

The Economic and Fiscal Effects of the Massachusetts Investment Tax Credit

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Prepared by:
Ernst & Young LLP
200 Clarendon Street
Boston, MA 02116
617-266-2000

For:
Associated Industries of Massachusetts Foundation, Inc.
222 Berkeley Street
Boston, MA 02117
617-262-1180

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Executive Summary

Massachusetts has provided business taxpayers with an investment tax credit (ITC) for tangible property investments in the state since 1970; businesses can use the ITC to offset a portion of the corporate excise tax liability. The ITC was adopted to provide an incentive for businesses to increase capital investments in Massachusetts with the goal of preserving and expanding manufacturing and other targeted industry employment in the Commonwealth. The economic effect of the ITC is a reduction in the cost of in-state capital investments, which results in increased jobs and additional plant and equipment investments in the state. In addition to providing additional Massachusetts jobs, this increase in Massachusetts investment makes Massachusetts workers more productive and increases their incomes.

This study provides estimates of the significant contribution the current 3 percent ITC makes to Massachusetts employment, income and state and local taxes. To measure this contribution, we estimate the additional Massachusetts private-sector jobs and income and state and local government taxes that the ITC is generating in 2003. These benefits in terms of additional jobs, personal income and taxes would be lost if the ITC is eliminated or reduced significantly.

Key Findings

- Massachusetts gained 4,220 more jobs in 2003 as a result of the ITC. The majority of these new jobs are highly-skilled jobs in the manufacturing sectors, which pay almost 40 percent more than the statewide average level of wages and fringe benefits.
- The ITC is a very effective tax incentive. Massachusetts gains \$7.00 of additional net personal income for each dollar of net costs to the state. This is a significant long-run return in terms of new jobs and higher incomes as a result of the state's investment. In the aggregate, the ITC added \$314 million to the state's personal income.
- Despite a long-run trend of declining manufacturing jobs in the Northeast, the 1969 to 2003 period shows a strong positive correlation between Massachusetts' share of manufacturing employment relative to national manufacturing employment and the rate of the ITC. This evidence points to the success of the ITC program in stimulating new Massachusetts investments and employment.
- A significant percentage of the state cost of the investment tax credit (the static revenue loss) is paid for by higher state tax revenues from increased income, property and consumption tax bases due to a stronger state economy. In addition, local governments benefit from higher property tax collections related to the increased level of investment and stronger economy.
- On balance, state and local governments gain \$35.6 million of additional tax revenues directly from the ITC, which offset more than 75 percent of the static revenue cost of the ITC to the state.

Both the carry-forward tax impact and the higher state spending impact would further reduce the net benefits to the state budget of eliminating the ITC. When all of these factors are considered together, the short-run state static revenue gains are virtually eliminated at a significant cost to the economy and residents of Massachusetts.

The Economic and Fiscal Effects of the Massachusetts Investment Tax Credit

I. Overview

Massachusetts has provided qualifying business taxpayers with an investment tax credit for tangible property investments in the state since 1970; businesses can use the ITC to offset a portion of the corporate excise tax liability. The ITC was adopted to provide an incentive for businesses to increase capital investments in Massachusetts with the goal of preserving and expanding manufacturing and other targeted industry employment in the Commonwealth. The economic effect of the ITC is a reduction in the cost of in-state capital investments, which results in increased plant and equipment in the state. In addition to providing additional Massachusetts jobs, this increase in Massachusetts investment makes Massachusetts workers more productive and increases Commonwealth income.

The credit is currently available to manufacturing corporations and to corporations engaged primarily in research and development, agriculture and commercial fishing. (See Appendix A for a detailed description of the ITC.) The current ITC rate is 3 percent; however, as shown in Table 1, the rate has fluctuated between 1 and 3 percent since the credit's adoption in 1970. Under current law, the ITC is scheduled to revert back to 1 percent beginning in 2004.

This study provides estimates of the significant contribution the current 3 percent ITC makes to Massachusetts employment, income and state and local taxes. To measure this contribution, we estimate the significant contribution of the ITC to jobs, income, and taxes in 2003.

A comprehensive evaluation of the investment tax credit's benefit to Massachusetts should consider the positive impacts on the Commonwealth's private and public sectors. Evaluating the value of the credit to Massachusetts' economic development in this context will include static estimates of the positive benefit of recaptured excise tax revenue (from firms currently claiming credits) and dynamic estimates of the revenue reductions associated with decreased economic activity. In addition to the short-term fiscal impacts of the elimination of the credit, a comprehensive evaluation of the ITC should consider private sector economic impacts, measured in terms of Massachusetts jobs and the personal income of Massachusetts residents. Massachusetts' competitive position and economic health will drive long-term revenue growth; maintaining and attracting jobs and investment in the state should be considered alongside estimates of short-term fiscal impacts.

