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| PROPOSED MASSACHUSETTS TAX EXPENDITURES EVALUATION SUMMARY  |
| EVALUATION YEAR: 2020 |

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| **TAX EXPENDITURE TITLE** | Net Operating Loss Carryover |
| **TAX EXPENDITURE NUMBER** | 2.203 |
| **TAX EXPENDITURE CATEGORY** | Deduction against tax *(corporate and business tax)*  |
| **TAX TYPE** | Corporate excise tax |
| **LEGAL REFERENCE** | IRC, § 172; M.G.L. c. 63, § 30(5) |
| **YEAR ENACTED** | 1988 |
| **REPEAL/EXPIRATION DATE** | None |
| **ANNUAL REVENUE IMPACT** | Tax loss of $167.1 - $194.0 million per year during FY18-FY22 |
| **NUMBER OF TAXPAYERS**  | 10,735 – 12,184 claims for the deduction per year during the tax years 2015 through 2018. |
| **AVERAGE TAXPAYER BENEFIT** | About $14,400 per claimant (2018) |

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| --- | --- |
| **Description of the Tax Expenditure:**A deduction for net operating losses incurred in previous taxable years is allowed to certain corporations in determining net income in the current year.   | **Is the purpose defined in the statute?**The statute does not explicitly state the purpose of this tax expenditure.  |
| **What are the policy goals of the expenditure?**No goals are identified in the statute, but we assume the goal of the NOL deduction is to smooth out annual variations in income.  | **Are there other states with a similar Tax Expenditure?**Most states with a corporate income tax allow a deduction for NOLs, including all of Massachusetts’ neighboring states. |

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| Conclusion/Recommendations: [To be Entered by TERC] |

**INTRODUCTION**

The net operating loss (NOL) deduction is a current-year deduction for losses sustained in prior years. Losses incurred in years a corporation is not subject to the corporate excise in Massachusetts are not allowed to be carried forward. While the Internal Revenue Code provides a federal deduction for NOLs, Massachusetts does not conform to those rules; rather the General Laws provide for a specific Massachusetts deduction.

The deduction was enacted in 1988. Prior to 2010, NOLs incurred by Massachusetts corporate excise filers could be carried forward for not more than 5 years, and could not be carried back. Losses incurred in taxable years beginning on or after January 1, 2010 can be carried forward for 20 years, and cannot be carried back.

**POLICY GOALS**

The federal NOL deduction is intended to smooth over the effects of economic and business cycles on corporate taxes over multiple tax years. The idea is that two companies that have the same earnings over a period of tax years should bear similar long term tax burdens even though one of the companies had losses in some years and the other was consistently profitable. Allowing a deduction for losses incurred in prior years furthers this goal.

A recent article by Tax Foundation (Watson, 2020) illustrates this point using the following example:

*For example, imagine a firm (Firm 1) that loses $50,000 in its first year, but earns $100,000 in the second year. A second firm (Firm 2) earns $25,000 in both years. In the absence of NOL deductions, the first firm is taxed at a 42 percent effective tax rate over those two years, while the second firm faces an effective tax rate half the size at 21 percent (see Table 1). The first firm faces a higher effective tax rate for earning uneven income over those two years.*

***Table 1. Effective Tax Rate for Two Firms without a Net Operating Loss Deduction (21% Tax Rate)***

|  | *Year 1 Net income* | *Year 2 Net Income* | *Tax Liability for Year 1* | *Tax Liability for Year 2* | *Combined Effective Tax Rate* |
| --- | --- | --- | --- | --- | --- |
| *Firm 1* | *($50,000)* | *$100,000* | *$0* | *$21,000* | *42%* |
| *Firm 2* | *$25,000* | *$25,000* | *$5,250* | *$5,250* | *21%* |
| *Source: Tax Foundation calculations.* |
|  |

*When NOL deductions are available, both firms face an equivalent effective tax rate, and the firm with uneven income is not penalized for losses accrued in Year 1 (see Table 2). NOL deductions are an important aspect of the tax code to ensure neutrality between firms and industries that experience variability in profits over time.*

***Table 2. Effective Tax Rate for Two Firms with a Net Operating Loss Deduction (21% Tax Rate)***

|  | *Year 1 Net income* | *Year 2 Net Income* | *Tax Liability for Year 1* | *Tax Liability for Year 2* | *Combined Effective Tax Rate* |
| --- | --- | --- | --- | --- | --- |
| *Firm 1* | *($50,000)* | *$100,000* | *$0* | *$10,500 ($100,000 – $50000) \* 21%* | *21%* |
| *Firm 2* | *$25,000* | *$25,000* | *$5,250* | *$5,250* | *21%* |
| *Source: Tax Foundation calculations.* |
|  |

The Massachusetts statute does not explicitly state the purpose of this tax expenditure. However, it is likely that the Massachusetts NOL deduction was adopted for the same reasons as the federal deduction.

