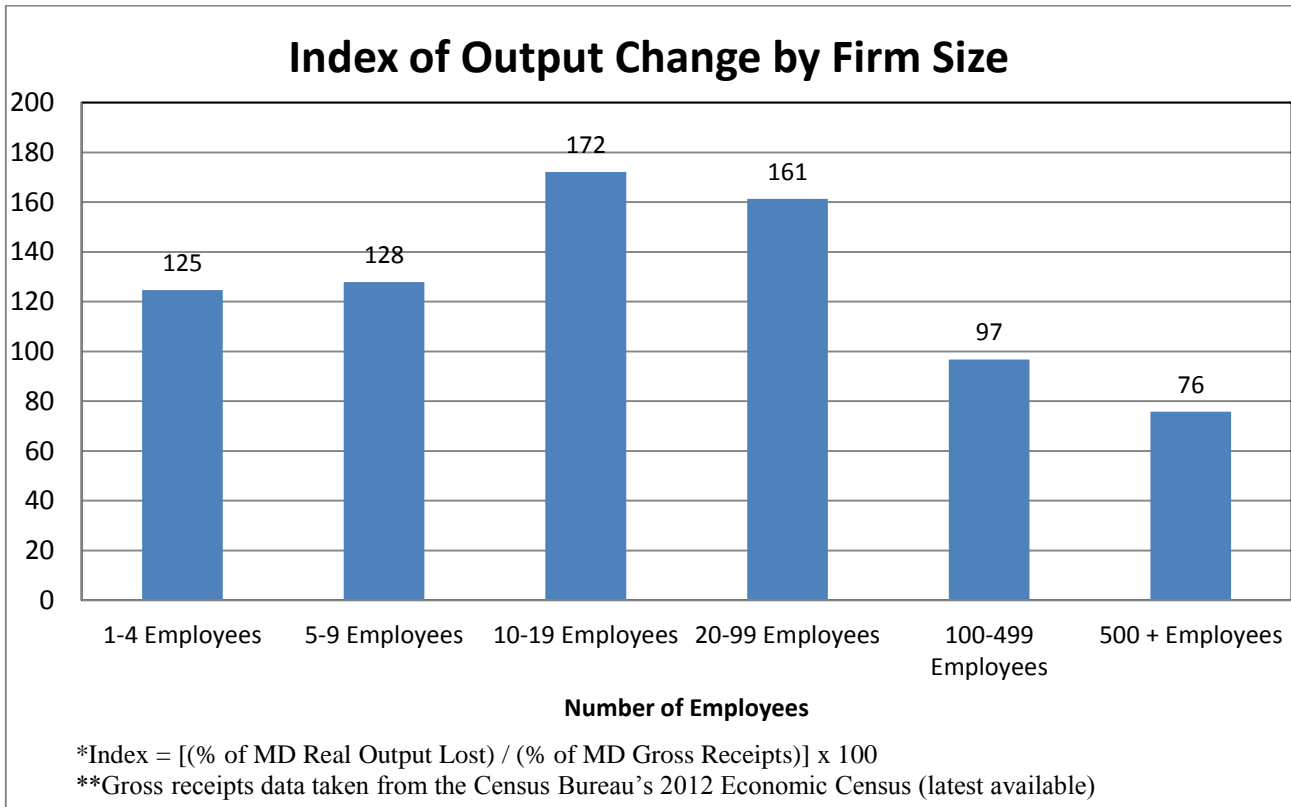
Table 10: Forecast Cumulative MD Real Output Lost by 2026 (in Billions of 2009 $s)

Firm Size	Cumulative MD Real Output Lost by 2026	% of Cumulative Real Output Difference (2017 to 2026)
1 to 4 Employees	$0.415B	5.9%
5 to 9 Employees	$0.374B	5.3%
10 to 19 Employees	$0.593B	8.5%
20 to 99 Employees	$1.621B	23.1%
100 to 499 Employees	$0.895B	12.8%
500 or More Employees	$3.119B	44.4%
< 20 Employees per Firm	$1.382B	19.7%
< 100 Employees per Firm	$3.003B	42.8%
< 500 Employees per Firm	$3.898B	55.6%
All Firms	$7.017B	100.0%

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[21] Drago, Robert and Vicky Lovell, "San Francisco's Paid Sick Leave Ordinance: Outcomes for Employers and Employees," Institute for Women's Policy Research, February 2011.

MD Real Output:
Cumulative Difference From Baseline (in Billions of 2009 $s) by 2026

Figure 3

Index of Output Change by Firm Size

*Index = [(% of MD Real Output Lost) / (% of MD Gross Receipts)] x 100
**Gross receipts data taken from the Census Bureau's 2012 Economic Census (latest available)

Figure 4

Summary

A statewide paid sick leave mandate as stipulated in SB472 or HB580 would impose new costs on Maryland employers in the forms of compensation costs associated with paying workers taking paid sick leave, 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 2016, the BSIM forecasts that over 8,500 MD jobs could be lost by 2026, and MD real output could decrease by $1.0 billion. Small firms would bear 61 percent of the job losses and 56 percent of lost sales. The cumulative real output lost between 2017 and 2026 is estimated to be $7.0 billion.