The following sections examine the recent history of the ITC, in terms of tax impacts and economic contributions, and the simulated economic and fiscal impacts of eliminating the credit.

Table 1
Investment Tax Credit Rates
(Percent of Eligible Property)

<u>Taxable Years Ending</u>	<u>ITC Rate</u>
12/31/1970 - 12/30/1974.....	1 percent
12/31/1974 - 12/30/1985.....	3 percent
12/31/1985 - 12/30/1993.....	1 percent
12/31/1993 - 12/31/2003.....	3 percent
After 1/1/2004*	1 percent

* The credit reverts to 1 percent in 2004 unless the 3 percent rate is extended by the Massachusetts Legislature.

II. Recent History of the Investment Tax Credit

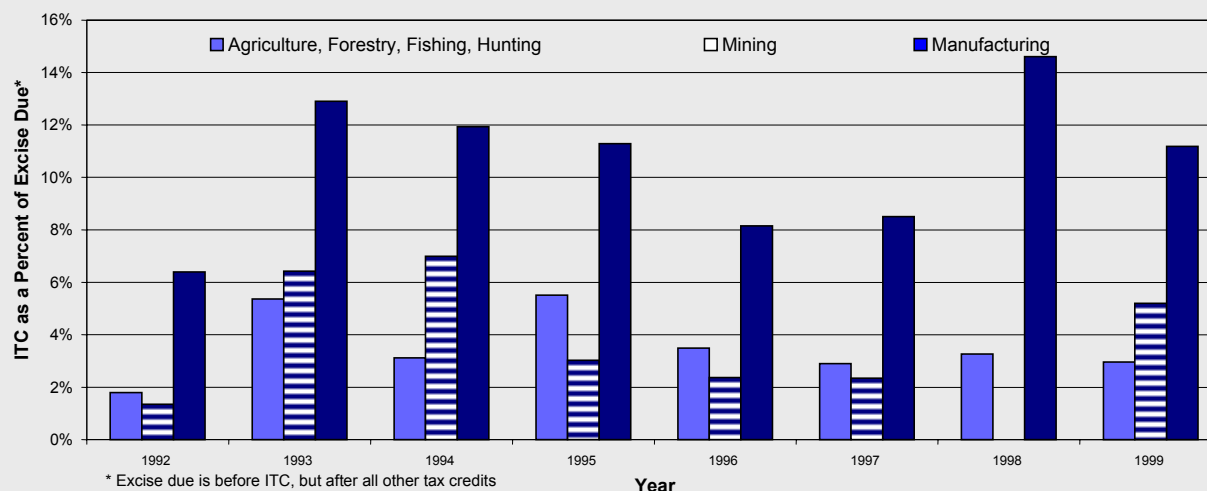
Table 2 shows the total annual amount of investment tax credits claimed against the Massachusetts corporate excise tax between 1992 and 1999.¹ The credit rate was 1 percent for tax years 1992 and 1993 and 3 percent for 1994 and later years. In 1992, corporations claimed \$33.3 million in investment tax credits. Corporations claimed over \$74.7 million in 1993, likely due to carry-forward unused credits from previous years as the economy rebounded from recession. The amount of dollar credits claimed remained high in 1994, with the increase of the ITC rate to 3 percent and additional carry-forwards. For the 1995 to 1999 period, the ITC has averaged almost \$40 million annually.

Figure 1 illustrates total investment tax credits claimed as a percent of excise tax due for all taxpayers (inclusive of the ITC, but exclusive of other tax credits) for the three industries with the largest dollar value ITC claims.²

Table 2
Massachusetts Investment Tax Credits Claimed, FY1992 - 1999

Year	ITC Claimed (\$ Millions)
1992	\$33.3
1993	74.8
1994	73.6
1995	39.2
1996	36.4
1997	44.0
1998	40.2
1999	36.8