**DIRECT COSTS**

The revenue loss resulting from this tax expenditure is estimated to be $167.1 - $194.0 million per year during FY18-FY22. See Table 3. The estimates are based on several factors, including historical claims, economic forecasts, and related law changes.

**Table 3. Tax Revenue Loss Estimates for NOL deduction**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fiscal Year | 2018 | 2019 | 2020 | 2021 | 2022 |
| Estimated Revenue Loss ($Million) | $167.1 | $177.4 | $182.8 | $188.3 | $194.0 |

Table 4 below shows the number of claimed and shared NOL deductions and the amount of such deductions in the past several years. Here, “Claimed NOL” is the deduction amount that a taxpayer claimed; and “Shared NOL” is the deduction amount used by other members of the taxpayer’s combined group.

During the tax years 2015 through 2018, the number of NOL deductions claimed or shared annually varied from 10,735 to 12,184, the amount of NOL deduction claimed or shared annually varied from $1.677 billion to $2.922 billion, and the average claimed or shared amount was $147,200-$239,800 per year.

**Table 4. Amount and Count of Net Operating Loss Deduction by Tax Year**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | 2015 | 2016 | 2017 | 2018 |
| Amount ($000) | Count | Amount ($000) | Count | Amount ($000) | Count | Amount ($000) | Count |
|  Claimed NOL  | $1,629,247 | 11,132 | $1,661,298 | 10,555 | $2,053,378 | 10,831 | $2,809,989 | 11,816 |
| Shared NOL | $48,246 | 263 | $25,298 | 180 | $33,689 | 184 | $111,551 | 368 |
| Total | $1,677,493 | 11,395 | $1,686,596 | 10,735 | $2,087,067 | 11,015 | $2,921,541 | 12,184 |
| Average Amount of Deduction | $147.2 | NA | $157.1 | NA | $189.5 | NA | $239.8 | NA |

Source: Massachusetts Department of Revenue.

Notes: 1. 2017 and 2018 data are preliminary and subject to change.

 2. The count is the number of claims, not the number of claimants. The number of claims is either the same as or slightly higher than the number of claimants, as discussed in footnote 1.

 3. “NA” means not applicable.

**DIRECT BENEFITS**

Direct beneficiaries of the deduction are corporations that conduct business in Massachusetts and have net operating losses in some years. Because it is common for corporations to incur losses in some years with the expectation of profits in future years, the deduction applies to a broad range of businesses in the state. Tables 5-7 below show the profile of the corporations that claimed the deduction in tax year 2018.

In 2018, a total of 12,024 claimants[[1]](#footnote-1) claimed $2.921 billion in NOL deductions, reducing taxable income by 49.4% from $5.919 billion to $2.998 billion. Put another way, taxable income after NOL deductions was 50.6% of taxable income before NOL deductions. The ratio of taxable income post-NOLs to taxable income pre-NOLs varied from 0.3% for corporations whose taxable income ranged between $0 and $9,999, to 87.2% for corporations with $10 million or higher taxable income (see Table 5), from 26.3% for corporations with 200-499 employees to 63.6% for corporations with fewer than 5 employees (see Table 6), and from 1.7% for corporations in the industry of “Mining, Quarrying, and Oil and Gas Extract” to 78.3% for corporations in the “Retail Trade” industry (see Table 7).

Table 5 shows that about 77.8% of the corporations claiming NOL deductions (“impacted corporations”) had taxable income ranging between $0 and $9,999, and in total represented 16.9% of the total tax liability of all impacted corporations and 0.2% of total taxable income after NOL deductions. About 0.3% of the impacted corporations had more than $10 million taxable income, representing 49.3% of the total tax liability of impacted corporations and 63.3% of total taxable income after NOL deductions. Table 6 shows that about 55.7% of the impacted corporations had with fewer than 5 employees, and these corporations represented 50.8% of the total tax liability of such corporations and 43.2% of total taxable income after NOL deductions. About 4.5 % of the impacted corporations were corporations with 500 or more employees, representing 24.8% of the total tax liability of all impacted corporations and 31.5% of total taxable income after NOL deductions. By industry, Table 7 shows that the “Professional, Scientific, and Technical Services” industry represented about 19.3% of impacted corporations, 13.5% of total tax liability, and 19.3% of total taxable income after NOL deductions. The “Manufacturing” industry represented about 11.0% of total impacted corporations, 8.3% of total tax liability, and 11.9% of taxable income after NOL deduction.

On average, impacted corporations claimed net operation loss deduction of $242,972. This average claimed amount varied from $49,509 for corporations with taxable income less than $0 to $7.927 million for corporations with $10 million or higher taxable income, from $110,716 for corporations with fewer than 5 employees to $1.467 million for corporations with 500 or more employees, and from $27,540 for corporations in the industry of “Other Services (except Public Administration)” to $851,304 for corporations in the “Utilities” industry.

**Table 5. Impacted Corporations of Net Operating Loss Carryover, Tax Liability, and Taxable Income**

**by Taxable Income Level**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Taxable Income Range (after NOL) |  Tax Liability ($000)  |  Percent of Total Tax Liability |  Taxable Income After NOL ($000) -A  |  Percent of Total Taxable Income After NOL |  Taxable Income Before NOL ($000) -B  |  *A/B*  |  Number of Impacted Corporations  |  *Percent of Total Number of Impacted Corporations* |  NOL per impacted Corporation ($)  |
| Less than $0 | $13 | *0.0%* | -$981 | *0.0%* | $306 |  | 26 | *0.2%* | $49,509 |
| 0 to $9,999 | $43,287 | *16.9%* | $5,530 | *0.2%* | $1,975,266 | *0.3%* | 9,354 | *77.8%* | $210,577 |
| $10,000 to $99,999 | $8,262 | *3.2%* | $55,970 | *1.9%* | $145,423 | *38.5%* | 1,501 | *12.5%* | $59,596 |
| $100,000 to $999,999 | $26,477 | *10.3%* | $286,140 | *9.5%* | $493,236 | *58.0%* | 843 | *7.0%* | $245,666 |
| $1,000,000 to $9,999,99 | $51,729 | *20.2%* | $752,415 | *25.1%* | $1,128,909 | *66.6%* | 265 | *2.2%* | $1,420,732 |
| $10,000,000 or more | $126,351 | *49.3%* | $1,898,435 | *63.3%* | $2,175,866 | *87.2%* | 35 | *0.3%* | $7,926,592 |
| Total | $256,118 | *100.0%* | $2,997,508 | *100.0%* | $5,919,005 | *50.6%* | 12,024 | *100.0%* | $242,972 |

Source: Department of Revenue (2018 corporate excise returns)

Notes: 1. NOL denotes Net Operating Loss.

 2. The data is preliminary and subject to change.

**Table 6. Impacted Corporations of Net Operating Loss Carryover, Tax Liability, and Taxable Income**

**by Number of Employees**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Employees Range\*  | Tax Liability ($000)  |  *Percent of Total Tax Liability*  |  Taxable Income After NOL ($000) -A  |  *Percent of Total Taxable Income After NOL* |  Taxable Income Before NOL ($000) -B  |  *A/B*  |  Number of Impacted Corporations  |  *Percent of Total Number of Impacted Corporations* |  NOL per impacted Corporation ($)  |
|  Less than 5 | $129,988 | *50.8%* | $1,296,241 | *43.2%* | $2,037,597 | *63.6%* | 6,696 | *55.7%* | $110,716 |
|  5 to 49  | $24,795 | *9.7%* | $301,809 | *10.1%* | $870,079 | *34.7%* | 3,300 | *27.4%* | $172,203 |
|  50 to 99  | $10,717 | *4.2%* | $105,349 | *3.5%* | $263,154 | *40.0%* | 586 | *4.9%* | $269,292 |
|  100 to 199  | $15,617 | *6.1%* | $221,636 | *7.4%* | $528,449 | *41.9%* | 483 | *4.0%* | $635,223 |
|  200 to 499  | $11,413 | *4.5%* | $129,029 | *4.3%* | $490,022 | *26.3%* | 423 | *3.5%* | $853,410 |
|  500 or more  | $63,587 | *24.8%* | $943,443 | *31.5%* | $1,729,705 | *54.5%* | 536 | *4.5%* | $1,466,906 |
|  Total  | $256,118 | *100.0%* | $2,997,508 | *100.0%* | $5,919,005 | *50.6%* | 12,024 | *100.0%* | $242,972 |

Source: Department of Revenue (2018 corporate excise returns)

Notes: 1. \* Information is based on number of employees as reported by taxpayers.