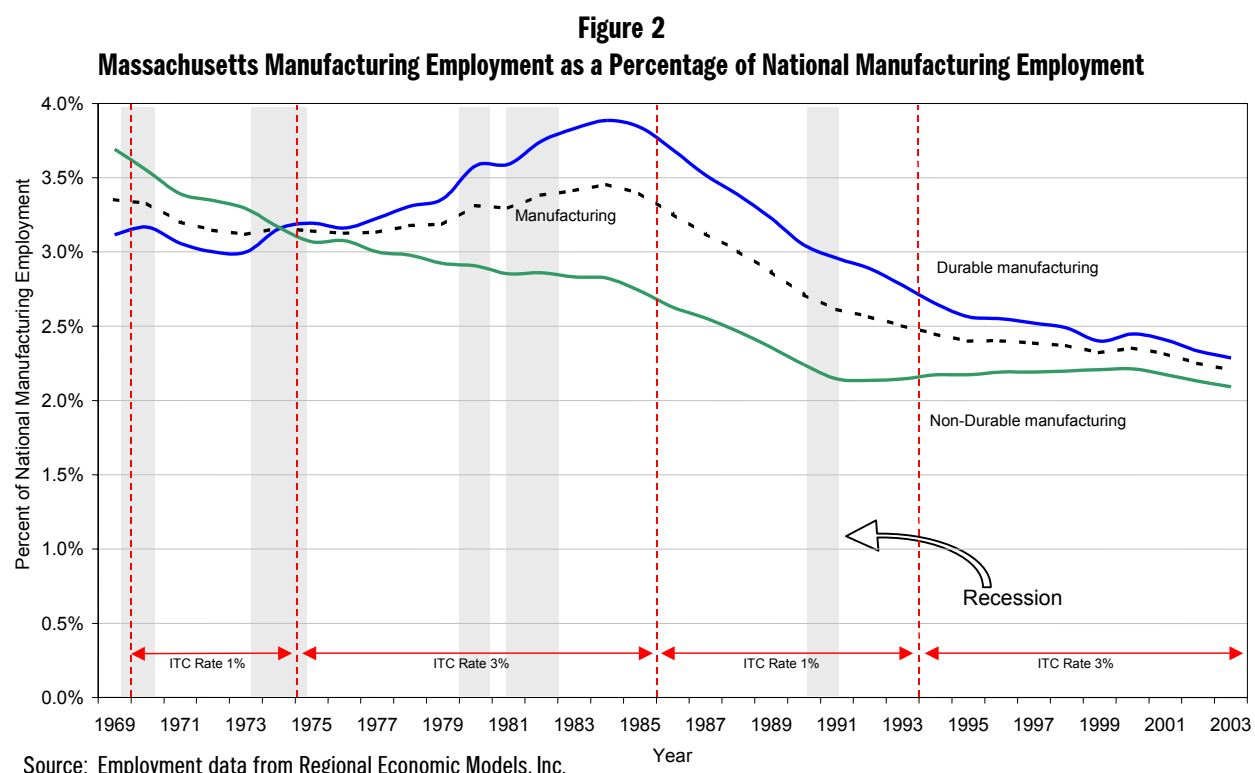
Figure 1
Investment Tax Credits as a Percent of Before-Credit Excise Taxes
By Industry, Tax Years 1992 - 1999



¹ The most recent year for which data is available from the Massachusetts Department of Revenue

² Other tax credits are not added back because data for many industries are not reported by the Massachusetts Department of Revenue to protect confidentiality of taxpayers.

Figure 2 provides one method of measuring the impact of the ITC on the Massachusetts economy. Figure 2 shows manufacturing employment in Massachusetts as a percent of national manufacturing employment for the years 1969 to 2003. Employment ratios are shown for all manufacturing, as well as for durable and non-durable manufacturing separately.³ The dotted vertical lines indicate changes in the ITC rate. Shaded regions represent U.S. recessions as defined by the U.S. Bureau of Economic Analysis.⁴



The ratio of Massachusetts manufacturing jobs to total U.S. jobs in manufacturing provides a means to control for economic factors, such as economy-wide recessions, that affect employment across the country. The ratios show how Massachusetts employment has fared relative to the U.S. economy. Comparing 1969 to 2003, it is clear that the long-run trend has been for Massachusetts manufacturing employment to fall relative to U.S. manufacturing jobs, with Massachusetts' share of total employment falling from 3.4 percent to 2.25 percent.

Despite this long-run trend, Figure 2 shows a strong positive correlation between Massachusetts' relative share of manufacturing employment and the rate of the ITC. For example, the Massachusetts ITC rate was 1 percent between 1970 and 1975, a time during which all three measures of Massachusetts manufacturing employment relative to the U.S. were either steady or gradually falling. In contrast, from 1975 through 1986, Massachusetts increased its share of national manufacturing employment while the ITC rate was 3 percent. The ITC's positive impact on manufacturing employment is apparent when comparing the ITC rate reduction in 1986 and a slower decline in manufacturing after reinstatement of the 3 percent rate in 1993. This evidence points to the success of the 3 percent ITC program in encouraging new investments and employment.