 2. NOL denotes Net Operating Loss.

 3. The data is preliminary and subject to change.

**Table 7. Impacted Corporations of Net Operating Loss Carryover, Tax Liability, and Taxable Income**

**by Industry**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Industry  |  Tax Liability ($000)  |  *Percent of Total Tax Liability*  |  Taxable Income After NOL ($000) -A  |  *Percent of Total Taxable Income After NOL*  |  Taxable Income Before NOL ($000) -B  |  *A/B*  |  Number of Impacted Corporations  |  *Percent of Total Number of Impacted Corporations* |  NOL per impacted Corporation ($)  |
|  11 Agriculture, Forestry, Fishing and Hunting  | $96 | *0.0%* | $615 | *0.0%* | $3,341 | *18.4%* | 46 | *0.4%* | $59,271 |
|  21 Mining, Quarrying, and Oil and Gas Extract  | $89 | *0.0%* | $8 | *0.0%* | $495 | *1.7%* | 8 | *0.1%* | $60,895 |
|  22 Utilities  | $2,004 | *0.8%* | $16,075 | *0.5%* | $52,681 | *30.5%* | 43 | *0.4%* | $851,304 |
|  23 Construction  | $4,741 | *1.9%* | $70,058 | *2.3%* | $145,815 | *48.0%* | 999 | *8.3%* | $75,834 |
|  31-33 Manufacturing  | $21,182 | *8.3%* | $355,866 | *11.9%* | $937,465 | *38.0%* | 1,319 | *11.0%* | $440,939 |
|  42 Wholesale Trade  | $8,978 | *3.5%* | $109,797 | *3.7%* | $252,518 | *43.5%* | 796 | *6.6%* | $179,298 |
|  44-45 Retail Trade  | $36,025 | *14.1%* | $409,767 | *13.7%* | $523,430 | *78.3%* | 920 | *7.7%* | $123,547 |
|  48-49 Transportation and Warehousing  | $2,151 | *0.8%* | $24,174 | *0.8%* | $69,257 | *34.9%* | 387 | *3.2%* | $116,494 |
|  51 Information  | $10,965 | *4.3%* | $130,435 | *4.4%* | $398,384 | *32.7%* | 537 | *4.5%* | $498,975 |
|  52 Finance and Insurance | $12,603 | *4.9%* | $68,962 | *2.3%* | $244,041 | *28.3%* | 769 | *6.4%* | $227,671 |
|  53 Real Estate and Rental and Leasing  | $18,161 | *7.1%* | $158,399 | *5.3%* | $274,287 | *57.7%* | 813 | *6.8%* | $142,543 |
|  54 Professional, Scientific, and Technical Services  | $34,497 | *13.5%* | $578,259 | *19.3%* | $1,195,083 | *48.4%* | 2,318 | *19.3%* | $266,102 |
|  55 Management of Companies and Enterprises  | $13,091 | *5.1%* | $120,873 | *4.0%* | $321,537 | *37.6%* | 324 | *2.7%* | $619,332 |
|  56 Administrative and Support and Waste Management  | $4,347 | *1.7%* | $38,434 | *1.3%* | $124,962 | *30.8%* | 495 | *4.1%* | $174,803 |
|  61 Educational Services  | $205 | *0.1%* | $1,004 | *0.0%* | $13,291 | *7.6%* | 111 | *0.9%* | $110,698 |
|  62 Health Care and Social Assistance  | $4,934 | *1.9%* | $43,371 | *1.4%* | $103,741 | *41.8%* | 454 | *3.8%* | $132,973 |
|  71 Arts, Entertainment, and Recreation  | $289 | *0.1%* | $3,056 | *0.1%* | $7,926 | *38.6%* | 142 | *1.2%* | $34,296 |
|  72 Accommodation and Food Services  | $1,536 | *0.6%* | $12,107 | *0.4%* | $33,647 | *36.0%* | 461 | *3.8%* | $46,725 |
|  81 Other Services (except Public Administration)  | $666 | *0.3%* | $7,138 | *0.2%* | $19,999 | *35.7%* | 467 | *3.9%* | $27,540 |
|  Others or unmatched\* | $79,557 | *31.1%* | $849,109 | *28.3%* | $1,197,102 | *70.9%* | 615 | *5.1%* | $565,842 |
|  Total or average  | $256,118 | *100.0%* | $2,997,508 | *100.0%* | $5,919,005 | *50.6%* | 12,024 | *100.0%* | $242,972 |

Source: Department of Revenue (2018 corporate excise returns)

Notes: 1. \*Unmatched means that we could not find some taxpayers in one or more of data sets to match.

 2. NOL denotes Net Operating Loss.

 3. The data is preliminary and subject to change.

**EVALUATION: COMPARING COSTS AND BENEFITS**

In the previous sections, we reported the direct costs (to the Commonwealth, or to the residents and businesses who ultimately bear the costs when the Commonwealth cuts government spending or increases tax to finance the NOL deduction) and direct benefits (to taxpayers who claim the benefits) of this tax expenditure. Since the direct costs to the Commonwealth are the direct benefits to taxpayers, they are equal.

However, when looking at the broader economy, there are, in addition to direct impacts, indirect and induced impacts on other residents and businesses in Massachusetts. See the appendix for more discussion.

To determine the net impact of the tax expenditure, i.e., the total benefits (including direct, indirect and induced benefits) offset by the total costs (including direct, indirect and induced costs), we employed the model of “Tax-PI” developed by Regional Economic Models Incorporated (“REMI”).[[2]](#footnote-2) See the appendix for details.

The estimated net impact of the tax expenditure for fiscal years 2018 through 2022 are shown in Tables 8 and 9. As shown, the NOL deduction combined with a cut in state government spending results in less economic activity, with real state GDP decreasing by $96 million-$147 million. The net impact on total employment is negative, decreasing by 1,529 – 2,005 jobs annually. The net additional impact on state revenues[[3]](#footnote-3) is also negative, decreasing by $3.0 million to $6.3 million annually.

Because the tax expenditure has its own specific purpose, the net negative impacts do not necessarily imply that the tax expenditure is not desirable. The statute does not explicitly state the purpose of this tax expenditure; however, we assume that the purpose is to smooth over the effects of economic and business cycles on corporate taxes over multiple tax years as described above.

**Table 8. Net Additional Revenue Impact of NOL Deduction\***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fiscal Year | 2018 | 2019 | 2020 | 2021 | 2022 |
| Net additional revenue impact ($000) | -$3,015 | -$6,247 | -$6,258 | -$6,121 | -$5,901 |

\* assuming state government spending is cut by the same amount as the revenue loss due to the NOL deduction to balance budget.

**Table 9. Net Economic Impacts of NOL Deduction by Selected Economic Measure\***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Calendar Year | 2018 | 2019 | 2020 | 2021 | 2022 |
| Impact on total employment | -2,005 | -1,890 | -1,775 | -1,634 | -1,529 |
| Impact on private non-farm employment | -136 | 57 | 170 | 282 | 363 |
| Impact on GDP ($000), real dollars (2012) | -$147,000 | -$133,000 | -$121,000 | -$106,000 | -$96,000 |
| Impact on personal income ($000) | -$139,000 | -$145,000 | -$146,000 | -$143,000 | -$142,000 |

\* assuming state government spending is cut by the same amount as the revenue loss due to the NOL deduction to balance budget.

**Similar Tax Expenditures Offered by Other States**

This is a popular and widely used deduction. Most states allow a deduction for NOLs, but the terms of those deductions vary. New York, like Massachusetts, has a state specific NOL deduction that does not conform to the federal deduction, and allows 20 years carryforward. However, New York allows a carryback deduction for NOLs, which Massachusetts does not allow.

Connecticut also has a state specific NOL deduction, which can be carried forward for 20 years, as in Massachusetts. Also like Massachusetts, Connecticut recognizes NOLs only from years the corporation was subject to tax in the state. Like federal law, prior year losses must be applied against income to the maximum extent possible and in a consecutive fashion during the carryover period, so that losses from the earliest years are used first.