³ Durable manufacturing includes lumber, furniture, stone and clay, primary metals, fabricated metals, machines and computers, electrical equipment, motor vehicles, other transportation equipment, instruments, and miscellaneous manufacturing. Non-durable manufacturing includes food, tobacco, textiles, apparel, paper, printing, chemicals, petroleum products, rubber, and leather.

⁴ Survey of Current Business, July 2002.

III. Economic and Revenue Impacts of Eliminating the Investment Tax Credit

The current 3 percent ITC provides significant new investment incentives for manufacturing, agricultural services, and research and development firms, making Massachusetts a more attractive investment location compared to competitive locations in other states. Eliminating the ITC would lead to lower employment, income, and state and local tax revenues in Massachusetts. This study estimates both the private - and public - sector benefits attributable to the ITC program by identifying the static and dynamic economic and fiscal impacts of the current ITC.

To estimate the positive economic and fiscal contributions of the ITC we:

1. Estimate the decrease in the after-tax cost of investing in new Massachusetts' buildings, machinery and equipment, and other qualified investments due to the ITC.
2. Simulate the positive impact of the lower cost of capital on statewide jobs and income.
3. Determine the net effect of the ITC on state and local government revenues: the difference between a) lower corporate excise taxes ("static" revenue impact) due to the credit, and b) higher state and local taxes due to a stronger state economy ("dynamic" revenue impact).

The following section describes the methodology used in each step of the estimation process. Figure 5 provides an illustration of the steps of the economic and fiscal impact estimation process.

Estimating the Credit's Impact on the After-Tax Cost of Capital

The impact of the ITC on rates of return on new investments is sensitive to the "bundle" of assets purchased by firms in different industries. The ITC reduces the required return on capital more for industries that have relatively high ratios of machinery and equipment to other types of assets (land and inventories, for example). In this analysis, we identify the value of the ITC to firms making new investments in Massachusetts by comparing the after-tax rate of return without the ITC to the after-tax rate of return with the benefits of tax reductions due to the ITC. The difference of these two rates is the measure of the current 3 percent ITC's reduction of new Massachusetts investment costs.

The ITC's impact on the after-tax cost of capital is calculated by changing the present value of credit allowances in the calculation of the user-cost of capital (See Appendix C for detail on this calculation). By providing a tax allowance in the first year, the credit reduces the first year cost of investments by up to 3 percent. In some taxpayer situations, credit limits, carry-forwards, and discounting lower the change in the effective ITC rate relative to the statutory change in the rate.

The change in the cost of capital is determined on an industry by industry basis by comparing the required rates of return with and without the credit. The required return on assets in the absence of the credit is the present value of total interest expenses, depreciation, and taxes, net of depreciation allowances. While these factors vary by industry, our analysis suggests that the required rate of return is approximately 9.5 percent for most manufacturing industries with the credit, and approximately 10 percent without the ITC.

Credit Carry-forwards. Due to the 50 percent of current excise tax liability limitation on the investment tax credit, some of the investment tax credits related to current year investments must be carried forward to offset tax liabilities

in future tax years. The present value of the credits declines as amounts are carried forward into successive tax years. This analysis assumes that 70 percent of eligible firms can claim the full amount of the credit in the year of the investment while the remaining 30 percent of firms must carry credits for an average of 5 years. At the assumed discount rate of 8 percent, the carry-forward requirement lowers the value of the credit for these firms to roughly 80 percent of the credit's full value.

Eligible Property. Eligible property investments, excluding motor vehicles, were calculated for each qualifying industry in the Regional Economic Models, Inc. (REMI) model. Using data from the Bureau of Economic Analysis, the overall percentage of investments eligible for the credit was calculated for each industry.

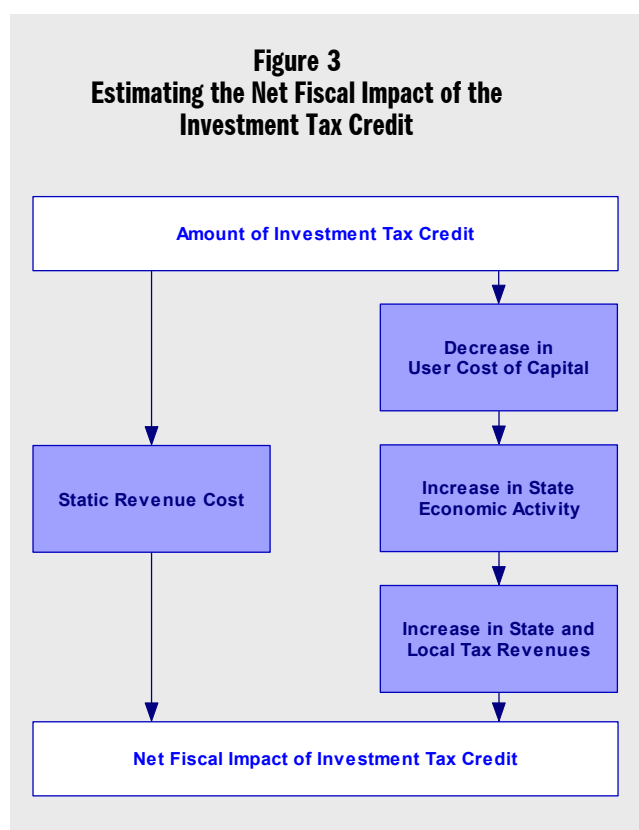
Estimating the Impact of the ITC on the Massachusetts State Economy