Rhode Island uses a modified version of the federal NOL deduction. Like Massachusetts, Rhode Island recognizes NOLs only from years the corporation was subject to tax in the state. Rhode Island does not permit NOL carrybacks. The carryforward period is limited to five years.

Maine generally conforms to the federal NOL provisions, but for tax years ending after 2017 losses may be carried forward indefinitely, but not carried back, except in limited circumstances.

Vermont has decoupled from the federal NOL deduction and has created a state-specific deduction. Vermont allows NOLs to be carried forward 10 years, and does not allow carrybacks.

Louisiana offers a net operating loss deduction. For returns filed on or after July 1, 2015, regardless of the tax year to which it relates, the deduction is equal to 72% of the available net operating loss, limited to 72 percent of net income.

Colorado offers a net operating loss deduction. For any given tax year the deduction is the portion of the federal net operating loss allocated and/or apportioned to Colorado. An NOL deduction is allowed in the same manner that it is allowed under the internal revenue code unless subject to any state limitations.

**IS THE INCENTIVE AS DESIGNED ACCOMPLISHING ITS PURPOSE?**

[FOR TERC TO COMPLETE]

# References

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Keith R. Ihlanfeldt, David L. Sjoquist. (2001, August). Conducting an Analysis of Georgia’s Economic Development Tax Incentive Program. *ECONOMIC DEVELOPMENT QUARTERLY, 15*(3), 217-228.

*MODELS: TAX-PI*. (n.d.). Retrieved from Regional Economic Models, Inc.: https://www.remi.com/model/tax-pi/

Watson, G. (2020, May). *Advancing Net Operating Loss Deductions in Phase 4 Business Relief.* Retrieved from FISCAL FACT: https://taxfoundation.org/phase-4-coronavirus-relief-net-operating-loss-business-relief/

**Appendix: Further Discussion on Costs and Benefits**

The text of the report discusses the direct costs (to the Commonwealth, or more specifically, to the Massachusetts residents or businesses who benefit from state expenditures[[4]](#footnote-4)) and direct benefits (to taxpayers who claim the benefits) of this tax expenditure. It also summarizes indirect and induced costs and benefits associated with this tax expenditure. This appendix will discuss the indirect and induced, as well as other costs and benefits in more detail.

**Other costs and benefits: Indirect and Induced**

*Indirect and Induced Costs*

Regardless of its size, the existence of a specific tax incentive means less revenue for other spending given the Commonwealth’s balanced budget requirement, assuming that there is no increase in state revenues. Reduced spending on other expenditure items means forgone benefits from those items. This is an **“opportunity cost”** to the Commonwealth. The opportunity cost to the state includes not only the impact on the businesses and their employees that directly benefit from those expenditure items (this is called “direct impact”), but also the indirect impact on the chain of businesses that provide intermediate products and services to the directly impacted businesses (this is called “indirect impact”). In addition, there is the cost to the chain of businesses that benefit when the employees working for the directly impacted businesses spend their wages and salaries to buy goods and services (this is called “induced impact”). The total forgone benefits to the whole economy are larger than the initial forgone benefits. This phenomenon is called the “Multiplier Effect”.[[5]](#footnote-5)

To estimate the total forgone benefits of the reduced spending, we employed Tax-PI, an economic analysis tool for evaluating the total fiscal and economic effects of tax policy changes. Tax-PI is built on over 30 years of experience in modeling the economic effects of tax policy changes, according to MODELS: TAX-PI in the reference. The popularity of the model has grown substantially since it was introduced. Note that while the tax incentive has a specific purpose, the reduced spending is assumed to be proportionally distributed across the Commonwealth’s current expenditures.

*Quantifying total costs (direct, indirect and induced)*

The period of study is limited to the five years from 2018 through 2022, for which we prepared input data to run the model. Tables A1 and A2 report the model results. The figures for 2018 and 2019 are estimates of forgone benefits (opportunity costs) that the Massachusetts economy experienced due to having the expenditure, and those for 2020, 2021 and 2022 are projections of forgone benefits that the Massachusetts economy will experience going forward. The effects are displayed as negative numbers as reduced spending has a negative impact on the state economy.

Tables A1 and A2 show that the reduction in state government spending results in lost economic activity, with real state GDP declining by $377 million - $428 million and total employment declining by 4,364- 4,859 jobs annually. Lost economic activity results in further loss of state revenues, ranging from $8.0 million to $23.2 million annually. Note that the revenue impact reported in Table A1 does not include the estimated direct impact of the tax expenditure from Table 3, but only the additional indirect/induced impact.

**Table A1. Additional Revenue Impact due to Decreased Government Spending\***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fiscal Year | 2018 | 2019 | 2020 | 2021 | 2022 |
| Additional revenue impact ($000) | -$8,041 | -$17,952 | -$20,598 | -$22,381 | -$23,232 |

\* This table reports the lost revenues from the foregone economic activity as the state reduced government spending to finance the NOL deduction.

**Table A2. Economic Impacts due to Decreased Government Spending by Selected Economic Measure\***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Calendar Year | 2018 | 2019 | 2020 | 2021 | 2022 |
| Impact on total employment | -4,364 | -4,664 | -4,859 | -4,722 | -4,530 |
| Impact on private non-farm employment | -2,407 | -2,571 | -2,689 | -2,574 | -2,411 |
| Impact on GDP ($000), real dollars (2012) | -$377,000 | -$407,000 | -$428,000 | -$421,000 | -$410,000 |
| Impact on personal income ($000) | -$314,000 | -$372,000 | -$420,000 | -$441,000 | -$454,000 |

\*This table reports the lost economic activity as the state reduced government spending to finance the NOL deduction.

*Indirect and Induced Benefits*

The cost savings due to the NOL deduction encourages the directly affected businesses to invest, expand, hire additional workers, etc. Such decisions would increase demand for goods and services provided by other individuals and businesses in the economy, or put another way, generate a “Multiplier Effect” (see discussion in the previous section) from the initial or direct benefits as reported in the text. As a result, the total benefits of the NOL deduction would be larger than the initial or direct benefits.

*Quantifying total benefits (direct, indirect and induced)*

To quantify the total benefits, including indirect/induced benefits, we again employed Tax-PI. A summary of the revenue impact of the NOL deduction is reported in Table A3, and the economic benefit from the NOL deduction is reflected in Table A4 below. The figures for 2018 and 2019 are estimates of benefits that the Massachusetts economy experienced and those for 2020, 2021 and 2022 are projections of the benefits that the Massachusetts economy will experience going forward.

Tables A3 and A4 show that, the NOL deduction results in more economic activity, with real state GDP increasing by $230 million - $315 million and total employment increasing by 2,359 – 3,088 jobs annually. More economic activity results in more state revenues, ranging from $5.0 million to $17.3 million annually, which partially offsets the cost of this tax incentive.

**Table A3. Additional Revenue Impact of NOL Deduction**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fiscal Year | 2018 | 2019 | 2020 | 2021 | 2022 |
| Additional revenue impact ($000) | $5,026 | $11,705 | $14,340 | $16,260 | $17,331 |

**Table A4. Economic Impacts of NOL Deduction by Selected Economic Measure**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Calendar Year | 2018 | 2019 | 2020 | 2021 | 2022 |
| Impact on total employment | 2,359 | 2,774 | 3,084 | 3,088 | 3,001 |
| Impact on private non-farm employment | 2,271 | 2,628 | 2,859 | 2,856 | 2,774 |
| Impact on GDP ($000), real dollars (2012) | $230,000 | $274,000 | $307,000 | $315,000 | $314,000 |
| Impact on personal income ($000) | $175,000 | $227,000 | $274,000 | $298,000 | $312,000 |

**Comparison of costs and benefits**

Ignoring the opportunity cost of the tax incentive, total benefits are greater than costs. Considering the opportunity cost means asking what benefits would be reaped if the Commonwealth used the dollars spent on the tax incentive for other purposes. Those dollars could be spent in many other ways, and examining them is beyond the scope of the current evaluation report. Nonetheless, we reported net impacts of the tax incentive in Tables A5 and A6 below under the balanced budget requirement, which are the combined effects in Tables A1-A4.

Tables A5 and A6 show that the NOL deduction combined with a cut in state government spending results in less economic activity, with real state GDP decreasing by $96 million-$147 million. The net impact on total employment is negative with total employment decreasing by 1,529 – 2,005 jobs annually. The impact on state revenues is also negative, decreasing by $3.0 million to $6.3 million annually.

Because the tax expenditure has its own specific purpose, the net negative impacts do not necessarily imply that the tax expenditure is not desirable. The statute does not explicitly state the purpose of this tax expenditure; however, we assume that the purpose is to smooth over the effects of economic and business cycles on corporate taxes over multiple tax years as described above.