The investment tax credit positively affects Massachusetts' overall economic activity, capital stock, jobs, and income by reducing the cost of capital and making Massachusetts a more attractive investment location relative to other states. To model these economic impacts, we used a detailed structural economic model of the Massachusetts economy developed by REMI. The model is a dynamic economic forecasting and policy simulation tool that captures economic interactions among all the industries within the Commonwealth, as well as changes in Massachusetts's competitive position among the states. (More detailed information about the REMI model may be found in Appendix B.)

The decrease in the after-tax cost of capital due to the ITC (estimated by industry in the first step) is entered into the REMI model to simulate the positive impact of the ITC on the state economy. The model simulations indicate that the economic stimulus from the ITC grows over time as more investment occurs in Massachusetts. The results presented below present estimates of the increased jobs and income created by the ITC in 2003.⁵

Estimating the Net Impact of the ITC on Massachusetts State and Local Taxes

As illustrated in Figure 3, Massachusetts net state revenue loss from the ITC ("static" loss) is less than the amount of the actual excise tax credits because of the higher state and local taxes generated by more jobs and investment. This offset is referred to as the "dynamic" fiscal impact of the ITC. The net impact is calculated as the combined impacts of ITC costs and higher state and local revenues resulting from increased Massachusetts economic activity. Competition with other states for investment drives the economic impact of the ITC; locations offering a favorable tax environment for investments, including investment credits, will capture a greater share of total investment and the resulting economic activity.



⁵ The positive contribution of the ITC is estimated as the difference in employment, income, and other key economic variables between the baseline estimate with the 3 percent ITC and an estimate of the economy without the ITC.

Estimates of the Economic and Long-Term Revenue Impacts of the ITC

Table 3 briefly summarizes the significant positive impact that the 3 percent investment tax credit has on Massachusetts personal income, employment, output, and invested capital stock.⁶

As presented in Table 3, our analysis shows that Massachusetts gained 4,220 more jobs in 2003 as a result of the ITC. As discussed below, this impact is relatively large when compared to the net state revenue loss from the ITC. The majority of these new well-compensated, highly-skilled jobs occur in the manufacturing sectors. The average compensation for these workers is approximately \$59,000 (including fringe benefits), compared to a statewide average annual compensation of approximately \$43,000 (including fringe benefits).

Table 3 also identifies the increase in the value of the capital stock (\$218.3 million) invested in the state as a result of the credit. This increased capital expands the private sector as well as increases property taxes collected on real and personal business property.

Table 4 provides estimates of the net state and local tax impacts of the ITC. The corporate excise tax reduction due to the ITC, the static ITC tax decrease, is estimated to be \$46.6 million in 2003. However the increased statewide economic activity and personal income attributable to the ITC increases Commonwealth tax revenues by \$21.5 million, offsetting a significant percentage of the static revenue loss. Combining both the static loss and the dynamic tax gain, the net cost of the ITC to the state is only \$21.5 million in 2003. In other words, the higher dynamic feedback from a stronger state economy pays for 54 percent of the cost of the ITC.

Moreover, as shown clearly in the comparison of Tables 3 and 4, the state's return on the cost of the ITC is substantial. The estimates indicate that the residents of Massachusetts gain \$7.00 of additional net income for each dollar of net cost to the state. This is a significant long-run return on the state's investment in terms of additional private-sector jobs and income.

Table 3
Increase in Massachusetts Economic Activity from the Investment Tax Credit, 2003
(dollars in thousands)

Economic Impact	2003
Employment	4,220
Personal Income	\$314,000
Capital Stock	\$218,300

Table 4
State and Local Tax Impacts of the Massachusetts ITC, 2003
(dollars in millions)

Tax Impact	2003
A. State Static ITC Tax Loss*	(\$46.6)
B. State Dynamic Tax Impacts	
General Sales and Gross Receipts	\$6.2
Selective Sales	2.2
Individual Income Tax	14.6
Corporate Net Income	1.1
License and Other Taxes	1.0
Total State Dynamic Tax Impact	\$25.1
Net State Tax Impact (A+B)	(\$21.5)
C. Local Dynamic Tax Impacts	
Property	\$10.2
Selective Sales and Other Taxes	0.3
Total Local Dynamic Tax Impact	\$10.5
Net State and Local Impact (A+B+C)	\$11.0

⁶ The estimate of the net state fiscal impact of the investment tax credit does not assume a revenue neutral increase in other taxes to pay for the cost of the ITC. If a balanced-budget constraint were imposed on the model, the positive economic feedback would be reduced by approximately 32 percent.

* The Department of Revenue estimates that the FY2004 cost of the credit will be \$31.9 million. This estimate considers the 50% limitation of the credit.

As shown in Table 4, local governments receive a substantial windfall from the ITC. Local taxes, primarily property taxes, are \$10.5 million higher in 2003 due to the economic activity generated by the ITC. In contrast to the state, local governments do not experience any static tax revenue loss.

Short-Term Budgetary Impact of Eliminating the ITC

The estimates in this report measure the significant private - and public - sector benefits created in 2003 by the Massachusetts ITC. The estimates reflect the longer-run benefits of the credit in generating new jobs, increasing in-state investment and producing higher state and local tax collections. These substantial private-sector benefits would be lost if the ITC is eliminated or significantly reduced. It should be pointed out, however, that the short-run state budget impact of eliminating the current 3 percent ITC is expected to be substantially smaller than the estimated \$46.6 million 2003 reduction in corporate excise tax collections for two reasons: the existence of unused credit carry-forwards and potentially higher short-run state costs associated with a higher rate of unemployment.

Carry-forward of Unused Credits. The first reason for a lower static state revenue gain is that unused carry-forward ITC from prior tax years that will still be claimed on corporate excise tax returns for tax year 2004 and beyond. These credits will reduce the net tax gain to the state from eliminating the ITC every year until the credits have been used to offset corporate tax liabilities. Table 5 illustrates this impact based on the assumptions used in this study that 1) 30 percent of the ITC creates a carry-forward credit each year, and 2) the credits are claimed against corporate tax liabilities for the next five tax years. Assuming that the ITC is eliminated beginning with tax years 2004 and that the credit costs remain at \$46.6 million annually, the table shows the net direct state tax increase through 2009. Because of the carry-forward of unused credits, the elimination of the ITC would generate \$32.6 million in direct higher corporate

Credit Component	2004	2005	2006	2007	2008	2009
Current-year credits	\$46.6	\$46.6	\$46.6	\$46.6	\$46.6	\$46.6
Carry-forward credits	-\$14.0	-\$11.2	-\$8.4	-\$5.6	-\$2.8	-\$0.0
Net tax increase	\$32.6	\$35.4	\$38.2	\$41.0	\$43.8	\$46.0

excise taxes in 2004. In other words, the state revenue gain is reduced by \$14 million in carry-forward credits in 2004. Not until 2009 would direct state excise taxes equal \$46 million.

Potential Increase in State Spending Related to Higher Unemployment. In the short run, the elimination of the ITC can be expected to reduce the number of jobs as businesses relocate existing capital or shift the location of new investments in response to the higher cost of capital in Massachusetts. We used the REMI Massachusetts model to estimate the potential increase in state spending from unemployment compensation and transfer payments due to jobs lost in 2004 and 2005 (assuming that the ITC is eliminated in 2004 and that the employees losing their jobs would remain in Massachusetts. Based on the historical experience reflected in the model, the estimated increase in state spending, primarily unemployment compensation and transfer payments, in 2004 is \$10 million.

In summary, both the carry-forward tax impact and the higher state spending impact would reduce the net benefits to the state budget of eliminating the ITC. When all of these factors are considered together, the short-run state static revenue gains are virtually eliminated at a significant cost to the economy and residents of Massachusetts.

Competitive States' Investment Tax Credits

As shown in Table 6, Massachusetts competes for investments with other states that offer investment tax credits. Eliminating the Massachusetts investment tax credit would reduce Massachusetts' ability to successfully compete with these states for new investments and jobs.