**Table A5. Net Additional Revenue Impact of NOL Deduction\***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fiscal Year | 2018 | 2019 | 2020 | 2021 | 2022 |
| Net additional revenue impact ($000) | -$3,015 | -$6,247 | -$6,258 | -$6,121 | -$5,901 |

\* assuming state government spending is cut by the same amount as the revenue loss due to the NOL deduction to balance budget.

**Table A6. Net Economic Impacts of NOL Deduction by Selected Economic Measure\***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Calendar Year | 2018 | 2019 | 2020 | 2021 | 2022 |
| Impact on total employment | -2,005 | -1,890 | -1,775 | -1,634 | -1,529 |
| Impact on private non-farm employment | -136 | 57 | 170 | 282 | 363 |
| Impact on GDP ($000), real dollars (2012) | -$147,000 | -$133,000 | -$121,000 | -$106,000 | -$96,000 |
| Impact on personal income ($000) | -$139,000 | -$145,000 | -$146,000 | -$143,000 | -$142,000 |

\* assuming state government spending is cut by the same amount as the revenue loss due to the NOL deduction to balance budget.

**Other unquantified costs and benefits:**

Besides the additional costs and benefits quantified in the previous sections, there are other costs and benefits that are hard to quantify due to lack of data or other challenges. In this section we will enumerate some of these costs and benefits.

Ihlanfeldt and Sjoquist (2001), a published study for the state of Georgia, summarizes some of the other costs and benefits as follows:

*Loss of competitiveness.* Providing tax incentive such as credits to selected firms may diminish the competitiveness for existing similar firms.

*Compliance costs.* They think that the costs to the firm may be substantial.

*Improved business climate.* Tax incentive improves the perception of the business climate in the state and is used by site location specialists in screening alternative sites.

*Synergistic or clustering effects.* Tax incentive may attract a firm in an industry new to the state, which then serves as a magnet for attracting additional firms in the industry.

Another hard to quantify cost is the administrative cost. The administrative cost attributable to this incentive should be relatively small because the Department of Revenue administers the deduction with existing staff as part of its overall mission.

**Other issues related to costs and benefits**

The burden of a tax does not necessarily fall on those responsible for remitting the tax. It is known through economic theories that corporate taxes change the allocation of capital between corporations and noncorporate businesses and among states because capital would flee from states of higher corporate taxes if all other considerable factors are not significantly different.

Felix (2009) finds that labor bears a significant burden from the state corporate tax in the form of lower wages. Her study further suggests that a one-percentage-point increase in the marginal state corporate tax rate reduces wages by 0.14% to 0.36%, that labor’s burden from the state corporate tax has trended upward over time due to increased global competition and increased competition among states to attract businesses, and that state corporate taxes reduce the wages of highly educated workers more than that of less-educated workers.

As discussed in the report, the NOL deduction reduces the effective tax rate of its direct beneficiaries. The findings imply that the incentive may have benefited workers who were employed by the corporations in the form of higher wages. The incentive may have further benefited the shareholders and clients due to the growth of businesses.

1. Tables 5-7 show that there were 12,024 claimants for the deduction in 2018, which is slightly lower than the 12,184 claims reported in Table 4. The difference was due to the cases in which a claimant had more than one claims. For example, a taxpayer in a combined group that incurred a loss may use part of the available deduction itself, and then share the remainder with other members, in which case the number of claims would be larger than the number of claimants (all claims are counted under the name of the member who incurred the loss). [↑](#footnote-ref-1)
2. Regional Economic Models Inc. is a recognized leader in economic analysis at the state level. See their website for background information and further details <https://www.remi.com/> [↑](#footnote-ref-2)
3. Including both tax and non-tax revenues but excluding the revenue loss reported in Table 3. [↑](#footnote-ref-3)
4. Spending on a specific tax incentive means less spending on other expenditure items for the Commonwealth under balanced budget requirement if there is no increase in state revenues. Reduced spending on other expenditure items means forgone benefits from those items. This is an opportunity cost to the Commonwealth, which, more specifically, is borne by the Massachusetts residents or businesses who benefit from those expenditure items. [↑](#footnote-ref-4)
5. For an illustration of “Multiplier Effect”, see Slide 4 of: <https://www.ilw.com/seminars/JohnNeillCitation.pdf> [↑](#footnote-ref-5)