State	Rate	Eligibility	Limitation
Massachusetts	3%	Manufacturing, research, and agricultural investments	Combined credit limit of 50% of tax
California	6%	Manufacturing, research, and pollution control equipment	Total franchise tax liability
Connecticut	5% to 10% of incremental investment	Machinery and equipment investments by small firms	Must be taken in year of investment
Florida	5% annually	High impact facilities expansions	Cannot exceed project costs
Illinois	0.5%	Investments over \$12m creating over 500 jobs	Credit must be taken in year of investment
Maine	1% annually	Machinery and equipment investments	Total tax liability; carry forwards allowed
Michigan	Varies from 0.85% to 2.3%	Generally available	First priority among credits
New Jersey	2%	Manufacturing machinery and equipment	50% of tax liability
New York	Varies from 4% to 9%	Generally available	None
North Carolina	7%	Machinery and equipment over \$200 thousand in most counties	Transportation, manufacturing, customer service centers, telecommunications, and financial services companies
Ohio	Varies from 7.5% to 13%	Manufacturing machinery and equipment	Cannot exceed \$1 million
Rhode Island	4%	Capital investment by high-performance firms in manufacturing and other selected industries	Cannot exceed current year liability; carry-forward allowed
Vermont	Varies from 5% to 10%	Capital investments over \$150 thousand by small businesses	Cannot exceed current year liability; carry-forward allowed

Appendix A

Description of the Massachusetts Investment Tax Credit

The Massachusetts investment tax credit (ITC) is equal to three percent of the cost or other basis for federal income tax purposes of “qualifying tangible property” acquired, constructed, or erected during the taxable year.

Qualification – Eligible Property

To be considered “qualifying tangible property” the property must meet all of the following criteria: 1) the property must be tangible personal property or other tangible property including buildings and structural components of buildings acquired by purchase per Internal Revenue Code (IRC) § 179(d) or leased under an operating lease; 2) the property must be used by the corporation in Massachusetts; 3) the property must be situated in Massachusetts on the last day of the corporation’s taxable year; and 4) the property must either be depreciable under IRC § 167 and have a useful life of four (4) years or more or considered recovery property under IRC § 168.

Note that the first prong of the rules set forth above has been interpreted to permit the ITC for self-constructed tangible personal property that otherwise qualifies for the Credit. See *Digital Equip. Corp. v. Comm’r of Rev.*, 389 Mass. 577 (1983). In general, in applying the fourth prong, the Massachusetts Department of Revenue (“DOR”) permits the ITC for all tangible personal property that is three-year property, with the exception of computer software, which is not considered to be depreciable tangible personal property. Motor vehicles are another major category of tangible personal property not eligible for the ITC.

Qualification – Eligible Corporations

Manufacturing Corporations. To be considered a “manufacturing” corporation for purposes of ITC qualification, the corporation is not required to be a Massachusetts classified manufacturer under Mass. Regs. Code tit. 830, § 58.2.1 (although such classification will allow the corporation to be eligible for the ITC). Instead, the corporation need only be engaged in manufacturing activity under Mass. Regs. Code tit. 830, § 58.2.1(6) to be a “manufacturing” corporation for ITC purposes. In general a corporation is a manufacturing corporation if one of the following tests are met:

- The corporation derives 25 percent or more of its gross receipts from manufacturing activities in Massachusetts; or
- The corporation derives 15 percent or more of its gross receipts from manufacturing activities in Massachusetts and 25 percent or more of the corporation’s Massachusetts payroll is attributable to employees working in manufacturing operations; or
- The corporation derives 15 percent or more of its gross receipts from manufacturing activities in Massachusetts and uses 25 percent or more of its tangible property located in Massachusetts in manufacturing; or
- The corporation uses 35 percent or more of its tangible property located in Massachusetts in manufacturing.

Research and Development Corporations. To be considered a “research and development” corporation for purposes of ITC qualification, the corporation must meet the requirements expressed in either Mass. Gen. Laws ch. 63, § 38C (domestic corporation) or § 42B (foreign corporation). Section 42B of the statute requires a corporation to be “one whose principal activity is research and development and which, during the taxable year, derives more than two thirds of its receipts from such activity assignable to [Massachusetts] and derives more than one third of its receipts assignable to [Massachusetts] from the research and development of tangible personal property capable of being manufactured in [Massachusetts].” Note that § 38C has a similar definition for domestic corporations.

Other Eligible Corporations. Corporations primarily engaged in agriculture or commercial fishing are also eligible for the ITC. Little guidance is available to help define such corporations. Under case law, a corporation primarily engaged in agriculture or commercial fishing is eligible for the Credit with respect to property located in Massachusetts even if the agriculture and commercial fishing takes place outside Massachusetts. See Comm'r of Rev. v. Cargill, 429 Mass. 79.

Limitations on the ITC

- The ITC cannot reduce the corporation's tax liability below the minimum corporate excise tax (\$456).
- The maximum amount of ITC claimed in a taxable year may not exceed 50 percent of the corporate excise.
- Where the corporation is eligible for the ITC and other credits, these limitations are applied without regard to the other credits.
- Eligible corporations cannot claim both the ITC and the Economic Opportunity Area Credit under Mass. Gen. Laws ch. 63, § 38N with respect to the same property.
- If the corporation files in Massachusetts as part of a combined return under Mass. Gen. Laws ch. 63, § 32B, the ITC generated by a member of the filing group may be applied only against the excise of that member, subject to all other limitations. Excess ITC may not be used against the excise of other group members, either in the current taxable year, or for carry-forward purposes.

Recapture Rules

If eligible property for which ITC has been taken is disposed of or ceases to be in qualified use prior to the end of its "useful life" (determined in accordance with federal depreciation rules), the difference between the Credit taken and the Credit allowed for actual use must be added back as additional taxes due in the year of disposition. The amount of ITC allowed for actual use is determined by multiplying the original Credit by the ratio that the months of qualified use bear to the total months of useful life. No ITC recapture is necessary if the property has been in qualified use for more than 12 consecutive years. Property will cease to be in qualified use as of the effective date that the DOR revokes a corporation's manufacturing classification or status. Property (within the 12-year rule) that is moved outside of Massachusetts will be subject to recapture as of the date of movement outside the state.

The DOR has recently ruled for all open tax years the recapture tax will be considered a tax against which ITC (and carry-forwards of such) may be claimed and a tax against which the 50 percent limitation will be applied.

Leasing Rules

Eligible corporations that lease under an operating lease, rather than purchase, tangible property in Massachusetts may be eligible for the ITC. If eligible, the credit is calculated at 3 percent of the lessor's adjusted basis in the property (for federal income tax purposes) at the beginning of the lease term, multiplied by a fraction, the numerator of which is the number of days in the taxable year during which the lessee corporation leases the property and the denominator of which is the number of days in the useful life of the property (the same as lessor calculates for federal income tax depreciation purposes).

Appendix B

Description of the REMI Massachusetts Economic Model

The REMI model incorporates information from the U.S. Bureau of Economic Analysis, the Bureau of Labor Statistics, the Department of Energy, and other public sources to develop a detailed model of the Massachusetts economy. The model includes an input-output structure that describes commodity flows from producers to intermediate and final consumers. The total industry purchases of commodities, services, employment compensation, value added, and imports is equal to the value of the commodities produced. Purchases for final use (final demand) drive the model. Industries producing goods and services for final demand purchase goods and services from other producers. These other producers, in turn, purchase goods and services. This buying of goods and services (indirect purchases) continues until leakage from the region (imports and value added) stop the cycle.

The model summarizes these complex interactions and uses the data to estimate the total economic impact of the employment, investment and export sales related to the eligible industries in Massachusetts. The REMI model has detailed information for each of 53 sectors of the state economy. The model is used to establish a baseline economic forecast for the state under current law. Policy variables are then used to model the expected impacts of the credit's elimination, as described in the text.

Appendix C

Calculating the User Cost of Capital

$$\text{Cost of Capital} = \frac{(1 - A)}{(1 - \tau)} (\rho + \delta - \pi) - \delta,$$

$$\text{Where } A = \text{Allowances} = [\%D] \cdot A_d + [\%C] \cdot r_{itc};$$

%D is assumed to be 1, i.e., full depreciation of invested capital;

A_d = Present discounted tax benefit of future depreciation deductions;

%C = percent of all invested capital eligible for the credit;

r_{itc} = Investment tax credit rate, currently 3 percent;

τ = corporate tax rate;

ρ = nominal discount rate of firm for net of tax dollars;

π = inflation;

Allowances are simply the sum of (a) present discounted tax benefits of future depreciation deductions times the percentage of deductions depreciated (assumed here to be one) and (b) the percent of all invested capital eligible for the credit times the credit rate. This analysis ignores the Federal basis adjustment that allows immediate expensing. The allowance, holding all variables constant, is negatively related to the required pretax rate of return.

A higher allowance increases the tax advantage of the investment capital, meaning that the firm would not require as high a pretax rate of return on the capital investment itself. This is the mechanism by which the investment tax credit rate impacts capital investment.

The required pretax rate of return increases as the corporate tax rate, τ , increases, simply because the net benefit to the firm is only the untaxed, $1 - \tau$ portion. The discount rate, ρ , is positively related to the required rate of return on investment capital because an increase in the discount rate reflects a higher time value of money. The discount rate can be interpreted as the interest rate that one could earn on an alternative investment.